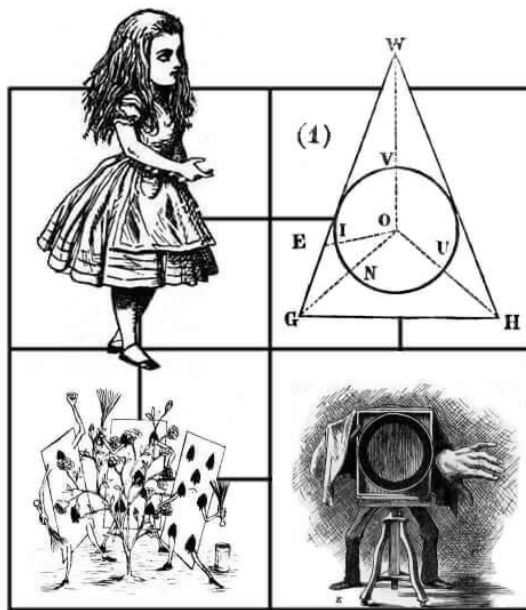


The (almost really) Complete Works
of
Lewis Carroll
(C. L. Dodgson)

Collected by Schnark



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18.111	My dear Christie	2223
18.112	My First has no beard	2224
18.113	My First heads all atrocity heartrending	2225
18.114	My First is a berry	2226
18.115	Four Riddles. No. IV	2227
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18.117	My First we call her when her belt is on	2230
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18.120	My Sukie! He hath bought, yea, Muggle's self	2233
18.121	Near Albury, so runs my lay	2234
18.122	"No mind!" the little maiden cried	2235
18.123	No, no! I cannot write a line	2236
18.124	Now what's the most appropriate thing	2237
18.125	O come to me at two today	2238
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Part 1

Preface

1.1 Introduction

This is (or rather: should be) a complete edition of all texts by Lewis Carroll.¹ Well, of course it isn't. But it is the most complete collection I know of, and according to the scope (which I think is a very reasonable one) only a few texts are missing in it.

It started as a personal project to collect some texts, but then grew more and more until it reached its current state. Originally I only planned a PDF file generated from a L^AT_EX source, but then decided to also produce HTML files. Both versions should have the same content, similar formatting, and only differ in the presentation.

The Scope of This Collection

The most difficult thing in creating a collection is to decide on the scope. No matter how you decide, once you try to follow your plan, you will end up adding more and more works, because if you added *this*, then you also have to add *that*, and so on. One example: You might try to limit the collection to all *literary* works by Lewis Carroll. This will exclude *Euclid and his Modern Rivals*. Sure, this is a mathematical book by C. L. Dodgson. But it also is a literary work with Carrollian humour. So you just *have* to add it, as the collection would be incomplete otherwise. But once you added that, you no longer have a real reason to exclude other mathematical books (after all, some of them contain literary portions, too), so you will add those, and so on.

I first tried to limit myself to published works. This seemed to work well, but there were a few unpublished works I wanted to add, too. And the few works soon became more and more, until I could hardly declare them as a few exceptions. So I decided to give up on a restrictive limit of the scope.

On the other hand, there are a few problems with adding *all* works. Even in electronic form they take away space. And it takes time to add them properly.

¹In this preface I will use the name "Lewis Carroll" throughout, even in cases where "C. L. Dodgson" (pronounced, by the way, with a silent G like "Dodson") might seem more appropriate. There is no longer the danger that anybody who wanted to see the famous Lewis Carroll would come to C. L. Dodgson and disturb him in his privacy, so this strict separation is no longer necessary, and it is easier to use just one name instead of two.

The current rules about which works are included into this collection and which aren't are these:

Carroll wrote almost 50 books (including some larger pamphlets, which make about half that number). All these are at least listed. Some “uninteresting” mathematical books are only very partially included, and some not at all. “Uninteresting” is of course very subjective, but means that more or less nobody would even think about looking at that book if it had a different author. Also parts by other authors are omitted, this also applies to translations of Euclid. Some parts like the table of contents and advertisements have been omitted for all books.

Carroll also contributed several hundreds (the number depends very much on whether and how you count all the “Doublets” columns, and will be either about 200 or about 300) of articles and letters to almost 50 magazines and newspapers. These are all included. But given that this collection is the only one (at least the only one I know of) to mention and reprint “*The Priest in Absolution*” from the *Pall Mall Gazette* and *Mr. Gladstone’s New Book* from the *St. James’s Gazette* (well, this actually is mentioned in the *Lewis Carroll Handbook*, but without proper citation),² there sure are still some unknown articles waiting hidden in some archives to be found.

Offprints and reprints from contributions to magazines and newspapers are in most cases just mentioned, but even in case of small changes not included additionally. Many of these reprints are actually nowhere listed, *Lewis Carroll and the Press* mentions some, but searching digitized newspaper archives will give many more.

In a few cases magazines published letters Carroll sent to the editor, but probably didn't intend to have them published. These are not included in this collection.

Carroll also had hundreds of pamphlets (again the number depends on how you count, and will be something up to 200) printed, or (since 1877) produced them himself with an electric pen or similar devices, or (a few since 1888) with a typewriter. These, too, are included. The exceptions are the offprints mentioned above (though in some cases the border between an offprint and a separate pamphlet is hard to draw), circular letters (including most of what he had printed as Curator of Common Room), works he only compiled, and some other strange stuff. For these omitted pamphlets sources are given, so you can find them if you want to read them.

Carroll left some unpublished galley proofs, either because at some point stopped working on them, or because he died before he could finish them. Of these a few are also included into this collection, for legal reasons only if they have been published long enough ago. Galley proofs of books he did publish are not included.

The most difficult part are the lots of manuscripts: It is almost impossible to draw the line between manuscripts that deserve inclusion among his works and those that are mere scribbles on note-sheets. I took the *Lewis Carroll Handbook* and the *Pamphlets* series as rough guidelines as to which of them to include. I excluded all manuscripts not in English, that is, the two known poems in Latin, the first one from 1844, quoted by Collingwood (*Life and Letters*, p. 23), the

²When I started this collection, and the last volume of the *Pamphlets* series hadn't been published yet, this list was much longer.

second from 1882 in a scrapbook of Thomas Verse Bayne (<https://digital.bodleian.ox.ac.uk/objects/179a125e-2800-4d02-982c-a019bc761392/surfaces/88c913e4-fe5a-4991-b794-c27774965183/>). Again, for legal reasons only those published long enough ago are included. In the section with missing manuscripts I listed more manuscripts that still exist, but still excluded several papers that don't seem worth for listing there. Most of these are mentioned and some reprinted in the notes to the published diaries.

Among the works out of scope of this collection are his diaries, including the *Russian Journal* from 1867.

Also excluded are his letters, but there is one exception: Poems from letters (or inscribed into book presents, etc.) are treated like manuscripts, that is, most are included, especially if they are reprinted in traditional "complete" collections. A few of these poems were printed by him with minor variations, in most cases these are not included additionally. Also note that in some cases the only known source is not the final poem, but only a draft version Carroll kept for himself.

Also missing in this collection are Carroll's photographs and drawings (except for a few exceptions).

Of course most of his sermons are missing, in fact, only one sermon was published. But at least a list of all known (from his diaries, note that the diary for the time of his first sermons is missing, and he might not have recorded all his sermons) sermons is given here, as the choice of topics is very interesting and much neglected until now. (Very interesting: While working on liar problems in logic, he preached on "All men are liars.") Unless otherwise noted the date is always an "ordinary" sunday. Where Carroll gives quotes for the text, I took them unchanged (and in a few cases corrected the verse number), where he only gave a verse number, I added the quote (hoping the verse is correct). When he preached on the same text more than one time, the quote is only given for the first time (which allows you to quickly identify such repetitions).

Date	Topic
Jun 8, 1862 (Whitsunday)	2 Cor 13:14 ["The grace of the Lord Jesus Christ, and the love of God, and the communion of the Holy Ghost, be with you all."]
Dec 28, 1862	2 Pet 3:4 "Where is the promise of his coming, for since the fathers fell asleep, all things continue as they were until now"
Feb 18, 1863 (Ash Wednesday)	Ps 95:4 "In his hand are all the corners of the earth"
Mar 8, 1863	Rev 4:8 "And they rest not day or night, saying, Holy, Holy, Holy, Lord God Almighty"
Mar 19, 1863 (St. Joseph)	Rev 3:20 ["Behold, I stand at the door, and knock: if any man hear my voice, and open the door, I will come in to him, and will sup with him, and he with me."]
Aug 9, 1863	2 Cor 11:14 "Satan himself is transformed into an angel of light"
Aug 16, 1863	Deut 4:40 "Thou shalt keep therefore his statutes and his commandments, which I command thee this day, that it may go well with thee", Eccl 12:13 "Fear God, and keep his commandments, for this is the whole duty of man", 1 Joh 5:3 "This is the love of God, that we keep his commandments"

Sep 6, 1863	John 4:13–14 “Jesus answered and said unto her, whosoever drinketh of this water shall thirst again; but whosoever drinketh of the water that I shall give him shall be in him a well of water, springing up unto everlasting life”
Nov 1, 1863	Luke 15:18–19 “I will arise and go to my Father . . .” [“. . . and will say unto him, Father, I have sinned against heaven, and before thee, and am no more worthy to be called thy son: make me as one of thy hired servants.”]
Mar 20, 1864 (Palm Sunday)	Matt 6:21 “where your treasure is, there will your heart be also”
Mar 27, 1864 (Easter Sunday)	Col 3:1 [“If ye then be risen with Christ, seek those things which are above, where Christ sitteth on the right hand of God.”]
Apr 24, 1864	Matt 28:20 “Lo, I am with you alway, even unto the end of the world”
May 29, 1864	Phil 1:21 “to die is gain”
Nov 6, 1864	1 Cor 10:31 “Whether therefore ye eat or drink, or whatever ye do, do all to the glory of God.”
Feb 19, 1865	Gen 3:4 “The serpent said unto the woman, ye shall not surely die”, Luke 2:11 “Unto you is born this day in the city of David a Saviour.”
Mar 5, 1865	Gen 3:4, Luke 2:11
Mar 12, 1865	Ps 66:18 “If I incline unto wickedness in my heart, the Lord will not hear me”
Mar 26, 1865	Ps 64:1 “Hear my voice, oh God” (same sermon as above)
Apr 2, 1865	1 Joh 2:15 “Love not the world, neither the things of the world. If any man love the world, the love of the Father is not in him.”
Apr 16, 1865 (Easter Sunday)	Col 3:1
Apr 23, 1865	1 Joh 5:4 “This is the victory that overcometh the world, even our faith.”
May 14, 1865	Luke 16:10 “He that is unjust in the least . . .” [“. . . is unjust also in much.”]
Jun 4, 1865 (Whitsunday)	Acts 2:38–39 “Ye shall receive the Holy Ghost, for the promise is unto you and to your children.”
Jun 18, 1865 (Dedication Church)	2 Kgs 19:14 “And Hezekiah received the letter of the hand of the messenger, and read it: Hezekiah went up into the house of the Lord.”
Jun 18, 1865	Ps 100:4 “Oh go your way into his gates with thanksgiving, and into his courts with praise.” (same sermon without referring to dedication)
Jul 2, 1865	Ps 100:4
Aug 6, 1865	1 Joh 3:16 “Hereby perceive we the love of God, because he laid down his life for us, and we ought to lay down our lives for the brethren.”
Aug 20, 1865	Matt 25:35 “I was an hungred, and ye gave me meat: I was thirsty, and ye gave me drink.”

Sep 3, 1865	Eccl 8:14 ["There is a vanity which is done upon the earth; that there be just men, unto whom it happeneth according to the work of the wicked; again, there be wicked men, to whom it happeneth according to the work of the righteous: I said that this also is vanity."]
Sep 10, 1865	Eccl 8:14
Oct 1, 1865	Rom 7:22-23 ["For I delight in the law of God after the inward man: but I see another law in my members, warring against the law of my mind, and bringing me into captivity to the law of sin which is in my members."]
Oct 8, 1865	John 10:16 ["And other sheep I have, which are not of this fold: them also I must bring, and they shall hear my voice; and there shall be one fold, and one shepherd."]
Oct 15, 1865	Rom 7:22-23
Oct 29, 1865	Rom 7:22-23
Dec 24, 1865	Matt 6:14 ["For if ye forgive men their trespasses, your heavenly Father will also forgive you."]
Dec 25, 1865 (Christmas)	John 1:10 ["He was in the world, and the world was made by him, and the world knew him not."]
Dec 31, 1865	Eccl 9:10 ["Whatsoever thy hand findeth to do, do it with thy might; for there is no work, nor device, nor knowledge, nor wisdom, in the grave, whither thou goest."]
Apr 1, 1866 (Easter Sunday)	Rom 6:10-11 ["For in that he died, he died unto sin once: but in that he liveth, he liveth unto God. Likewise reckon ye also yourselves to be dead indeed unto sin, but alive unto God through Jesus Christ our Lord."]
Mar 10, 1867	Amos 5:15 "Hate the evil, and love the good"
Jan 2, 1887	Mark 10:51 ["And Jesus answered and said unto him, What wilt thou that I should do unto thee? The blind man said unto him, Lord, that I might receive my sight."]
Apr 17, 1887	Eccl 5:2 ["Be not rash with thy mouth, and let not thine heart be hasty to utter any thing before God: for God is in heaven, and thou upon earth: therefore let thy words be few."]
Jul 3, 1887	Is 6:8 "Here am I; send me."
Jan 15, 1888	Is 6:8
Nov 25, 1888	Rom 13:8 ["Owe no man any thing, but to love one another: for he that loveth another hath fulfilled the law."]
Dec 30, 1888	Matt 20:6 ["And about the eleventh hour he went out, and found others standing idle, and saith unto them, Why stand ye here all the day idle?"]
Jan 6, 1889	Luke 2:11 ["For unto you is born this day in the city of David a Saviour, which is Christ the Lord."]
May 19, 1889	Eph 4:25 "We are members one of another."
Jan 19, 1890	Phil 3:13 ["forgetting those things which are behind"]
Jan 26, 1890	Phil 3:13 "reaching forth unto those things which are before"
May 11, 1890	John 20:29 ["Jesus saith unto him, Thomas, because thou hast seen me, thou hast believed: blessed are they that have not seen, and yet have believed."]

Nov 9, 1890	Mark 16:7 “Go your way, tell his disciples, and Peter, that he goeth before you into Galilee: there shall ye see him.”
Jan 4, 1891	Eccl 1:9 [“The thing that hath been, it is that which shall be; and that which is done is that which shall be done: and there is no new thing under the sun.”]
Jan 25, 1891 (Conversion St. Paul)	Acts 9:6 [“And he trembling and astonished said, Lord, of what wilt thou have me to do? And the Lord said unto him, Arise, and go into the city, and it shall be told thee what thou must do.”]
Feb 1, 1891	Rom 8:28 [“And we know that all things work together for good to them that love God, to them who are the called according to his purpose.”]
Apr 3, 1892	Rev 3:1 [“I know thy works, that thou hast a name that thou livest, and art dead.”]
Apr 24, 1892	Rev 3:1
Jun 12, 1892	John 17:26 [“And I have declared unto them thy name, and will declare it: that the love wherewith thou hast loved me may be in them, and I in them.”]
Jul 3, 1892	John 17:26
Nov 13, 1892	Luke 11:4 “Lead us not into temptation.”
Nov 20, 1892	Jas 1:2 “My brethren, count it all joy, when ye fall into divers temptations.”
Jan 8, 1893	Luke 11:4
Apr 16, 1893	Luke 11:4
May 14, 1893	Luke 11:4
May 28, 1893	Jas 1:2
Sep 10, 1893	Luke 11:4
Sep 17, 1893	Jas 1:2
Nov 19, 1893	Matt 12:34–35 “Out of the abundance . . .” [“. . . of the heart the mouth speaketh. A good man out of the good treasure of the heart bringeth forth good things: and an evil man out of the evil treasure bringeth forth evil things.”]
Dec 31, 1893	Luke 6:45 [“A good man out of the good treasure of his heart bringeth forth that which is good; and an evil man out of the evil treasure of his heart bringeth forth that which is evil: for of the abundance of the heart his mouth speaketh.”] (same sermon as above)
Feb 11, 1894	Luke 11:4
Oct 7, 1894	Luke 10:29 [“But he, willing to justify himself, said unto Jesus, And who is my neighbour?”]
Sep 29, 1895 (Harvest Festival)	Ps 116:11 [“I said in my haste, All men are liars.”]
Dec 6, 1896	Mark 9:24 [“And straightway the father of the child cried out, and said with tears, Lord, I believe; help thou mine unbelief.”]

Jan 3, 1897	John 8:10–11 [“When Jesus had lifted up himself, and saw none but the woman, he said unto her, Woman, where are those thine accusers? hath no man condemned thee? She said, No man, Lord. And Jesus said unto her, Neither do I condemn thee: go, and sin no more.”]
Jan 24, 1897	John 8:10–11
Mar 7, 1897	Job 28:28 “And unto man he said, The fear of the Lord, that is wisdom”, prayer “Give us an heart to love and dread thee”
Aug 22, 1897	“Victor and Arnion”, part 1 (Children’s Service)
Aug 29, 1897	“Victor and Arnion”, part 2 (Children’s Service)
Sep 19, 1897	“Victor and Arnion”, part 1 (Children’s Service)
Sep 26, 1897	Stories for Harvest Festival (Children’s Service)
Oct 3, 1897	Stories for Harvest Festival (Children’s Service) (same sermon as above with some addition) → 11.9, p. 1726
Oct 24, 1897	Ps 103:11–12 [“For as the heaven is high above the earth, so great is his mercy toward them that fear him. As far as the east is from the west, so far hath he removed our transgressions from us.”]

And of course the riddles and stories he told many times, but never wrote down, are missing here, too.

Some of these missing contents you can find in other books, there are some lists in the section on *Further Reading*.

The Contents of This Collection

While the previous section gave you a rather technical overview about what kinds of text you will find in this collection, this section will tell you more about its contents.

Of course, you will find the *Alice* books which made Carroll famous. There’s not much to say about them except for the fact that much *can* be said about them. But there are many books that do so, first of all Martin Gardner’s annotated editions, and they do this much better than I could do it.

Among the novels there are also the two volumes of *Sylvie and Bruno*. This sometimes is viewed as a difficult work, and—indeed—it is not easy. I had to read it several times before I could really understand and appreciate the book, but it is a book you not only *can* read several times, but which you *should* read several times.

You will also find a lot of texts dealing with some Oxford matters. Many of them a hard to understand today, because they allude to people and events long forgotten. The *Picture Book* has some introductions and the *Oxford Pamphlets* extensive notes that will help you. Again, these books do a much better job than I could do.

Since Carroll was a mathematician, this collection also contains many mathematical books. The early ones deal with geometry, with Euclidian geometry, to be precise, because non-Euclidian geometry was still very young in these days, and Carroll rejected these new ideas like many others on more or less philosophical grounds.

Starting with voting on university matters Carroll wrote about mathematical voting theory, later turning his interests to parliamentary elections. You will find many interesting ideas among these texts, some which are a matter of course today, some that are as new today as they were then.

Some of his mathematical texts deal with infinitesimals. At that time they were just a shadowy idea not clearly understood. A strict foundation of Analysis without infinitesimals was developed only since the 1870s, which now forms the usual basis of mathematics. But in 1961 Robinson developed a strict theory of infinitesimals, which formalizes the intuitive ideas of Carroll and his contemporaries.

Take for example Carroll's view in the Note on Question 7695 (\rightarrow 9.12, p. 1456). Most modern mathematicians will agree with Simmons, but in Non-standard Analysis Carroll's view can be formalized: Choose some infinite non-standard natural number, and let the players play for that many rounds at most. Then the infinite sum will become a *-finite one. To be precise: Let $\omega \in \mathbb{N}^* \setminus \mathbb{N}$. Then A's chance is $k \sum_{i=0}^{\omega} ((1-k)(1-l))^i = k \cdot \frac{1 - ((1-k)(1-l))^{\omega+1}}{1 - (1-k)(1-l)} = \frac{k}{k+l-kl} \cdot (1 - ((1-k)(1-l))^{\omega+1})$. Similarly B's chance is $\frac{(1-k)l}{k+l-kl} \cdot (1 - ((1-k)(1-l))^{\omega+1})$. The probability of a draw is what remains to 1, i. e. $((1-k)(1-l))^{\omega+1}$. This actually means that the ratio, of A's expectation to B's, is exactly $\frac{k}{(1-k)l}$, but there is still an infinitesimal chance of a draw, the ratio being $k : (1-k)l : (k+l-kl) \cdot \frac{((1-k)(1-l))^{\omega+1}}{1 - ((1-k)(1-l))^{\omega+1}}$.

Some other treatment of probabilities can be explained by its state at that time. To properly understand in which cases probabilities are additive, it is necessary to understand the different kinds of infinity. This theory was developed by Cantor in the late 1870s, and only accepted some time later. The consequences for probability theory were first really understood by Kolmogorov in the 1930s.

The question 9588 (\rightarrow 9.15, p. 1460) can be interpreted in two different ways: Modern mathematicians will again agree with Simmons, on the ground that there are countably many rational points, but uncountably many irrational ones. But is this the interpretation Carroll had in mind? Can a point be randomly selected that can't be constructed? If you use as base only constructible points, the paradox appears as stated by Carroll, since there are only countably many constructible points. The solution is that there isn't a natural random distribution: Any random distribution on the set of all constructible points must give to some points a positive chance of being selected, and different points can have different chances. Without an explicit distribution the question can't be answered if thus interpreted.

Pillow-Problem 45 (\rightarrow 9.21, p. 1478) suffers from a similar difficulty, neither do we know how the random breaking is done, nor how many "an infinite number" really is. Also problem 58 (\rightarrow 9.21, p. 1480) lacks an explicit random distribution, and allows for different solutions with different results, being similar to the Bertrand paradox.

On the other hand, the famous Pillow-Problem 72 (\rightarrow 9.21, p. 1482) isn't a problem in probability theory, but in "Transcendental Probabilities". That is, it is a clever paradox, the real problem is to detect the fallacy in the solution.

In his later years Carroll turned to logic. As I understand it, he tried to formalize the natural language and its reasoning. This is different from modern

logic which has given up in trying to adapt to “normal reasoning”, and therefore is sometimes regarded as strange. The most difficult part is to formalize “if a then b ”. Modern logic uses two different symbols in different situations, $a \rightarrow b$ and $a \vdash b$. That two different symbols are necessary can be seen in *What the Tortoise Said to Achilles* (\rightarrow 6.22, p. 1037). But why shouldn’t there be a third? “If the moon were made of cheese, it would taste like chocolate” is true in modern logic, but Carroll would say it is false. It would taste like cheese, not like chocolate. (You can find a more mathematical example in *Euclid and His Modern Rivals*, \rightarrow 4.4, p. 798.) Note the tight connection to existential import: “All moons made of cheese taste like chocolate” is a similar or even equivalent variant. Unfortunately, we ca’n’t know what kind of formalization Carroll would have invented had he lived long enough to complete his studies, but perhaps it would have been similar to Hugh MacColl’s ideas.

But not only late works are included, you will also find very early works in this collection, including *La Guida di Bragia* (\rightarrow 18.144, p. 2306), which really deserves more attention than it got by only reprinting the prologue. Also included are his family magazines and other early manuscripts.

You will even find some books that never were published. Carroll listed his literary plans in his diary on March 29, 1885:

- (1) Supplement to “Euclid and Modern Rivals,” now being set up in pages. This will contain the review of Henrici and extracts from reviews of “E. & M. R.” with my remarks on them. I think of printing 250.
- (2) 2nd Edition of “Euc. and Mod. Rivals,” this I am correcting for press, and shall embody above in it.
- (3) A book of Math. curiosities, which I think of calling “Pillow Problems, and other Math. Trifles.” This will contain Problems worked out in the dark, Logarithms without Tables, Sines and angles do., a paper I am now writing, on “Infinities and Infinitesimals,” condensed Long Multiplication, and perhaps others.
- (4) “Euclid V,” treating Incommensurables by a method of Limits, which I have nearly completed.
- (5) “Plain Facts for Circle-Squarers,” which is nearly complete, and gives actual proof of limits 3.14158, 3.14160.
- (6) A symbolical Logic, treated by my algebraic method.
- (7) “A Tangled Tale,” with answers, and perhaps illustrated by Mr. Frost.
- (8) A collection of Games and Puzzles of my devising, with fairy pictures by Miss E. G. Thomson. This might also contain my “Mem. Tech.” for dates &c., my “Cipher-writing,” scheme for Letter-registration, &c., &c.
- (9) Nursery “Alice,” for which 20 pictures are now being coloured by Mr. Tenniel.
- (10) Serious poems in “Phantasmagoria.” I think of calling it “Reason and Rhyme,” and hope to get Mr. Furniss to draw for it.
- (11) “Alice’s Adventures Underground,” a facsimile of the MS. book, lent me by “Alice” (Mrs. Hargreaves). I am now in correspondence with Dalziel about it.
- (12) “Girl’s Own Shakespeare.” I have begun on “Tempest.”

(13) New edition of “Parliamentary Representation,” embodying supplement &c.

(14) New edition of “Euc. I., II,” for which I am now correcting edition 4.

(15) The new child’s book, which Mr. Furniss is to illustrate: he has now “Peter and Paul” to begin on. I have settled on no name as yet, but it will perhaps be “Sylvie and Bruno.”

I have other shadowy ideas, e. g., a Geometry for Boys, a vol. of Essays on theological points freely and plainly treated, and a drama on “Alice” (for which Mr. Mackenzie would write music) [...]

What became of these? (1), (2), (7), (9), (11), (14) and (15) were published as planned, (10) under the title “Three Sunsets and Other Poems” and without drawings by Mr. Furniss. (3) was published with less content than planned, but you will find some parts of the omitted content in the fragments of *Curiosa Mathematica. Part III* (→ 7.6, p. 1239). Carroll started publishing (6) with *The Game of Logic* (→ 6.3, p. 951), which can be called “volume zero” of the series, and also the real volume one (→ 6.24, p. 1043). The rest exists in some galley proofs and manuscripts, some of them included in this collection (→ 6.25, p. 1176). Some content of (5) survives, you will find the preface in this collection (→ 19.22, p. 2505). Most of the content of (8) exists, the fairy pictures made it into *Three Sunsets and Other Poems* (→ 19.18, p. 2493), the scheme for letter-registration into *Eight or Nine Wise Words About Letter-Writing* (→ 15.6, p. 1908), and many games had been published separately and will be found in their own section in this collection. One essay on theological points exists, *Eternal Punishment* (→ 11.8, p. 1720). The dramatization of “Alice” was done by H. Savile Clarke, with music by Walter Slaughter. Carroll’s additions are added to the poems in the poem section.

Speaking of poems, the poem section will give you not only the popular and often reprinted poems, but also early variants of them, as well as some not so widely spread ones.

This collection also contains some texts where it is not clear whether Lewis Carroll really is the author. These texts all have a note mentioning this fact. On the other hand, I excluded several poems found in other collections, because they are most certainly not by Carroll. The poem *Who Killed Cock Robin?* appeared anonymously since mid-1881 in many newspapers. The first appearance I could find is from June 4, 1881 in the *Rothesay Chronicle* (<https://www.britishnewspaperarchive.co.uk/viewer/bl/0001909/18810604/062/0004>), titled *The Transvaal Muddle*. This first variant has one additional verse and some other variations. Since then it was reprinted frequently and with modifications. Apparently Carroll just copied the poem. The poem starting “I have wandered” from *A New Theory of Parallels* appeared as *The Fate of Genius* in *Punch’s Pocket Book for 1861*. The poem “He took a second-story flat” from a letter written Feb. 28, 1890 is actually quoted (though not very accurately) from *Beauty and the Beast* by Albert Smith. And then there are lots of poems he wrote next to his photographs. These are often (sometimes explicitly, sometimes implicitly) attributed to him, and in most cases erroneously so. These poems are: *To a Child* (“O child! O new-born denizen”) by Henry Wadsworth Longfellow, *Children on the Shore* (“We are building little homes on the sands”) by Menella Smedley, *The Daisy* (“No sooner does the sun appear”) by Edwin Lee

(in his book *The Botanical Looker-out Among the Wild Flowers*), *My Daughters on the Beach* (“Pretty little legs”, though it is actually “Pretty rosy legs”) by John Richard Green, *The Vision of Sin* (“You are bones, and what of that?”) by Alfred Tennyson, *The May Queen* (“There’s many a black, black eye”) by Alfred Tennyson, *A Lay of the Early Rose* (“A rose once grew within”) by Elizabeth Barrett Browning, some lines from *The Lady of the Lake* (“Come one, come all! This rock shall fly”) by Walter Scott and from *Twelfth Night* (“My father had a daughter loved a man”) by William Shakespeare. The only of these verses that I can’t find a source for are the other “daisy” verses (“Sweet, all sweets above”, https://figgy.princeton.edu/viewer?manifest=https://figgy.princeton.edu/concern/scanned_resources/a744c172-b7f7-4f17-8a0b-2768f654153f/manifest&c=&m=&s=&cv=18&xywh=-3758%2C-687%2C17985%2C13708). This might be by Carroll, it could even be part of his acrostic on “Daisy Whiteside” (July 15, 1875),³ but even if it is I do not think these four lines worth for inclusion among the poems.

Typography and Changes to the Texts

The texts have been transcribed at different times and (when I didn’t had access to the original text, but only to modern reprints) by different transcribers. Sometimes I wanted to recreate the original look as closely as possible, sometimes I wanted to standardize it, and sometimes I was just lazy. So while the texts should look quite similar to the originals, they may deviate more or less from them.

Also the PDF and the HTML version might differ, especially for things that can’t be reproduced properly in HTML (for texts with math you should use Firefox to view them, or some other browser with proper MathML support), though in some other cases the format of the HTML is better than the PDF.

The most important changes to the typography are the following: The format of the headlines (also note that in some cases the date or some other distinguishing text has been added for works with the same title) and first words of a chapter or poem have been standardized, as well as signatures. Numbering of stanzas is omitted. Underlining in handwriting has been reproduced as italics in most cases, the symbol for “and” (which could be a “&”, or a “+”, or even a Tironian Et) usually as “&”. Dashes are usually reproduced as they are, but in some cases they are changed to follow the convention to use the very long ones for interrupted speech. Separating rules are usually reproduced by just a larger vertical skip in the PDF, while the HTML version uses different rules. References to other pages etc. have been substituted (with a few exceptions) for the correct reference inside this collection (in the PDF version, the HTML version keeps the original text with a link to the correct place). This also includes some textual changes, like from “previous page” to “this page above” etc. In all cases the reference has been kept as closely as possible to the original. Where the referenced text is not part of this collection, the original reference is kept.

In many cases Carroll published his texts in several variants. The main variant given in this collection is usually the latest version. How the other versions are treated depends on circumstances: For some mathematical books,

³The only reason why “love” should be “deep” instead of “strong as death” is to let the line start with “D”, but I have nothing else to support my conjecture.

they are simply omitted. For manuscript poems that were later published with differences, these differences are just mentioned in the header of the text. This is also done where there are only differences in punctuation or similar minor details. Otherwise the changes are marked ‘like this’ and given in footnotes (if there are more versions, the footnotes will say to which of them they apply, unless they apply to all). In the HTML version the notes appear on click, for this and similar functions you must have JavaScript enabled. In some cases with many changes over a longer time only the differences to the first version are mentioned, not the ones in between. Finally for cases where the differences are too large to present them in footnotes all variants have been included, usually directly after each other, or else with a note where the other versions can be found. In the HTML version these other variants are linked.

In some cases, parts of the works have been omitted if it is some long table or similar text with no real interest. Also some parts of books like the advertisements have not been reproduced here.

Most books aren’t presented in their original form, but have their contents split into several sections, i. e. the preface is in the section with prefaces (unless it is in the same style as the text, in which case it is kept there), any dedication poem is with the other poems, the frontispiece is with the main content, the list of illustrations is omitted, but the entries used a image captions, etc. If you want to read them completely, you should refer to the next section, which lists the original order for all these books, and links to a complete source. If the cover contains images (in most cases these are circular illustrations in gold, which are a bit difficult to reproduce in print), they are with the preface, the front cover image at the start, the backcover image at the end.

Most mathematical drawings have been redrawn. In some books images are repeated several times on following pages, this hasn’t been reproduced here. In some cases (especially in manuscripts) the illustrations are carefully embedded into the text. This hasn’t been possible to reproduce in all cases, so sometimes such images are placed outside the text or combined with other images or such minor changes.

Some strange spellings, that could be seen as mistakes have been reproduced as they are, in early works “it’s” is always spelled this way, even if it normally should be spelled “its” (but you use an apostrophe in any other genitive form, so why not here, too?), in later works he writes “ca’n’t” etc., as explained in the preface to *Sylvie and Bruno Concluded* (→ 19.14, p. 2479). Also note that in early works every line starts with a quotation mark when inside a spoken part. Sometimes a single quote is used as continued quotation. This has only been reproduced in poems. Later works only repeat the quotation mark on the start of a paragraph, or not at all.

Quotes and parodies are annotated in the margin (for whole texts in the header, and in HTML only after a click). A few other remarks are given in footnotes, to distinguish them from the footnotes in the original works, these editorial footnotes start with “Remark:”. In HTML the remarks are shown after a click. Solutions to puzzles and acrostichons are given in the footer.

Of course this collection ca’n’t be better than its sources. As far as possible I used scans of the original texts rather than reprints. Where only reprints are available, in a few cases I had access to different reprints, so I could correct some errors in one reprint by looking at another. These alternative sources are not always mentioned.

All texts have been proofread at least a bit, but due to the large extent, there sure are mistakes. (Even the last volume of the *Pamphlets* series, which without doubt has been very carefully prepared, has errors. If you don't believe it, then compare the penultimate line of *Richard Hakluyt* with the original.) If in doubt, compare with the cited source. In some cases mistakes in the original have been corrected here, sometimes (especially for obvious typesetter errors and punctuation) without note.

How this Book should be read

In Science—in fact, in most things—it is usually best *to begin at the beginning*. So you might expect the advice: “Begin at the beginning and go on till you come to the end: then stop.” This certainly *is* one way in reading this book, but depending on *why* you read it, it might not be the *best* way.

If you are interested in a list of all works by Lewis Carroll, but don't have access to the *Lewis Carroll Handbook* or other bibliographical lists, or for some reason don't want to use those, you should look at the next section. It contains several lists, together they contain almost all the works by Lewis Carroll, even those not included in this collection. While not really intended as bibliography, it certainly can be used as such.

If you are interested in one specific work, you should look for it in the next section. If it is included in this book, you should find both an external source for it and the place in this book (or several places, if it has several different parts) where you can find it. Even if it is not included, an external source might be listed. Alternatively, you can look for it in the table of contents.

If you are interested in all texts of a certain type or topic, you should go to that section and just start reading. In most sections, the works are ordered chronologically, with a few exceptions to keep similar texts next to each other. The poems are in alphabetical order, the prefaces in the order in which the books are listed in the list of works, with additional texts inserted where it makes most sense to insert them.

If you are interested in poetry, you should go to the chapter with all poems. This chapter contains even those poems published as part of a story (except for the images), with the exception of other author's poems that appear as quote and very short rhymes.

Among them there are 23 Acrostics: *A boat, beneath a sunny sky* (→ 18.1, p. 2010), *A Nursery Darling* (→ 18.4, p. 2014), *Alice dear, will you join me in hunting the Snark?* (→ 18.7, p. 2018), *Alice dreamed one night* (→ 18.8, p. 2019), *Are you deaf, Father William?* (→ 18.14, p. 2030), *Around my lonely hearth, to-night* (→ 18.15, p. 2031), *To My Pupil* (→ 18.22, p. 2040), *Dear Dolly, since I do not know* (→ 18.27, p. 2047), *Dreams, that elude the Waker's frenzied grasp* (→ 18.31, p. 2054), *Even while the blinding bandage lies* (→ 18.33, p. 2056), *From the air do they come?* (→ 18.44, p. 2082), *Girlie to whom in perennial bloom* (→ 18.46, p. 2084), *Girt with a Boyish Garb* (→ 18.47, p. 2085), *To my Child-Friend* (→ 18.64, p. 2136), *Is All Our Life* (→ 18.89, p. 2174), *Lines* (→ 18.100, p. 2209), *Love-lighted eyes* (→ 18.102, p. 2211), *Maiden, though thy heart may quail* (→ 18.104, p. 2213), *Maidens, if a maid you meet* (→ 18.105, p. 2214), *Maidens! If you love the tale* (→ 18.106, p. 2215), *Puck Lost and Found* (→ 18.137, p. 2297), *Round the wondrous globe* (→ 18.139, p. 2299), *Love among the Roses* (→ 18.143, p. 2305)

You will also find 9 Double Acrostics: *Four Riddles. No. II* (→ 18.32, p. 2055), *I saw a child: even if blind* (→ 18.75, p. 2151), *Double Acrostic* (Argles) (→ 18.76, p. 2152), *Near Albury, so runs my lay* (→ 18.121, p. 2234), *Double Acrostic* (Kerr) (→ 18.151, p. 2331), *Four Riddles. No. I* (→ 18.170, p. 2373), *Three Children* (→ 18.176, p. 2387), *Double Acrostic* (Bremer) (→ 18.185, p. 2407), *Double Acrostic* (Hughes) (→ 18.186, p. 2408)

And 11 Charades: *Dedicated to a tea-tea. Why? Oh, when?* (→ 18.48, p. 2086), *Charade* (Amy Hughes) (→ 18.78, p. 2156), *My First has no beard* (→ 18.112, p. 2224), *My First heads all atrocity heartrending* (→ 18.113, p. 2225), *My First is a berry* (→ 18.114, p. 2226), *Four Riddles. No. IV* (→ 18.115, p. 2227), *A Riddle* (→ 18.116, p. 2229), *My First we call her when her belt is on* (→ 18.117, p. 2230), *My First's a drink resembling wine* (→ 18.118, p. 2231), *Four Riddles. No. III* (→ 18.152, p. 2332), *They both make a roaring* (→ 18.173, p. 2383)

And finally 8 other riddle poems: *Examination Statute* (→ 18.2, p. 2012), *A Monument* (→ 18.3, p. 2013), *Anagrammatic Sonnet* (→ 18.18, p. 2034), *Puzzles from Wonderland* (→ 18.30, p. 2051), *First, the fish must be caught* (→ 18.35, p. 2061), *The Lyceum* (→ 18.92, p. 2178), *Tell me truly, Maidens three* (→ 18.150, p. 2330), *Puzzle* (→ 18.197, p. 2422)

If you think you already read almost everything (in this case I assume you read the complete *Pamphlets* series and all well-known books), you will want to read *The Priest in Absolution* (→ 11.3, p. 1709) and *Mr. Gladstone's New Book* (→ 16.32, p. 1980). Perhaps you also missed the first version of *Memoria Technica* (→ 16.18, p. 1960). Are you aware of all the many variants of *Lanrick* (→ 10.11, p. 1586 and following)? You might also want to check the list of mathematical books, and the manuscript poems. For example, did you ever read the complete version of *Maggie's Visit to Oxford* (→ 18.196, p. 2418)?

If you want to read everything you can start reading from beginning to the end, but even then it could be better to read the texts in some random order for more variety.

Copyright

Most works by Lewis Carroll are no longer protected by copyright, even if we apply the much longer terms of modern copyright: In most countries today copyright expires 70 years after the death of the author. Since Carroll died in 1898, this is long past. This also applies to the illustrations: E. Gertrude Thomson, the illustrator who lived longest, died in 1929, so her works, too, are no longer protected.

The only exception to this is with originally unpublished material. These texts may still be protected by copyright, depending on the date of publication and the laws you want or have to follow. For this reason I state the date of the earliest publication for these items, or at least the earliest publication I know of, even if I took it from some later source. Since I am German, I will follow German laws, which grant such texts a protection for 25 years after the first publication. I also assume that most printed works have been published by Carroll himself, especially those listed by Collingwood in his bibliography, but since even rare works where it is questionable whether they were published originally have been reprinted quite early, these should all have been published long enough ago anyway.

If your country protects originally unpublished works for a longer period, you will have to remove the respective texts before redistributing this collection. For your convenience the following list contains all texts published within the last 50 years for the first time (but note that in some countries the protection may last even longer):

- 1974: *An Inconceivable Conversation; A Disputed Point in Logic. A Concrete Example; Life of Richard Hakluyt; Marriage Service; Number-Guessing; Logs of Nos.; Verses for Christmas Cards; Near Albury, so runs my lay; Square Poem*
- 1975: *Sidney Hamilton, Answers to Correspondents, The Village School, and Woes from The Rectory Magazine*
- 1977: *Symbolic Logic. Part II* (parts already 1972); *The Wasp in a Wig*
- 1979: *A Russian's Day in England; To "Hallie"; My dear Christie; No, no! I cannot write a line; My First we call her when her belt is on; Alice dreamed one night; My first is a drink resembling wine; some of the Memoria Technica Verses*
- 1981: *Double Acrostic* (for Agnes and Emily Hughes); *O come to me at two today; If Ruth & you*
- 1982: *Charade* (for Amy Hughes)
- 1994: some of the *Memoria Technica Verses*
- 1995: *Little Red Riding Hood*
- 1998: *Dear Dolly, since I do not know*

These dates are the earliest publication dates known to me, but it is likely that many texts have been published earlier, even much earlier. Take the *Lig-niad* as an example: Most bibliographies will tell you it was first published in 1973, some in 1976. But if you dig a bit deeper, you will find several auction catalogues from earlier years, which reprint parts of the poem, and since each one reprints other parts, almost the whole poem had been published before. And if you dig really deep, you will come across an obscure magazine *Eastbourne* which had in its issue of Aug. 2, 1897 an article titled *An Early MS. of Dodgson's, and Entirely Unpublished* which reprints the poem completely. This article was published on the death of Woodhouse, and I think it likely that similar articles appeared—more or less unnoticed—for other recipients of Carroll's manuscript poems. The same is true for auction catalogues: They often reprint short manuscripts, sometimes even in facsimile, but aren't recorded in bibliographies. So several of the above works are probably no longer protected even in countries with longer periods of protection.

The only part that *is* protected by copyright is this preface as well as the code used to generate the different files. You are allowed to distribute or otherwise use these (and thus the whole collection) under the license CC BY-SA (<https://creativecommons.org/licenses/by-sa/4.0/>). If you want to re-use parts of the L^AT_EX code you may alternatively do so according to the terms of the usual LPPL (<https://www.latex-project.org/lppl/>). The code to build the files may also be used alternatively according to the terms of the MPL (<https://mozilla.org/MPL/2.0/>).

All code and data is available from Github: <https://github.com/Schnark/lewis-carroll>

Biographical Overview

- 1832 Born at Daresbury, Cheshire (January 27), as eldest son (third of eleven children) of Charles Dodgson, Perpetual Curate of Daresbury, and Frances Jane (born Lutwidge)
- 1843 Father became Rector of Croft, Yorkshire, and family moved there
- 1844–5 At Richmond School, Yorkshire (from August 1, 1844)
- 1845 First publication (*The Unknown One*) in school magazine
- 1846–9 At Rugby School (from January 27, 1846)
- 1850 Matriculated at Christ Church, Oxford (May 23)
- 1851 Took up residence at Christ Church (January 24)
Mother died (January 26)
- 1852 Student of Christ Church (December)
- 1854 B.A. (1st Class Honours in Mathematics; 2nd Class in Classics)
- 1855 Sub-Librarian, Christ Church (until 1857)
Mathematical Lecturer (until 1881)
- 1856 First publication under the pseudonym Lewis Carroll
Began photographing (until 1880)
- 1857 M.A.
- 1860 *A Syllabus of Plane Algebraical Geometry* published
- 1861 Ordained deacon (December 22)
- 1862 Told the story of Alice’s adventures to the Liddell sisters on a boat trip (July 4)
- 1865 *Alice’s Adventures in Wonderland* published (July, December)
- 1867 Journey on the continent with H. P. Liddon (July 12–September 14)
An Elementary Treatise on Determinants published
- 1868 Father died (June 21)
Moved his family to Guildford (September)
- 1869 *Phantasmagoria* published (January)
- 1871 *Through the Looking-Glass* published (December)
- 1874 *Notes by an Oxford Chiel* published (June)
- 1876 *The Hunting of the Snark* published (March)
- 1879 *Euclid and His Modern Rivals* published (March)
- 1880 Gave up photographing
- 1881 Resigned Mathematical Lectureship
- 1882 Curator of Common Room (December 1882 to February 1892)
- 1883 *Rhyme? and Reason?* published (December)
- 1885 *A Tangled Tale* published (December)
- 1886 *Alice’s Adventures Under Ground* published (December)
- 1887 *The Game of Logic* published (February)
- 1888 *A New Theory of Parallels* published
- 1889 *Sylvie and Bruno* published (December)
- 1890 *The Nursery “Alice”* published (March)
- 1892 Resigned Curatorship of Common Room (February)
- 1893 *Pillow-Problems* published (July)
Sylvie and Bruno Concluded published (December)
- 1896 *Symbolic Logic, Part I* published (February)
- 1898 Died at Guildford (January 14) and buried there
Three Sunsets and Other Poems published (February)

Note how perfectly birth, publication of *Alice* and death are spread over the cen-

ture. Every 16 or 17 years you can celebrate a round (divisible by 50) anniversary!

About the Editor

Like many others I first came across Lewis Carroll when I read *Alice's Adventures in Wonderland* as a child (in the German translation by Christian Enzensberger). When I was learning English I read it again, this time the original, together with the other works in the so-called "Complete Works". (By the way, did it help me in learning English? Well, I now speaks English almost as goodly as Bruno, and I'm among the few who get the apostrophes right in words like "ca'n't".) Several years later I decided that I wanted to read everything by Lewis Carroll, and started collecting texts I found online and offline. This collection is the result.

The name I use online, "Schnark", is of course derived from *The Hunting of the Snark*. (For those who don't know how to pronounce German, the "Sch" is like the English "sh".) You might think that in this case I must be able to explain what the Snark really is. If so, I must disappoint you, because I ca'n't, either. I actually don't think the Snark is important at all. It isn't even clear whether there are any real Snarks except Boojums. I think that the only important fact is the friendship between Butcher and Beaver.

1.2 Contents by Source

All texts name their source. This is either the the complete story (for “extracted”), which can be found in some other chapter, or the book, magazine, etc. the text comes from. The best available source is listed and described here. Note that in some cases the description is from the *Lewis Carroll Handbook*. This list also includes the works not included in this book.

As far as possible the sources give links to freely available scans from the Internet Archive, but in some cases scans are only available on other sites, not always with free access. For some scans from Google Books you might need to use a proxy located in the US to access them, these are marked thus.^{US-proxy}

Some texts are only available in modern reprints. In some cases (and for many books listed in the section on “Further Reading”) they can be borrowed from the Internet Archive, but you need a free account to do so.

Novels and Stories

Alice’s Adventures in Wonderland

By Lewis Carroll, first published 1866 (printed 1865), several unnumbered editions; illustrations by John Tenniel
scans from <https://archive.org/details/alicesadventur00carr> (1866)
and <https://archive.org/details/alicesadventure00tenngoog> (1898),
text of preface from 1886 from the *Lewis Carroll Handbook*

- Frontispiece (moved to text)
- Title
- Preface (only in later versions, → 19.1, p. 2454)
- Table of Contents
- Dedication (in early versions before the table of contents, → 18.10, p. 2022)
- Christmas-Greetings (only in later versions, → 18.97, p. 2205)
- Main content (→ 2.1, p. 101)
- Advertisements (only in later versions)

Through the Looking-Glass, and What Alice Found There

By Lewis Carroll, first published 1871/1872, several unnumbered editions; illustrations by John Tenniel
scans from <https://archive.org/details/throughlooking00carr> (1872)
and <https://archive.org/details/throughlookinggl00carr3> (1897)

- Dramatis Personæ (only in early versions, → 19.4, p. 2458)
- Chess Game (→ 19.4, p. 2458)
- Frontispiece (moved to text)

- Title
- Dedication (→ 18.26, p. 2046)
- Preface (only in later versions, → 19.4, p. 2459)
- Table of Contents
- Main content (→ 2.2, p. 176)
- Dedication (→ 18.1, p. 2010)
- Christmas-Greetings (only in later versions, → 18.97, p. 2205)
- Advertisements

There is also an edition with both *Alice's Adventures in Wonderland* and *Through the Looking-Glass* in one volume.

Alice's Adventures under Ground

Being a Facsimile of the Original MS. Book

Afterwards Developed into "Alice's Adventures in Wonderland"

Original written in 1864, published as book by Lewis Carroll in facsimile 1886;
illustrations by Lewis Carroll

scans from

<https://archive.org/details/AlicesAdventuresUnderGround1864>

(manuscript) and

<https://archive.org/details/alicesadventure00carrgoog/https://babel.hathitrust.org/cgi/pt?id=hvd.32044037112588&view=1up&seq=9>

(book)

- Preface (only in printed version, → 19.7, p. 2463)
- Table of Contents (only in printed version)
- Pictorial title and dedication (moved to preface)
- Main content (→ 2.3, p. 262)
- An Easter Greeting (only in printed version, → 11.2, p. 1707)
- Christmas-Greetings (only in printed version, → 18.97, p. 2205)
- Advertisements (only in printed version)

Several illustrations of the original manuscript are in colour, while they are monochrome in the printed book.

The Nursery “Alice”

By Lewis Carroll, first published 1890 (first printed 1889), several issues; illustrations by John Tenniel (coloured), cover by E. Gertrude Thomson scan from https://archive.org/details/bub_gb_FoUyAQAAMAAJ

- Cover (moved to preface)
- Frontispiece (moved to text)
- Title
- Dedication (→ 18.4, p. 2014)
- Preface (→ 19.9, p. 2468)
- Table of Contents
- Main content (→ 2.4, p. 302)
- An Easter Greeting (→ 11.2, p. 1707)
- Christmas-Greetings (→ 18.97, p. 2205)
- Advertisements (including a note “Cautions to Readers”, → 19.3, p. 2457)

Sylvie and Bruno

By Lewis Carroll, published 1889; illustrations by Harry Furniss scan from <https://archive.org/details/sylviebruno00carr>

- Frontispiece (moved to text)
- Title
- Dedication (→ 18.89, p. 2174)
- Preface (→ 19.12, p. 2472)
- Table of Contents
- Main content (→ 2.5, p. 327)
- Index (omitted)

Sylvie and Bruno Concluded

By Lewis Carroll, published 1893; illustrations by Harry Furniss scan from <https://archive.org/details/sylviebrunoconcl00carrich>

- Frontispiece (moved to text)
- Title
- Dedication (→ 18.31, p. 2054)
- Preface (→ 19.14, p. 2479)

- Table of Contents
- List of Illustrations (for both volumes, entries used as captions)
- Main content (→ 2.6, p. 467)
- Index (omitted)
- Advertisements (including a note “Cautions to Readers”, → 19.3, p. 2457; also inserted is an “Advertisement”, → 19.6, p. 2462)

Poems

Phantasmagoria and Other Poems

By Lewis Carroll, published 1869, three issues

scan from <https://archive.org/details/phantasmagoriaot00carrich>

- Title
- Preface (→ 19.15, p. 2487)
- Table of contents
- Part I
 - Phantasmagoria (→ 18.132, p. 2249)
 - A Valentine (→ 18.13, p. 2028)
 - A Sea Dirge (→ 18.164, p. 2360)
 - Ye Carpette Knyghte (→ 18.68, p. 2141)
 - Hiawatha’s Photographing (→ 18.42, p. 2069)
 - The Lang Coortin’ (→ 18.156, p. 2338)
 - Melancholetta (→ 18.207, p. 2443)
 - The Three Voices (→ 18.205, p. 2434)
 - A Double Acrostic (→ 18.170, p. 2373)
 - Size and Tears (→ 18.199, p. 2425)
 - Poeta Fit, Non Nascitur (→ 18.62, p. 2130)
 - Atalanta in Camden-Town (→ 18.20, p. 2036)
 - The Elections to the Hebdomadal Council (→ 18.56, p. 2118)
- Part II
 - The Valley of the Shadow of Death (→ 18.50, p. 2088)
 - Beatrice (→ 18.84, p. 2164)
 - Lines (→ 18.100, p. 2209)
 - The Path of Roses (→ 18.86, p. 2168)
 - The Sailor’s Wife (→ 18.142, p. 2302)
 - Stolen Waters (→ 18.157, p. 2346)

- Stanzas for Music (→ 18.158, p. 2350)
- Solitude (→ 18.69, p. 2143)
- Only a Woman’s Hair (→ 18.133, p. 2287)
- Three Sunsets (→ 18.51, p. 2092)
- Christmas Greetings (→ 18.97, p. 2205)
- After Three Days (→ 18.77, p. 2153)
- Faces in the Fire (→ 18.159, p. 2351)

The Hunting of the Snark.

An Agony, in Eight Fits.

By Lewis Carroll, first published 1876, several issues (without changes to the text); illustrations by Henry Holiday
scans from <https://archive.org/details/huntingofsnarkan00carruoft>
(advertisements missing) and
<https://archive.org/details/huntingofsnarkag00carrich> (other
defects)

- Frontispiece
- Title
- Dedication (→ 18.47, p. 2085)
- Preface (→ 19.16, p. 2488)
- Table of contents
- Main content (→ 18.93, p. 2179)
- Advertisements

Rhyme? and Reason?

By Lewis Carroll, first published 1883, several issues; illustrations by Arthur B. Frost and Henry Holiday
scans from <https://archive.org/details/rhymeandreason00carrgoog>
(1884) and <https://archive.org/details/dli.granth.117591> (1897)

- Frontispiece (moved to appropriate place)
- Title (motto moved to preface)
- Dedication (→ 18.47, p. 2085)
- Preface (→ 19.17, p. 2492)
- Table of contents
- Phantasmagoria (→ 18.132, p. 2249)
- Echoes (→ 18.96, p. 2204)

- A Sea Dirge (→ 18.164, p. 2360)
- Ye Carpette Knyghte (→ 18.68, p. 2141)
- Hiawatha's Photographing (→ 18.43, p. 2074)
- Melancholetta (→ 18.207, p. 2443)
- A Valentine (→ 18.13, p. 2028)
- The Three Voices (→ 18.55, p. 2100)
- Tèma Con Variazióni (→ 18.72, p. 2148)
- A Game of Five (→ 18.37, p. 2063)
- Poeta Fit, Non Nascitur (→ 18.62, p. 2130)
- The Hunting of the Snark. An Agony in Eight Fits. Preface (→ 19.16, p. 2488)
- The Hunting of the Snark (→ 18.93, p. 2179)
- Size and Tears (→ 18.199, p. 2425)
- Atalanta in Camden-Town (→ 18.20, p. 2036)
- The Lang Coortin' (→ 18.156, p. 2338)
- Four Riddles (→ 18.170, p. 2373, → 18.32, p. 2055, → 18.152, p. 2332, → 18.115, p. 2227)
- Fame's Penny-Trumpet (→ 18.24, p. 2042)
- Christmas-Greetings (only in later editions, → 18.97, p. 2205)
- Advertisements

Three Sunsets and Other Poems

By Lewis Carroll, published 1898; illustrations by E. Gertrude Thomson
 scan from <https://archive.org/details/cu31924013341148>

- Frontispiece
- Title
- Preface (→ 19.18, p. 2493, all images have been moved there)
- Table of contents
- List of Illustrations
- Three Sunsets (→ 18.51, p. 2092)
- The Path of Roses (→ 18.86, p. 2168)
- The Valley of the Shadow of Death (→ 18.50, p. 2088)

- Solitude (→ 18.69, p. 2143)
- Far Away (→ 18.53, p. 2097)
- Beatrice (→ 18.84, p. 2164)
- Stolen Waters (→ 18.157, p. 2346)
- The Willow-Tree (→ 18.158, p. 2350)
- Only a Woman's Hair (→ 18.133, p. 2287)
- The Sailor's Wife (→ 18.142, p. 2302)
- After Three Days (→ 18.77, p. 2153)
- Faces in the Fire (→ 18.159, p. 2351)
- A Lesson in Latin (→ 18.134, p. 2289)
- Puck Lost and Found (→ 18.137, p. 2297)
- A Song of Love (→ 18.140, p. 2300)
- Advertisements

Mathematical Books

A Syllabus of Plane Algebraical Geometry

Systematically Arranged, with Formal Definitions, Postulates, and Axioms.

Part I. Containing Points, Right Lines, Rectilinear Figures, Pencils, and Circles.

By Charles Lutwidge Dodgson, published 1860

scan from <https://books.google.de/books?id=HndaAAAAcAAJ>

- Title
- Introduction (→ 4.1, p. 686)
- Table of Contents
- Main content (still missing)
- Errata

The book presents analytical geometry in seven books, mainly the presentation and manipulation of points, lines, and circles in different coordinate systems. The main text only gives definitions, axioms, and propositions without proofs, some explanations and proofs are given in the appendix.

The exact contents are: Three preliminary sections on general definitions, algebra, and plane geometry. These are followed by seven books: I. Representation of magnitude only, II. Representation of direction only, III. Representation of magnitude and direction, i. e. trigonometry, IV.

Representation of position (with chapters I. Cartesian system, II. Polar system,

III. Distantial system (with sections I. Bilinear system, II. Trilinear system, III. Multilinear system)), V. Discussion of points, right lines, rectilinear figures, and pencils, VI. Investigation of loci, VII. The circle. The work concludes with a section with formulæ and the appendix.

Notes on the First Two Books of Euclid

Designed for Candidates for Responsions.

Anonymous, published 1860

scan from <https://books.google.de/books?id=iXdaAAAACAAJ>

- Title
- Main content (→ 4.2, p. 691)

Notes on the First Part of Algebra

(i. e. To Simple Equations Inclusive.)

Designed for Candidates for Responsions.

Anonymous, published 1861

text from *Pamphlets: A Miscellany*, item 38

- Title
- Main content (→ 9.1, p. 1269)

The Formulæ of Plane Trigonometry

Printed with Symbols (Instead of Words) to Express the “Goniometrical Ratios.”

By Charles Lutwidge Dodgson, published 1861

text from *Mathematical Pamphlets*, item 5

- Title
- Main content (→ 4.3, p. 696)

General List of Subjects

Published 1863

- Title
- Main content (following directly, → 9.2, p. 1272)

Proof sheets from 1862 are available as item 42 in *Mathematical Pamphlets*. The published work is described to be exactly the same as *A Guide to the Mathematical Student*, except for the preface.

The Enunciations of Euclid I, II

The Enunciations of the Propositions and Corollaries, together with Questions on the Definitions, Postulates, Axioms, &c. in Euclid, Books I. and II.

Anonymous, published 1863

text available from *Mathematical Pamphlets*, item 2

- Title
- Main content (still missing)

The work contains questions (more or less a list of all defined terms, and the topics of the postulates and axioms), and the enunciations (i. e., the propositions without the proofs) of the first two books of Euclid.

A Guide to the Mathematical Student

in Reading, Reviewing, and Working Examples. Part I: Pure Mathematics

By Charles Lutwidge Dodgson, published 1864

scan from <https://archive.org/details/aguidetomathema00dodggoog>

- Title
- Main content (→ 9.2, p. 1272)

An Elementary Treatise on Determinants

with Their Application to Simultaneous Linear Equations and Algebraical Geometry

By Charles L. Dodgson, published 1867

scan from <https://archive.org/details/elementarytreati00carr>

- Title
- Preface (moved to content)
- Corrigenda (applied to content)
- Table of Contents
- Main content (→ 9.4, p. 1289)
- Tables with formulæ extracted from main content (omitted)

The Fifth Book of Euclid Treated Algebraically

So Far as it Relates to Commensurable Magnitudes, with Notes

By Charles L. Dodgson, published 1868

scan from <https://books.google.de/books?id=PndaAAAAcAAJ>

- Title
- Preface (→ 9.5, p. 1381)
- Main content (still missing)

The first part contains definitions in two columns, Euclid's on the left, the algebraical equivalent on the right, with examples in footnotes. The second part gives algebraical proofs for the propositions.

A Discussion of the Various Methods of Procedure in Conducting Elections

Anonymous (author given in preface), published 1873

scan from <https://digital.bodleian.ox.ac.uk/objects/35ce936d-873c-42ba-b163-95aada2bb359/>, text from *Political Pamphlets*,

item 1a (The Method of Nomination)

- Title
- Preface (moved to content)
- Table of Contents
- Main content (→ 5.1, p. 893)
- The Method of Nomination (accidently omitted and printed separately, here moved to content)

The Enunciations of Euclid I–VI

Together with Questions on the Definitions, Postulates, Axioms, &c.

Anonymous, published 1873

scans available from <https://books.google.de/books?id=XD1bAAAAQAAJ>

(early proof) and <https://books.google.de/books?id=Dokvy91Z31AC>

- Title
- Main content (still missing)

The work is both in style and content very similar to *The Enunciations of Euclid I, II*, but also includes the books III–VI.

Euclid, Book V.

Proved Algebraically so far as it relates to Commensurable Magnitudes to which is prefixed a Summary of all the necessary algebraical operations.

By Charles L. Dodgson, published 1874

scan from <https://archive.org/details/euclidbookvprov00carrgoog>

- Title
- Preface (moved to content)
- Table of Contents
- Main content (still partially missing, → 9.6, p. 1382)

The missing main content starts with a chapter “Preliminary Algebra”, containing basic algebraical formulæ in two columns. The chapter “Propositions” contains the propositions, first as given by Euclid, then stated algebraically with algebraical proof. The chapter “Enunciations” lists all enunciations in algebraical form, again in two columns. The next chapters contain Euclid’s Definitions and Axioms.

Euclid and his Modern Rivals

By Charles L. Dodgson, first published 1879, two editions (second 1885)
scans from

<https://babel.hathitrust.org/cgi/pt?id=mdp.39015017351969> (first edition, not reproduced here) and

<https://archive.org/details/euclidhismodernr00carr> (second edition)

- Frontispiece (moved to content)
- Title (motto moved to preface)
- Dedication (“Dedicated to the memory of Euclid”)
- Preface (→ 19.19, p. 2501)
- Table of Contents
- Main content (→ 4.4, p. 708)
- Appendices
 - Appendix I (by Mr. Todhunter)
 - Appendix II (by Mr. De Morgan)
 - Appendix III (moved to content)
 - Appendix IV (omitted)

Appendix I contains an extract from Mr. Todhunter’s essay on ‘Elementary Geometry,’ included in ‘The Conflict of Studies, &c.’ Appendix II contains an extract from Mr. De Morgan’s review of Mr. Wilson’s Geometry, in the ‘Athenæum’ for July 18, 1868. Appendix IV contains a list of Propositions of Euc. I, II, with references to their occurrence in the manuals of his Modern Rivals.

The first edition had two more appendices, which is why the Supplement contains an “Appendix VII”.

Supplement to “Euclid and his Modern Rivals”

Containing a Notice of Henrici’s Geometry, together with a Selection from the Reviews

Anonymous (author given in preface), published 1885

scan from <https://books.google.com/books?id=J8szaQAAMAAJ>^{US-proxy}

- Title
- Preface (→ 19.20, p. 2503)
- Act II. Scene VI. Henrici (→ 4.4, p. 742)
- Appendix VII (→ 4.5, p. 822)¹

Euclid. Books I, II

By Charles L. Dodgson, first published 1882, seven editions (private edition 1875, second 1883, third and fourth 1885, fifth 1886, sixth 1888)

scan from <https://archive.org/details/euclidbooksiii00euclrich>
(second edition from 1883)

- Frontispiece (same as in *Euclid and his Modern Rivals*)
- Title
- Introduction (→ 4.6, p. 837)
- Main content (still missing)
- Appendix A (still missing)
- Appendix B (still missing)
- Appendix C (still missing)

The main content is a slightly modified translation of Euclid I and II.² Appendix A contains some explanatory notes to some of the axioms and propositions. Appendix B contains additional definitions, given in Euclid, but not needed in Books I, II. Appendix C contains additional definitions, not given in Euclid.

¹This has nothing to do with Carroll, but I ca’n’t resist to mention that *Euclid and his Modern Rivals* is a collection of reviews, so reviews on that book are meta-reviews, which makes this appendix a meta-meta-review. Unfortunately, the short notice in *Nature* (June 25, 1885, <https://www.nature.com/articles/032171a0>, neither can I find any other reviews) ca’n’t be called “review”, otherwise it were a meta-meta-meta-review, and I could discuss it here in a meta-meta-meta-meta-review.

²Note that Heiberg’s text of Euclid’s *Elements* was only published 1883 (English translation 1908), during Carroll’s time the edition by Simson was most commonly used.

The Principles of Parliamentary Representation

By Charles L. Dodgson, first published 1884, two public editions (second 1885), additionally Supplement (1885) and Postscript to Supplement (1885) scans from <https://archive.org/details/principlesofparl00carr> (first edition from 1884, including Supplement and Postscript, but with missing preface) and <https://books.google.de/books?id=ZCovAAAAAYAAJ> (first edition from 1884, without Supplement and Postscript)

- Title
- Preface (moved to content)
- Table of Contents
- Main content (→ 5.9, p. 924)
- Index
- Supplement (→ 5.9, p. 941)
- Postscript to Supplement (→ 5.9, p. 943, Erratum applied to Supplement)

A Tangled Tale

By Lewis Carroll, first published 1885, several issues; illustrations by Arthur B. Frost
scans from <https://archive.org/details/atangledtale00carrgoog> and <https://archive.org/details/16841884celebrat00worcrich> (this has the advertisements with the note on the *Index to "In Memoriam"*)

- Frontispiece (moved to text)
- Title (motto moved to preface)
- Dedication (→ 18.22, p. 2040)
- Preface (→ 19.21, p. 2504)
- Table of Contents
- Main content (→ 9.10, p. 1390)
- Advertisements

The Game of Logic

By Lewis Carroll, first published 1886 (privat/American edition), first official edition 1887
scans from <https://archive.org/details/gameoflogic00carrich> (1886) and <https://archive.org/details/gameoflogic00carruoft> (1887)

- Frontispiece (moved to text)
- Title

- Dedication (→ 18.64, p. 2136)
- Note (moved to preface, in 1886 edition after Table of Contents)
- Preface (→ 19.23, p. 2507)
- Table of Contents
- Main content (→ 6.3, p. 951)
- Advertisements

For use with the book an envelope with a card and nine counters (four red, five grey) was also published. The card is shown in *Logic Pamphlets*, p. 196, it has a trilateral and a biliteral diagram, similar to the frontispiece. See also <https://www.bonhams.com/auctions/17163/lot/603/>.

A New Theory of Parallels (Curiosa Mathematica. Part I)

By Charles L. Dodgson, first published 1888, four editions (second 1889, third 1890, fourth 1895)

scans from <https://archive.org/details/curiosamathemat00carrgoog> (third edition, one missing page),

<https://books.google.de/books?id=i9ruAAAAMAAJ> (third edition), and https://books.google.de/books?id=m_5KAQAAMAAJ (fourth edition)

- Frontispiece (moved to content)
- Title
- Preface (moved to content)
- Introduction (moved to content)
- Table of Contents
- Main content (→ 4.8, p. 842)
- Advertisements

Pillow-Problems, thought out during Wakeful Hours (Curiosa Mathematica. Part II)

By Charles L. Dodgson, first published 1893 (as “. . . during Sleepless Nights”), four editions (second 1893, third 1894, fourth 1895)

scan from <https://babel.hathitrust.org/cgi/pt?id=hvd.32044014465587&view=1up&seq=9> (third edition, not reproduced here), text

from <https://archive.org/details/pillowproblemsan0000carr> (1958 reprint, fourth edition)

- Frontispiece (drawing for Problem 67 without labels, → 9.21, p. 1536)
- Title
- Preface to Fourth Edition (moved to content)

- Preface to Second Edition (moved to content)
- Introduction (moved to content)
- Table of Contents
- Subjects Classified (moved to content)
- Main content (→ 9.21, p. 1466)
- Advertisements

Symbolic Logic. Part I: Elementary

By Lewis Carroll, first published 1896, four editions (second and third 1896, fourth 1897)

scans from <https://archive.org/details/symboliclogicpa00carrgoog> (first edition), <https://archive.org/details/symboliclogic00carr> (second edition), <https://babel.hathitrust.org/cgi/pt?id=chi.27867650> (fourth edition), text of preface of third edition from *Logic Pamphlets*, item 10
The main content only gives the text of the fourth edition, to get an idea of the differences in the earlier editions (which sometimes are minor, but in many cases are too large to properly represent) see the preface and the introduction, which give the text of all four editions.

- Frontispiece (moved to text)
- Title
- Advertisement (→ 19.25, p. 2512)
- Dedication (only in first edition, “Dedicated to the memory of Aristotle”)
- Preface (only in later editions, → 19.25, p. 2513)
- Introduction (→ 19.25, p. 2515)
- Table of Contents
- Main content (→ 6.24, p. 1043)
- Index

For use with the book an envelope with a card, nine counters (four red, five grey) and a pamphlet were also published. Card and pamphlet are reprinted in *Logic Pamphlets*, item 5. The card has a trilateral and a biliteral diagram, the pamphlet reprints tables I to VIII from the book.

Other Books

An Index to “In Memoriam”

Anonymous, published 1862

scan from <https://babel.hathitrust.org/cgi/pt?id=coo.31924013559541&view=1up&seq=9>

- Title
- Preface (→ 19.26, p. 2518)
- Index (not reproduced here, a specimen is shown with preface)

The New Method of Evaluation as Applied to π

Anonymous, first published 1865, two editions (both 1865)
text from *Oxford Pamphlets*, item 5

- Title
- Main content (following directly, → 12.4, p. 1734)

The Dynamics of a Parti-cle

with an excursus on the New Method of Evaluation as applied to π

Anonymous, first published 1865, three editions (all 1865)
text from *Oxford Pamphlets*, item 6

- Title
- Introduction (moved to content)
- Table of Contents
- Main content (→ 12.5, p. 1738, → 12.4, p. 1734)

The Elections to the Hebdomadal Council

A Letter to the Rev. C. W. Sandford, M.A., has been addressed (on this subject) by Goldwin Smith, and may possibly reach a Second Edition

Anonymous, first published 1866
text from *Oxford Pamphlets*, item 7

- Title
- Main content (→ 18.56, p. 2118)

The Deserted Parks

Anonymous, published 1867
text from *Oxford Pamphlets*, item 8

- Title (motto moved to content)
- Main content (following directly, → 18.110, p. 2220)

The Offer of the Clarendon Trustees

Anonymous, published 1868
scan from <https://digital.bodleian.ox.ac.uk/objects/179a125e-2800-4d02-982c-a019bc761392/surfaces/39915d31-d0aa-48bf-b812-a9553f490e61/>

- Title
- Main content (following directly, → 12.6, p. 1744)

The New Belfry of Christ Church, Oxford

A Monograph

By D. C. L., first published 1872, five issues (the last in 1873, all other 1872)
scan from <https://books.google.de/books?id=pvfGZXW6CwQC>

- Title (motto and image moved to content)
- Table of Contents
- Main content (→ 12.9, p. 1750)

The Vision of the Three T's

A Threnody

By the author of “The New Belfry”, first published 1873, two or three editions (all 1873)
scan from <https://babel.hathitrust.org/cgi/pt?id=msu.31293009978697&view=1up&seq=5>

- Title (motto and image moved to content)
- Table of Contents
- Main content (→ 12.10, p. 1757)

The Blank Cheque, a Fable

By the author of “The New Belfry”, published 1874
scan from <https://digital.bodleian.ox.ac.uk/objects/5aed22e5-99f9-4a21-a43a-d5912867c9a3/>

- Title (motto moved to content)
- Main content (→ 12.12, p. 1772)

Notes by an Oxford Chiel

Anonymous, published 1874

scan from <https://archive.org/details/notesbyoxfordchi00carrich>

- Title (with motto “A Chiel’s amang ye takin’ notes, And, faith, he’ll prent it.”)
- Table of contents
- The New Method of Evaluation as Applied to π .
 - Title (motto moved to content)
 - Table of contents
 - Content (→ 12.4, p. 1734)
- The Dynamics of a Parti-cle.
 - Title (motto moved to content)
 - Introduction (moved to content)
 - Table of contents
 - Content (→ 12.5, p. 1738)
- Facts, Figures, and Fancies.
 - Title (with motto “Thrice the brinded cat hath mewed”)
 - Introduction (splitted and moved to content)
 - The Elections to the Hebdomadal Council (→ 18.56, p. 2118)
 - The Offer of the Clarendon Trustees (→ 12.6, p. 1744)
 - The Deserted Parks (→ 18.110, p. 2220)
- The New Belfry of Christ Church, Oxford.
 - Title (motto and image moved to content)
 - Table of Contents
 - Content (→ 12.9, p. 1750)
- The Vision of the Three T’s.
 - Title (motto and image moved to content)
 - Table of Contents
 - Content (→ 12.10, p. 1757)
- The Blank Cheque, a Fable.
 - Title (motto moved to content)
 - Content (→ 12.12, p. 1772)

Quoted from *On The Late Captain Grose’s Peregrinations Thro’ Scotland: Collecting The Antiquities Of That Kingdom* by Robert Burns

Quoted from *Macbeth* by William Shakespeare

All parts have been issued separately, including *Facts, Figures, and Fancies*, additionally to the original editions listed above.

Doublets. A Word-Puzzle

By Lewis Carroll, first published 1879, four editions (abridged 1879, second and third 1880)

scan from <https://archive.org/details/doubletsawordpu00dodggoog> (first edition), text of second edition from the *Picture Book*, pp. 275–288 (only partially, not reproduced here)

- Title (motto moved to content)
- Dedication (“Inscribed to Julia and Ethel”)
- Main Content (→ 10.8, p. 1562)

Lawn Tennis Tournaments

The True Method of Assigning Prizes with a Proof of the Fallacy of the Present Method

By Charles L. Dodgson, published 1883

partial scan from <https://www.dominicwinter.co.uk/Auction/Lot/712-dodgson-charles-lutwidge-lewis-carroll/?lot=131177&sd=1>, text from *Complete Works* and *Political Pamphlets*, item 4

- Title (motto moved to content)
- Table of Contents
- Main Content (→ 10.25, p. 1615)
- Advertisement

Twelve Months in a Curatorship

By one who has tried it

Anonymous, privately published 1884
text from *Oxford Pamphlets*, item 22

- Title
- Table of Contents
- Main content (→ 12.21, p. 1793)

Three Years in a Curatorship

By one whom it has tried

Anonymous (author given in preface), privately published 1886
text from *Oxford Pamphlets*, item 34

- Title
- Preface (moved to content)
- Table of Contents
- Main content (→ 12.26, p. 1828)

Eight or Nine Wise Words about Letter-Writing

By Lewis Carroll, first published 1890, five editions (second 1890, third and fourth 1891, fifth 1897)

scans from https://archive.org/details/eightorninewisew00carr_0 (first edition), <https://digital.bodleian.ox.ac.uk/objects/e38f4132-1266-4bda-842c-ddcd469825bc/> (fifth edition), and <https://archive.org/details/eightorninewisew00carr> (later reprint of first edition, including stamp case)

- Title
- Table of Contents
- Main Content (→ 15.6, p. 1908)
- Advertisements (first edition including a note “Cautions to Readers”, → 19.3, p. 2457)

Curiosissima Curatoria

By “Rude Donatus”

Anonymous (author given in preface), privately published 1892
text from *Oxford Pamphlets*, item 65

- Title (motto moved to content)
- Preface (moved to content)
- Table of Contents
- Main content (→ 12.28, p. 1842)

Syzygies and Lanrick

A Word-Puzzle and a Game for Two Players

By Lewis Carroll, published 1893 (second private edition 1893)
scan from

<https://digitallibrary.usc.edu/asset-management/2A3BF1QN7PTG1>
(first edition), text (including second edition) from *Pamphlets: Games*, item 16, partial reprint similar to second private edition also in the *Picture Book*, pp. 289–312

- Title
- Preface (→ 19.28, p. 2520)
- Table of Contents
- Syzygies (→ 10.30, p. 1696)
- Lanrick (→ 10.16, p. 1595)
- Advertisements (including a note “Cautions to Readers”, → 19.3, p. 2457)

Contributions to Books

- *The Edison Electric Pen and Duplicating Press* by The Electric Writing Co. Limited, 1878: Testimonial in instruction manual, p. 11 (scan from <https://archive.org/details/edisonmicrofilm27/page/n951/mode/1up/https://electricpen.org/Images/dodgson.jpg>, → 16.24, p. 1970)
- *The Garland of Rachel*, 1881: What hand may wreathe (text from *Humorous Verse*, pp. 330–331, partial scan of reprint from https://www.calameo.com/usc_lewis Carroll/read/0059563172c668f8dfa56, p. 1095 (1103), see also <https://worchestercollegelibrary.wordpress.com/2020/01/31/the-garland-of-rachel/> and <https://www.jstor.org/stable/3815822>, → 18.192, p. 2414)
- *The Lost Plum Cake* by E. G. Wilcox, 1897: Introduction (text from *Complete Works*, → 19.29, p. 2521)

Chapter 11 of *The Lost Plum Cake* might also be written by Carroll, see *Pamphlets: A Miscellany*, item 34.

Magazines, Newspapers

Whitby Gazette

scans from <http://www.britishnewspaperarchive.co.uk/search/results/1854-01-01/1854-12-31?newspapertitle=whitby%2bgazette&sortorder=dayearly> (only two issues of five), text of “Wilhelm von Schmitz” 1–3 from *Pamphlets: A Miscellany*, item 79

- The Lady of the Ladle (August 1854, → 18.163, p. 2358)
- Wilhelm von Schmitz (September 1854, → 3.6, p. 638, → 3.6, p. 639, → 3.6, p. 641, → 3.6, p. 644)

The Comic Times

scan of “Photography Extraordinary” from *Scrapbook*, text of the rest from *Mischmasch*

- Poetry for the Million (August 1855, → 18.71, p. 2147)
- She’s All my Fancy painted Him (September 1855, → 18.145, p. 2323)
- Hints for Etiquette; or Dining Out made Easy (October 1855, → 16.9, p. 1938)
- Photography Extraordinary (November 1855, → 3.7, p. 649)

The Train

scans from <http://search.proquest.com/publication/3124>, partially also <https://babel.hathitrust.org/cgi/pt?id=chi.49804842>, <https://archive.org/details/trainafirstclas00sonsgoog>

- Solitude (March 1856, → 18.69, p. 2143)
- Ye Carpette Knyght (March 1856, → 18.68, p. 2141)
- The Path of Roses (May 1856, → 18.86, p. 2168)
- Novelty and Romancement (October 1856, → 3.8, p. 652)
- Upon the Lonely Moor (October 1856, → 18.70, p. 2145)
- The Three Voices (November 1856, → 18.205, p. 2434)
- The Sailor's Wife (April 1857, → 18.142, p. 2302)
- Hiawatha's Photographing (December 1857, → 18.42, p. 2069)

The Illustrated London News

scan from <http://www.britishnewspaperarchive.co.uk/search/results/1857-04-18/1857-04-18?newspapertitle=illustrated%2blondon%2bnews>

- Where Does the Day Begin? (April 1857, → 16.11, p. 1945)

Oxford Critic

scan from https://play.google.com/store/books/details/The_Oxford_Critic_and_University_Magazine?id=7PUHAAAQAAJ, or alternatively from the *Scrapbook*

- The Palace of Humbug (June 1857, → 18.65, p. 2137)

Illustrated Times

scan from <http://www.britishnewspaperarchive.co.uk/search/results/1860-01-28/1860-01-28?NewspaperTitle=Illustrated%2BTimes>, or alternatively from the *Scrapbook*

- Photographic Exhibition (January 1860, → 16.12, p. 1946)

All the Year Round

scan from <https://archive.org/details/allyearround02dick>

- Faces in the Fire (February 1860, → 18.159, p. 2351)

South Shields Amateur Magazine

scan from the *Scrapbook*

- A Photographer's Day Out (1860, → 3.10, p. 663)

The College Rhymes

scans from <https://books.google.com/books?id=MJEVAAAAAYAAJ> (1861),
<https://books.google.com/books?id=FZEVAAAAAYAAJ> (1862),
<https://books.google.com/books?id=8pAVAAAAAYAAJ> (1863); poems for
November are in the volume of the following year

- A Sea Dirge (November 1860, → 18.164, p. 2360)
- The Dream of Fame (November 1861, → 18.51, p. 2092)
- Ode to Damon (November 1861, → 18.128, p. 2243)
- Those Horrid Hurdy-Gurdies (November 1861, → 18.119, p. 2232)
- Only a Woman's Hair (March 1862, → 18.133, p. 2287)
- Melancholetta (March 1862, → 18.207, p. 2443)
- Stolen Waters (June 1862, → 18.157, p. 2346)
- Poeta Fit, Non Nascitur (June 1862, → 18.62, p. 2130)
- Disillusionized (June 1862, → 18.74, p. 2150)
- Prologue (November 1862, → 18.19, p. 2035)
- The Lang Coortin' (November 1862, → 18.156, p. 2338)
- Beatrice (November 1862, → 18.84, p. 2164)
- The Majesty of Justice (March 1863, → 18.174, p. 2384)
- Size and Tears (June 1863, → 18.199, p. 2425)

The Temple Bar

scan from <https://babel.hathitrust.org/cgi/pt?id=mdp.39015009224398;view=1up;seq=570>

- After Three Days (July 1861, → 18.77, p. 2153)

The Oxford Magazine and Church Advocate

scan from the *Scrapbook*

- Feeding the Mind (December 1861, → 16.13, p. 1949)

A later variant was published posthumously, see
<https://archive.org/details/feedingmind00carruoft>.

The Morning Post

scan from <https://www.britishnewspaperarchive.co.uk/search/results/1864-03-04/1864-03-04?newspapertitle=morning%2bpost> (very poor
quality), text from *Oxford Pamphlets*, item 3

- The New Examination Statute (March 1864, → 12.2, p. 1731)

Pall Mall Gazette

scans from <http://www.britishnewspaperarchive.co.uk/search/results?exactsearch=false&newspapertitle=pall%2bmall%2bgazette>, “The Organization of Charity” also included in the *Scrapbook*

- The Science of Betting (November 1866, → 9.3, p. 1287, → 9.3, p. 1288)
- The Organization of Charity (January 1867, → 16.15, p. 1954)
- Original Research (October 1874, → 16.17, p. 1958)
- Architecture in Oxford (November 1874, → 12.13, p. 1776, → 12.13, p. 1777)
- Vivisection as a Sign of the Times (February 1875, → 13.1, p. 1860)
- Vivisection (February 1875, → 13.2, p. 1863)
- Natural Science at Oxford (May 1877, → 12.16, p. 1783)
- Clerical Fellowships (June 1877, → 12.17, p. 1786)
- “The Priest in Absolution” (July 1877, → 11.3, p. 1709)

The Times

scans from

<https://www.thetimes.co.uk/archive/article/1866-11-21/10/5.html>,
<https://www.thetimes.co.uk/archive/article/1883-09-01/7/5.html>,
<https://www.thetimes.co.uk/archive/page/1893-12-02/1.html>,
<https://www.thetimes.co.uk/archive/page/1894-03-06/1.html>, “The Science of Betting” also included in the *Scrapbook*

- The Science of Betting (November 1866, → 9.3, p. 1288)
- A Complete Postage Guide (September 1883, → 15.4, p. 1906)
- Through the Looking-Glass (December 1893/March 1894, → 19.5, p. 2461, → 19.5, p. 2461)

Proceedings of the Royal Society of London

scan from

<https://royalsocietypublishing.org/doi/10.1098/rspl.1866.0037>

- Condensation of determinants, being a new and brief method for computing their arithmetical values (1866/1867, → 7.1, p. 1220)

This was also published as an offprint.

Punch

scan from <https://archive.org/details/punch52a53lemouoft>

- Atalanta in Camden Town (July 1867, → 18.20, p. 2036)

Most bibliographies also include an anecdote Carroll contributed, published on January 3, 1874. But the published version differs so much from his, that I do not think it should count as a work by him. Therefore I did not include it here.

Aunt Judy's Magazine

scans from <https://babel.hathitrust.org/cgi/pt?id=uc1.a0003938263;view=1up;seq=255>,

<https://babel.hathitrust.org/cgi/pt?id=uc1.a0003938271;view=1up;seq=80>,

<https://books.google.com/books?id=60AsAAAAYAAJ>,

<https://books.google.com/books?id=pVMoAQAAMAAJ>

- Castle Croquet (August 1867, → 10.5, p. 1554)
- Bruno's Revenge (December 1867, → 3.11, p. 667)
- Puzzles from Wonderland (December 1870, → 18.30, p. 2051; the solutions published in January 1871 are probably not by Carroll, but he might have seen, approved, and perhaps improved them)
- Aunt Judy's Correspondence (April/May 1882, → 16.28, p. 1976, → 16.28, p. 1976)
- Dreamland (July 1882, → 18.198, p. 2423)

Oxford University Herald

scan from <http://www.britishnewspaperarchive.co.uk/search/results/1868-11-28?NewspaperTitle=Oxford%2BUniversity%2Bband%2BCity%2BHerald&IssueId=BL%2F0000994%2F18681128%2F&County=Oxfordshire%2C%20England>,

also included in the *Scrapbook*

- Woodstock Election (November 1868, → 16.16, p. 1956)

The Oxford Undergraduate's Journal

scan from the *Scrapbook*

- Reform at Christ Church (February 1869, → 12.7, p. 1747)

Authorship and date are not entirely certain.

The Fortnightly Review

scan from <https://babel.hathitrust.org/cgi/pt?id=njp.32101026757201>

- Some Popular Fallacies about Vivisection (June 1875, → 13.3, p. 1864)

The Eastbourne Chronicle

scans from

<https://www.britishnewspaperarchive.co.uk/search/results/1877-08-18/1877-09-22?newspapertitle=eastbourne%2bchronicle>,
partially also
<https://www.informedparent.co.uk/wp-content/uploads/2017/10/1877-EASTBOURNE-CHRONICLE-debate-with-Lewis-Carroll-C-Dodgson.pdf>

- Is it Well to have Children Vaccinated? (August/September 1877, → 16.25, p. 1971, → 16.25, p. 1971, → 16.25, p. 1972)

Vanity Fair

scans from <https://books.google.de/books?id=yfFHAQAAMAAJ>,
https://books.google.de/books?id=-_FHAQAAMAAJ,
<https://books.google.de/books?id=KfJHAQAAMAAJ>,
<https://books.google.de/books?id=AFFHAQAAMAAJ>,
<https://books.google.de/books?id=TfJHAQAAMAAJ>

- Doublets (March 1879–April 1881, → 10.8, p. 1562, → 10.9, p. 1576, → 10.10, p. 1585)

The Doublets were managed by Choker (the editor), it is not clear how much of the content was actually written by Carroll. Here only those parts are reproduced, that were reprinted as book, as well as all the doublets. Several of these were also published as offprints.

The Standard

scans from <http://www.britishnewspaperarchive.co.uk/search/results/1879-01-01/1890-12-31?exactsearch=false&newspapertitle=london%2bevening%2bstandard&sortorder=2> (only three articles, even though all four should be there), text of “Eight Hours Movement” from *Life and Letters*, p. 293

- Misleading Playbills (October 1879, → 14.2, p. 1879)
- Too Many Dogs (April 1885, → 16.33, p. 1983)
- Eight Hours Movement (August 1890, → 16.40, p. 1991)
- The Cab-Runner Nuisance (September 1890, → 16.41, p. 1992)

The Educational Times

scans from

<https://archive.org/details/mathematicalque09millgoog/page/n94>,
<https://archive.org/details/educationaltimes3941educ/page/245>,
<https://archive.org/details/educationaltimes3941educ/page/246>,
<https://archive.org/details/educationaltimes3941educ/page/280>,
<https://archive.org/details/mathematicalque25millgoog/page/n33>,

<https://archive.org/details/educationaltimes4243educ/page/n90>,
<https://archive.org/details/educationaltimes4445educ/page/234>,
<https://archive.org/details/mathematicalque64unkngoog/page/n96>,
<https://archive.org/details/mathematicalque66unkngoog/page/n92>,
<https://archive.org/details/educationaltimes50educ/page/390>,
<https://archive.org/details/educationaltimes52educ/page/93> (not all issues are available), “Note on 7695” and “12650” are here from reprints in later issues, text of “Practical Hints on Teaching” and “Infinitesimal or Zero?” from *Mathematical Pamphlets*, items 26, 18

- Practical Hints on Teaching (November 1879, → 7.2, p. 1227)
- Note on Question 7695 (May 1885; MQS XLIII, 1885, → 9.12, p. 1456)
- Infinitesimal or Zero? (July 1885; MQS XLIV, 1886, → 9.13, p. 1458)
- “Something or Nothing?” (June 1888, → 9.14, p. 1459)
- Questions for Solution: 9588 (June 1888, → 9.15, p. 1460)
- Questions for Solution: 9636 (July 1888, → 9.16, p. 1461)
- Comments on Solutions for Question 9588 (MQS L, 1889, → 9.15, p. 1460)
- Questions for Solution: 9995 (February 1889, → 9.17, p. 1462)
- Questions for Solution: 11530 (May 1892, → 9.18, p. 1463)
- Comments on Solutions for Question 9636 (MQS LIX, 1893, → 9.16, p. 1461)
- Questions for Solution: 12650 (February 1895, → 9.19, p. 1464)
- Questions for Solution: 13614 (September 1897, → 9.20, p. 1465)
- Questions for Solution: 14122 (February 1899, → 6.17, p. 1031)

Most of these items were reprinted in *Mathematical Questions and Solutions, from the “Educational Times”*, some in expanded form. The questions also were reprinted with the solutions, some in abridged form.

The Monthly Packet

scans from <https://archive.org/details/monthlypacket33unkngoog> (1880 I), <https://archive.org/details/monthlypacket26unkngoog> (1880 II), <https://archive.org/details/monthlypacket00colegoog> (1881 I), <https://books.google.com/books?id=xHE3AAAAMAAJ>^{US-proxy} (1881 II), <https://archive.org/details/monthlypacket22unkngoog> (1882 I), <https://archive.org/details/monthlypacket00unkngoog> (1882 II), <https://archive.org/details/monthlypacket34unkngoog> (1883 I), <https://books.google.com/books?id=7nM3AAAAMAAJ>^{US-proxy} (1883 II), <https://archive.org/details/monthlypacket36unkngoog> (1884 II), <https://archive.org/details/monthlypacket44unkngoog> (1885 I)

- The Cats and Rats Again (February 1880, → 9.9, p. 1388)
- Romantic Problems, A Tangled Tale. Knot I. Excelsior (April 1880, → 9.10, p. 1390)
- Answers to “Romantic Problems. Knot I” (June 1880, → 9.10, p. 1420)
- Romantic Problems; A Tangled Tale. Knot II. Mad Mathesis (July 1880, → 9.10, p. 1396)
- Answers to “Romantic Problems. Knot II” (September 1880, → 9.10, p. 1426)
- A Tangled Tale. Knot III. The Dead Reckoning (October 1880, → 9.10, p. 1398)
- A Tangled Tale. Answers to Knot III (December 1880, → 9.10, p. 1429), including:
 - Lanrick (→ 10.14, p. 1590)
- A Tangled Tale. Knot IV. Oughts and Crosses (January 1881, → 9.10, p. 1401)
- Notices to Correspondents. Acknowledgements (February 1881, → 10.14, p. 1591)
- A Tangled Tale. Answers to Knot IV (March 1881, → 9.10, p. 1432), including:
 - Untitled remarks about “Lanrick” (→ 10.14, p. 1591)
- A Tangled Tale. Knot V. Eligible Apartments (April 1881, → 9.10, p. 1392)
- A Tangled Tale. Answers to Knot V (June 1881, → 9.10, p. 1423), including:
 - Untitled remarks about “Lanrick” (→ 10.14, p. 1592)
- Mischmasch (June 1881, → 10.17, p. 1601)
- A Tangled Tale. Knot VI. Her Radiance (July 1881, → 9.10, p. 1403)
- Lanrick (August 1881, → 10.15, p. 1593)
- A Tangled Tale. Answers to Knot VI (September 1881, → 9.10, p. 1434, including a short note on “Mischmasch”)
- A Tangled Tale. Answers to Correspondents (November 1881, → 9.10, p. 1442)
- Lanrick (November 1881, → 10.15, p. 1593)
- Notices to Correspondents (January 1882, → 16.26, p. 1974)
- A Tangled Tale. Knot VII. Petty Cash (April 1882, → 9.10, p. 1407)

- Notices to Correspondents (April 1882, → 16.29, p. 1977)
- A Tangled Tale. Answers to Knot VII (June 1882, → 9.10, p. 1437), including:
 - Untitled note about “Shakespeare for Girls” (June 1882, → 16.30, p. 1978)
- Mischmasch (November 1882, → 10.18, p. 1602)
- A Tangled Tale. Knot VIII. A Serpent with Corners (January 1883, → 9.10, p. 1413)
- A Tangled Tale. Answers to Knot VIII (April 1883, → 9.10, p. 1446)
- A Tangled Tale. Knot IX. De Omnibus Rebus (August 1883, → 9.10, p. 1411)
- A Tangled Tale. Answers to Knot IX (November 1883, → 9.10, p. 1445)
- A Tangled Tale. Knot X and Last. Chelsea Buns (November 1884, → 9.10, p. 1415)
- A Tangled Tale. Answers to Knot X. (March 1885, → 9.10, p. 1449)
- A Tangled Tale. Answers to Knot X. (May 1885, → 9.10, p. 1450)

Most, if not all, Knots, as well as several solutions, *Lanrick* of August 1881 and the note about “Shakespeare for Girls” were also published as offprints.

St. James’s Gazette

scans from <http://www.britishnewspaperarchive.co.uk/search/results?exactsearch=false&newspapertitle=st%20james%27s%20gazette> (doesn’t include 1881), text of “The Purity of Election” from *Political Pamphlets*, item 14, text of “Traitors in the Camp” from *Pamphlets: A Miscellany*, item 28

- The Purity of Election (May 1881, → 5.4, p. 909)
- Traitors in the Camp (December 1881, → 11.5, p. 1713)
- Education for the Stage (February/March 1882, → 14.3, p. 1880, → 14.3, p. 1882)
- Notes (March 1882, → 16.27, p. 1975)
- Lawn Tennis Tournaments (August 1882, → 10.21, p. 1606)
- The Fallacies of Lawn Tennis Tournaments (August 1883, → 10.22, p. 1608)
- Lawn Tennis: Reply to “Cavendish” (August 1883, → 10.23, p. 1612)
- Lawn Tennis (August 1883, → 10.24, p. 1614)
- Proportionate Representation (May/June 1884, → 5.5, p. 912, → 5.5, p. 912, → 5.5, p. 913, → 5.5, p. 915)

- Parliamentary Elections (July 1884, → 5.6, p. 916)
- Notes (August 1884, → 5.7, p. 919)
- Redistribution (October 1884, → 5.8, p. 920, → 5.8, p. 923)
- Vivisection Vivisected (March 1885, → 13.4, p. 1871)
- Mr. Gladstone's New Book (March 1885, → 16.32, p. 1980; authorship not entirely certain)
- "Whoso Shall Offend One of These Little Ones—" (July 1885, → 11.6, p. 1716)
- Hydrophobia Curable (October 1885, → 16.34, p. 1984)
- Election Gains and Losses (December 1885, → 5.10, p. 945)
- Children in Theatres (July 1887, → 14.5, p. 1888)
- To All Readers of "Alice's Adventures Under Ground" (December 1887, → 19.8, p. 2467)
- Tristan d'Acunha (April 1888, → 16.36, p. 1987)
- To All Readers of "Alice's Adventures Under Ground" (December 1888, → 19.8, p. 2467)
- What to Call a "Telephone-Message" (January 1889, → 15.5, p. 1907)
- Mrs. Fawcett and the Stage Children (July 1889, → 14.7, p. 1897)
- "Life on a Lonely Isle of the Sea." (November 1889, → 16.38, p. 1989)
- To All Readers of "Alice's Adventures Under Ground" (December 1889, → 19.8, p. 2467)
- Sylvie and Bruno (January 1890, → 19.13, p. 2478)
- The Fasting Man (April 1890, → 16.39, p. 1990)
- "An Oxford Scandal" (December 1890, → 11.7, p. 1718)

About half of the contributions were reprinted (in a few cases with minor changes) in the weekly *St. James's Budget*. *The Purity of Election*, *Parliamentary Elections*, and *Children in Theatres* were also published as offprints.

The Observer

text from *Life and Letters*, pp. 214–216

- Christ Church, Oxford (June 1881, → 12.18, p. 1787)

Supplement to the Guardian

text from *Oxford Pamphlets*, item 19 (introduction)

- Oxford Responsions (February 1882, → 12.19, p. 1789)

Knowledge

scan from <https://books.google.de/books?id=K3dIAQAAMAAJ>

- Divisibility by Seven (July 1884, → 7.3, p. 1229)
- Euclid's Theory of Parallels (November 1884, → 4.7, p. 841)

The Court Circular

text from *Pamphlets: Games*, item 8c

- Mischmasch (December 1886, → 10.20, p. 1605)

Nature

scans from

<http://www.nature.com/nature/journal/v35/n909/pdf/035517a0.pdf>,

<https://www.nature.com/articles/056565f0> (also

https://archive.org/download/paper-doi-10_1038_056565f0),

<https://www.nature.com/articles/057269a0> (also

https://archive.org/details/paper-doi-10_1038_057269a0)

- To Find the Day of the Week for Any Given Date (March 1887, → 9.11, p. 1454)
- Brief Method of Dividing a Given Number by 9 or 11 (October 1897, → 7.4, p. 1231)
- Abridged Long Division (January 1898, → 7.5, p. 1233)

The Theatre

scans from <http://search.proquest.com/docview/7869458/fulltextPDF/63A94482ACB34EACPQ/9>, <http://search.proquest.com/docview/7849356/fulltextPDF/AB3CF7F82A4444CBPQ/15>, <http://search.proquest.com/docview/7868966/fulltextPDF/FC9BCE5018F24AA4PQ/5>

- "Alice" on the Stage (April 1887, → 14.4, p. 1883)
- The Stage and the Spirit of Reverence (June 1888, → 14.6, p. 1890)
- Stage Children (reprint, September 1889, → 14.8, p. 1898)

Ad Lucem

text from *Logic Pamphlets*, item 22

- 'Game of Logic' (July 1887, → 16.35, p. 1986)

Nineteenth Century

scan from <https://archive.org/details/in.ernet.dli.2015.21431>

- To the Editor (November 1887, → 19.2, p. 2456)

The Jabberwock

text from *Life and Letters*, pp. 276–277

- A Lesson in Latin (June 1888, → 18.134, p. 2289)

The editors also published two letters, but I don't think they were actually meant to be published (unlike the poem), so I do not include them in this collection. You can find them in *Life and Letters*.

Notes and Queries

scan from

<https://academic.oup.com/nq/article/s7-VIII/187/67/4440666>

- Authors of Epigrams Wanted (July 1889, → 16.37, p. 1988)

The Sunday Times

text from reprint in *The Theatre*, also *Pamphlets: A Miscellany*, item 15

- Stage Children (August 1889, → 14.8, p. 1898)

The Lady

text from *Pamphlets: Games*, item 15 (reprint with some omissions), scan of first issue (as an offprint) in *The Universe in a Handkerchief*, pp. 145–147, for detailed description see also *Lewis Carroll and the Press*

- Syzygies (July 1891–June 1892, → 10.29, p. 1627), also including:
 - Nyctograph (October 1891, → 16.42, p. 1993)
 - A Postal Problem (December 1891, → 15.8, p. 1921)
 - For All Lovers of Children (March–May 1892, → 19.10, p. 2470)
 - For All Writers of Letters (March–May 1892, → 19.11, p. 2471)

The first two *Syzygy* issues were also published as offprints.

The Daily News

scan from <https://www.britishnewspaperarchive.co.uk/search/results/1894-03-06/1894-03-06?NewspaperTitle=London%2BDaily%2BNews&IssueId=BL%2F0000051%2F18940306%2F&County=London%2C%20England>

- Through the Looking-Glass (March 1894, → 19.5, p. 2461)

Mind

scans from <https://academic.oup.com/mind/article/III/11/436/992008/A-LOGICAL-PARADOX>, <https://academic.oup.com/mind/article/IV/14/278/1046872/WHAT-THE-TORTOISE-SAID-TO-ACHILLES>

- A Logical Paradox (July 1894, → 6.15, p. 1023)
- What the Tortoise Said to Achilles (April 1895, → 6.22, p. 1037)

Both articles were also published as offprints.

Chatterbox

scan from <https://babel.hathitrust.org/cgi/pt?id=uc1.b2860916;view=thumb;seq=10>

- A Mysterious Number (February 1897, → 9.23, p. 1544)

This text might not be by Carroll, though a very similar manuscript by him exists, see the *Picture Book*, p. 269.

St. Mary Magdalen Church Magazine

text from the *Picture Book*, pp. 340–344

- Address by the Rev. C. L. Dodgson (November 1897, → 11.9, p. 1726)

Pamphlets, Leaflets, etc.

Note that larger pamphlets in most cases are treated as books, so this list only includes the smaller ones.

- Rules for Court Circular, 1860 (scan from *The Universe in a Handkerchief*, pp. 124–126, → 10.1, p. 1545)
- “Endowment of the Greek Professorship”, 1861 (scan from *Scrapbook*, → 12.1, p. 1729)
- Rules for Court Circular, 1862 (text from *Pamphlets: Games*, item 1b/http://serg.spb.ru/literature/Lewis_Carroll/The_hunting_of_the_snark/p8-ogp.html, → 10.2, p. 1548)
- Croquet Castles, 1863 (scan from *The Universe in a Handkerchief*, pp. 127–129, → 10.3, p. 1550)
- Castle Croquet, 1863? (text from *Picture Book*, pp. 271–274, → 10.4, p. 1552)
- Examination Statute, 1864 (scan from *Scrapbook*, → 18.2, p. 2012)
- The New Examination Statute, 1864 (text from *Oxford Pamphlets*, item 3, → 12.2, p. 1731)

- American Telegrams, 1865 (scan from *Christ Church and Reform*, pp. 112b–112c, → 12.3, p. 1733)
- Castle-Croquêt, 1866 (scan from *The Universe in a Handkerchief*, pp. 130–133, → 10.5, p. 1554)
- Enigma, Explication of the Enigma, 1866 (text from *Pamphlets: A Miscellany*, item 104, → 16.14, p. 1953)
- The Telegraph-Cipher, 1868 (scan from *The Universe in a Handkerchief*, p. 38, → 15.1, p. 1902)
- The Alphabet-Cipher, 1868? (scan from *The Universe in a Handkerchief*, pp. 40–41, → 15.2, p. 1903)
- Algebraical Formulæ, 1868 (text from *Mathematical Pamphlets*, item 11, → 8.1, p. 1253)
- Formulæ in Algebra, 1868? (text from *Mathematical Pamphlets*, item 12, → 8.2, p. 1255)
- The Guildford Gazette Extraordinary, 1870 (scan from <https://iiif.bodleian.ox.ac.uk/iiif/mirador/39ca7386-41db-4db8-99fe-f7f80f943f65>, → 14.1, p. 1874)
- Algebraical Formulæ and Rules, 1870 (scan from <https://digitallibrary.usc.edu/asset-management/2A3BF1QNSVOGT>, → 8.3, p. 1259)
- Arithmetical Formulæ and Rules, 1870 (text from *Mathematical Pamphlets*, item 21, → 8.4, p. 1262)
- Suggestions for Committee, 1871 (text from *Oxford Pamphlets*, item 11, → 12.8, p. 1748)
- To All Child-Readers of “Alice’s Adventures in Wonderland”, 1871 (scan from <https://digitallibrary.usc.edu/asset-management/2A3BF1QNSJP7M>, → 11.1, p. 1706)
- Objections, Submitted to the Governing Body of Christ Church, Oxford, 1873 (text from *Oxford Pamphlets*, item 14, partial scan from <https://lewis Carroll125.blogspot.com/2014/06/dodgsons-objections-against-proposed.html?m=1>, → 12.11, p. 1768)
- Suggestions as to the Best Method of Taking Votes, 1874 (scan from <https://digitallibrary.usc.edu/asset-management/2A3BF1QNSJR10>, → 5.2, p. 899)
- The Professorship of Comparative Philology, 1876 (three pamphlets, text from *Oxford Pamphlets*, item 17, → 12.14, p. 1778)

- An Easter Greeting, 1876 (scan from <http://digitallibrary.usc.edu/cdm/compoundobject/collection/p15799coll185/id/137/rec/7> and others, variants also published in *Alice* books, → 11.2, p. 1707)
- Fame's Penny-Trumpet, 1876 (text from *Pamphlets: A Miscellany*, item 90, partial scan from <https://www.bonhams.com/auctions/24116/lot/34/?category=results>, → 18.24, p. 2042)
- Responsions, Hilary Term, 1877 (text from *Oxford Pamphlets*, item 18, → 12.15, p. 1782)
- Algebra (13), 1877 (text from *Mathematical Pamphlets*, item 14, → 9.8, p. 1387)
- Memoria Technica, 1877 (scan from *The Universe in a Handkerchief*, p. 32, → 16.18, p. 1960)
- The Electric Pen, 1877 (text and partial scan from *Illustrated London News*, Nov. 2, 1976, <https://www.britishnewspaperarchive.co.uk/viewer/BL/0001578/19761102/100/0031?browse=true>, → 16.23, p. 1969)
- Specific Gravities of Metals, &c., 1877 (scan from *The Universe in a Handkerchief*, p. 36, → 16.19, p. 1961)
- Formulæ, 1878 (scan from [https://www.christies.com/img/LotImages/2005/CSK/2005_CSK_05056_0075_000\(112114\).jpg?mode=max](https://www.christies.com/img/LotImages/2005/CSK/2005_CSK_05056_0075_000(112114).jpg?mode=max), → 8.5, p. 1266)
- Formulæ (Group C), 1878? (scan from [https://www.christies.com/img/LotImages/2010/CSK/2010_CSK_05476_0217_000\(dodgson_charles_lutwidge_formulae_oxford_c1878_cyclostyled_bifolium_wi043101\).jpg?mode=max](https://www.christies.com/img/LotImages/2010/CSK/2010_CSK_05476_0217_000(dodgson_charles_lutwidge_formulae_oxford_c1878_cyclostyled_bifolium_wi043101).jpg?mode=max) and <https://www.rootenbergbooks.com/pictures/14039.jpg?v=1551462353>, also in https://www.calameo.com/usc_lewiscarroll/read/0059563172c668f8dfa56, p. 939 (947), → 8.6, p. 1267)
- A Charade, 1878 (scan from *The Story of Lewis Carroll*, pp. 108–110, → 18.115, p. 2227)
- Word-Links, 1878 (scan from *The Universe in a Handkerchief*, pp. 89–92, → 10.6, p. 1557)
- Word-Links, 1878 (scan from *The Universe in a Handkerchief*, pp. 93–96, → 10.7, p. 1560)
- Lanrick, 1879 (scan from *The Universe in a Handkerchief*, p. 135, → 10.11, p. 1586)
- Lanrick, 1879 (text from *Pamphlets: A Miscellany*, item 97a, → 10.12, p. 1587)
- Lanrick, 1879 (scan from *The Universe in a Handkerchief*, pp. 136–137, → 10.12, p. 1587)

- Letter from Mabel, 1880 (text from *Letters*, → 15.3, p. 1905)
- Lanrick, 1880 (text from *Pamphlets: A Miscellany*, item 97b, → 10.13, p. 1589)
- Lanrick, 1880 (scan from *The Universe in a Handkerchief*, p. 138, → 10.14, p. 1590)
- Lanrick, 1881 (scan from *The Universe in a Handkerchief*, pp. 139–140, → 10.15, p. 1593)
- Notice re Concordance to ‘In Memoriam’, 1881 (text from probably similar advertisement in *A Tangled Tale*, → 19.27, p. 2519)
- An Analysis of the Responsions-Lists, 1882 (text from *Oxford Pamphlets*, item 19, → 12.20, p. 1791)
- Dreamland, 1882 (scan from <https://catalogue.swanngalleries.com/full//609%5C706609.jpg>, → 18.198, p. 2423)
- Mischmasch, 1882 (scan from *The Universe in a Handkerchief*, pp. 142–143, → 10.19, p. 1604)
- Rules for Reckoning Postage, 1883 (text from the probably very similar note in *The Times*, → 15.4, p. 1906)
- Christmas Greetings, 1884 (scan from [https://www.christies.com/img/LotImages/1998/NYP/1998_NYP_09046_0015_000\(113044\).jpg?mode=max](https://www.christies.com/img/LotImages/1998/NYP/1998_NYP_09046_0015_000(113044).jpg?mode=max), → 18.97, p. 2205)
- The Profits of Authorship, 1884 (text from *Life and Letters*, pp. 227–228, only one paragraph, → 16.31, p. 1979)
- The Proposed Procuratorial Cycle, 1885 (text from *Oxford Pamphlets*, items 30, 31, → 12.22, p. 1810)
- The Proctorial Cycle, 1885 (text from *Oxford Pamphlets*, item 32, → 12.23, p. 1814)
- Suggestions as to Election of Proctors, 1885 (text from *Oxford Pamphlets*, item 33, → 12.24, p. 1817)
- Remarks on Report of Finance Committee, 1886 (text from *Oxford Pamphlets*, item 36, → 12.27, p. 1836)
- Suggestions as to the Election of Proctors, 1886 (text from *Oxford Pamphlets*, item 37, → 12.25, p. 1822)
- First Paper on Logic, 1886 (text from *Logic Pamphlets*, item 20a, → 6.1, p. 946)
- Fourth Paper on Logic, 1886 (text from *Logic Pamphlets*, item 20b, → 6.2, p. 948)

- Fifth Paper on Logic, 1887 (text from *Logic Pamphlets*, item 20c, → 6.4, p. 998)
- Sixth Paper on Logic, 1887 (text from *Logic Pamphlets*, item 20d, → 6.5, p. 1002)
- Questions in Logic, 1887 (text from *Logic Pamphlets*, item 21, → 6.6, p. 1006)
- To my Child-Friend, 1888 (text from *The Game of Logic*, → 18.64, p. 2136)
- Memoria Technica, 1888 (scan from *The Universe in a Handkerchief*, pp. 33–35, → 16.22, p. 1967)
- Circular Billiards, 1890 (scan of one variant from *The Universe in a Handkerchief*, pp. 149–150, text of other variant from *Pamphlets: Games*, item 9b, → 10.26, p. 1622, → 10.27, p. 1624)
- A Postal Problem, 1891 (text from *Complete Works*, including Supplement, → 15.7, p. 1919)³
- A Challenge to Logicians, 1892 (scan from *The Mathematical World of Charles L. Dodgson*, → 6.7, p. 1009)
- Eighth Paper on Logic, 1892 (text from *Logic Pamphlets*, items 20e–f, → 6.8, p. 1010)
- Ninth Paper on Logic, 1892 (text from *Logic Pamphlets*, item 20g, partial scan from https://martoru.blogs.uv.es/files/2009/10/7_9thpaperbig-1887.jpg, → 6.9, p. 1012)
- Eighth and Ninth Paper on Logic. Notes, 1892 (text from *Logic Pamphlets*, item 20h, → 6.10, p. 1016)
- Advertisement, 1893 (scan from copy in *Sylvie and Bruno Concluded*, → 19.6, p. 2462)
- Symbolic Logic, 1894 (text from *Logic Pamphlets*, items 23–26, → 6.18, p. 1032, → 6.19, p. 1034, → 6.20, p. 1035, → 6.21, p. 1036)
- A Disputed Point in Logic, 1894 (text from *Logic Pamphlets*, item 15a, → 6.11, p. 1019)
- A Disputed Point in Logic, 1894 (text from *Logic Pamphlets*, item 15b, → 6.13, p. 1021)
- A Theorem in Logic, 1894 (text from *Logic Pamphlets*, item 15c, → 6.14, p. 1022)
- A Logical Puzzle, 1894 (text from *Logic Pamphlets*, item 15e, → 6.16, p. 1027)

³see <https://digital.bodleian.ox.ac.uk/objects/00edb6d2-da75-4fc2-81c0-cb41f1d9e897> for original manuscript and related manuscripts

- Logical Nomenclature, 1895 (text from *Logic Pamphlets*, item 4, → 6.23, p. 1040)
- A Fascinating Mental Recreation for the Young, 1896 (text from *Logic Pamphlets*, item 12, and *Pamphlets: A Miscellany*, item 58, → 19.24, p. 2508)
- Resident Women-Students, 1896 (scan from <https://iiif.bodleian.ox.ac.uk/iiif/viewer/8c4d795d-3b6a-4c70-b974-dc11083c1975#?c=0&m=0&s=0&cv=72&r=0&xywh=-246%2C-1%2C3971%2C2902>, → 12.29, p. 1858)

Unpublished Galley Proofs

Some works were meant for publication, but still weren't published when Lewis Carroll died. The surviving galley proofs or preprints of these are listed here, see the next section for manuscripts.

- The Wasp in a Wig, 1870 (first published 1977, scan from https://archive.org/details/waspinwigsuppres0000carr_m8q0, → 3.12, p. 678)
- A Method of Taking Votes on More Than Two Issues, 1876 (first published 1958, scan from <https://digital.bodleian.ox.ac.uk/objects/d5ce1de6-d037-4ab4-9aeb-8e0f10a532be/>, → 5.3, p. 901)
- Symbolic Logic. Part II, 1887–1897 (first published 1977, text (and a few scans) from *Lewis Carroll's Symbolic Logic* by W. W. Bartley, → 6.25, p. 1176)
- Eternal Punishment, 1895/1897 (first published 1899, text from the *Picture Book*, pp. 345–355, → 11.8, p. 1720)
- Curiosa Mathematica Part III, 1897 (first published 1899, text from the *Picture Book*, pp. 240–263, → 7.6, p. 1239)

For a detailed analysis of the authenticity of *The Wasp in a Wig* see <https://archive.org/details/knightletterno7202lewi/page/14>.

Manuscripts

Useful and Instructive Poetry

Written about 1845, first published 1954, text from <http://www.kursivom.ru/%d1%80%d1%83%d0%ba%d0%be%d0%bf%d0%b8%d1%81%d0%bd%d1%8b%d0%b5-%d0%b6%d1%83%d1%80%d0%bd%d0%b0%d0%bb%d1%8b-%d0%bb%d1%8c%d1%8e%d0%b8%d1%81%d0%b0-%d0%ba%d1%8d%d1%80%d1%80%d0%be%d0%bb%d0%bb%d0%b0/> (most of the content, including some images), <https://books.google.com/books?id=GXyiAAAAQBAJ&pg=PA469> (A quotation from Shakespeare with slight improvements)

- My Fairy (→ 18.67, p. 2140)
- The Headstrong Man (→ 18.166, p. 2366)

- Punctuality (→ 18.107, p. 2216)
- Charity (→ 18.200, p. 2428)
- Melodies (→ 18.171, p. 2376)
- A Tale of a Tail (→ 18.11, p. 2024)
- A quotation from Shakespeare with slight improvements (→ 18.204, p. 2432)
- Brother and Sister (→ 18.146, p. 2324)
- The Trial of a Traitor (→ 18.168, p. 2370)
- The Juvenile Jenkins (→ 18.154, p. 2336)
- Facts (→ 18.191, p. 2413)
- The Angler's Adventure (→ 18.16, p. 2032)
- A Fable (→ 18.155, p. 2337)
- Rules and Regulations (→ 18.5, p. 2015)
- Clara (→ 18.147, p. 2325)
- A Visitor (→ 18.190, p. 2412)

The Rectory Magazine

Written about 1848, first published 1975 (many parts already earlier), scan from http://hrc.contentdm.oclc.org/cdm/compoundobject/collection/p15878coll130/id/129/rec/1#nav_top

- Title
- Dedication (“To the Inhabitants of the Rectory, Croft, and especially to the younger members of that house, this Magazine, their own united labour and produce is respectfully Dedicated by The Editor.”)
- Table of contents
- Names of Authors
 - – Reasonings on Rubbish (→ 19.30, p. 2523)
 - A Tale without a Name. Ch. 1 (by Elisabeth L. Dodgson)
 - Tommy and Dicky (by Caroline H. Dodgson)
 - Sidney Hamilton. Ch. 1 (→ 3.1, p. 609)
 - Answers to Correspondents (→ 16.3, p. 1924)
 - – Thoughts on Thistles (→ 19.30, p. 2523)
 - A Tale without a Name. Ch. 2 (by Elisabeth L. Dodgson)
 - Ode to Wild Beasts (by Louisa F. Dodgson)

- Sidney Hamilton. Ch. 2 (→ 3.1, p. 610)
- Horrors (→ 18.109, p. 2219)
- Crundle Castle. Ch. 1 (→ 3.2, p. 617)
- Answers to Correspondents (→ 16.3, p. 1924)
- – Things in General (→ 19.30, p. 2524)
- Sidney Hamilton. Ch. 3 (→ 3.1, p. 611)
- A Tale of the Wars. Part 1 (by Wilfred L. Dodgson)
- Farmer Grubbins. Ch. 1 (by Skeffington H. Dodgson)
- Crundle Castle. Ch. 2 (→ 3.2, p. 617)
- Tears (→ 18.39, p. 2066)
- Answers to Correspondents (→ 16.3, p. 1924)
- – Rust (→ 19.30, p. 2525)
- As It Fell upon a Day (→ 18.17, p. 2033)
- Sidney Hamilton. Ch. 4 (→ 3.1, p. 612)
- The Village School (→ 3.3, p. 623; authorship not entirely certain)
- A Tale of the Wars. Part 2 (by Wilfred L. Dodgson)
- Crundle Castle. Ch. 3 (→ 3.2, p. 618)
- Terrors (→ 18.141, p. 2301)
- Answers to Correspondents (→ 16.3, p. 1924)
- – But (→ 19.30, p. 2525)
- Woes (→ 18.206, p. 2441)
- Sidney Hamilton. Ch. 5 (→ 3.1, p. 612)
- Yang-ki-ling (→ 18.60, p. 2128)
- Battiana (by Elisabeth L. Dodgson)
- Crundle Castle. Ch. 4 (→ 3.2, p. 619)
- Answers to Correspondents (→ 16.3, p. 1925)
- – Musings on Milk (→ 19.30, p. 2526)
- Misunderstandings (→ 18.80, p. 2159)
- Sidney Hamilton. Ch. 6 (→ 3.1, p. 613)
- Screams (→ 18.49, p. 2087)
- Crundle Castle. Ch. 5 (→ 3.2, p. 619)
- Wanted immediately (by Lucy Lutwidge)
- Answers to Correspondents (→ 16.3, p. 1925)
- – Ideas upon Ink (→ 19.30, p. 2526)
- Reviews (→ 16.4, p. 1926)
- Sidney Hamilton. Ch. 7 (→ 3.1, p. 614)
- Thrillings (→ 18.188, p. 2410)

- Crundle Castle. Ch. 6 (→ 3.2, p. 620)
- Mrs Stoggle’s Dinner-Party. Ch. 1 (by Elisabeth L. Dodgson)
- Answers to Correspondents (→ 16.3, p. 1925)
- – Twaddle on Telescopes (→ 19.30, p. 2527)
- Sidney Hamilton. Ch. 8 (→ 3.1, p. 614)
- The Bride (by Caroline H. Dodgson)
- Crundle Castle. Ch. 7 (→ 3.2, p. 620)
- Mrs Stoggle’s Dinner-Party. Ch. 2 & 3 (by Elisabeth L. Dodgson)
- The Whirl-Wind (by Mary C. Dodgson)
- Answers to Correspondents (→ 16.3, p. 1925)
- – Cogitations on Conclusions (→ 19.30, p. 2528)
- Sidney Hamilton. Ch. 9 (→ 3.1, p. 615)
- Crundle Castle. Ch. 8 & 9 (→ 3.2, p. 621)
- Mrs Stoggle’s Dinner-Party. Ch. 4 (by Elisabeth L. Dodgson)
- Farmer Grubbins. Ch. 2 (by Skeffington H. Dodgson)
- Index (table of contents, ordered alphabetically, ending with “*And so the vision endeth!*” *Dickens.*)

Quoted from *Life and Adventures of Martin Chuzzlewit* by Charles Dickens

The Rectory Umbrella

Written about 1850, first published 1932, scan from
[https://iiif.lib.harvard.edu/manifests/view/drs:10267096\\$1i#\\$](https://iiif.lib.harvard.edu/manifests/view/drs:10267096$1i#$)

- Frontispiece (→ 17.2, p. 2003)
- Preface (→ 19.31, p. 2529)
- The Walking-Stick of Destiny. Ch. 1. (→ 3.4, p. 624)
- Ye Fatalle Cheyse (→ 18.211, p. 2451)
- The Vernon Gallery: The Age of Innocence (→ 17.1, p. 1996)
- The Walking-Stick of Destiny. Ch. 2. (→ 3.4, p. 625)
- Moans from the Miserable (→ 16.5, p. 1927)
- The Vernon Gallery: The Scanty Meal (→ 17.1, p. 1997)
- Zoological Papers: No. 1. Pixies (→ 16.6, p. 1928)
- The Walking-Stick of Destiny. Ch. 3. (→ 3.4, p. 627)
- The Storm (→ 18.12, p. 2026)
- The Vernon Gallery: The Woodland Gait (→ 17.1, p. 1998)
- Zoological Papers: No. 2. The Lory (→ 16.6, p. 1928)

- The Walking-Stick of Destiny. Ch. 4. (→ 3.4, p. 628)
- The Vernon Gallery: The First Earring (→ 17.1, p. 1999)
- Difficulties. No. 1. (→ 16.8, p. 1936)
- Zoological Papers: No. 3. Fishs (→ 16.6, p. 1929)
- Lays of Sorrow. No. 1. (→ 18.153, p. 2333)
- The Vernon Gallery: The Wooden Bridge (→ 17.1, p. 2000)
- The Walking-Stick of Destiny. Ch. 5. (→ 3.4, p. 631)
- Representative Men: Lecture 1st: On the Use of Little Men (→ 16.7, p. 1934)
- Zoological Papers: No. 4. The One-Winged Dove (→ 16.6, p. 1930)
- The Vernon Gallery: High Life and Low Life (→ 17.1, p. 2001)
- Representative Men: Lecture 2nd: Cuffey, or the Chartist (→ 16.7, p. 1934)
- The Walking-Stick of Destiny. Ch. 6. (→ 3.4, p. 633)
- Lays of Sorrow. No. 2. (→ 18.34, p. 2057)
- Representative Men: Lecture 3d: Jack Sprat, or the Epicure (→ 16.7, p. 1935)
- The Vernon Gallery: The Duett (→ 17.1, p. 2002)
- The Walking-Stick of Destiny. Ch. 7. (→ 3.4, p. 634)
- The Walking-Stick of Destiny. Ch. 8 and Last (→ 3.4, p. 636)
- Difficulties. No. 2. (→ 16.8, p. 1937)
- The Poet's Farewell (→ 18.9, p. 2020)
- The Index (table of contents, ordered alphabetically)
- Image (moved to frontispiece)

Mischmasch

Written 1855–1862 (including some older texts starting from 1853), first published 1932, text from http://www.europeana.eu/portal/record/9200143/BibliographicResource_2000069294604.html

- Frontispiece (→ 17.5, p. 2008, together with other images)
- Preface (→ 19.32, p. 2530)
- Studies from English Poets. No. I (→ 17.3, p. 2005)
- Studies from English Poets. No. II (→ 17.3, p. 2005)

- The Mermaids (by Louisa F. Dodgson)
- The Two Brothers (→ 18.172, p. 2378)
- Poetry for the Million (→ 18.71, p. 2147)
- From Our Own Correspondent (→ 17.4, p. 2007)
- She's All My Fancy Painted Him (→ 18.145, p. 2323)
- Photography Extraordinary (→ 3.7, p. 649)
- Hints for Etiquette; or, Dining Out Made Easy (→ 16.9, p. 1938)
- Notice to the Public (→ 19.32, p. 2531)
- Wilhelm von Schmitz. Chapter III (→ 3.6, p. 641)
- Wilhelm von Schmitz. Chapter IV (→ 3.6, p. 644)
- The Lady of the Ladle (→ 18.163, p. 2358)
- Studies from English Poets. No. III (→ 17.3, p. 2006)
- Lays of Mystery, Imagination, and Humor. No. 1. The Palace of Humbug (→ 18.65, p. 2137)
- Stanza of Anglo-Saxon Poetry (→ 18.182, p. 2404)
- Image (moved to other images)
- Lays of Mystery, Imagination, and Humor. No. 2. The Three Voices (→ 18.205, p. 2434)
- Lays of Mystery, Imagination, and Humor. No. 3. Tommy's Dead (→ 18.91, p. 2176)
- Ode to Damon (→ 18.128, p. 2243)
- (Untitled: A monument) (→ 18.3, p. 2013)
- Maze (moved to other images)
- Lays of Mystery, Imagination, and Humor. No. 4. Melancholetta (→ 18.207, p. 2443)
- Studies from English Poets. No. IV (→ 17.3, p. 2006)
- The Willow Tree (→ 18.158, p. 2350)
- Faces in the Fire (→ 18.159, p. 2351)
- Review (→ 16.12, p. 1946)
- Blood (by Wilfred L. Dodgson)
- Lines (→ 18.13, p. 2028)
- Lays of Mystery, Imagination, and Humor. No. 5. Bloggs' Woe (→ 18.199, p. 2425)

Other Manuscripts

- Railway Rules, 1847? (first published 1932, text from biographies by Florence Becker Lennon, p. 24, and Derek Hudson, pp. 34–35, → 16.1, p. 1922)
- “Love’s” Railway Guide, 1847? (first published 1932, scan from *The Raven and the Writing Desk*, p. 161, → 16.2, p. 1923)
- La Guida di Bragia, 1850? (first published 1931, text from <https://archive.org/details/knightletterno61001ewi>, partial scan at <https://archive.org/details/b31639987>, p. 126, → 18.144, p. 2306)
- The Christ-Church Commoner, 1851 (first published 1973, text from *Lewis Carroll, a Biography* by Anne Clark Amor, p. 72, → 3.5, p. 637)
- The Ligniad, 1853 (for George Girdlestone Woodhouse, first published 1897, scan from *Lewis Carroll observed*, pp. 84–91, → 18.126, p. 2239)
- Life of Richard Hakluyt, 1856 (first published 1974, scan from <https://iiif.bodleian.ox.ac.uk/iiif/viewer/68e04d1e-1edd-4bdd-b6ff-6e57729959a5>, → 16.10, p. 1940)
- The Legend of “Scotland”, 1858 (for the daughters of Archbishop Longley, first published 1899, text from *Picture Book*, pp. 331–339, → 3.9, p. 658)
- Sequel to “The Sheppard of Salisbury Plain”, 1862 (first published 1954, text from *Jabberwocky and Other Poems*, → 18.25, p. 2045; authorship not entirely certain)
- Miss Jones, 1862 (first published 1932, scan from *Humorous Verse*, pp. 47–50, → 18.179, p. 2391)
- Prologue, 1871 (for the Hatch family, first published 1932, text from *Humorous Verse*, pp. 108–110, → 18.95, p. 2202)
- Prologue, 1873 (for the Hatch family, first published 1898, scan from *The Story of Lewis Carroll*, p. 115, → 18.201, p. 2429)
- An Inconceivable Conversation, 1874 (first published 1974, scan from <https://iiif.bodleian.ox.ac.uk/iiif/viewer/dd6d9ce9-c190-4728-a849-524a06f7ade8>, → 9.7, p. 1385)
- A Russian’s Day in England, 1874 (for Lady Gwendolen Cecil, first published 1979, text from *The Russian Journal—II*, p. 52, → 18.103, p. 2212)
- Various Memoria Technica Verses, 1877–1897 (first published 1898/1933/1979/1994, text from *Life and Letters*, p. 270, *Letters to Child-Friends*, pp. 232–234, *Library Chronicle of the University of Texas at Austin, 1979*, https://archive.org/details/sim_library-chronicle-of-the-university-of-texas-at-austin_1979_11, p. 88, *Mathematical Pamphlets*, item 35, → 16.21, p. 1965)

- Marriage Service, 1877 (first published 1974, text from *Pamphlets: A Miscellany*, item 27, → 11.4, p. 1711)
- Logs of Nos., 1878 (first published 1974, text from *Rare Verses*, pp. 88–89, → 16.20, p. 1963)
- Verses for Christmas Cards, 1879 (first published 1974, scan from *Lewis Carroll and Alice, 1832–1982*, p. 126, → 18.38, p. 2065)
- Limits of Circle-Squaring, 1882 (first published 1932, text from *Mathematical Pamphlets*, item 7, → 19.22, p. 2505)
- Isa’s Visit to Oxford, 1888 (for Isa Bowman, first published 1899, scan from *The Story of Lewis Carroll*, pp. 37–52, → 3.13, p. 681)
- Maggie’s Visit to Oxford, 1889 (for Maggie Bowman, first published 1899, text from *The Story of Lewis Carroll*, pp. 97–104, → 18.196, p. 2418)
- Arithmetical Croquet, 1889 (first published 1953, text from *The Universe in a Handkerchief*, pp. 39, 42, → 10.28, p. 1626)
- A Disputed Point in Logic. A Concrete Example, 1894 (first published 1974, scan from <https://digital.bodleian.ox.ac.uk/inquire/p/f5fa07c3-9776-46e6-9dbb-f7c1aa1402ac>, → 6.12, p. 1020)
- Number-Guessing, 1896 (first published 1974, scan from *Mathematical Pamphlets*, item 31, → 9.22, p. 1543)

For *Alice’s Adventures under Ground* see above among the printed books.

Poems from Letters, Inscriptions, etc.

- The year when boilers froze, 1855? (for Samuel Courthorpe Bosanquet?, first published 1966, text from *Jabberwocky and Other Poems*, → 18.162, p. 2357)
- Little Red Riding Hood, 1858 (for Agnes Grace Weld, first published 1995, text from *Jabberwocky and Other Poems*, → 18.88, p. 2173)
- Lines, 1861 (for Lorina, Alice and Edith Liddell, first published 1928, scan from *Letters*, p. 51, → 18.100, p. 2209)
- To M. A. B., 1866 (for Marion Terry, first published 1931, text from *Humorous Verse*, p. 325, → 18.160, p. 2353)
- To “Hallie”, 1868 (for Clara Halyburton Cunyngname, first published 1979, scan from *Letters*, pp. 110–112, → 18.127, p. 2242)
- Dear Maggie,—I found that the friend, 1868 (for Margaret Cunyngname, first published 1898, text from *Life and Letters*, pp. 423–425, → 18.28, p. 2048)
- “Will you trot a little quicker?”, 1868 (for Edith and Dolly Argles, first published 1933, text from *Letters to Child-Friends*, pp. 53–55, → 18.202, p. 2430)

- I saw a child: even if blind, 1868? (for Edith and Dolly Argles, first published 1933, text from *Letters to Child-Friends*, p. 56, → 18.75, p. 2151)
- To Three Puzzled Little Girls, From the Author, 1869 (for the three Misses Drury, first published 1898, scan from *Strand Magazine*, April 1898, <https://archive.org/stream/TheStrandMagazineAnIllustratedMonthly/TheStrandMagazine1898aVol.XvJan-jun#page/n425/mode/2up>, → 18.177, p. 2389)
- Double Acrostic, 1869? (for Agnes and Emily Hughes, first published 1981, scan from <https://www.themorgan.org/exhibitions/online/alice/23> or *Lewis Carroll and Alice, 1832–1982*, p. 67, → 18.186, p. 2408)
- Double Acrostic, 1869 (for E. M. Argles, first published 1932, text from *Humorous Verse*, pp. 313–314, → 18.76, p. 2152)
- My dear Christie, 1869? (for E. M. Argles, first published 1979, text from *Letters*, p. 141, → 18.111, p. 2223)
- Puzzle, 1869 (for Mary, Ina and Harriet Watson, first published 1924, text from *Humorous Verse*, p. 316, → 18.197, p. 2422)
- Double Acrostic, 1870 (for Trina and Freda Bremer, first published 1898, text from *Life and Letters*, pp. 372–373, → 18.185, p. 2407)
- Tell me truly, Maidens three, 1870 (for Mary, Ina and Harriet Watson, first published 1924, scan from *The Magic of Lewis Carroll*, p. 53, → 18.150, p. 2330)
- “No mind!” the little maiden cried, 1870 (for Janet Merriman, first published 1933, text from *Letters to Child-Friends*, p. 81, → 18.122, p. 2235)
- Charade, 1871? (for Amy Hughes, first published 1982, scan from *Lewis Carroll and Alice, 1832–1982*, pp. 69–70/text from *Jabberwocky*, 1988, pp. 17, 18, <https://books.google.de/books?id=FaLyAAAAMAAJ>, → 18.78, p. 2156)
- No, no! I cannot write a line, 1871 (for Margaret Cunnynghame, first published 1979, text from *Letters*, p. 163, → 18.123, p. 2236)
- Three Children, 1871 (for Mary, Ina and Harriet Watson, first published 1924, scan from *Lewis Carroll and Alice, 1832–1982*, pp. 68–69/text from *Humorous Verse*, pp. 317–318, → 18.176, p. 2387)
- Double Acrostic, 1871 (for Mabel and Emily Kerr, first published 1933, scan from *Lewis Carroll and Alice, 1832–1982*, p. 68/text from *Letters to Child-Friends*, pp. 82–83, → 18.151, p. 2331)

- Near Albury, so runs my lay, 1871 (for Alice Pares, first published 1974, text from *Jabberwocky*, 1990, pp. 7, 8, <https://books.google.de/books?id=MaLyAAAAAAAJ>, → 18.121, p. 2234)
- Two Thieves, 1872 (for the three Misses Drury, first published 1929, text from *Humorous Verse*, p. 319, → 18.187, p. 2409)
- O come to me at two today, 1872 (for August Harcourt, first published 1981, scan <https://digital.bodleian.ox.ac.uk/objects/44e7c0f9-920d-4078-bacb-cc486d3e0cc9/surfaces/d2d7539f-ae99-41e0-bcf5-2cd9ea90fb49/>, → 18.125, p. 2238)
- Three Little Maids, 1873 (for the three Misses Drury, first published 1898, text from *Life and Letters*, p. 419, → 18.178, p. 2390)
- My First we call her when her belt is on, 1875? (for Gertrude Chataway, first published 1979, text from *Letters*, p. 232, → 18.117, p. 2230)
- Maidens! If you love the tale, 1876 (for the three Misses Drury, first published 1929, scan from <https://historical.ha.com/itm/books/children-s-books/lewis-carroll-the-hunting-of-the-snark-an-agony-in-eight-fits-london-macmillan-and-co/6234-45149.s>, → 18.106, p. 2215)
- Alice dear, will you join me in hunting the Snark?, 1876 (for Alice Crompton, first published 1936, text from *Letters*, pp. 247–248, → 18.7, p. 2018)
- Alice dreamed one night, 1876 (for Alice Pratt, first published 1979, text from *Letters*, p. 248, → 18.8, p. 2019)
- Dear Dolly, since I do not know, 1876 (for Dolly Draper, first published 1998, scan from *Yours very sincerely C. L. Dodgson*, p. 21, → 18.27, p. 2047)
- Are you deaf, Father William?, 1876 (for Adelaide Paine, first published 1898, text from *Life and Letters*, p. 374–375, → 18.14, p. 2030)
- Love-lighted eyes, 1876 (for Laura Plomer, first published 1899, text from *Picture Book*, p. 209, → 18.102, p. 2211)
- Maiden, though thy heart may quail, 1876 (for Marion Terry, first published 1930, text from *Letters to Child-Friends*, p. 112, → 18.104, p. 2213)
- Even while the blinding bandage lies, 1876 (for Edith Denman, first published 1953, text from *Diaries*, p. 351, → 18.33, p. 2056)
- From the air do they come?, 1876 (for Florence Louise Beaton, first published 1932, text from *Jabberwocky and Other Poems*, → 18.44, p. 2082)
- Round the wondrous globe, 1877 (for Ruth Dymes, first published 1898, text from *Life and Letters*, p. 408, → 18.139, p. 2299)

- Maidens, if a maid you meet, 1877 (for Margaret Dymes, first published 1898, text from *Life and Letters*, p. 408, → 18.105, p. 2214)
- They both make a roaring, 1877 (for Agnes Hull, first published 1924, text from *Letters to Child-Friends*, pp. 133–134, → 18.173, p. 2383)
- Anagrammatic Sonnet, 1877 (for Maud Standen, first published 1924, text from *Letters to Child-Friends*, pp. 73–74, → 18.18, p. 2034)
- Madrigal, 1877 (for May Forshall, first published 1932, text from *Letters to Child-Friends*, p. 121, → 18.52, p. 2096)
- Love among the Roses, 1878 (for Sarah Sinclair, first published 1899, *Picture Book*, p. 204, → 18.143, p. 2305)
- Around my lonely hearth, to-night, 1878 (for Agnes Georgina Hull, first published 1898, text from *Life and Letters*, p. 364, → 18.15, p. 2031)
- If Ruth & you, 1879? (for Effie Mayhew, first published 1981, text from <https://www.nytimes.com/1981/12/20/magazine/christmas-with-lewis-carroll.html>/<https://www.themorgan.org/literary-historical/413276>, → 18.79, p. 2158)
- My First's a drink resembling wine, 1880 (for Alexandra Kitchin, first published 1979, text from *Letters*, p. 384, → 18.118, p. 2231)
- My First has no beard, 1880? (for Alexandra Kitchin, first published 1968, text from *Letters*, p. 384, → 18.112, p. 2224)
- My First heads all atrocity heartrending, 1880 (for Alice Maud Kitchin/Atty Owen, first published 1946, scan from *Yours very sincerely C. L. Dodgson*, p. 71, → 18.113, p. 2225)
- Dedicated to a tea-tea. Why? Oh, when?, 1880 (for Atty Owen, first published 1968, partially visible scan from *Rare Books and Manuscripts*, p. 7, <https://books.google.de/books?id=q7MzAQAAIAAJ>/text from *Jabberwocky and Other Poems*, → 18.48, p. 2086)
- A Riddle, 1880 (for Gaynor Simpson, first published 1898, text from *Humorous Verse*, p. 337, → 18.116, p. 2229)
- Oh pudgy podgy pup, 1880 (for C. H. O. Daniel, first published 1931, scan from https://findingaids.princeton.edu/catalog/C0171_c00187, → 18.129, p. 2245)
- Something fails, 1881 (for Edith Blakemore, first published 1933, text from *Letters to Child-Friends*, p. 159, → 18.148, p. 2328)
- The Lyceum, 1881 (for Agnes Hull, first published 1899, scan from *Letters to Child-Friends*, p. 146b, → 18.92, p. 2178)
- Rhyme? and Reason?, 1883 (for Emmie Drury, first published 1929, text from *Humorous Verse*, p. 337, → 18.83, p. 2163)

- A Limerick, 1888? (for Vera Beringer, first published 1898, text from *Life and Letters*, p. 407, → 18.169, p. 2372)
- Dear Violet,—I’m glad to hear, 1889 (for Violet Dodgson, first published 1933, text from *Letters to Child-Friends*, p. 204–205, → 18.29, p. 2050)
- Maggie B—, 1891 (for Maggie Bowman, first published 1931, text from *Humorous Verse*, p. 344, → 18.208, p. 2448)
- My First is a berry, 1892 (for Olive, Ruth, and Violet Butler, first published 1933, text from *Letters to Child-Friends*, p. 229, → 18.114, p. 2226)
- Girlie to whom in perennial bloom, 1895? (for Gladys Baly, first published 1932, text from *Diaries*, p. 487, → 18.46, p. 2084)
- Square Poem (for the brother of Lady Ure, first published 1974, text from *The Universe in a Handkerchief*, p. 20, → 18.73, p. 2149; authorship not certain)

Some poems from letters Carroll published himself. These are not listed above and their differences are not reproduced in the poems, but noted where available. These poems are *Girt with a Boyish Garb* (for Gertrude Chataway), *A Charade (Four Riddles. No. III, for Marion Terry)*, *Matilda Jane* (for Catherine Holiday), *A Game of Fives*, and *Puck Lost and Found*. The first of the *Puzzles from Wonderland* can be found in his letters, too, but without changes. The poem *Lines* was published by Carroll, too, but since the manuscript variant is more prominent than the printed one, it is included above. *Disillusionized*, too, has such a variant, though it is not clear where it comes from.

Missing Works

The following texts are not included into this collection, either because I don’t know a source, or because they are out of scope, or because I just hadn’t have the time yet to add them.

Books

The following books are missing partially or completely, most of them because they are “uninteresting” mathematical works or by other authors:

- *A Syllabus of Plane Algebraical Geometry*: Main part missing, “uninteresting” mathematical work
- *Notes on the First Part of Algebra*: Main part mostly missing, “uninteresting” mathematical work
- *The Enunciations of Euclid I, II*: Completely missing, more or less a translation of Euclid
- *The Fifth Book of Euclid Treated Algebraically*: Main part missing, partially a translation of Euclid, partially an “uninteresting” mathematical work

- *The Enunciations of Euclid I–VI*: Completely missing, more or less a translation of Euclid
- *Euclid, Book V*: Main part missing, partially a translation of Euclid, partially an “uninteresting” mathematical work
- *Euclid. Books I, II*: Main part missing, translation of Euclid
- *An Index to “In Memoriam”*: Main part missing, really uninteresting listing, mainly compiled by his sisters

From the following books some minor parts are missing:

- *A Guide to the Mathematical Student*: cycle
- *An Elementary Treatise on Determinants*: some tables with formulæ extracted from main content
- *Euclid and his Modern Rivals*: three appendices (two of them by other authors)
- *Symbolic Logic. Part I*: one chapter with solutions
- *Doubles. A Word-Puzzle*: glossary
- *Twelve Months in a Curatorship*: several tables
- *Three Years in a Curatorship*: one table
- *Curiosissima Curatoria*: several tables

From all books the table of contents, the index, the advertisements, and similar parts are missing.

Also some books have more than one edition, but not all are reproduced here. These books are: *Euclid and his Modern Rivals*, *Euclid. Books I, II*, *The Principels of Parliamentary Representation*, *A New Theory of Parallels*, *Pillow-Problems*, *Symbolic Logic. Part I*, *Doublets. A Word-Puzzle*

Magazines, etc.

All known contributions to magazines and newspapers are included. From the *Doublets* and the *Syzygies* some parts are missing, as well as some reprints with minor variations.

Pamphlets, etc.

From *The Guildford Gazette Extraordinary* several texts are omitted, from *The Profits of Authorship* only one paragraph is known.

The following pamphlets are missing completely:

- Acland’s Tunny, 1860 (scan in the *Scrapbook* and at <https://digital.bodleian.ox.ac.uk/objects/179a125e-2800-4d02-982c-a019bc761392/surfaces/a1496623-b7a3-4497-a9a9-1615ff5c4d11/>)

- Photographs, 1860 (*Pamphlets: A Miscellany*, item 70; partial scan in *Lewis Carroll: Photographer*, p. 46)
- Arithmetic, 1863? (*Mathematical Pamphlets*, item 25)
- Arithmetic I, 1863? (scan at <http://digitallibrary.usc.edu/cdm/compoundobject/collection/p15799coll185/id/565/rec/8>)
- Arithmetic II, 1863? (*Mathematical Pamphlets*, item 24)
- Examples in Arithmetic, 1874 (*Mathematical Pamphlets*, item 22)
- On Catching Cold, 1881 (scan at <https://digitallibrary.usc.edu/Share/gw0qp8kr54iw28ogr1wh4yk6il34xtow>)
- Royal Cowper Theatre, 1891 (*Pamphlets: A Miscellany*, item 16)

Acland's Tunny was written by Carroll, but refined by others. Apart from the introduction it is in Latin.

Photographs is a list of 159 photographs Carroll took, sorted alphabetically in three sections: *Portraits, Size 6 by 5* (87, including 3 groups), *Portraits, Size 7 $\frac{1}{4}$ by 6 $\frac{1}{4}$* (19, including 11 groups), and *Miscellaneous, Size 7 $\frac{1}{4}$ by 6 $\frac{1}{4}$* (53 items, mostly buildings, also sculptures, skeletons, artistic portraits, and other photographs)

The three *Arithmetic* pamphlets are templates for arithmetical problems for examinations.

Examples in Arithmetic is a collection of arithmetical problems for examinations, compiled, but most probably not authored by Carroll.

On Catching Cold reprints three extracts from medical books.

Royal Cowper Theatre is the programme for a private theatrical by the Bowmans printed with much ornament and probably partially written by Carroll.

There are also some unrecorded and unprinted cyclostyled collections of formulæ missing, as well as several examination papers (and many more lost).

Circulars

- Circulars about proof sheets:
 - Circular to Mathematical Friends about “General List of Subjects”, 1862 (*Mathematical Pamphlets*, item 41)
 - Circular about Frontispiece for “Through the Looking-Glass, and What Alice Found There”, 1871 (*Pamphlets: A Miscellany*, item 50)
 - Circular about “A Method of Taking Votes on More Than Two Issues”, 1877 (cyclostyled; *Political Pamphlets*, item 3a)
- Circular about Senior Student’s Biographies, 1880 (cyclostyled; *Pamphlets: A Miscellany*, item 59)
- Circular about the “Dramatic School of Art”, 1882 (*Pamphlets: A Miscellany*, item 3)
- Circular about Shakespeare for Girls, 1882 (*Pamphlets: A Miscellany*, item 8)

- Circulars on behalf of friends and relatives:
 - Circular about the Dymes Family, 1883 (*Pamphlets: A Miscellany*, item 60)
 - Circular about a house, 1885 (*Pamphlets: A Miscellany*, item 61)
 - Circular about Governesses, 1886 (*Pamphlets: A Miscellany*, item 62)
 - Circular about W. M. Wilcox, 1888 (cyclostyled; *Pamphlets: A Miscellany*, item 63)
 - Circular about C. S. Collingwood, 1888 (*Pamphlets: A Miscellany*, item 64)
 - Circular about Appointments, 1889 (*Pamphlets: A Miscellany*, item 65)
- Various Common Room Circulars, Agenda Papers, etc., 1883–1892 (*Oxford Pamphlets*, items 20–64, with exceptions, 37 items), especially including:
 - Supplement and Postscript to “Twelve Months in a Curatorship”, 1884 (*Oxford Pamphlets*, items 23, 24)
 - Remarks on Mr. Sampson’s Proposal, 1886 (*Oxford Pamphlets*, item 40)
 - Observations, 1886 (*Oxford Pamphlets*, item 43)
 - Circular to Members of the Governing Body, 1891 (*Oxford Pamphlets*, item 61)
 - Circular about Resignation, 1892 (*Oxford Pamphlets*, item 63)
- Circular about Counters, 1886 (*Logic Pamphlets*, item 1)
- Stranger Circular, 1890 (*Pamphlets: A Miscellany*, item 66)
- Circulars offering copies of books:
 - Circular to Hospitals, including “List of Institutions”, 1890 (*Pamphlets: A Miscellany*, items 53, 54)
 - Circular offering copies of *Through the Looking-Glass*, 1894 (*Pamphlets: A Miscellany*, item 57)
- Circular about Stationers, 1890 (*Pamphlets: A Miscellany*, item 67)
- Second-Hand Books, 1893 (*Pamphlets: A Miscellany*, item 68)

The circulars about proof sheets were sent together with these proofs, and ask for comments.

The circular about Senior Student’s biographies asked for details for a planned publication *Senior Students*.

The circular about the “Dramatic School of Art” was similar to the public *Education for the Stage* (→ 14.3, p. 1880).

The circular about Shakespeare for Girls was similar to the public requests on that topic (→ 16.28, p. 1976 and following).

Carroll sent several circulars on behalf of friends and relatives, to help them in various matters.

Most of the Common Room Circulars invite to meetings and give their agenda. Many of the agenda items are listed in *Curiosissima Curatoria* (→ 12.28, p. 1842).

The circular about counters asks for suggestions for the colours of the counters in the *Game of Logic*.

Several circulars offered copies of Carroll's books to hospitals, etc. See also the announcement in the *Times* (→ 19.5, p. 2461), and the offer at the end of *A Fascinating Mental Recreation* (→ 19.24, p. 2508). Some earlier such circulars are lost.

The *Stranger Circular* is a letter (in two variants) intended to be sent to those who addressed C. L. Dodgson about books written by Lewis Carroll, protesting against this.

The circular about stationers asked about stationers who would sell the *Wonderland Stamp-Case*.

Second-Hand Books was sent to booksellers, asking them to send catalogues only once a year, and a list of books Carroll wanted to purchase.

Unpublished Galley Proofs

From *Symbolic Logic. Part II* some parts are omitted. The following galley proofs are missing completely:

- Limits of Circle-Squaring, 1882? (first published 1994, scan available from *Mathematical Pamphlets*, item 8)
- Rule for Finding Easter-Day, 1892?/1897? (first published 1994, text available from *Mathematical Pamphlets*, item 35)

Both these proof sheets have many corrections by hand, which is why I don't include them here.

For *Limits of Circle-Squaring* see the notes to the manuscript introduction (→ 19.22, p. 2505).

The *Rule for Finding Easter-Day* is based on Gauss's, but modified to be calculated mentally, with hints on how to do so. It was intended for *Original Games and Puzzles*.

Manuscripts

From the *Rectory Magazine* and *Mischmasch* the contributions by other authors are omitted. From the manuscripts missing completely, the following are the most notable:

- Ways and Means
- Problem: To trisect a right angle, 1844 (first published 1939, partial scan available from <https://www.maths.ox.ac.uk/system/files/attachments/Lewis%20Carroll.pdf>)
- Papers read in Hall

- Formosa facies muta commendatio est, 1851 (first published 1995, *Pamphlets: A Miscellany*, item 84)
- Nil prodest quod non laedere potest idem, 1852 (first published 1995, *Pamphlets: A Miscellany*, item 85)
- Contempta fama contemni virtutes, 1853? (first published 1995, *Pamphlets: A Miscellany*, item 86)
- (Untitled: On Aristotle's Ethics), 1854 (first published 1995, *Pamphlets: A Miscellany*, item 87)
- On the Population of the World, 1853
- Oxford Limericks, 1856? (first published 2022, text available from *Four limericks and a carving* by Mark Davies in the *Times Literary Supplement*, July 1, 2022, <https://morrisoxford.co.uk/wp-content/uploads/10.-St-Frideswides-Door-PDF.pdf>)
- Algebraic Geometry, 1858
- Harmonic Pencils, 1859
- Anharmonic Ratio, 1859
- On the introduction of a 4th co-ordinate into Algebraic Geometry, 1859 (first published 2020, *Pamphlets: A Miscellany*, item 36)
- (Untitled: Notes on Salmon's *Conic Sections*), 1859
- Theorem of Tangents, 1860 (first published 1994, scan available from *Mathematical Pamphlets*)
- Notes on Salmon, 1860
- On the Continuity of Daylight, 1860 (first published 2020, *Pamphlets: A Miscellany*, item 37)
- Rectification of Curves. Parabola, 1860
- Rectification of Curves. Ellipse, 1861
- Asymptotes, 1861
- Equivalent Algebraical Expressions, 1861
- Differential Calculus (from Price), 1861
- Solid Geometry, 1861
- General Equation of Second Degree: Asymptote, 1861
- (Untitled: Solutions to Examination Papers), 1862
- The Rev. C. L. Dodgson's Will, 1871 (text available from the *Lewis Carroll Handbook*, p. 303)
- Directions regarding my Funeral, &c., 1873 (first published 1954, text available from biography by Derek Hudson, pp. 4–5)

- Various Memoria Technica Verses, 1875–1897 (first published 2001/2005/2018, text available from *Diaries, Vol. 6*, pp. 433–436, *Diaries, Vol. 9*, pp. 177–178, *Rare Verses*, pp. 82–95)
- Problem. Given 2 fractions: to find one between them, whose denominator shall be the least possible, 1882
- Dress, 1885 (first published 1974, *Pamphlets: A Miscellany*, item 10)
- Direction-Theory, as applied to Pairs of Lines, 1891
- Circle-Squaring, 1893

Ways and Means is a game played with specially created cards based on auctions and requiring buying and selling using counters, and is principally a word game involving strategy. A photograph of the cards is available at <https://lewiscarrollssociety.org.uk/cld/wp-content/uploads/2021/07/P1170053-1536x756.jpeg> on

<https://lewiscarrollssociety.org.uk/v-a/>.

The first three *Papers read in Hall* are short essays (some considerably edited) on a Latin theme that have been read publicly. A fourth text, *An prodesse plus quam nocere videntur Satirarum scripturae*, from 1855 is probably lost. The last one is in Latin, and has been read publicly, too.

Most of the following texts are minor mathematical manuscripts.

On the introduction of a 4th co-ordinate into Algebraic Geometry and *On the Continuity of Daylight* are the manuscripts for speeches before the Ashmolean Society given on November 21, 1859, and November 26, 1860. The first one discusses briefly equations in 4-dimensional space (with some awkward method, but the correct result that two 3-dimensional spaces intersect in a plane, unless they are parallel; Carroll also suggests using the 4th dimension to analyse polarized light), the second one on the recurrent topic of “Where does the Day begin?” (→ 16.8, p. 1936 and similar texts).

In his last will Carroll divides all his possessions among his brothers and sisters into equal shares. If any of them had died before him, his share would have been divided among his children. Executors were his brothers Wilfred and Edwin, witnesses T. Vere Bayne and A. Vernon Harcourt.

In the directions for his funeral Carroll asks for a simple and inexpensive funeral, without anything just for show. This also applies to the grave, he prefers a small plain head-stone.

Dress is a draft for an essay, probably intended for publication in *The Theatre*, on the decency or sinfulness of dress, especially concerning its amount.

Carroll distinguishes between the intention of the dramatist and the actor and the effect on the spectator. I did not include it, because in some places it still is a very rough draft.

Direction-Theory, as applied to Pairs of Lines is the manuscript for an almost finished book, which could have become part 3 in the *Curiosa Mathematica* series.

Poems from Letters, Inscriptions, etc.

- A Day in the Country, 1866 (for Henry Wall, first published 2010, text available from *Jabberwocky and Other Poems*)⁴
- Just half a world to travel o'er, 1875 (for Jessie Howard Clark, first published 2017, scan available from <https://www.finebooksmagazine.com/news/original-lewis-carroll-poem-signed-inside-alice-be-auctioned>)
- Mabel! Are you longing sadly, 1876 (for Mabel Blackett, first published 2016, scan available from <https://digitallibrary.usc.edu/CS.aspx?VP3=DamView&VBID=2A3BXZSP93YRD&SMLS=1&RW=1280&RH=854#/DamView&VBID=2A3BXZSP93YRD&PN=3&WS=SearchResults>)
- Joyous fancy, light as air, 1878 (for Jessie Josephine Scrivener, first published 2005, scan available from <http://www.sothebys.com/en/auctions/ecatalogue/2005/english-literature-history-105407/lot.365.html>)
- Breathes there the man with soul so dead, 1880 (for Arthur Lewis, first published 2003, scan available from <https://www.bonhams.com/auctions/20922/lot/126/>)
- Take not amiss this missile dread, 1884 (for Elizabeth “Bessie” Hussey, first published 2012, scan available from <https://www.theatlantic.com/entertainment/archive/2013/04/tiny-verses-on-envelopes-the-handwritten-poems-of-famous-authors/274784/>)
- Ode addressed to a Young Lady, 1884 (for Albina “Lily” Falle, first published 2004, text available from *Jabberwocky and Other Poems*)
- Joy was what we hoped to meet, 1884 (for Joa Pollack, first published 2016, scan available from <https://www.peterharrington.co.uk/blog/wp-content/uploads/2016/09/119-LewisCarroll.pdf>)
- She gave it both some bread & milk (first published 2010, scan available from <https://www.lewiscarroll.org/2010/11/16/first-editions-and-part-of-a-poem-about-bats-under-the-hammer/>; part only)

All these are available, but have only recently been published for the first time, so are probably still protected by copyright.

Lost Works

The works in this list might be lost, but as you never can know whether a long lost text is suddenly found, they are included here. Not all such works are included here, there are more mentioned in the diaries.

⁴As far as I know the complete solution to this Double Acrostic has never been published. Here is my suggestion which I'm sure that it is correct with one exception: portmanteau, photography; pump, ostrich, Romeo, talent, motto, awning, Niebuhr (?), tea, eggcup, Aldrich, ugly

Richmond School Magazine

- The Unknown One (1845)

The Oxonian Advertiser

- Two poems (summer 1854)

Copies of that newspaper still exist, but the poems are not identifiable.

Pamphlets, etc.

- Symbols, &c., to be Used in Euclid, 1866?/1872?
- Number of Propositions in Euclid, 1872
- Anonymous pamphlet printed at Cambridge, 1872
- Song for Puss in Boots, 1876
- The Profits of Authorship, 1884 (one paragraph survived)
- Second Paper on Logic, 1886
- Third Paper on Logic, 1886
- Seventh Paper on Logic, 1887?

Manuscripts

- The Comet, 1849?

There also were three more similar family magazines: *The Rosebud*, *The Star*, and *The Will-O'-The-Wisp*.

Further Reading

This section lists books and other resources for further reading. Partially these are sources for some of the texts, either the ones I used or alternative sources, partially they cover topics outside the scope of this collection, and partially they are listed just because they are easily available.

It is always worth to look for new additions to the Internet Archive:
<https://archive.org/search?query=creator%3A%28lewis+carroll%29+OR+creator%3A%28charles+dodgson%29+OR+title%3A%28lewis+carroll%29&sort=-adddate>

Collections

- *The Lewis Carroll Picture Book* edited by STUART DODGSON COLLINGWOOD (1899):
<https://archive.org/details/lewiscarrollpict00carruoft>
- *Further Nonsense Verse and Prose* edited by LANGFORD REED (1926):
<https://archive.org/details/further-nonsense-verse-and-prose>

- *Humorous Verse of Lewis Carroll* (1960, this is a reprint of *Collected Verse* from 1932):
<https://archive.org/details/humorousverseofl00carr>
- *The Complete Works of Lewis Carroll* (1939, this is what the *Lewis Carroll Handbook* calls the *Nonesuch* collection):
<https://archive.org/details/completeworksofl1920carr>
- *The Works of Lewis Carroll* edited by ROGER LANCELYN GREEN (1965):
https://archive.org/details/worksoflewiscarr0000unse_n2y9
- *The Complete Stories of Lewis Carroll* (1993):
<https://archive.org/details/completestorieso0000carr>
- *The Pamphlets of Lewis Carroll*
 - *The Oxford Pamphlets, Leaflets, and Circulars of Charles Lutwidge Dodgson* edited by EDWARD WAKELING (1993):
<https://archive.org/details/oxfordpamphlets10000dodg>
 - *The Mathematical Pamphlets of Charles Lutwidge Dodgson and Related Pieces* edited by FRANCINE F. ABELES (1994)
 - *The Political Pamphlets and Letters of Charles Lutwidge Dodgson and Related Pieces* edited by FRANCINE F. ABELES (2001)
 - *The Logic Pamphlets of Charles Lutwidge Dodgson and Related Pieces* edited by FRANCINE F. ABELES (2010)
 - *Games, Puzzles & Related Pieces* edited by CHRISTOPHER MORGAN (2015)
 - *A Miscellany of Works on Alice, Theatre, Religion, Science, and More* edited by CHARLIE LOVETT (2020)
- *Jabberwocky and Other Nonsense Collected Poems* edited by GILLIAN BEER (2012): <https://books.google.de/books?id=2h010chZZRoC> (partial view)
- *Rare, Uncollected, Unpublished, & Nonexistent Verse of Lewis Carroll* edited by AUGUST A. IMHOLTZ, JR. and EDWARD WAKELING (2018, detailed list of contents at <http://www.isfdb.org/cgi-bin/pl.cgi?668434>)

I can especially recommend the *Pamphlets* series, which is a great resource.

Biographies

- *The Life and Letters of Lewis Carroll* by STUART DODGSON COLLINGWOOD (1898):
<https://archive.org/details/lifelettersofcar00colluoft>
- *The Story of Lewis Carroll* by ISA BOWMAN (1899):
<https://archive.org/details/storyoflewiscarr00bowmrich>
- *Lewis Carroll in Wonderland and at Home* by BELLE MOSES (1910):
<https://archive.org/details/lewiscarrollinwo00mose>

- *Lewis Carroll* by WALTER DE LA MARE (1932):
<https://archive.org/details/in.ernet.dli.2015.260764>
- *The Life of Lewis Carroll* by LANGFORD REED (1932, reprint 1974):
<https://archive.org/details/lifeoflewisarro0000reed>
- *Lewis Carroll* by FLORENCE BECKER LENNON (1947):
<https://archive.org/details/in.ernet.dli.2015.100291>
- *Lewis Carroll* by DEREK HUDSON (1954):
<https://archive.org/details/lewiscarroll0000unse>
- *Lewis Carroll and his World* by JOHN PUDNEY (1976):
<https://archive.org/details/lewiscarrollhisw00pudn>
- *Lewis Carroll, a Biography* by ANNE CLARK AMOR (1979):
<https://archive.org/details/lewiscarrollbiog0000anne>
- *Lewis Carroll: A Biography* by MORTON N. COHEN (1995):
https://archive.org/details/lewiscarrollbiog0000cohe_f9y0
- *In the Shadow of the Dreamchild* by KAROLINE LEACH (1999, revised 2009, reprint 2015): <https://archive.org/details/in-the-shadow-of-the-dreamchild-karoline-leach>
- *Lewis Carroll in Numberland* by ROBIN J. WILSON (2009):
https://archive.org/details/lewiscarrollinnu0000wils_f1u9
- *The Mystery of Lewis Carroll* by JENNY WOOLF (2010):
<https://archive.org/details/mysteryoflewisca0000wool>

Many biographies reprint some works of Carroll, even if I didn't mention them above as a source. Since there are so many biographies, I cannot compare them all and list only the best, so do not interpret the inclusion or exclusion of a biography as a strong recommendation, with one exception: I *do* recommend *The Mystery of Lewis Carroll*.

Bibliographies

- *Lewis Carroll Handbook* by SIDNEY HERBERT WILLIAMS et al. (1979):
https://archive.org/details/lewiscarrollhand00will_0
- *Lewis Carroll: an Annotated International Bibliography* by EDWARD GUILIANO (1980):
<https://archive.org/details/lewiscarrollanno0000guil>
- *Lewis Carroll: a Reference Guide* by RACHEL FORDYCE (1988):
<https://archive.org/details/lewiscarroll00rach>
- *Lewis Carroll and the Press* by CHARLES LOVETT (1999)

Apparently a new complete bibliography is currently being prepared, and drafts of the first part are available at https://community.adobe.com/havfw69955/attachments/havfw69955/indesign/571214/2/Section%20A%20Copyedited%2012_27.docx and

<https://community.adobe.com/havfw69955/attachments/havfw69955/indesign/576161/1/Section%20A.rtf>. While the file format might not be what you prefer, the high quality contents will be a compensation for that.

Letters and Diaries

- *A Selection from the Letters of Lewis Carroll to his Child-Friends* edited by EVELYN M. HATCH (1933):
<https://archive.org/details/in.ernet.dli.2015.470274>
- *The Diaries of Lewis Carroll* edited by ROGER LANCELYN GREEN (2 volumes; 1971):
<https://archive.org/details/diariesoflewisca0000lewi>,
<https://archive.org/details/diariesoflewisca0002lewi>
- *The Letters of Lewis Carroll* edited by MORTON N. COHEN (2 volumes, and a one-volume-selection in *The Selected Letters of Lewis Carroll*; 1979): <https://archive.org/details/dli.ernet.65641>,
<https://archive.org/details/selectedletterso00carr>
- *Lewis Carroll and the House of Macmillan* edited by MORTON N. COHEN and ANITA GANDOLFO (1987):
https://archive.org/details/isbn_052125602
- *Looking-Glass Letters* edited by THOMAS HINDE (1991):
<https://archive.org/details/lookingglasslett0000carr>
- *Lewis Carroll & His Illustrators* edited by MORTON N. COHEN and EDWARD WAKELING (2003):
<https://archive.org/details/lewiscarrollhisi00unse>
- *Lewis Carroll's Diaries* edited by EDWARD WAKELING (10 volumes; 1993–2007)

When you are reading the diaries edited by Edward Wakeling, note that the errata are in volumes 9 and 10, so it is a good idea to have them ready from the beginning. See also

<https://lewiscarrollsociety.org.uk/volume-by-volume/> for a detailed overview.

Puzzles and Games

- *The Snark Puzzle Book* by MARTIN GARDNER (1973):
<https://archive.org/details/snarkpuzzlebook00gard>
- *The Magic of Lewis Carroll* by JOHN FISHER (1973):
https://archive.org/details/lccn_67121604x
- *Lewis Carroll's Games and Puzzles* edited by EDWARD WAKELING (1992): <https://archive.org/details/lewiscarrollsgam0000carr>
- *Rediscovered Lewis Carroll Puzzles* edited by EDWARD WAKELING (1995): <https://archive.org/details/rediscoveredlewi00carr>

- *Alice in Wonderland Puzzle and Game Book* edited by EDWARD WAKELING (1996):
https://archive.org/details/isbn_9781572810068
- *The Universe in a Handkerchief* by MARTIN GARDNER (1996):
<https://archive.org/details/universeinhandke0000mart>

The Universe in a Handkerchief deserves a special mention for the many texts reprinted from the original source.

Photography

- *Lewis Carroll, Photographer* by HELMUT GERNESHEIM (1969):
<https://archive.org/details/lewiscarrollphot00gern>
- *Reflections in a Looking Glass* by MORTON N. COHEN (1998):
<https://archive.org/details/reflectionsinloo0000cohe>
- *Lewis Carroll* by COLIN FORD (1998):
<https://archive.org/details/lewiscarroll175ph00001ewi>
- *Lewis Carroll: Photographer* by ROGER TAYLOR and EDWARD WAKELING (2002):
<https://archive.org/details/lewiscarrollphot00unse>
- *The Photographs of Lewis Carroll: A Catalogue Raisonné* by EDWARD WAKELING (2015)

Wakeling's list of Carroll's photographs is also available at
<https://web.archive.org/web/20221206032347/https://www.thereallewiscarroll.com/Pages/Photographs.html>.

Adaptions

- *Alice and Other Fairy Plays for Children* by KATE FREILIGRATH-KROEKER (1881):
<https://archive.org/details/aliceotherfairyp00freiiala>
- *The Game of Alice in Wonderland*, published by SELCHOW & RIGHTER (trick-taking card game, 1882):
https://web.archive.org/web/20180831022450/http://thealicegame.com/?page_id=26
- *Alice's Wonderland Birthday Book*, compiled by E. STANLEY LEATHES (1884): <https://digital.bodleian.ox.ac.uk/objects/f2748080-9f09-4fe3-aea4-683dd6f7a2b3/>
- *Alice in Wonderland. A Dream Play for Children* by H. SAVILE CLARKE (1886): <https://lewiscarrollresources.net/savileclarke/documents/Script86Final.pdf>, together with other material from <https://lewiscarrollresources.net/savileclarke/index.html>
- *Alice in Wonderland: a Play* by EMILY PRIME DELAFIELD (1898):
<https://archive.org/details/aliceinwonderlan00dela>

- *Alice in Wonderland: a Play for Children in Three Acts* by BURTON HARRISON (1898):
<https://babel.hathitrust.org/cgi/pt?id=hvd.hxb2y4&seq=7>
- *Alice in Wonderland* cards, published by THOMAS DE LA RUE (card game with 48 cards, similar to Quartets/Happy Families, based on Tenniels images coloured by E. Gertrude Thomson, about 1900):
<https://www.wopc.co.uk/delarue/alice-in-wonderland>,
<https://collections.tepapa.govt.nz/object/1565514>
- *The Story of Sylvie and Bruno*, compiled by EDWIN H. DODGSON (1904, reprint 1922): <https://archive.org/details/storyofsylviebrucarr>
- *Alice in Wonderland: a Musical Play in Three Acts* by HARRIETTE A. GAUL and HARVEY B. GAUL (1912): <https://babel.hathitrust.org/cgi/pt?id=pst.000045166716&seq=1>
- *Alice in Wonderland; a Dramatization of Lewis Carroll's "Alice's Adventures in Wonderland" and "Through the looking glass"* by ALICE GERSTENBERG (1915):
<https://babel.hathitrust.org/cgi/pt?id=loc.ark:/13960/t98631c09&seq=11>
- *Songs from Alice in Wonderland and Through the Looking-Glass* by LUCY ETHELDRED BROADWOOD (1921):
<https://archive.org/details/songsfromalicein00broa>
- *Lewis Carroll's Bedside Book* (1979):
<https://archive.org/details/lewiscarrollsbed00carr>
- *The Annotated Alice in Nurseryland* by BYRON W. SEWELL (2016):
<https://archive.org/details/annotatedalicein0000sewe>

Depending on which works about Lewis Carroll you already read, you might as well read *Alice in Nurseryland*, the annotations contain at least as much truth as some other books. And while you are at it, Sewell wrote some more books, and Evertype published many more. And if your are interested in more *Alice* games, see

<https://archive.org/details/knightletterno109309lewi/page/n33>.

German Translations

- *Alice's Abenteuer im Wunderland*, translated by ANTONIE ZIMMERMANN (1869, reprint 1901):
<https://archive.org/details/alicesabenteueri00carr>,
https://de.wikisource.org/wiki/Alice_im_Wunderland
- *Liese im Wunderland*, translated by HELEN SCHEU-RIESZ, illustrated by MARIA HOFRICHTER (1912):
<https://archive.org/details/lieseimwunderland>
- *Alice im Wunderland*, translated by R. G. L. BARRETT, illustrated by F. W. ROTH (1922):
https://archive.org/details/wunderland_barrett

- *Alice im Spiegelland*, translated by HELEN SCHEU-RIESZ, illustrated by URIEL BIRNBAUM (1923):
<https://archive.org/details/aliceimspiegella00carrrich>
- *Alice im Wunderland*, translated by CHRISTIAN ENZENSBERGER (1963, reprint 2006):
<https://archive.org/details/aliceimwunderlan0000carr>
- *Alice hinter den Spiegeln*, translated by CHRISTIAN ENZENSBERGER (1963)
- *Die kleine Alice*, translated by WALTER E. RICHARTZ (1977):
<https://archive.org/details/diekleinealice001ewi>
- *Geschichten mit Knoten*, translated by WALTER E. RICHARTZ (1978)
- *Phantasmagorie*, translated by DIETER H. STÜNDEL (1980):
<https://archive.org/details/phantasmagorie0000carr>
- *Sylvie & Bruno: die Geschichte einer Liebe*, translated by DIETER H. STÜNDEL (1994)
- *Misch & Masch: Erzählungen und Gedichte*, translated by DIETER H. STÜNDEL (1996)

If you prefer Latin, then you can also find two translations by CLIVE HARCOURT CARRUTHERS: *Alicia in Terra Mirabili* (1964, https://archive.org/details/bwb_KR-547-031) and *Aliciae per Speculum Transitus* (1966, <https://archive.org/details/aliciae-per-speculum-transitus-through-the-looking-glass-and-what-alice-found-th>).

Other Topics

- *Before “Alice”—The Boyhood of Lewis Carroll* by STUART DODGSON COLLINGWOOD (1898):
<https://archive.org/details/s-1898-b-lewis-carroll>
- *The Mathematical Manuscripts of Lewis Carroll* by WARREN WEAVER (1954): <https://www.jstor.org/stable/26403045>
- *The Annotated Alice* by MARTIN GARDNER (1960):
<https://archive.org/details/annotatedaliceal00carr>
- *More Annotated Alice* by MARTIN GARDNER (1990):
<https://archive.org/details/moreannotatedali00carr>
- *The Annotated Snark* by MARTIN GARDNER (1962):
<https://archive.org/details/annotatedsnarkfu00carr>
- *Christ Church and Reform, 1850–1867* by E. G. W. BILL and J. F. A. MASON (1970):
<https://archive.org/details/christchurchrefo0000bill>
- *Under the Quizzing Glass* edited by DENIS CRUTCH (1972):
<https://archive.org/details/underquizzinggla0000unse>

- *The Illustrators of Alice* edited by GRAHAM OVENDEN (1972):
https://archive.org/details/isbn_0902620258
- *Lewis Carroll: Fragments of a Looking-Glass* by JEAN GATTÉGNO (1976, French original 1974):
<https://archive.org/details/lewiscarrollfragments00gatt>
- *Lewis Carroll Observed* by EDWARD GUILIANO (1976):
<https://archive.org/details/lewiscarrollobse00guil>
- *The Raven and the Writing Desk* by FRANCIS HUXLEY (1976):
https://archive.org/details/ravenwritingdesk0000huxl_q0v8
- *Lewis Carroll's Symbolic Logic* by W. W. BARTLEY (1977):
<https://archive.org/details/lewiscarrollssym00carr>
- *The Russian Journal—II* edited by MORTON N. COHEN (1979):
<https://archive.org/details/russianjournalii00lidd>
- *Lewis Carroll, a Celebration* edited by EDWARD GUILIANO (1982):
<https://archive.org/details/lewiscarrollcele0000unse>
- *Lewis Carroll and Alice, 1832–1982* by MORTON N. COHEN (1982):
<https://archive.org/details/lewiscarrollalic0000cohe>
- *Soaring with the Dodo* edited by EDWARD GUILIANO and JAMES R. KINCAID (1982): https://archive.org/details/isbn_0930326075
- *A KWIC concordance to Lewis Carroll ...* by MICHAEL JAMES PRESTON (1986):
<https://archive.org/details/kwicconcordancet00pres>
- *Lewis Carroll in Wonderland: the Life and Times of Alice and her Creator* by STEPHANIE LOVETT STOFFEL (1997):
<https://archive.org/details/lewiscarrollinwo0000stof>
- *Yours very sincerely C. L. Dodgson* (1998):
<https://archive.org/details/yoursverysincere0000grol>
- *Lewis Carroll and the Victorian Theatre* by RICHARD FOULKES (2005):
<https://archive.org/details/lewiscarrollvict0000foul>
- *Lewis Carroll among his Books* by CHARLIE LOVETT (2005):
<https://archive.org/details/lewiscarrollamon0000love>
- *The Mathematical World of Charles L. Dodgson (Lewis Carroll)* by ROBIN WILSON and AMIROUCHE MOKTEFI (2019)

Some of these include reprints of single texts, some other interesting content.

Online Catalogues

- *The Lewis Carroll Collection of Christ Church, Oxford:*
<https://www.chch.ox.ac.uk/library-and-archives/lewis-carroll-collection-0>
- *Digital Bodleian:*
<https://digital.bodleian.ox.ac.uk/search/?q=dodgson>
- *Harcourt Amory Collection of Lewis Carroll:* <https://hollisarchives.lib.harvard.edu/repositories/24/resources/1416>
- *Charles Lutwidge Dodgson Collection at the Harry Ransom Center:*
<https://norman.hrc.utexas.edu/fasearch/findingAid.cfm?eadid=00531>,
<https://hrc.contentdm.oclc.org/digital/collection/p15878coll18/search>
- *Cassady Lewis Carroll Collection:* <https://digitallibrary.usc.edu/Archive/Cassady-Lewis-Carroll-Collection-2A3BF1ZQ68?Flat=1>,
https://www.calameo.com/usc_lewis Carroll/read/0059563172c668f8dfa56
- *The Alfred C. Berol Collection of Lewis Carroll:* http://dlib.nyu.edu/findingaids/html/fales/berol/dscaspace_ref550.html
- *Berg Collection:* <https://archives.nypl.org/brg/19160#detailed>,
<https://digitalcollections.nypl.org/collections/charles-lutwidge-dodgson-collection-of-papers#/?tab=navigation>
- *Parrish Collection:*
<http://libweb2.princeton.edu/rbsc2/parrish/09-Dodgson.pdf>,
<https://findingaids.princeton.edu/catalog/C0171>
- *Rosenbach Collection:*
<https://rosenbach.org/wp-content/uploads/2020/05/Dodgson-Lewis-Carroll-collection-guide-rev-20200228.pdf>
- *The Morgan Library & Museum:*
<https://www.themorgan.org/exhibitions/online/alice>, <http://corsair.themorgan.org/vwebv/search?searchType=4&searchCode=NAME&searchArg=Dodgson,%20Charles%20Lutwidge,%201832-1898>,
<http://corsair.themorgan.org/vwebv/search?searchType=4&searchCode=NAME&searchArg=Carroll,%20Lewis,%201832-1898>
- *Hathi Trust:* <https://catalog.hathitrust.org/Search/Home?type%5B%5D=author&lookfor%5B%5D=%22Carroll%2C%20Lewis%2C%201832-1898.%22>

Some online catalogues listed here also provide access to digitized materials, but even in other cases the lists of available works are interesting enough, even if you probably wo'n't see them in person yourself.

Other Online Resources

- *Lewis Carroll Scrapbook*:
[http://memory.loc.gov/cgi-bin/query/r?intlidl/carrollbib:@field\(NUMBER+@band\(lhtml+lc001\)\)](http://memory.loc.gov/cgi-bin/query/r?intlidl/carrollbib:@field(NUMBER+@band(lhtml+lc001)))
- *The Lewis Carroll Society*: <https://lewiscarrollsociety.org.uk/>
- *The Lewis Carroll Society of North America*:
<https://www.lewiscarroll.org/>
- *Lewis Carroll Resources*: <https://lewiscarrollresources.net/>
- *Alice-in-Wonderland.net*: <https://www.alice-in-wonderland.net/>
- *Lewis Carroll in the Victorian Web*:
<https://victorianweb.org/authors/carroll/index.html>
- *Contrariwise*: <https://contrariwise.info/>
- *Photographs by Lewis Carroll on Wikimedia Commons*:
https://commons.wikimedia.org/wiki/Category:Photographs_by_Lewis_Carroll
- *Mr. C and Mr. T*: <https://schnark.github.io/mr-c-mr-t/>

Part 2

Novels and Stories

2.1 Alice's Adventures in Wonderland

Source: Alice's Adventures in Wonderland, editions from 1866 (with minor differences as noted) and 1898

Other versions:

→ 2.3, p. 262

→ 2.4, p. 302

Chapter I. Down the Rabbit-Hole



Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her

sister was reading, but it had no pictures or conversations in it, “and what is the use of a book,” thought Alice “without pictures or conversations?”

So she was considering, in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.

There was nothing so *very* remarkable in that; nor did Alice think it so *very* much out of the way to hear the Rabbit say to itself “Oh dear! Oh dear! I shall be too late!” (when she thought it over afterwards, it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but when the Rabbit actually *took a watch out of its waistcoat-pocket*, and looked at it, and then hurried on, Alice started to her feet, for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket, or a watch to take out of it, and, burning with curiosity, she ran across the field after it, and was just in time to see it pop down a large rabbit-hole under the hedge.

In another moment down went Alice after it, never once considering how in the world she was to get out again.

The rabbit-hole went straight on like a tunnel for some way, and then dipped suddenly down, so suddenly that Alice had not a moment to think about stopping herself before she found herself falling down what seemed to be a very deep well.

Either the well was very deep, or she fell very slowly, for she had plenty of time as she went down to look about her, and to wonder what was going to happen next. First, she tried to look down and make out what she was coming to, but it was too dark to see anything: then she looked at the sides of the well, and noticed that they were filled with cupboards and book-shelves: here and there she saw maps and pictures hung upon pegs. She took down a jar from one of the shelves as she passed: it was labelled “ORANGE MARMALADE,” but to her great disappointment it was empty: she did not like to drop the jar for fear of killing somebody underneath, so managed to put it into one of the cupboards as she fell past it.

“Well!” thought Alice to herself. “After such a fall as this, I shall think nothing of tumbling down-stairs! How brave they’ll all think me at home! Why, I wouldn’t say anything about it, even if I fell off the top of the house!” (Which was very likely true.)

Down, down, down. Would the fall *never* come to an end! “I wonder how many miles I’ve fallen by this time?” she said aloud. “I must be getting somewhere near the centre of the earth. Let me see: that would be four thousand miles down, I think—” (for, you see, Alice had learnt several things of this sort in her lessons in the school-room, and though this was not a *very* good opportunity for showing off her knowledge, as there was no one to listen to her, still it was good practice to say it over) “—yes, that’s about the right distance—but then I wonder what Latitude or Longitude I’ve got to?” (Alice had not the slightest idea what Latitude was, or Longitude either, but she thought they were nice grand words to say.)

Presently she began again. “I wonder if I shall fall right *through* the earth! How funny it’ll seem to come out among the people that walk with their heads downward! The antipathies, I think—” (she was rather glad there *was* no one listening, this time, as it didn’t sound at all the right word) “—but I shall have

to ask them what the name of the country is, you know. Please, Ma'am, is this New Zealand? Or Australia?" (and she tried to curtsy as she spoke—fancy, *curtseying* as you're falling through the air! Do you think you could manage it?) "And what an ignorant little girl she'll think me for asking! No, it'll never do to ask: perhaps I shall see it written up somewhere."

Down, down, down. There was nothing else to do, so Alice soon began talking again. "Dinah'll miss me very much to-night, I should think!" (Dinah was the cat.) "I hope they'll remember her saucer of milk at tea-time. Dinah, my dear! I wish you were down here with me! There are no mice in the air, I'm afraid, but you might catch a bat, and that's very like a mouse, you know. But do cats eat bats, I wonder?" And here Alice began to get rather sleepy, and went on saying to herself, in a dreamy sort of way, "Do cats eat bats? Do cats eat bats?" and sometimes "Do bats eat cats?", for, you see, as she couldn't answer either question, it didn't much matter which way she put it. She felt that she was dozing off, and had just begun to dream that she was walking hand in hand with Dinah, and was saying to her, very earnestly, "Now, Dinah, tell me the truth: did you ever eat a bat?", when suddenly, thump! thump! down she came upon a heap of sticks and dry leaves, and the fall was over.

Alice was not a bit hurt, and she jumped up on to her feet in a moment: she looked up, but it was all dark overhead: before her was another long passage, and the White Rabbit was still in sight, hurrying down it. There was not a moment to be lost: away went Alice like the wind, and was just in time to hear it say, as it turned a corner, "Oh my ears and whiskers, how late it's getting!" She was close behind it when she turned the corner, but the Rabbit was no longer to be seen: she found herself in a long, low hall, which was lit up by a row of lamps hanging from the roof.

There were doors all round the hall, but they were all locked; and when Alice had been all the way down one side and up the other, trying every door, she walked sadly down the middle, wondering how she was ever to get out again.



Suddenly she came upon a little three-legged table, all made of solid glass: there was nothing on it but a tiny golden key, and Alice's first idea was that this might belong to one of the doors of the hall; but, alas! either the locks were too large, or the key was too small, but at any rate it would not open any of them. However, on the second time round, she came upon a low curtain she had not noticed before, and behind it was a little door about fifteen inches high: she tried the little golden key in the lock, and to her great delight it fitted!

Alice opened the door and found that it led into a small passage, not much larger than a rat-hole: she knelt down and looked along the passage into the loveliest garden you ever saw. How she longed to get out of that dark hall, and wander about among those beds of bright flowers and those cool fountains, but she could not even get her head through the doorway; "and even if my head *would* go through," thought poor Alice, "it would be of very little use without my shoulders. Oh, how I wish I could shut up like a telescope! I think I could, if I only knew how to begin." For, you see, so many out-of-the-way things had happened lately, that Alice had begun to think that very few things indeed were really impossible.

There seemed to be no use in waiting by the little door, so she went back to

the table, half hoping she might find another key on it, or at any rate a book of rules for shutting people up like telescopes: this time she found a little bottle on it (“which certainly was not here before,” said Alice), and tied round the neck of the bottle was a paper label, with the words “DRINK ME” beautifully printed on it in large letters.

It was all very well to say “Drink me,” but the wise little Alice was not going to do *that* in a hurry. “No, I’ll look first,” she said, “and see whether it’s marked ‘poison’ or not”; for she had read several nice little stories about children who had got burnt, and eaten up by wild beasts, and other unpleasant things, all because they *would* not remember the simple rules their friends had taught them: such as, that a red-hot poker will burn you if you hold it too long; and that, if you cut your finger *very* deeply with a knife, it usually bleeds; and she had never forgotten that, if you drink much from a bottle marked “poison,” it is almost certain to disagree with you, sooner or later.



However, this bottle was *not* marked “poison,” so Alice ventured to taste it, and, finding it very nice (it had, in fact, a sort of mixed flavour of cherry-tart, custard, pine-apple, roast turkey, toffy, and hot buttered toast), she very soon finished it off.

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 * * * *

“What a curious feeling!” said Alice; “I must be shutting up like a telescope!”

And so it was indeed: she was now only ten inches high, and her face brightened up at the thought that she was now the right size for going through the little door into that lovely garden. First, however, she waited for a few minutes to see if she was going to shrink any further: she felt a little nervous about this; “for it might end, you know,” said Alice to herself, “in my going out altogether, like a candle. I wonder what I should be like then?” And she tried to fancy what the flame of a candle looks like after the candle is blown out, for she could not remember ever having seen such a thing.

After a while, finding that nothing more happened, she decided on going into the garden at once; but, alas for poor Alice! when she got to the door, she found she had forgotten the little golden key, and when she went back to the table for it, she found she could not possibly reach it: she could see it quite plainly through the glass, and she tried her best to climb up one of the legs of the table, but it was too slippery; and when she had tired herself out with trying, the poor little thing sat down and cried.

“Come, there’s no use in crying like that!” said Alice to herself rather sharply. “I advise you to leave off this minute!” She generally gave herself very good advice (though she very seldom followed it), and sometimes she scolded herself so severely as to bring tears into her eyes; and once she remembered trying to box her own ears for having cheated herself in a game of croquet she was playing against herself, for this curious child was very fond of pretending to be two people. “But it’s no use now,” thought poor Alice, “to pretend to be two people! Why, there’s hardly enough of me left to make *one* respectable person!”

Soon her eye fell on a little glass box that was lying under the table: she opened it, and found in it a very small cake, on which the words "EAT ME" were beautifully marked in currants. "Well, I'll eat it," said Alice, "and if it makes me grow larger, I can reach the key; and if it makes me grow smaller, I can creep under the door; so either way I'll get into the garden, and I don't care which happens!"

She ate a little bit, and said anxiously to herself "Which way? Which way?", holding her hand on the top of her head to feel which way it was growing; and she was quite surprised to find that she remained the same size. To be sure, this generally happens when one eats cake; but Alice had got so much into the way of expecting nothing but out-of-the-way things to happen, that it seemed quite dull and stupid for life to go on in the common way.

So she set to work, and very soon finished off the cake.

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Chapter II. The Pool of Tears



"Curiouser and curiouser!" cried Alice (she was so much surprised, that for the moment she quite forgot how to speak good English). "Now I'm opening out like the largest telescope that ever was! Good-bye, feet!" (for when she looked down at her feet, they seemed to be almost out of sight, they were getting so far off). "Oh, my poor little feet, I wonder who will put on your shoes and stockings for you now, dears? I'm sure *I* sha'n't be able! I shall be a great deal too far off to trouble myself about you: you must manage the best way you can;—but I must be kind to them," thought Alice, "or perhaps they wo'n't walk the way I want to go! Let me see. I'll give them a new pair of boots every Christmas."

And she went on planning to herself how she would manage it. "They must go by the carrier," she thought; "and how funny it'll seem, sending presents to one's own feet! And how odd the directions will look!

Alice's Right Foot, Esq.
Hearthrug,
near the Fender,
(with Alice's love).

Oh dear, what nonsense I'm talking!"

Just then her head struck against the roof of the hall: in fact she was now more than nine feet high, and she at once took up the little golden key and hurried off to the garden door.

Poor Alice! It was as much as she could do, lying down on one side, to look through into the garden with one eye; but to get through was more hopeless than ever: she sat down and began to cry again.

“You ought to be ashamed of yourself,” said Alice, “a great girl like you,” (she might well say this), “to go on crying in this way! Stop this moment, I tell you!” But she went on all the same, shedding gallons of tears, until there was a large pool all round her, about four inches deep, and reaching half down the hall.



After a time she heard a little pattering of feet in the distance, and she hastily dried her eyes to see what was coming. It was the White Rabbit returning, splendidly dressed, with a pair of white kid-gloves in one hand and a large fan in the other: he came trotting along in a great hurry, muttering to himself as he came, “Oh! The Duchess, the Duchess! Oh! *Wo’n’t* she be savage if I’ve kept her waiting!” Alice felt so desperate that she was ready to ask help of any one: so, when the Rabbit came near her, she began, in a low, timid voice, “If you please, Sir——” The Rabbit started violently, dropped the white kid-gloves and

the fan, and skurried away into the darkness as hard as he could go.

Alice took up the fan and gloves, and, as the hall was very hot, she kept fanning herself all the time she went on talking: "Dear, dear! How queer everything is to-day! And yesterday things went on just as usual. I wonder if I've been changed in the night? Let me think: *was* I the same when I got up this morning? I almost think I can remember feeling a little different. But if I'm not the same, the next question is 'Who in the world am I?' Ah, *that's* the great puzzle!" And she began thinking over all the children she knew that were of the same age as herself, to see if she could have been changed for any of them.

"I'm sure I'm not Ada," she said, "for her hair goes in such long ringlets, and mine doesn't go in ringlets at all; and I'm sure I ca'n't be Mabel, for I know all sorts of things, and she, oh, she knows such a very little! Besides, *she's* she, and *I'm* I, and—oh dear, how puzzling it all is! I'll try if I know all the things I used to know. Let me see: four times five is twelve, and four times six is thirteen, and four times seven is—oh dear! I shall never get to twenty at that rate! However, the Multiplication-Table doesn't signify: let's try Geography. London is the capital of Paris, and Paris is the capital of Rome, and Rome—no, *that's* all wrong, I'm certain! I must have been changed for Mabel! I'll try and say '*How doth the little—*'," and she crossed her hands on her lap, as if she were saying lessons, and began to repeat it, but her voice sounded hoarse and strange, and the words did not come the same as they used to do:—

*"How doth the little crocodile
Improve his shining tail,
And pour the waters of the Nile
On every golden scale!*

*"How cheerfully he seems to grin,
How neatly spreads his claws,
And welcome little fishes in,
With gently smiling jaws!"*

Parody on *How Doth
the Little Busy Bee*
by Isaac Watts

"I'm sure those are not the right words," said poor Alice, and her eyes filled with tears again as she went on, "I must be Mabel after all, and I shall have to go and live in that poky little house, and have next to no toys to play with, and oh, ever so many lessons to learn! No, I've made up my mind about it: if I'm Mabel, I'll stay down here! It'll be no use their putting their heads down and saying 'Come up again, dear!' I shall only look up and say 'Who am I, then? Tell me that first, and then, if I like being that person, I'll come up: if not, I'll stay down here till I'm somebody else'—but, oh dear!" cried Alice, with a sudden burst of tears, "I do wish they *would* put their heads down! I am so *very* tired of being all alone here!"

As she said this she looked down at her hands, and was surprised to see that she had put on one of the Rabbit's little white kid-gloves while she was talking. "How *can* I have done that?" she thought. "I must be growing small again." She got up and went to the table to measure herself by it, and found that, as nearly as she could guess, she was now about two feet high, and was going on shrinking rapidly: she soon found out that the cause of this was the fan she was holding, and she dropped it hastily, just in time to avoid shrinking away altogether.

"That *was* a narrow escape!" said Alice, a good deal frightened at the sudden change, but very glad to find herself still in existence. "And now for the garden!"

And she ran with all speed back to the little door; but, alas! the little door was shut again, and the little golden key was lying on the glass table as before, “and things are worse than ever,” thought the poor child, “for I never was so small as this before, never! And I declare it’s too bad, that it is!”



As she said these words her foot slipped, and in another moment, splash! she was up to her chin in salt-water. Her first idea was that she had somehow fallen into the sea, “and in that case I can go back by railway,” she said to herself. (Alice had been to the seaside once in her life, and had come to the general conclusion that, wherever you go to on the English coast, you find a number of bathing-machines in the sea, some children digging in the sand with wooden spades, then a row of lodging-houses, and behind them a railway-station.) However, she soon made out that she was in the pool of tears which she had wept when she was nine feet high.

“I wish I hadn’t cried so much!” said Alice, as she swam about, trying to find her way out. “I shall be punished for it now, I suppose, by being drowned in my own tears! That *will* be a queer thing, to be sure! However, everything is queer to-day.”

Just then she heard something splashing about in the pool a little way off, and she swam nearer to make out what it was: at first she thought it must be a walrus or hippopotamus, but then she remembered how small she was now, and she soon made out that it was only a mouse, that had slipped in like herself.

“Would it be of any use, now,” thought Alice, “to speak to this mouse? Everything is so out-of-the-way down here, that I should think very likely it can talk: at any rate, there’s no harm in trying.” So she began: “O Mouse, do you know the way out of this pool? I am very tired of swimming about here, O

Mouse!” (Alice thought this must be the right way of speaking to a mouse: she had never done such a thing before, but she remembered having seen, in her brother’s Latin Grammar, “A mouse—of a mouse—to a mouse—a mouse—O mouse!”) The mouse looked at her rather inquisitively, and seemed to her to wink with one of its little eyes, but it said nothing.

“Perhaps it doesn’t understand English,” thought Alice. “I daresay it’s a French mouse, come over with William the Conqueror.” (For, with all her knowledge of history, Alice had no very clear notion how long ago anything had happened.) So she began again: “Où est ma chatte?”, which was the first sentence in her French lesson-book. The Mouse gave a sudden leap out of the water, and seemed to quiver all over with fright. “Oh, I beg your pardon!” cried Alice hastily, afraid that she had hurt the poor animal’s feelings. “I quite forgot you didn’t like cats.”

“Not like cats!” cried the Mouse in a shrill, passionate voice. “Would *you* like cats, if you were me?”

Quoted from *La Bagatelle*: Intended to introduce children of three or four years old to some knowledge of the French language



“Well, perhaps not,” said Alice in a soothing tone: “don’t be angry about it. And yet I wish I could show you our cat Dinah. I think you’d take a fancy to cats, if you could only see her. She is such a dear quiet thing,” Alice went on, half to herself, as she swam lazily about in the pool, “and she sits purring so nicely by the fire, licking her paws and washing her face—and she is such a nice soft thing to nurse—and she’s such a capital one for catching mice——oh, I beg your pardon!” cried Alice again, for this time the Mouse was bristling all over, and she felt certain it must be really offended. “We wo’n’t talk about her any more, if you’d rather not.”

“We, indeed!” cried the Mouse, who was trembling down to the end of ^{his} tail. “As if *I* would talk on such a subject! Our family always *hated* cats: nasty, low, vulgar things! Don’t let me hear the name again!”

¹his

“I wo’n’t indeed!” said Alice, in a great hurry to change the subject of conversation. “Are you—are you fond—of—of dogs?” The Mouse did not answer, so Alice went on eagerly: “There is such a nice little dog, near our house, I should like to show you! A little bright-eyed terrier, you know, with oh, such long curly brown hair! And it’ll fetch things when you throw them, and it’ll sit up and beg for its dinner, and all sorts of things—I ca’n’t remember half of them—and it belongs to a farmer, you know, and he says it’s so useful, it’s worth a hundred pounds! He says it kills all the rats and—oh dear!” cried Alice in a sorrowful tone, “I’m afraid I’ve offended it again!” For the Mouse was swimming away from her as hard as it could go, and making quite a commotion in the pool as it went.

So she called softly after it, “Mouse dear! Do come back again, and we wo’n’t talk about cats or dogs either, if you don’t like them!” When the Mouse heard this, it turned round and swam slowly back to her: its face was quite pale (with passion, Alice thought), and it said, in a low trembling voice, “Let us get to the shore, and then I’ll tell you my history, and you’ll understand why it is I hate cats and dogs.”

It was high time to go, for the pool was getting quite crowded with the birds and animals that had fallen into it: there ^{were}² a Duck and a Dodo, a Lory and an Eaglet, and several other curious creatures. Alice led the way, and the whole party swam to the shore.

Chapter III. A Caucus-Race and a Long Tale

They were indeed a queer-looking party that assembled on the bank—the birds with draggled feathers, the animals with their fur clinging close to them, and all dripping wet, cross, and uncomfortable.

The first question of course was, how to get dry again: they had a consultation about this, and after a few minutes it seemed quite natural to Alice to find herself talking familiarly with them, as if she had known them all her life. Indeed, she had quite a long argument with the Lory, who at last turned sulky, and would only say “I’m³ older than you, and must know better.” And this Alice would not allow, without knowing how old it was, and, as the Lory positively refused to tell its age, there was no more to be said.

At last the Mouse, who seemed to be a person of authority among them, called out “Sit down, all of you, and listen to me! *I’ll* soon make you dry enough!” They all sat down at once, in a large ring, with the Mouse in the middle. Alice kept her eyes anxiously fixed on it, for she felt sure she would catch a bad cold if she did not get dry very soon.

“Ahem!” said the Mouse with an important air. “Are you all ready? This is the driest thing I know. Silence all round, if you please! ‘William the Conqueror, whose cause was favoured by the pope, was soon submitted to by the English, who wanted leaders, and had been of late much accustomed to usurpation and conquest. Edwin and Morcar, the earls of Mercia and Northumbria——’”

“Ugh!” said the Lory, with a shiver.

“I beg your pardon!” said the Mouse, frowning, but very politely. “Did you speak?”

²was

³I am

Quoted from *Short Course of History* by Haviland Chepmell



“Not I!” said the Lory, hastily.

“I thought you did,” said the Mouse. “I proceed. ‘Edwin and Morcar, the earls of Mercia and Northumbria, declared for him; and even Stigand, the patriotic archbishop of Canterbury, found it advisable——’”

“Found *what?*” said the Duck.

“Found *it,*” the Mouse replied rather crossly: “of course you know what ‘it’ means.”

“I know what ‘it’ means well enough, when *I* find a thing,” said the Duck: “it’s generally a frog or a worm. The question is, what did the archbishop find?”

The Mouse did not notice this question, but hurriedly went on, “‘——found it advisable to go with Edgar Atheling to meet William and offer him the crown. William’s conduct at first was moderate. But the insolence of his Normans——’ How are you getting on now, my dear?” it continued, turning to Alice as it spoke.

“As wet as ever,” said Alice in a melancholy tone: “it doesn’t seem to dry me at all.”

“In that case,” said the Dodo solemnly, rising to its feet, “I move that the meeting adjourn, for the immediate adoption of more energetic remedies——”

“Speak English!” said the Eaglet. “I don’t know the meaning of half those long words, and, what’s more, I don’t believe you do either!” And the Eaglet bent down its head to hide a smile: some of the other birds tittered audibly.

“What I was going to say,” said the Dodo in an offended tone, “was, that the best thing to get us dry would be a Caucus-race.”

“What *is* a Caucus-race?” said Alice; not that she _{much}wanted⁴ to know, but the Dodo had paused as if it thought that *somebody* ought to speak, and no one else seemed inclined to say anything.

“Why,” said the Dodo, “the best way to explain it is to do it.” (And, as you might like to try the thing yourself, some winter-day, I will tell you how the Dodo managed it.)

First it marked out a race-course, in a sort of circle, (“the exact shape doesn’t matter,” it said,) and then all the party were placed along the course, here and there. There was no “One, two, three, and away!”, but they began running when they liked, and left off when they liked, so that it was not easy to know when the race was over. However, when they had been running half an hour or so, and were quite dry again, the Dodo suddenly called out “The race is over!”, and they all crowded round it, panting, and asking “But who has won?”

This question the Dodo could not answer without a great deal of thought, and it stood for a long time with one finger pressed upon its forehead (the position in which you usually see Shakespeare, in the pictures of him), while the rest waited in silence. At last the Dodo said, “*everybody* has won, and *all* must have prizes.”

“But who is to give the prizes?” quite a chorus of voices asked.

“Why, *she*, of course,” said the Dodo, pointing to Alice with one finger; and the whole party at once crowded round her, calling out in a confused way, “Prizes! Prizes!”

Alice had no idea what to do, and in despair she put her hand in her pocket, and pulled out a box of comfits (luckily the salt water had not got into it), and handed them round as prizes. There was exactly one a-piece, all round.

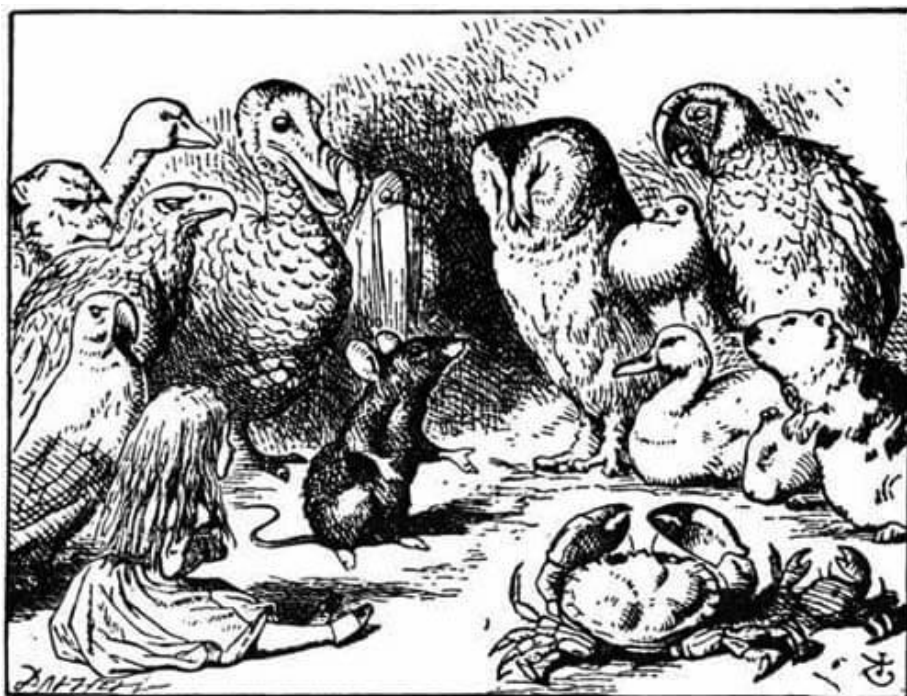
⁴wanted much

“But she must have a prize herself, you know,” said the Mouse.

“Of course,” the Dodo replied very gravely. “What else have you got in your pocket?” ^{it}⁵ went on, turning to Alice.

“Only a thimble,” said Alice sadly.

“Hand it over here,” said the Dodo.



Then they all crowded round her once more, while the Dodo solemnly presented the thimble, saying “We beg your acceptance of this elegant thimble”; and, when it had finished this short speech, they all cheered.

Alice thought the whole thing very absurd, but they all looked so grave that she did not dare to laugh; and, as she could not think of anything to say, she simply bowed, and took the thimble, looking as solemn as she could.

The next thing was to eat the comfits: this caused some noise and confusion, as the large birds complained that they could not taste theirs, and the small ones choked and had to be patted on the back. However, it was over at last, and they sat down again in a ring, and begged the Mouse to tell them something more.

“You promised to tell me your history, you know,” said Alice, “and why it is you hate—C and D,” she added in a whisper, half afraid that it would be offended again.

“Mine is a long and a sad tale!” said the Mouse, turning to Alice, and sighing.

“It *is* a long tail, certainly,” said Alice, looking down with wonder at the Mouse’s tail; “but why do you call it sad?” And she kept on puzzling about it while the Mouse was speaking, so that her idea of the tale was something like this:—

⁵he

“Fury said to
 a mouse, That
 he met in the
 house, ‘Let
 us both go
 to law: *I*
 will prose-
 cute *you*.—
 Come, I’ll
 take no de-
 nial; We
 must have
 the⁶ trial:
 For really
 this morn-
 ing I’ve
 nothing
 to do.’
 Said the
 mouse to
 the cur,
 ‘Such a
 trial, dear
 Sir, With
 no jury
 or judge,
 would
 be wast-
 ing our
 breath.’
 ‘I’ll be
 judge,
 I’ll be
 jury,’
 Said
 cun-
 ning
 old
 Fury:
 ‘I’ll
 try
 the
 whole
 cause,
 and
 con-
 demn
 you to
 death.’”

“You are not attending!” said the Mouse to Alice, severely. “What are you thinking of?”

“I beg your pardon,” said Alice very humbly: “you had got to the fifth bend, I think?”

“I had *not!*” cried the Mouse, sharply and very angrily.

⁶a

“A knot!” said Alice, always ready to make herself useful, and looking anxiously about her “Oh, do let me help to undo it!”

“I shall do nothing of the sort,” said the Mouse, getting up and walking away. “You insult me by talking such nonsense!”

“I didn’t mean it!” pleaded poor Alice. “But you’re so easily offended, you know!”

The Mouse only growled in reply.

“Please come back, and finish your story!” Alice called after it. And the others all joined in chorus “Yes, please do!” But the Mouse only shook its head impatiently, and walked a little quicker.

“What a pity it wouldn’t stay!” sighed the Lory, as soon as it was quite out of sight. And an old Crab took the opportunity of saying to her daughter “Ah, my dear! Let this be a lesson to you never to lose *your* temper!” “Hold your tongue, Ma!” said the young Crab, a little snappishly. “You’re enough to try the patience of an oyster!”

“I wish I had our Dinah here, I know I do!” said Alice aloud, addressing nobody in particular. “*She’d* soon fetch it back!”

“And who is Dinah, if I might venture to ask the question?” said the Lory.

Alice replied eagerly, for she was always ready to talk about her pet: “Dinah’s our cat. And she’s such a capital one for catching mice, you ca’n’t think! And oh, I wish you could see her after the birds! Why, she’ll eat a little bird as soon as look at it!”

This speech caused a remarkable sensation among the party. Some of the birds hurried off at once: one old Magpie began wrapping itself up very carefully, remarking “I really must be getting home: the night-air doesn’t suit my throat!” And a Canary called out in a trembling voice, to its children, “Come away, my dears! It’s high time you were all in bed!” On various pretexts they all moved off, and Alice was soon left alone.

“I wish I hadn’t mentioned Dinah!” she said to herself in a melancholy tone. “Nobody seems to like her, down here, and I’m sure she’s the best cat in the world! Oh, my dear Dinah! I wonder if I shall ever see you any more!” And here poor Alice began to cry again, for she felt very lonely and low-spirited. In a little while, however, she again heard a little pattering of footsteps in the distance, and she looked up eagerly, half hoping that the Mouse had changed his mind, and was coming back to finish his story.

Chapter IV. The Rabbit Sends in a Little Bill

It was the White Rabbit, trotting slowly back again, and looking anxiously about as it went, as if it had lost something; and she heard it muttering to itself, “The Duchess! The Duchess! Oh my dear paws! Oh my fur and whiskers! She’ll get me executed, as sure as ferrets are ferrets! Where *can* I have dropped them, I wonder?” Alice guessed in a moment that it was looking for the fan and the pair of white kid-gloves, and she very good-naturedly began hunting about for them, but they were nowhere to be seen—everything seemed to have changed since her swim in the pool; and the great hall, with the glass table and the little door, had vanished completely.

Very soon the Rabbit noticed Alice, as she went hunting about, and called out to her in an angry tone, “Why, Mary Ann, what *are* you doing out here? Run home this moment, and fetch me a pair of gloves and a fan! Quick, now!”

And Alice was so much frightened that she ran off at once in the direction it pointed to, without trying to explain the mistake it had made.

“He took me for his housemaid,” she said to herself as she ran. “How surprised he’ll be when he finds out who I am! But I’d better take him his fan and gloves—that is, if I can find them.” As she said this, she came upon a neat little house, on the door of which was a bright brass plate with the name “W. RABBIT” engraved upon it. She went in without knocking, and hurried upstairs, in great fear lest she should meet the real Mary Ann, and be turned out of the house before she had found the fan and gloves.

“How queer it seems,” Alice said to herself, “to be going messages for a rabbit! I suppose Dinah’ll be sending me on messages next!” And she began fancying the sort of thing that would happen: “‘Miss Alice! Come here directly, and get ready for your walk!’ ‘Coming in a minute, nurse! But I’ve got to see that the mouse doesn’t get out.’ Only I don’t think,” Alice went on, “that they’d let Dinah stop in the house if it began ordering people about like that!”

By this time she had found her way into a tidy little room with a table in the window, and on it (as she had hoped) a fan and two or three pairs of tiny white kid-gloves: she took up the fan and a pair of the gloves, and was just going to leave the room, when her eye fell upon a little bottle that stood near the looking-glass. There was no label this time with the words “DRINK ME,” but nevertheless she uncorked it and put it to her lips. “I know *something* interesting is sure to happen,” she said to herself, “whenever I eat or drink anything: so I’ll just see what this bottle does. I do hope it’ll make me grow large again, for really I’m quite tired of being such a tiny little thing!”

It did so indeed, and much sooner than she had expected: before she had drunk half the bottle, she found her head pressing against the ceiling, and had to stoop to save her neck from being broken. She hastily put down the bottle, saying to herself “That’s quite enough—I hope I sha’n’t grow any more—As it is, I ca’n’t get out at the door—I do wish I hadn’t drunk quite so much!”

Alas! it was too late to wish that! She went on growing, and growing, and very soon had to kneel down on the floor: in another minute there was not even room for this, and she tried the effect of lying down with one elbow against the door, and the other arm curled round her head. Still she went on growing, and, as a last resource, she put one arm out of the window, and one foot up the chimney, and said to herself “Now I can do no more, whatever happens. What *will* become of me?”

Luckily for Alice, the little magic bottle had now had its full effect, and she grew no larger: still it was very uncomfortable, and, as there seemed to be no sort of chance of her ever getting out of the room again, no wonder she felt unhappy.

“It was much pleasanter at home,” thought poor Alice, “when one wasn’t always growing larger and smaller, and being ordered about by mice and rabbits. I almost wish I hadn’t gone down that rabbit-hole—and yet—and yet—it’s rather curious, you know, this sort of life! I do wonder what *can* have happened to me! When I used to read fairy tales, I fancied that kind of thing never happened, and now here I am in the middle of one! There ought to be a book written about me, that there ought! And when I grow up, I’ll write one—but I’m grown up now,” she added in a sorrowful tone: “at least there’s no room to grow up any more *here*.”

“But then,” thought Alice, “shall I *never* get any older than I am now?”



That'll be a comfort, one way—never to be an old woman—but then—always to have lessons to learn! Oh, I shouldn't like *that!*"

"Oh, you foolish Alice!" she answered herself. "How can you learn lessons in here? Why, there's hardly room for *you*, and no room at all for any lesson-books!"

And so she went on, taking first one side and then the other, and making quite a conversation of it altogether; but after a few minutes she heard a voice outside, and stopped to listen.

"Mary Ann! Mary Ann!" said the voice. "Fetch me my gloves this moment!" Then came a little pattering of feet on the stairs. Alice knew it was the Rabbit coming to look for her, and she trembled till she shook the house, quite forgetting that she was now about a thousand times as large as the Rabbit, and had no reason to be afraid of it.

Presently the Rabbit came up to the door, and tried to open it; but, as the door opened inwards, and Alice's elbow was pressed hard against it, that attempt proved a failure. Alice heard it say to itself "Then I'll go round and get in at the window."

"*That* you wo'n't!" thought Alice, and, after waiting till she fancied she heard the Rabbit just under the window, she suddenly spread out her hand, and made a snatch in the air. She did not get hold of anything, but she heard a little shriek and a fall, and a crash of broken glass, from which she concluded that it was just possible it had fallen into a cucumber-frame, or something of the sort.

Next came an angry voice—the Rabbit's—"Pat! Pat! Where are you?" And then a voice she had never heard before, "Sure then I'm here! Digging for apples, yer honour!"

"Digging for apples, indeed!" said the Rabbit angrily. "Here! Come and help me out of *this!*" (Sounds of more broken glass.)

"Now tell me, Pat, what's that in the window?"



“Sure, it’s an arm, yer honour!” (He pronounced it “arrum.”)

“An arm, you goose! Who ever saw one that size? Why, it fills the whole window!”

“Sure, it does, yer honour: but it’s an arm for all that.”

“Well, it’s got no business there, at any rate: go and take it away!”

There was a long silence after this, and Alice could only hear whispers now and then; such as “Sure, I don’t like it, yer honour, at all, at all!” “Do as I tell you, you coward!”, and at last she spread out her hand again, and made another snatch in the air. This time there were *two* little shrieks, and more sounds of broken glass. “What a number of cucumber-frames there must be!” thought Alice. “I wonder what they’ll do next! As for pulling me out of the window, I only wish they *could*! I’m sure *I* don’t want to stay in here any longer!”

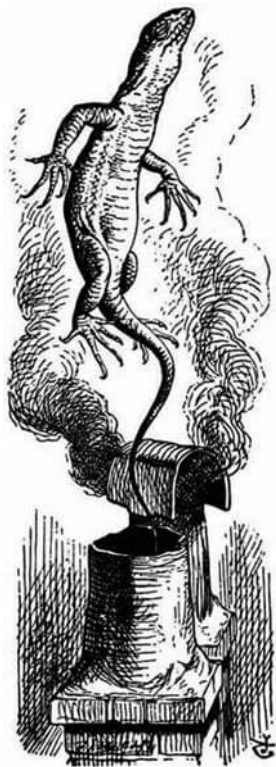
She waited for some time without hearing anything more: at last came a rumbling of little cart-wheels, and the sound of a good many voices all talking together: she made out the words: “Where’s the other ladder?—Why, I hadn’t to bring but one. Bill’s got the other—Bill! Fetch it here, lad!—Here, put ’em up at this corner—No, tie ’em together first—they don’t reach half high enough yet—Oh! they’ll do well enough; don’t be particular—Here, Bill! Catch hold of this rope—Will the roof bear?—Mind that loose slate—Oh, it’s coming down! Heads below!” (a loud crash)—“Now, who did that?—It was Bill, I fancy—Who’s to go down the chimney?—Nay, *I* sha’n’t! *You* do it!—*That* I wo’n’t, then!—Bill’s got to go down—Here, Bill! The master says you’ve got to go down the chimney!”

“Oh! So Bill’s got to come down the chimney, has he?” said Alice to herself. “Why, they seem to put everything upon Bill! I wouldn’t be in Bill’s place for a good deal: this fireplace is narrow, to be sure; but I *think* I can kick a little!”

She drew her foot as far down the chimney as she could, and waited till she heard a little animal (she couldn’t guess of what sort it was) scratching and scrambling about in the chimney close above her: then, saying to herself “This is Bill”, she gave one sharp kick, and waited to see what would happen next.

The first thing she heard was a general chorus of “There goes Bill!” then

the Rabbit's voice along—"Catch him, you by the hedge!" then silence, and then another confusion of voices—"Hold up his head—Brandy now—Don't choke him—How was it, old fellow? What happened to you? Tell us all about it!"



Last came a little feeble, squeaking voice ("That's Bill," thought Alice), "Well, I hardly know—No more, thank ye; I'm better now—but I'm a deal too flustered to tell you—all I know is, something comes at me like a Jack-in-the-box, and up I goes like a sky-rocket!"

"So you did, old fellow!" said the others.

"We must burn the house down!" said the Rabbit's voice. And Alice called out, as loud as she could, "If you do, I'll set Dinah at you!"

There was a dead silence instantly, and Alice thought to herself "I wonder what they *will* do next! If they had any sense, they'd take the roof off." After a minute or two, they began moving about again, and Alice heard the Rabbit say "A barrowful will do, to begin with."

"A barrowful of *what?*" thought Alice. But she had not long to doubt, for the next moment a shower of little pebbles came rattling in at the window, and some of them hit her in the face. "I'll put a stop to this," she said to herself, and shouted out "You'd better not do that again!", which produced another dead silence.

Alice noticed, with some surprise, that the pebbles were all turning into little cakes as they lay on the floor, and a bright idea came into her head. "If I eat one of these cakes," she thought, "it's sure to make *some* change in my size; and, as it ca'n't possibly make me larger, it must make me smaller, I suppose."

So she swallowed one of the cakes, and was delighted to find that she began shrinking directly. As soon as she was small enough to get through the door, she ran out of the house, and found quite a crowd of little animals and birds waiting outside. The poor little Lizard, Bill, was in the middle, being held up by two guinea-pigs, who were giving it something out of a bottle. They all made a rush at Alice the moment she appeared; but she ran off as hard as she could, and soon found herself safe in a thick wood.

"The first thing I've got to do," said Alice to herself, as she wandered about in the wood, "is to grow to my right size again; and the second thing is to find my way into that lovely garden. I think that will be the best plan."

It sounded an excellent plan, no doubt, and very neatly and simply arranged; the only difficulty was, that she had not the smallest idea how to set about it; and, while she was peering about anxiously among the trees, a little sharp bark just over her head made her look up in a great hurry.

An enormous puppy was looking down at her with large round eyes, and feebly stretching out one paw, trying to touch her. "Poor little thing!" said Alice, in a coaxing tone, and she tried hard to whistle to it; but she was terribly frightened all the time at the thought that it might be hungry, in which case it would be very likely to eat her up in spite of all her coaxing.



Hardly knowing what she did, she picked up a little bit of stick, and held it out to the puppy: whereupon the puppy jumped into the air off all its feet at once, with a yelp of delight, and rushed at the stick, and made believe to worry it: then Alice dodged behind a great thistle, to keep herself from being run over; and, the moment she appeared on the other side, the puppy made another rush at the stick, and tumbled head over heels in its hurry to get hold of it: then Alice, thinking it was very like having a game of play with a cart-horse, and expecting every moment to be trampled under its feet, ran round the thistle again: then the puppy began a series of short charges at the stick, running a very little way forwards each time and a long way back, and barking hoarsely all the while, till at last it sat down a good way off, panting, with its tongue hanging out of its mouth, and its great eyes half shut.

This seemed to Alice a good opportunity for making her escape: so she set off at once, and ran till she was quite tired and out of breath, and till the puppy's bark sounded quite faint in the distance.

"And yet what a dear little puppy it was!" said Alice, as she leant against a buttercup to rest herself, and fanned herself with one of the leaves. "I should have liked teaching it tricks very much, if—if I'd only been the right size to do it! Oh dear! I'd nearly forgotten that I've got to grow up again! Let me see—how *is* it to be managed? I suppose I ought to eat or drink something or other; but the great question is 'What?'"

The great question certainly was "What?". Alice looked all round her at the flowers and the blades of grass, but she did not see anything that looked like the right thing to eat or drink under the circumstances. There was a large mushroom growing near her, about the same height as herself; and, when she had looked under it, and on both sides of it, and behind it, it occurred to her that she might as well look and see what was on the top of it.

She stretched herself up on tiptoe, and peeped over the edge of the mushroom, and her eyes immediately met those of a large blue caterpillar, that was sitting on the top with its arms folded, quietly smoking a long hookah, and taking not the smallest notice of her or of anything else.

Chapter V. Advice from a Caterpillar

The Caterpillar and Alice looked at each other for some time in silence: at last the Caterpillar took the hookah out of its mouth, and addressed her in a languid, sleepy voice.

"Who are *you?*" said the Caterpillar.

This was not an encouraging opening for a conversation. Alice replied, rather shyly, "I—I hardly know, Sir, just at present—at least I know who I *was* when I got up this morning, but I think I must have been changed several times since then."

"What do you mean by that?" said the Caterpillar, sternly. "Explain yourself!"

"I ca'n't explain *myself*, I'm afraid, Sir," said Alice, "because I'm not myself, you see."

"I don't see," said the Caterpillar.

"I'm afraid I ca'n't put it more clearly," Alice replied, very politely, "for I ca'n't understand it myself, to begin with; and being so many different sizes in a day is very confusing."



"It isn't," said the Caterpillar.

"Well, perhaps you haven't found it so yet," said Alice; "but when you have to turn into a chrysalis—you will some day, you know—and then after that into a butterfly, I should think you'll feel it a little queer, wo'n't you?"

"Not a bit," said the Caterpillar.

"Well, perhaps *your* feelings may be different," said Alice: "all I know is, it would feel very queer to *me*."

"You!" said the Caterpillar contemptuously. "Who are *you*?"

Which brought them back again to the beginning of the conversation. Alice felt a little irritated at the Caterpillar's making such *very* short remarks, and she drew herself up and said, very gravely, "I think, you ought to tell me who *you* are, first."

"Why?" said the Caterpillar.

Here was another puzzling question; and, as Alice could not think of any good reason, and⁷ the Caterpillar seemed to be in a *very* unpleasant state of mind, she turned away.

"Come back!" the Caterpillar called after her. "I've something important to say!"

This sounded promising, certainly. Alice turned and came back again.

"Keep your temper," said the Caterpillar.

"Is that all?" said Alice, swallowing down her anger as well as she could.

"No," said the Caterpillar.

Alice thought she might as well wait, as she had nothing else to do, and perhaps after all it might tell her something worth hearing. For some minutes it puffed away without speaking; but at last it unfolded its arms, took the hookah out of its mouth again, and said "So you think you're changed, do you?"

"I'm afraid I am, Sir," said Alice. "I ca'n't remember things as I used—and I don't keep the same size for ten minutes together!"

"Ca'n't remember *what* things?" said the Caterpillar.

"Well, I've tried to say '*How doth the little busy bee,*' but it all came different!" Alice replied in a very melancholy voice.

"Repeat '*You are old, Father William,*'" said the Caterpillar.

Alice folded her hands, and began:—

"You are old, Father William," the young man said,

"And your hair has become very white;

And yet you incessantly stand on your head—

Do you think, at your age, it is right?"

"In my youth," Father William replied to his son,

"I feared it might injure the brain;

But, now that I'm perfectly sure I have none,

Why, I do it again and again."

"You are old," said the youth, "as I mentioned before,

And have grown most uncommonly fat;

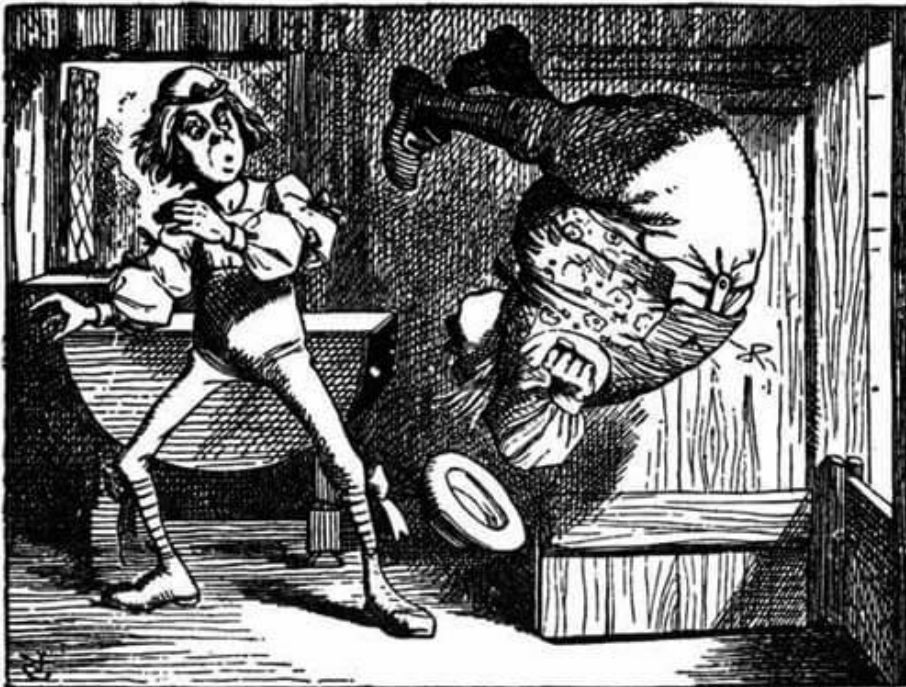
Yet you turned a back-somersault in at the door—

Pray, what is the reason of that?"

"In my youth," said the sage, as he shook his grey locks,

Parody on *The Old Man's Comforts and How He Gained Them*
by Robert Southey

⁷and as



*"I kept all my limbs very supple
By the use of this ointment—one shilling the box—
Allow me to sell you a couple?"*



*"You are old," said the youth, "and your jaws are too weak
For anything tougher than suet;
Yet you finished the goose, with the bones and the beak—
Pray how did you manage to do it?"*

*"In my youth," said his father, "I took to the law,
And argued each case with my wife;
And the muscular strength, which it gave to my jaw,
Has lasted the rest of my life."*

*"You are old," said the youth, "one would hardly suppose
That your eye was as steady as ever;
Yet you balanced an eel on the end of your nose—
What made you so awfully clever?"*

*"I have answered three questions, and that is enough,"
Said his father. "Don't give yourself airs!
Do you think I can listen all day to such stuff?
Be off, or I'll kick you down-stairs!"*

"That is not said right," said the Caterpillar.

"Not quite right, I'm afraid," said Alice, timidly: "some of the words have got altered."

"It is wrong from beginning to end," said the Caterpillar, decidedly; and there was silence for some minutes.



The Caterpillar was the first to speak.

“What size do you want to be?” it asked.

“Oh, I’m not particular as to size,” Alice hastily replied; “only one doesn’t like changing so often, you know.”

“I *don’t* know,” said the Caterpillar.

Alice said nothing: she had never been so much contradicted in her life before, and she felt that she was losing her temper.

“Are you content now?” said the Caterpillar.

“Well, I should like to be a *little* larger, Sir, if you wouldn’t mind,” said Alice: “three inches is such a wretched height to be.”

“It is a very good height indeed!” said the Caterpillar angrily, rearing itself upright as it spoke (it was exactly three inches high).

“But I’m not used to it!” pleaded poor Alice in a piteous tone. And she thought of herself “I wish the creatures wouldn’t be so easily offended!”

“You’ll get used to it in time,” said the Caterpillar; and it put the hookah into its mouth and began smoking again.

This time Alice waited patiently until it chose to speak again. In a minute or two the Caterpillar took the hookah out of its mouth, and yawned once or twice, and shook itself. Then it got down off the mushroom, and crawled away into the grass, merely remarking, as it went, “One side will make you grow taller, and the other side will make you grow shorter.”

“One side of *what?* The other side of *what?*” thought Alice to herself.

“Of the mushroom,” said the Caterpillar, just as if she had asked it aloud; and in another moment it was out of sight.

Alice remained looking thoughtfully at the mushroom for a minute, trying to make out which were the two sides of it; and, as it was perfectly round, she

found this a very difficult question. However, at last she stretched her arms round it as far as they would go, and broke off a bit of the edge with each hand.

“And now which is which?” she said to herself, and nibbled a little of the right-hand bit to try the effect. The next moment she felt a violent blow underneath her chin: it had struck her foot!

She was a good deal frightened by this very sudden change, but she felt that there was no time to be lost, as she was shrinking rapidly: so she set to work at once to eat some of the other bit. Her chin was pressed so closely against her foot, that there was hardly room to open her mouth; but she did it at last, and managed to swallow a morsel of the left-hand bit.

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“Come, my head’s free at last!” said Alice in a tone of delight, which changed into alarm in another moment, when she found that her shoulders were nowhere to be found: all she could see, when she looked down, was an immense length of neck, which seemed to rise like a stalk out of a sea of green leaves that lay far below her.

“What *can* all that green stuff be?” said Alice. “And where *have* my shoulders got to? And oh, my poor hands, how is it I ca’n’t see you?” She was moving them about, as she spoke, but no result seemed to follow, except a little shaking among the distant green leaves.

As there seemed to be no chance of getting her hands up to her head, she tried to get her head down to *them*, and was delighted to find that her neck would bend about easily in any direction, like a serpent. She had just succeeded in curving it down into a graceful zigzag, and was going to dive in among the leaves, which she found to be nothing but the tops of the trees under which she had been wandering, when a sharp hiss made her draw back in a hurry: a large pigeon had flown into her face, and was beating her violently with its wings.

“Serpent!” screamed the Pigeon.

“I’m *not* a serpent!” said Alice indignantly. “Let me alone!”

“Serpent, I say again!” repeated the Pigeon, but in a more subdued tone, and added, with a kind of sob, “I’ve tried every way, ⁸but nothing seems to suit them!”

“I haven’t the least idea what you’re talking about,” said Alice.

“I’ve tried the roots of trees, and I’ve tried banks, and I’ve tried hedges,” the Pigeon went on, without attending to her; “but those serpents! There’s no pleasing them!”

Alice was more and more puzzled, but she thought there was no use in saying anything more till the Pigeon had finished.

“As if it wasn’t trouble enough hatching the eggs,” said the Pigeon; “but I must be on the look-out for serpents night and day! Why, I haven’t had a wink of sleep these three weeks!”

“I’m very sorry you’ve been annoyed,” said Alice, who was beginning to see its meaning.

⁸and

“And just as I’d taken the highest tree in the wood,” continued the Pigeon, raising its voice to a shriek, “and just as I was thinking I should be free of them at last, they must needs come wriggling down from the sky! Ugh, Serpent!”

“But I’m *not* a serpent, I tell you!” said Alice. “I’m a——I’m a——”

“Well! *What* are you?” said the Pigeon. “I can see you’re trying to invent something!”

“I—I’m a little girl,” said Alice, rather doubtfully, as she remembered the number of changes she had gone through, that day.

“A likely story indeed!” said the Pigeon, in a tone of the deepest contempt. “I’ve seen a good many little girls in my time, but never *one* with such a neck as that! No, no! You’re a serpent; and there’s no use denying it. I suppose you’ll be telling me next that you never tasted an egg!”

“I *have* tasted eggs, certainly,” said Alice, who was a very truthful child; “but little girls eat eggs quite as much as serpents do, you know.”

“I don’t believe it,” said the Pigeon; “but if they do, why, then they’re a kind of serpent: that’s all I can say.”

This was such a new idea to Alice, that she was quite silent for a minute or two, which gave the Pigeon the opportunity of adding “You’re looking for eggs, I know *that* well enough; and what does it matter to me whether you’re a little girl or a serpent?”

“It matters a good deal to *me*,” said Alice hastily; “but I’m not looking for eggs, as it happens; and if I was, I shouldn’t want *yours*: I don’t like them raw.”

“Well, be off, then!” said the Pigeon in a sulky tone, as it settled down again into its nest. Alice crouched down among the trees as well as she could, for her neck kept getting entangled among the branches, and every now and then she had to stop and untwist it. After a while she remembered that she still held the pieces of mushroom in her hands, and she set to work very carefully, nibbling first at one and then at the other, and growing sometimes taller, and sometimes shorter, until she had succeeded in bringing herself down to her usual height.

It was so long since she had been anything near the right size, that it felt quite strange at first; but she got used to it in a few minutes, and began talking to herself, as usual, “Come, there’s half my plan done now! How puzzling all these changes are! I’m never sure what I’m going to be, from one minute to another! However, I’ve got back to my right size: the next thing is, to get into that beautiful garden—how *is* that to be done, I wonder?” As she said this, she came suddenly upon an open place, with a little house in it about four feet high. “Whoever lives there,” thought Alice, “it’ll never do to come upon them *this* size: why, I should frighten them out of their wits!” So she began nibbling at the right-hand bit again, and did not venture to go near the house till she had brought herself down to nine inches high.

Chapter VI. Pig and Pepper

For a minute or two she stood looking at the house, and wondering what to do next, when suddenly a footman in livery came running out of the wood—(she considered him to be a footman because he was in livery: otherwise, judging by his face only, she would have called him a fish)—and rapped loudly at the door with his knuckles. It was opened by another footman in livery, with a round face, and large eyes like a frog; and both footmen, Alice noticed, had powdered

hair that curled all over their heads. She felt very curious to know what it was all about, and crept a little way out of the wood to listen.



The Fish-Footman began by producing from under his arm a great letter, nearly as large as himself, and this he handed over to the other, saying, in a solemn tone, "For the Duchess. An invitation from the Queen to play croquet." The Frog-Footman repeated, in the same solemn tone, only changing the order of the words a little, "From the Queen. An invitation for the Duchess to play croquet."

Then they both bowed low, and their curls got entangled together.

Alice laughed so much at this, that she had to run back into the wood for fear of their hearing her; and, when she next peeped out, the Fish-Footman was gone, and the other was sitting on the ground near the door, staring stupidly up into the sky.

Alice went timidly up to the door, and knocked.

“There’s no sort of use in knocking,” said the Footman, “and that for two reasons. First, because I’m on the same side of the door as you are; secondly, because they’re making such a noise inside, no one could possibly hear you.” And certainly there *was* a most extraordinary noise going on within—a constant howling and sneezing, and every now and then a great crash, as if a dish or kettle had been broken to pieces.

“Please, then,” said Alice, “how am I to get in?”

“There might be some sense in your knocking,” the Footman went on, without attending to her, “if we had the door between us. For instance, if you were *inside*, you might knock, and I could let you out, you know.” He was looking up into the sky all the time he was speaking, and this Alice thought decidedly uncivil. “But perhaps he ca’n’t help it,” she said to herself; “his eyes are so *very* nearly at the top of his head. But at any rate he might answer questions.—How am I to get in?” she repeated, aloud.

“I shall sit here,” the Footman remarked, “till to-morrow——”

At this moment the door of the house opened, and a large plate came skimming out, straight at the Footman’s head: it just grazed his nose, and broke to pieces against one of the trees behind him.

“——or next day, maybe,” the Footman continued in the same tone, exactly as if nothing had happened.

“How am I to get in?” asked Alice again, in a louder tone.

“*Are* you to get in at all?” said the Footman. “That’s the first question, you know.”

It was, no doubt: only Alice did not like to be told so. “It’s really dreadful,” she muttered to herself, “the way all the creatures argue. It’s enough to drive one crazy!”

The Footman seemed to think this a good opportunity for repeating his remark, with variations. “I shall sit here,” he said, “on and off, for days and days.”

“But what am *I* to do?” said Alice.

“Anything you like,” said the Footman, and began whistling.

“Oh, there’s no use in talking to him,” said Alice desperately: “he’s perfectly idiotic!” And she opened the door and went in.

The door led right into a large kitchen, which was full of smoke from one end to the other: the Duchess was sitting on a three-legged stool in the middle, nursing a baby: the cook was leaning over the fire, stirring a large cauldron which seemed to be full of soup.

“There’s certainly too much pepper in that soup!” Alice said to herself, as well as she could for sneezing.

There was certainly too much of it in the *air*. Even the Duchess sneezed occasionally; and as for the baby, it was sneezing and howling alternately without a moment’s pause. The only two creatures in the kitchen, that did *not* sneeze, were the cook, and a large cat, which was ⁹lying on the hearth and grinning from ear to ear.

“Please would you tell me,” said Alice, a little timidly, for she was not quite sure whether it was good manners for her to speak first, “why your cat grins like that?”

⁹sitting



“It’s a Cheshire-Cat,” said the Duchess, “and that’s why. Pig!”

She said the last word with such sudden violence that Alice quite jumped; but she saw in another moment that it was addressed to the baby, and not to her, so she took courage, and went on again:—

“I didn’t know that Cheshire-Cats always grinned; in fact, I didn’t know that cats *could* grin.”

“They all can,” said the Duchess; “and most of ’em do.”

“I don’t know of any that do,” Alice said very politely, feeling quite pleased to have got into a conversation.

“You don’t know much,” said the Duchess; “and that’s a fact.”

Alice did not at all like the tone of this remark, and thought it would be as well to introduce some other subject of conversation. While she was trying to fix on one, the cook took the cauldron of soup off the fire, and at once set to work throwing everything within her reach at the Duchess and the baby—the fire-irons came first; then followed a shower of saucepans, plates, and dishes. The Duchess took no notice of them even when they hit her; and the baby was howling so much already, that it was quite impossible to say whether the blows hurt it or not.

“Oh, *please* mind what you’re doing!” cried Alice, jumping up and down in an agony of terror. “Oh, there goes his *precious* nose!”, as an unusually large saucepan flew close by it, and very nearly carried it off.

“If everybody minded their own business,” the Duchess said, in a hoarse growl, “the world would go round a deal faster than it does.”

“Which would *not* be an advantage,” said Alice, who felt very glad to get an

opportunity of showing off a little of her knowledge. "Just think of what work it would make with the day and night! You see the earth takes twenty-four hours to turn round on its axis——"

"Talking of axes," said the Duchess, "chop off her head!"

Alice glanced rather anxiously at the cook, to see if she meant to take the hint; but the cook was busily stirring the soup, and seemed not to be listening, so she went on again: "Twenty-four hours, I *think*; or is it twelve? I——"

"Oh, don't bother *me!*" said the Duchess. "I never could abide figures!" And with that she began nursing her child again, singing a sort of lullaby to it as she did so, and giving it a violent shake at the end of every line:—

*"Speak roughly to your little boy,
And beat him when he sneezes:
He only does it to annoy,
Because he knows it teases."*

Parody on *Speak
Gently* by David Bates

Chorus

(in which the cook and the baby joined):—

"Wow! wow! wow!"

While the Duchess sang the second verse of the song, she kept tossing the baby violently up and down, and the poor little thing howled so, that Alice could hardly hear the words:—

*"I speak severely to my boy,
I beat him when he sneezes;
For he can thoroughly enjoy
The pepper when he pleases!"*

Chorus

"Wow! wow! wow!"

"Here! You may nurse it a bit, if you like!" the Duchess said to Alice, flinging the baby at her as she spoke. "I must go and get ready to play croquet with the Queen," and she hurried out of the room. The cook threw a frying-pan after her as she went, but it just missed her.

Alice caught the baby with some difficulty, as it was a queer-shaped little creature, and held out its arms and legs in all directions, "just like a star-fish," thought Alice. The poor little thing was snorting like a steam-engine when she caught it, and kept doubling itself up and straightening itself out again, so that altogether, for the first minute or two, it was as much as she could do to hold it.

As soon as she had made out the proper way of nursing it (which was to twist it up into a sort of knot, and then keep tight hold of its right ear and left foot, so as to prevent its undoing itself), she carried it out into the open air. "If I don't take this child away with me," thought Alice, "they're sure to kill it in a day or two. Wouldn't it be murder to leave it behind?" She said the last words out loud, and the little thing grunted in reply (it had left off sneezing by this

time). “Don’t grunt,” said Alice; “that’s not at all a proper way of expressing yourself.”

The baby grunted again, and Alice looked very anxiously into its face to see what was the matter with it. There could be no doubt that it had a *very* turn-up nose, much more like a snout than a real nose: also its eyes were getting extremely small for a baby: altogether Alice did not like the look of the thing at all. “But perhaps it was only sobbing,” she thought, and looked into its eyes again, to see if there were any tears.

No, there were no tears. “If you’re going to turn into a pig, my dear,” said Alice, seriously, “I’ll have nothing more to do with you. Mind now!” The poor little thing sobbed again (or grunted, it was impossible to say which), and they went on for some while in silence.



Alice was just beginning to think to herself, “Now, what am I to do with this creature, when I get it home?” when it grunted again, so violently, that she looked down into its face in some alarm. This time there could be *no* mistake about it: it was neither more nor less than a pig, and she felt that it would be quite absurd for her to carry it any further.

So she set the little creature down, and felt quite relieved to see it trot away quietly into the wood. “If it had grown up,” she said to herself, “it would have made a dreadfully ugly child: but it makes rather a handsome pig, I think.” And she began thinking over other children she knew, who might do very well as pigs, and was just saying to herself “if one only knew the right way to change them——” when she was a little startled by seeing the Cheshire-Cat sitting on a bough of a tree a few yards off.

The Cat only grinned when it saw Alice. It looked good-natured, she thought: still it had *very* long claws and a great many teeth, so she felt that it ought to be treated with respect.

“Cheshire-Puss,” she began, rather timidly, as she did not at all know whether it would like the name: however, it only grinned a little wider. “Come, it’s pleased so far,” thought Alice, and she went on. “Would you tell me, please, which way I ought to go from here?”

“That depends a good deal on where you want to get to,” said the Cat.

“I don’t much care where——” said Alice.

“Then it doesn’t matter which way you go,” said the Cat.

“——so long as I get *somewhere*,” Alice added as an explanation.

“Oh, you’re sure to do that,” said the Cat, “if you only walk long enough.”

Alice felt that this could not be denied, so she tried another question. “What sort of people live about here?”

“In *that* direction,” the Cat said, waving its right paw round, “lives a Hatter: and in *that* direction,” waving the other paw, “lives a March Hare. Visit either you like: they’re both mad.”

“But I don’t want to go among mad people,” Alice remarked.

“Oh, you can’t help that,” said the Cat: “we’re all mad here. I’m mad. You’re mad.”

“How do you know I’m mad?” said Alice.

“You must be,” said the Cat, “or you wouldn’t have come here.”

Alice didn’t think that proved it at all: however, she went on: “And how do you know that you’re mad?”

“To begin with,” said the Cat, “a dog’s not mad. You grant that?”

“I suppose so,” said Alice.

“Well, then,” the Cat went on, “you see, a dog growls when it’s angry, and wags its tail when it’s pleased. Now *I* growl when I’m pleased, and wag my tail when I’m angry. Therefore I’m mad.”

“I call it purring, not growling,” said Alice.

“Call it what you like,” said the Cat. “Do you play croquet with the Queen to-day?”

“I should like it very much,” said Alice, “but I haven’t been invited yet.”

“You’ll see me there,” said the Cat, and vanished.

Alice was not much surprised at this, she was getting so used to queer things happening. While she was looking at the place where it had been, it suddenly appeared again.

“By-the-bye, what became of the baby?” said the Cat. “I’d nearly forgotten to ask.”

“It turned into a pig,” Alice answered very quietly, just as if it had come back in a natural way.

“I thought it would,” said the Cat, and vanished again.

Alice waited a little, half expecting to see it again, but it did not appear, and after a minute or two she walked on in the direction in which the March Hare was said to live. “I’ve seen hatters before,” she said to herself: “the March Hare will be much the most interesting, and perhaps, as this is May, it wo’n’t be raving mad—at least not so mad as it was in March.” As she said this, she looked up, and there was the Cat again, sitting on a branch of a tree.

“Did you say ‘pig’, or ‘fig’?” said the Cat.

“I said ‘pig’,” replied Alice; “and I wish you wouldn’t keep appearing and vanishing so suddenly: you make one quite giddy!”





“All right,” said the Cat; and this time it vanished quite slowly, beginning with the end of the tail, and ending with the grin, which remained some time after the rest of it had gone.

“Well! I’ve often seen a cat without a grin,” thought Alice; “but a grin without a cat! It’s the most curious thing I ever saw in my life!”

She had not gone much farther before she came in sight of the house of the March Hare: she thought it must be the right house, because the chimneys were shaped like ears and the roof was thatched with fur. It was so large a house, that she did not like to go nearer till she had nibbled some more of the left-hand bit of mushroom, and raised herself to about two feet high: even then she walked up towards it rather timidly, saying to herself “Suppose it should be raving mad after all! I almost wish I’d gone to see the Hatter instead!”

Chapter VII. A Mad Tea-Party

There was a table set out under a tree in front of the house, and the March Hare and the Hatter were having tea at it: a Dormouse was sitting between them, fast asleep, and the other two were using it as a cushion, resting their elbows on it, and talking over its head. “Very uncomfortable for the Dormouse,” thought Alice; “only, as it’s asleep, I suppose it doesn’t mind.”

The table was a large one, but the three were all crowded together at one corner of it. “No room! No room!” they cried out when they saw Alice coming. “There’s *plenty* of room!” said Alice indignantly, and she sat down in a large arm-chair at one end of the table.

“Have some wine,” the March Hare said in an encouraging tone.

Alice looked all round the table, but there was nothing on it but tea. “I don’t see any wine,” she remarked.

“There isn’t any,” said the March Hare.

“Then it wasn’t very civil of you to offer it,” said Alice angrily.

“It wasn’t very civil of you to sit down without being invited,” said the March Hare.

“I didn’t know it was *your* table,” said Alice: “it’s laid for a great many more than three.”

“Your hair wants cutting,” said the Hatter. He had been looking at Alice for some time with great curiosity, and this was his first speech.

“You should learn not to make personal remarks,” Alice said with some severity: “it’s very rude.”



The Hatter opened his eyes very wide on hearing this; but all he *said* was, “Why is a raven like a writing-desk?”

“Come, we shall have some fun now!” thought Alice. “I’m glad they’ve begun asking riddles—I believe I can guess that,” she added aloud.

“Do you mean that you think you can find out the answer to it?” said the March Hare.

“Exactly so,” said Alice.

“Then you should say what you mean,” the March Hare went on.

“I do,” Alice hastily replied; “at least—at least I mean what I say—that’s the same thing, you know.”

“Not the same thing a bit!” said the Hatter. “Why, you might just as well say that ‘I see what I eat’ is the same thing as ‘I eat what I see’!”

“You might just as well say,” added the March Hare, “that ‘I like what I get’ is the same thing as ‘I get what I like’!”

“You might just as well say,” added the Dormouse, ¹⁰which seemed to be talking in ¹¹its sleep, “that ‘I breathe when I sleep’ is the same thing as ‘I sleep

¹⁰who

¹¹his

when I breathe'!"

"It *is* the same thing with you," said the Hatter, and here the conversation dropped, and the party sat silent for a minute, while Alice thought over all she could remember about ravens and writing-desks, which wasn't much.

The Hatter was the first to break the silence. "What day of the month is it?" he said, turning to Alice: he had taken his watch out of his pocket, and was looking at it uneasily, shaking it every now and then, and holding it to his ear.

Alice considered a little, and then said¹² "The fourth."

"Two days wrong!" sighed the Hatter. "I told you butter wouldn't suit the works!" he added, looking angrily at the March Hare.

"It was the *best* butter," the March Hare meekly replied.

"Yes, but some crumbs must have got in as well," the Hatter grumbled: "you shouldn't have put it in with the bread-knife."

The March Hare took the watch and looked at it gloomily: then he dipped it into his cup of tea, and looked at it again: but he could think of nothing better to say than his first remark, "It was the *best* butter, you know."

Alice had been looking over his shoulder with some curiosity. "What a funny watch!" she remarked. "It tells the day of the month, and doesn't tell what o'clock it is!"

"Why should it?" muttered the Hatter. "Does *your* watch tell you what year it is?"

"Of course not," Alice replied very readily: "but that's because it stays the same year for such a long time together."

"Which is just the case with *mine*," said the Hatter.

Alice felt dreadfully puzzled. The Hatter's remark seemed to have no sort of meaning in it, and yet it was certainly English. "I don't quite understand you," she said, as politely as she could.

"The Dormouse is asleep again," said the Hatter, and he poured a little hot tea upon¹³ its nose.

The Dormouse shook its head impatiently, and said, without opening its eyes, "Of course, of course: just what I was going to remark myself."

"Have you guessed the riddle yet?" the Hatter said, turning to Alice again.

"No, I give it up," Alice replied. "What's the answer?"

"I haven't the slightest idea," said the Hatter.

"Nor I," said the March Hare.

Alice sighed wearily. "I think you might do something better with the time," she said, "than waste it in asking riddles that have no answers."

"If you knew Time as well as I do," said the Hatter, "you wouldn't talk about wasting *it*. It's *him*."

"I don't know what you mean," said Alice.

"Of course you don't!" the Hatter said, tossing his head contemptuously. "I dare say you never even spoke to Time!"

"Perhaps not," Alice cautiously replied; "but I know I have to beat time when I learn music."

"Ah! That accounts for it," said the Hatter. "He wo'n't stand beating. Now, if you only kept on good terms with him, he'd do almost anything you liked with the clock. For instance, suppose it were nine o'clock in the morning, just

¹²and said

¹³on

time to begin lessons: you'd only have to whisper a hint to Time, and round goes the clock in a twinkling! Half-past one, time for dinner!"

("I only wish it was," the March Hare said to itself in a whisper.)

"That would be grand, certainly," said Alice thoughtfully; "but then—I shouldn't be hungry for it, you know."

"Not at first, perhaps," said the Hatter: "but you could keep it to half-past one as long as you liked."

"Is that the way *you* manage?" Alice asked.

The Hatter shook his head mournfully. "Not I!" he replied. "We quarrelled last March—just before *he* went mad, you know——" (pointing with his teaspoon at the March Hare,) "——it was at the great concert given by the Queen of Hearts, and I had to sing



*'Twinkle, twinkle, little bat!
How I wonder what you're at!'*

Parody on *The Star*
by Jane Taylor

You know the song, perhaps?"

"I've heard something like it," said Alice.

"It goes on, you know," the Hatter continued, "in this way:—

*'Up above the world you fly,
Like a tea-tray in the sky.
Twinkle, twinkle——'*

Here the Dormouse shook itself, and began singing in its sleep "*Twinkle, twinkle, twinkle, twinkle——*" and went on so long that they had to pinch it to make it stop.

"Well, I'd hardly finished the first verse," said the Hatter, "when the Queen bawled out, 'He's murdering the time! Off with his head!'"

"How dreadfully savage!" exclaimed Alice.

"And ever since that," the Hatter went on in a mournful tone, "he wo'n't do a thing I ask! It's always six o'clock now."

A bright idea came into Alice's head. "Is that the reason so many tea-things are put out here?" she asked.

"Yes, that's it," said the Hatter with a sigh: "it's always tea-time, and we've no time to wash the things between whiles."

"Then you keep moving round, I suppose?" said Alice.

"Exactly so," said the Hatter: "as the things get used up."

"But what happens when you come to the beginning again?"¹⁴ Alice ventured to ask.

"Suppose we change the subject," the March Hare interrupted, yawning. "I'm getting tired of this. I vote the young lady tells us a story."

"I'm afraid I don't know one," said Alice, rather alarmed at the proposal.

"Then the Dormouse shall!" they both cried. "Wake up, Dormouse!" And they pinched it on both sides at once.

The Dormouse slowly opened his eyes. "I wasn't asleep," it said in a hoarse, feeble voice, "I heard every word you fellows were saying."

"Tell us a story!" said the March Hare.

"Yes, please do!" pleaded Alice.

"And be quick about it," added the Hatter, "or you'll be asleep again before it's done."

"Once upon a time there were three little sisters," the Dormouse began in a great hurry; "and their names were Elsie, Lacie, and Tillie; and they lived at the bottom of a well——"

"What did they live on?" said Alice, who always took a great interest in questions of eating and drinking.

"They lived on treacle," said the Dormouse, after thinking a minute or two.

"They couldn't have done that, you know," Alice gently remarked. "They'd have been ill."

"So they were," said the Dormouse; "*very* ill."

Alice tried to fancy to herself what such an extraordinary way of living would be like, but it puzzled her too much: so she went on: "But why did they live at the bottom of a well?"

"Take some more tea," the March Hare said to Alice, very earnestly.

"I've had nothing yet," Alice replied in an offended tone: "so I ca'n't take more."

"You mean you ca'n't take *less*," said the Hatter: "it's very easy to take *more* than nothing."

"Nobody asked *your* opinion," said Alice.

"Who's making personal remarks now?" the Hatter asked triumphantly.

Alice did not quite know what to say to this: so she helped herself to some tea and bread-and-butter, and then turned to the Dormouse, and repeated her question. "Why did they live at the bottom of a well?"

The Dormouse again took a minute or two to think about it, and then said "It was a treacle-well."

"There's no such thing!" Alice was beginning very angrily, but the Hatter and the March Hare went "Sh! sh!" and the Dormouse sulkily remarked "If you ca'n't be civil, you'd better finish the story for yourself."

"No, please go on!" Alice said very humbly. "I wo'n't interrupt again. I dare say there may be *one*."

¹⁴"But when do you come to the beginning again?"

“One, indeed!” said the Dormouse indignantly. However, he consented to go on. “And so these three little sisters—they were learning to draw, you know—

—”

“What did they draw?” said Alice, quite forgetting her promise.

“Treacle,” said the Dormouse, without considering at all, this time.

“I want a clean cup,” interrupted the Hatter: “let’s all move one place on.”

He moved on as he spoke, and the Dormouse followed him: the March Hare moved into the Dormouse’s place, and Alice rather unwillingly took the place of the March Hare. The Hatter was the only one who got any advantage from the change; and Alice was a good deal worse off than before, as the March Hare had just upset the milk-jug into his plate.

Alice did not wish to offend the Dormouse again, so she began very cautiously: “But I don’t understand. Where did they draw the treacle from?”

“You can draw water out of a water-well,” said the Hatter; “so I should think you could draw treacle out of a treacle-well—eh, stupid?”

“But they were *in* the well,” Alice said to the Dormouse, not choosing to notice this last remark.

“Of course they were,” said the Dormouse: “well in.”

This answer so confused poor Alice, that she let the Dormouse go on for some time without interrupting it.

“They were learning to draw,” the Dormouse went on, yawning and rubbing its eyes, for it was getting very sleepy; “and they drew all manner of things—everything that begins with an M——”

“Why with an M?” said Alice.

“Why not?” said the March Hare.

Alice was silent.

The Dormouse had closed its eyes by this time, and was going off into a doze; but, on being pinched by the Hatter, it woke up again with a little shriek, and went on: “——that begins with an M, such as mouse-traps, and the moon, and memory, and muchness—you know you say things are ‘much of a muchness’—did you ever see such a thing as a drawing of a muchness?”

“Really, now you ask me,” said Alice, very much confused, “I don’t think——”

“Then you shouldn’t talk,” said the Hatter.

This piece of rudeness was more than Alice could bear: she got up in great disgust, and walked off: the Dormouse fell asleep instantly, and neither of the others took the least notice of her going, though she looked back once or twice, half hoping that they would call after her: the last time she saw them, they were trying to put the Dormouse into the teapot.

“At any rate I’ll never go *there* again!” said Alice as she picked her way through the wood. “It’s the stupidest tea-party I ever was at in all my life!”

Just as she said this, she noticed that one of the trees had a door leading right into it. “That’s very curious!” she thought. “But everything’s curious today. I think I may as well go in at once.” And in she went.

Once more she found herself in the long hall, and close to the little glass table. “Now, I’ll manage better this time,” she said to herself, and began by taking the little golden key, and unlocking the door that led into the garden. Then she went to work nibbling at the mushroom (she had kept a piece of it in her pocket) till she was about a foot high: then she walked down the little passage: and *then*—she found herself at last in the beautiful garden, among the bright flower-beds and the cool fountains.



Chapter VIII. The Queen's Croquet Ground

A large rose-tree stood near the entrance of the garden: the roses growing on it were white, but there were three gardeners at it, busily painting them red. Alice thought this a very curious thing, and she went nearer to watch them, and, just as she came up to them, she heard one of them say "Look out now, Five! Don't go splashing paint over me like that!"

"I couldn't help it," said Five, in a sulky tone. "Seven jogged my elbow."

On which Seven looked up and said "That's right, Five! Always lay the blame on others!"

"*You'd* better not talk!" said Five. "I heard the Queen say only yesterday you deserved to be beheaded."



"What for?" said the one who had spoken first.

"That's none of *your* business, Two!" said Seven.

"Yes, it *is* his business!" said Five. "And I'll tell him—it was for bringing the cook tulip-roots instead of onions."

Seven flung down his brush, and had just begun "Well, of all the unjust things—" when his eye chanced to fall upon Alice, as she stood watching them, and he checked himself suddenly: the others looked round also, and all of them bowed low.

"Would you tell me, please," said Alice, a little timidly, "why you are painting those roses?"

Five and Seven said nothing, but looked at Two. Two began, in a low voice, "Why, the fact is, you see, Miss, this here ought to have been a *red* rose-tree, and we put a white one in by mistake; and, if the Queen was to find it out, we should all have our heads cut off, you know. So you see, Miss, we're doing our best, afore she comes, to—" At this moment, Five, who had been anxiously looking across the garden, called out "The Queen! The Queen!", and the three

gardeners instantly threw themselves flat upon their faces. There was a sound of many footsteps, and Alice looked round, eager to see the Queen.

First came ten soldiers carrying clubs: these were all shaped like the three gardeners, oblong and flat, with their hands and feet at the corners: next the ten courtiers: these were ornamented all over with diamonds, and walked two and two, as the soldiers did. After these came the royal children: there were ten of them, and the little dears came jumping merrily along, hand in hand, in couples: they were all ornamented with hearts. Next came the guests, mostly Kings and Queens, and among them Alice recognised the White Rabbit: it was talking in a hurried nervous manner, smiling at everything that was said, and went by without noticing her. Then followed the Knave of Hearts, carrying the King's crown on a crimson velvet cushion; and, last of all this grand procession, came THE KING AND THE QUEEN¹⁵ OF HEARTS.

Alice was rather doubtful whether she ought not to lie down on her face like the three gardeners, but she could not remember ever having heard of such a rule at processions; "and besides, what would be the use of a procession," thought she, "if people had all to lie down on their faces, so that they couldn't see it?" So she stood where she was, and waited.

When the procession came opposite to Alice, they all stopped and looked at her, and the Queen said, severely, "Who is this?". She said it to the Knave of Hearts, who only bowed and smiled in reply.

"Idiot!" said the Queen, tossing her head impatiently; and, turning to Alice, she went on: "What's your name, child?"

"My name is Alice, so please your Majesty," said Alice very politely; but she added, to herself, "Why, they're only a pack of cards, after all. I needn't be afraid of them!"

"And who are *these*?" said the Queen, pointing to the three gardeners who were lying round the rose-tree; for, you see, as they were lying on their faces, and the pattern on their backs¹⁶ was the same as the rest of the pack, she could not tell whether they were gardeners, or soldiers, or courtiers, or three of her own children.

"How should *I* know?" said Alice, surprised at her own courage. "It's no business of *mine*."

The Queen turned crimson with fury, and, after glaring at her for a moment like a wild beast, began screaming "Off with her head! Off with¹⁷——"

"Nonsense!" said Alice, very loudly and decidedly, and the Queen was silent.

The King laid his hand upon her arm, and timidly said "Consider, my dear: she is only a child!"

The Queen turned angrily away from him, and said to the Knave "Turn them over!"

The Knave did so, very carefully, with one foot.

"Get up!" said the Queen in a shrill, loud voice, and the three gardeners instantly jumped up, and began bowing to the King, the Queen, the royal children, and everybody else.

"Leave off that!" screamed the Queen. "You make me giddy." And then, turning to the rose-tree, she went on "What *have* you been doing here?"

¹⁵AND QUEEN

¹⁶back

¹⁷Off



“May it please your Majesty,” said Two, in a very humble tone, going down on one knee as he spoke, “we were trying—”

“*I see!*” said the Queen, who had meanwhile been examining the roses. “Off with their heads!” and the procession moved on, three of the soldiers remaining behind to execute the unfortunate gardeners, who ran to Alice for protection.

“You sha’n’t be beheaded!” said Alice, and she put them into a large flower-pot that stood near. The three soldiers wandered about for a minute or two, looking for them, and then quietly marched off after the others.

“Are their heads off?” shouted the Queen.

“Their heads are gone, if it please your Majesty!” the soldiers shouted in reply.

“That’s right!” shouted the Queen. “Can you play croquet?”

The soldiers were silent, and looked at Alice, as the question was evidently meant for her.

“Yes!” shouted Alice.

“Come on, then!” roared the Queen, and Alice joined the procession, wondering very much what would happen next.

“It’s—it’s a very fine day!” said a timid voice at her side. She was walking by the White Rabbit, who was peeping anxiously into her face.

“Very,” said Alice. “Where’s the Duchess?”

“Hush! Hush!” said the Rabbit in a low hurried tone. He looked anxiously over his shoulder as he spoke, and then raised himself upon tiptoe, put his mouth close to her ear, and whispered “She’s under sentence of execution.”

“What for?” said Alice.

“Did you say ‘What a pity!’?” the Rabbit asked.

“No, I didn’t,” said Alice. “I don’t think it’s at all a pity. I said ‘What for?’”

“She boxed the Queen’s ears—” the Rabbit began. Alice gave a little scream of laughter. “Oh, hush!” the Rabbit whispered in a frightened tone. “The Queen will hear you! You see, she came rather late, and the Queen said—”

“Get to your places!” shouted the Queen in a voice of thunder, and people began running about in all directions, tumbling up against each other; however, they got settled down in a minute or two, and the game began.



Alice thought she had never seen such a curious croquet-ground in her life: it was all ridges and furrows: the croquet balls were live hedgehogs, and the mallets live flamingoes, and the soldiers had to double themselves up and to stand on their hands and feet, to make the arches.

The chief difficulty Alice found at first was in managing her flamingo: she succeeded in getting its body tucked away, comfortably enough, under her arm, with its legs hanging down, but generally, just as she had got its neck nicely straightened out, and was going to give the hedgehog a blow with its head, it *would* twist itself round and look up in her face, with such a puzzled expression that she could not help bursting out laughing; and, when she had got its head down, and was going to begin again, it was very provoking to find that the hedgehog had unrolled itself, and was in the act of crawling away: besides all this, there was generally a ridge or a furrow in the way wherever she wanted to send the hedgehog to, and, as the doubled-up soldiers were always getting up and walking off to other parts of the ground, Alice soon came to the conclusion that it was a very difficult game indeed.

The players all played at once, without waiting for turns, quarrelling all the while, and fighting for the hedgehogs; and in a very short time the Queen was in a furious passion, and went stamping about, and shouting "Off with his head!" or "Off with her head!" about once in a minute.

Alice began to feel very uneasy: to be sure, she had not as yet had any dispute with the Queen, but she knew that it might happen any minute, "and then," thought she, "what would become of me? They're dreadfully fond of beheading people here: the great wonder is, that there's any one left alive!"

She was looking about for some way of escape, and wondering whether she could get away without being seen, when she noticed a curious appearance in the air: it puzzled her very much at first, but after watching it a minute or two she made it out to be a grin, and she said to herself "It's the Cheshire-Cat: now

I shall have somebody to talk to.”

“How are you getting on?” said the Cat, as soon as there was mouth enough for it to speak with.

Alice waited till the eyes appeared, and then nodded. “It’s no use speaking to it,” she thought, “till its ears have come, or at least one of them.” In another minute the whole head appeared, and then Alice put down her flamingo, and began an account of the game, feeling very glad she had someone to listen to her. The Cat seemed to think that there was enough of it now in sight, and no more of it appeared.

“I don’t think they play at all fairly,” Alice began, in rather a complaining tone, “and they all quarrel so dreadfully one ca’n’t hear oneself¹⁸ speak—and they don’t seem to have any rules in particular: at least, if there are, nobody attends to them—and you’ve no idea how confusing it is all the things being alive: for instance, there’s the arch I’ve got to go through next walking about at the other end of the ground—and I should have croqueted the Queen’s hedgehog just now, only it ran away when it saw mine coming!”

“How do you like the Queen?” said the Cat in a low voice.

“Not at all,” said Alice: “she’s so extremely—” Just then she noticed that the Queen was close behind her, listening: so she went on “—likely to win, that it’s hardly worth while finishing the game.”

The Queen smiled and passed on.

“Who *are* you talking to?” said the King, coming up to Alice, and looking at the Cat’s head with great curiosity.

“It’s a friend of mine—a Cheshire-Cat,” said Alice: “allow me to introduce it.”

“I don’t like the look of it at all,” said the King: “however, it may kiss my hand, if it likes.”

“I’d rather not,” the Cat remarked.

“Don’t be impertinent,” said the King, “and don’t look at me like that!” He got behind Alice as he spoke.

“A cat may look at a king,” said Alice. “I’ve read that in some book, but I don’t remember where.”

“Well, it must be removed,” said the King very decidedly; and he called to the Queen, who was passing at the moment, “My dear! I wish you would have this cat removed!”

The Queen had only one way of settling all difficulties, great or small. “Off with his head!” she said without even looking round.

“I’ll fetch the executioner myself,” said the King eagerly, and he hurried off.

Alice thought she might as well go back and see how the game was going on, as she heard the Queen’s voice in the distance, screaming with passion. She had already heard her sentence three of the players to be executed for having missed their turns, and she did not like the look of things at all, as the game was in such confusion that she never knew whether it was her turn or not. So she went in search of her hedgehog.

The hedgehog was engaged in a fight with another hedgehog, which seemed to Alice an excellent opportunity for croqueting one of them with the other: the only difficulty was, that her flamingo was gone across to the other side of the

¹⁸one’s-self

garden, where Alice could see it trying in a helpless sort of way to fly up into a tree.

By the time she had caught the flamingo and brought it back, the fight was over, and both the hedgehogs were out of sight: “but it doesn’t matter much,” thought Alice, “as all the arches are gone from this side of the ground.” So she tucked it away under her arm, that it might not escape again, and went back for a little more conversation with her friend.

When she got back to the Cheshire-Cat, she was surprised to find quite a large crowd collected round it: there was a dispute going on between the executioner, the King, and the Queen, who were all talking at once, while all the rest were quite silent, and looked very uncomfortable.

The moment Alice appeared, she was appealed to by all three to settle the question, and they repeated their arguments to her, though, as they all spoke at once, she found it very hard to make out exactly what they said.

The executioner’s argument was, that you couldn’t cut off a head unless there was a body to cut it off from: that he had never had to do such a thing before, and he wasn’t going to begin at *his* time of life.

The King’s argument was that anything that had a head could be beheaded, and that you weren’t to talk nonsense.

The Queen’s argument was that, if something wasn’t done about it in less than no time, she’d have everybody executed, all round. (It was this last remark that had made the whole party look so grave and anxious.)

Alice could think of nothing else to say but “It belongs to the Duchess: you’d better ask *her* about it.”

“She’s in prison,” the Queen said to the executioner: “fetch her here.” And the executioner went off like an arrow.

The Cat’s head began fading away the moment he was gone, and, by the time he had come back with the Duchess, it had entirely disappeared; so the King and the executioner ran wildly up and down, looking for it, while the rest of the party went back to the game.

Chapter IX. The Mock Turtle’s Story

“You ca’n’t think how glad I am to see you again, you dear old thing!” said the Duchess, as she tucked her arm affectionately into Alice’s, and they walked off together.

Alice was very glad to find her in such a pleasant temper, and thought to herself that perhaps it was only the pepper that had made her so savage when they met in the kitchen.

“When *I’m* a Duchess,” she said to herself (not in a very hopeful tone, though), “I wo’n’t have any pepper in my kitchen *at all*. Soup does very well without—Maybe it’s always pepper that makes people hot-tempered,” she went on, very much pleased at having found out a new kind of rule, “and vinegar that makes them sour—and camomile that makes them bitter—and—and barley-sugar and such things that make children sweet-tempered. I only wish people knew *that*: then they wouldn’t be so stingy about it, you know—”

She had quite forgotten the Duchess by this time, and was a little startled when she heard her voice close to her ear. “You’re thinking about something, my dear, and that makes you forget to talk. I ca’n’t tell you just now what the moral of that is, but I shall remember it in a bit.”



"Perhaps it hasn't one," Alice ventured to remark.

"Tut, tut, child!" said the Duchess. "Every thing's got a moral, if only you can find it." And she squeezed herself up closer to Alice's side as she spoke.



Alice did not much like keeping so close to her: first, because the Duchess was *very* ugly; and secondly, because she was exactly the right height to rest her chin upon Alice's shoulder, and it was an uncomfortably sharp chin. However, she did not like to be rude: so she bore it as well as she could.

"The game's going on rather better now," she said, by way of keeping up the conversation a little.

"'Tis so," said the Duchess: "and the moral of that is—'Oh, 'tis love, 'tis love, that makes the world go round!'"

"Somebody said," Alice whispered, "that it's done by everybody minding their own business!"

"Ah, well! It means much the same thing," said the Duchess, digging her sharp little chin into Alice's shoulder as she added "and the moral of *that* is—'Take care of the sense, and the sounds will take care of themselves.'"

"How fond she is of finding morals in things!" Alice thought to herself.

"I dare say you're wondering why I don't put my arm round your waist," the Duchess said after a pause: "the reason is, that I'm doubtful about the temper of your flamingo. Shall I try the experiment?"

"He might bite," Alice cautiously replied, not feeling at all anxious to have the experiment tried.

"Very true," said the Duchess: "flamingoes and mustard both bite. And the moral of that is—'Birds of a feather flock together.'"

"Only mustard isn't a bird," Alice remarked.

"Right, as usual," said the Duchess: "what a clear way you have of putting things!"

"It's a mineral, I *think*," said Alice.

"Of course it is," said the Duchess, who seemed ready to agree to everything that Alice said: "there's a large mustard-mine near here. And the moral of that is—'The more there is of mine, the less there is of yours.'"

"Oh, I know!" exclaimed Alice, who had not attended to this last remark. "It's a vegetable. It doesn't look like one, but it is."

"I quite agree with you," said the Duchess; "and the moral of that is—'Be what you would seem to be'—or, if you'd like it put more simply—'Never imagine yourself not to be otherwise than what it might appear to others that what you were or might have been was not otherwise than what you had been would have appeared to them to be otherwise.'"

"I think I should understand that better," Alice said very politely, "if I had it written down: but I ca'n't quite follow it as you say it."

"That's nothing to what I could say if I chose," the Duchess replied, in a pleased tone.

"Pray don't trouble yourself to say it any longer than that," said Alice.

"Oh, don't talk about trouble!" said the Duchess. "I make you a present of everything I've said as yet."

"A cheap sort of present!" thought Alice. "I'm glad \perp people¹⁹ don't give birthday-presents like that!" But she did not venture to say it out loud.

"Thinking again?" the Duchess asked, with another dig of her sharp little chin.

"I've a right to think," said Alice sharply, for she was beginning to feel a little worried.

"Just about as much right," said the Duchess, "as pigs have to fly; and the m——"

But here, to Alice's great surprise, the Duchess's voice died away, even in the middle of her favourite word 'moral,' and the arm that was linked into hers began to tremble. Alice looked up, and there stood the Queen in front of them, with her arms folded, frowning like a thunderstorm.

"A fine day, your Majesty!" the Duchess began in a low, weak voice.

"Now, I give you fair warning," shouted the Queen, stamping on the ground as she spoke; "either you or your head must be off, and that in about half no time! Take your choice!"

The Duchess took her choice, and was gone in a moment.

"Let's go on with the game," the Queen said to Alice; and Alice was too much frightened to say a word, but slowly followed her back to the croquet-ground.

The other guests had taken advantage of the Queen's absence, and were resting in the shade: however, the moment they saw her, they hurried back to the game, the Queen merely remarking that a moment's delay would cost them their lives.

All the time they were playing the Queen never left off quarrelling with the other players, and shouting "Off with his head!" or "Off with her head!" Those whom she sentenced were taken into custody by the soldiers, who of course had to leave off being arches to do this, so that, by the end of half an hour or so, there were no arches left, and all the players, except the King, the Queen, and Alice, were in custody and under sentence of execution.

¹⁹they

Then the Queen left off, quite out of breath, and said to Alice "Have you seen the Mock Turtle yet?"

"No," said Alice. "I don't even know what a Mock Turtle is."

"It's the thing Mock Turtle Soup is made from," said the Queen.

"I never saw one, or heard of one," said Alice.

"Come on, then," said the Queen, "and he shall tell you his history,"

As they walked off together, Alice heard the King say in a low voice, to the company generally, "You are all pardoned." "Come, *that's* a good thing!" she said to herself, for she had felt quite unhappy at the number of executions the Queen had ordered.



They very soon came upon a Gryphon, lying fast asleep in the sun. (If you don't know what a Gryphon is, look at the picture.) "Up, lazy thing!" said the Queen, "and take this young lady to see the Mock Turtle, and to hear his history. I must go back and see after some executions I have ordered;" and she walked off, leaving Alice alone with the Gryphon. Alice did not quite like the look of the creature, but on the whole she thought it would be quite as safe to stay with it as to go after that savage Queen: so she waited.

The Gryphon sat up and rubbed its eyes: then it watched the Queen till she was out of sight: then it chuckled. "What fun!" said the Gryphon, half to itself, half to Alice.

"What *is* the fun?" said Alice.

"Why, *she*," said the Gryphon. "It's all her fancy, that: they never executes nobody, you know. Come on!"

"Everybody says 'come on!' here," thought Alice, as she went slowly after it: "I never was so ordered about before, in all my life, never!"

They had not gone far before they saw the Mock Turtle in the distance, sitting sad and lonely on a little ledge of rock, and, as they came nearer, Alice could hear him sighing as if his heart would break. She pitied him deeply. "What

is his sorrow?" she asked the Gryphon. And the Gryphon answered, very nearly in the same words as before, "It's all his fancy, that: he hasn't got no sorrow, you know. Come on!"

So they went up to the Mock Turtle, who looked at them with large eyes full of tears, but said nothing.

"This here young lady," said the Gryphon, "she wants for to know your history, she do."

"I'll tell it her," said the Mock Turtle in a deep, hollow tone. "Sit down, both of you, and don't speak a word till I've finished."

So they sat down, and nobody spoke for some minutes. Alice thought to herself "I don't see how he can *even* finish, if he doesn't begin." But she waited patiently.

"Once," said the Mock Turtle at last, with a deep sigh, "I was a real Turtle."

These words were followed by a very long silence, broken only by an occasional exclamation of "Hjckrrh!" from the Gryphon, and the constant heavy sobbing of the Mock Turtle. Alice was very nearly getting up and saying "Thank you, Sir, for your interesting story," but she could not help thinking there *must* be more to come, so she sat still and said nothing.

"When we were little," the Mock Turtle went on at last, more calmly, though still sobbing a little now and then, "we went to school in the sea. The master was an old Turtle—we used to call him Tortoise——"

"Why did you call him Tortoise, if he wasn't one?" Alice asked.

"We called him Tortoise because he taught us," said the Mock Turtle angrily. "Really you are very dull!"

"You ought to be ashamed of yourself for asking such a simple question," added the Gryphon; and then they both sat silent and looked at poor Alice, who felt ready to sink into the earth. At last the Gryphon said to the Mock Turtle "Drive on, old fellow! Don't be all day about it!", and he went on in these words:—

"Yes, we went to school in the sea, though you mayn't believe it——"

"I never said I didn't!" interrupted Alice.

"You did," said the Mock Turtle.

"Hold your tongue!" added the Gryphon, before Alice could speak again. The Mock Turtle went on.

"We had the best of educations—in fact, we went to school every day——"

"*I've* been to a day-school, too," said Alice. "You needn't be so proud as all that."

"With extras?" asked the Mock Turtle, a little anxiously.

"Yes," said Alice: "we learned French and music."

"And washing?" said the Mock Turtle.

"Certainly not!" said Alice indignantly.

"Ah! Then yours wasn't a really good school," said the Mock Turtle in a tone of great relief. "Now, at *ours*, they had, at the end of the bill, 'French, music, and *washing*—extra.'"

"You couldn't have wanted it much," said Alice; "living at the bottom of the sea."

"I couldn't afford to learn it," said the Mock Turtle with a sigh. "I only took the regular course."

"What was that?" inquired Alice.



“Reeling and Writhing, of course, to begin with,” the Mock Turtle replied; “and then the different branches of Arithmetic—Ambition, Distraction, Uglification, and Derision.”

“I never heard of ‘Uglification,’” Alice ventured to say. “What is it?”

The Gryphon lifted up both its paws in surprise. “Never heard of uglifying!” it exclaimed. “You know what to beautify is, I suppose?”

“Yes,” said Alice doubtfully: “it means—to—make—anything—prettier.”

“Well, then,” the Gryphon went on, “if you don’t know what to uglify is, you *are* a simpleton.”

Alice did not feel encouraged to ask any more questions about it: so she turned to the Mock Turtle, and said “What else had you to learn?”

“Well, there was Mystery,” the Mock Turtle replied, counting off the subjects on his flappers,—“Mystery, ancient and modern, with Seaography: then Drawling—the Drawling-master was an old conger-eel, that used to come once a week: *he* taught us Drawling, Stretching, and Fainting in Coils.”

“What was *that* like?” said Alice.

“Well, I ca’n’t show it you, myself,” the Mock Turtle said: “I’m too stiff. And the Gryphon never learnt it.”

“Hadn’t time,” said the Gryphon: “I went to the Classics master, though. He was an old crab, *he* was.”

“I never went to him,” the Mock Turtle said with a sigh. “He taught Laughing and Grief, they used to say.”

“So he did, so he did,” said the Gryphon, sighing in his turn; and both creatures hid their faces in their paws.

“And how many hours a day did you do lessons?” said Alice, in a hurry to change the subject.

“Ten hours the first day,” said the Mock Turtle: “nine the next, and so on.”

“What a curious plan!” exclaimed Alice.

“That’s the reason they’re called lessons,” the Gryphon remarked: “because they lessen from day to day.”

This was quite a new idea to Alice, and she thought it over a little before she made her next remark. “Then the eleventh day must have been a holiday?”

“Of course it was,” said the Mock Turtle.

“And how did you manage on the twelfth?” Alice went on eagerly.

“That’s enough about lessons,” the Gryphon interrupted in a very decided tone. “Tell her something about the games now.”

Chapter X. The Lobster-Quadrille

The Mock Turtle sighed deeply, and drew the back of one flapper across his eyes. He looked at Alice and tried to speak, but, for a minute or two, sobs choked his voice. “Same as if he had a bone in his throat,” said the Gryphon; and it set to work shaking him and punching him in the back. At last the Mock Turtle recovered his voice, and, with tears running down his cheeks, he went on again:—

“You may not have lived much under the sea—” (“I haven’t,” said Alice)—“and perhaps you were never even introduced to a lobster—” (Alice began to say “I once tasted—” but checked herself hastily, and said “No, never”) “—so you can have no idea what a delightful thing a Lobster-Quadrille is!”

“No, indeed,” said Alice. “What sort of a dance is it?”

“Why,” said the Gryphon, “you first form into a line along the sea-shore——”
 “Two lines!” cried the Mock Turtle. “Seals, turtles, salmon, and so on: then, when you’ve cleared all the jelly-fish out of the way——”
 “*That* generally takes some time,” interrupted the Gryphon.
 “—you advance twice——”
 “Each with a lobster as a partner!” cried the Gryphon.
 “Of course,” the Mock Turtle said: “advance twice, set to partners——”
 “—change lobsters, and retire in same order,” continued the Gryphon.
 “Then, you know,” the Mock Turtle went on, “you throw the——”
 “The lobsters!” shouted the Gryphon, with a bound into the air.
 “—as far out to sea as you can——”
 “Swim after them!” screamed the Gryphon.
 “Turn a somersault in the sea!” cried the Mock Turtle, capering wildly about.
 “Change lobsters again!” yelled the Gryphon at the top of its voice.
 “Back to land again, and—that’s all the first figure,” said the Mock Turtle, suddenly dropping his voice; and the two creatures, who had been jumping about like mad things all this time, sat down again very sadly and quietly, and looked at Alice.

“It must be a very pretty dance,” said Alice timidly.

“Would you like to see a little of it?” said the Mock Turtle.

“Very much indeed,” said Alice.

“Come, let’s try the first figure!” said the Mock Turtle to the Gryphon. “We can do without lobsters, you know. Which shall sing?”

“Oh, *you* sing,” said the Gryphon. “I’ve forgotten the words.”

So they began solemnly dancing round and round Alice, every now and then treading on her toes when they passed too close, and waving their fore-paws to mark the time, while the Mock Turtle sang this, very slowly and sadly:—

*“Will you walk a little faster?” said a whiting to a snail,
 “There’s a porpoise close behind us, and he’s treading on my tail.
 See how eagerly the lobsters and the turtles all advance!
 They are waiting on the shingle—will you come and join the dance?
 Will you, wo’n’t you, will you, wo’n’t you, will you join the dance?
 Will you, wo’n’t you, will you, wo’n’t you, wo’n’t you join the
 dance?”*

*“You can really have no notion how delightful it will be
 When they take us up and throw us, with the lobsters, out to sea!”
 But the snail replied “Too far, too far!”, and gave a look askance—
 Said he thanked the whiting kindly, but he would not join the dance.
 Would not, could not, would not, could not, would not join the
 dance.
 Would not, could not, would not, could not, could not join the
 dance.*

*“What matters it how far we go?” his scaly friend replied.
 “There is another shore, you know, upon the other side.
 The further off from England the nearer is to France—
 Then turn not pale, beloved snail, but come and join the dance.
 Will you, wo’n’t you, will you, wo’n’t you, will you join the dance?
 Will you, wo’n’t you, will you, wo’n’t you, wo’n’t you join the
 dance?”*

Parody on *The Spider and the Fly* by Mary Howitt



“Thank you, it’s a very interesting dance to watch,” said Alice, feeling very glad that it was over at last: “and I do so like that curious song about the whiting!”

“Oh, as to the whiting,” said the Mock Turtle, “they—you’ve seen them, of course?”

“Yes,” said Alice, “I’ve often seen them at dinn——” she checked herself hastily.

“I don’t know where Dinn may be,” said the Mock Turtle; “but if you’ve seen them so often, of course you know what they’re like?”

“I believe so,” Alice replied thoughtfully. “They have their tails in their mouths—and they’re all over crumbs.”

“You’re wrong about the crumbs,” said the Mock Turtle: “crumbs would all wash off in the sea. But they *have* their tails in their mouths; and the reason is—” here the Mock Turtle yawned and shut his eyes. “Tell her about the reason and all that,” he said to the Gryphon.

“The reason is,” said the Gryphon, “that they *would* go with the lobsters to the dance. So they got thrown out to sea. So they had to fall a long way. So they got their tails fast in their mouths. So they couldn’t get them out again. That’s all.”

“Thank you,” said Alice, “it’s very interesting. I never knew so much about a whiting before.”

“I can tell you more than that, if you like,” said the Gryphon. “Do you know why it’s called a whiting?”

“I never thought about it,” said Alice. “Why?”

“*It does the boots and shoes,*” the Gryphon replied very solemnly.

Alice was thoroughly puzzled. “Does the boots and shoes!” she repeated in a wondering tone.

“Why, what are *your* shoes done with?” said the Gryphon. “I mean, what makes them so shiny?”

Alice looked down at them, and considered a little before she gave her answer. “They’re done with blacking, I believe.”

“Boots and shoes under the sea,” the Gryphon went on in a deep voice, “are done with a whiting. Now you know.”

“And what are they made of?” Alice asked in a tone of great curiosity.

“Soles and eels, of course,” the Gryphon replied, rather impatiently: “any shrimp could have told you that.”

“If I’d been the whiting,” said Alice, whose thoughts were still running on the song, “I’d have said to the porpoise ‘Keep back, please! We don’t want *you* with us!’”

“They were obliged to have him with them,” the Mock Turtle said. “No wise fish would go anywhere without a porpoise.”

“Wouldn’t it, really?” said Alice, in a tone of great surprise.

“Of course not,” said the Mock Turtle. “why, if a fish came to *me*, and told me he was going a journey, I should say ‘With what porpoise?’”

“Don’t you mean ‘purpose’?” said Alice.

“I mean what I say,” the Mock Turtle replied, in an offended tone. And the Gryphon added “Come, let’s hear some of *your* adventures.”

“I could tell you my adventures—beginning from this morning,” said Alice a little timidly; “but it’s no use going back to yesterday, because I was a different person then.”

"Explain all that," said the Mock Turtle.

"No, no! The adventures first," said the Gryphon in an impatient tone: "explanations take such a dreadful time."

So Alice began telling them her adventures from the time when she first saw the White Rabbit. She was a little nervous about it, just at first, the two creatures got so close to her, one on each side, and opened their eyes and mouths so *very* wide; but she gained courage as she went on. Her listeners were perfectly quiet till she got to the part about her repeating "*You are old, Father William,*" to the Caterpillar, and the words all coming different, and then the Mock Turtle drew a long breath, and said "That's very curious!"

"It's all about as curious as it can be," said the Gryphon.

"It all came different!" the Mock Turtle repeated thoughtfully. "I should like to hear her try and repeat something now. Tell her to begin." He looked at the Gryphon as if he thought it had some kind of authority over Alice.

"Stand up and repeat '*'Tis the voice of the sluggard,*'" said the Gryphon.



"How the creatures order one about, and make one repeat lessons!" thought Alice. "I might as well be at school at once." However, she got up, and began to repeat it, but her head was so full of the Lobster-Quadrille, that she hardly knew what she was saying; and the words came very queer indeed:—

*"'Tis the voice of the Lobster: I heard him declare
'You have baked me too brown, I must sugar my hair.'
As a duck with its eyelids, so he with his nose*

Parody on *The Sluggard* by Isaac Watts

*Trims his belt and his buttons, and turns out his toes.*²⁰
When the sands are all dry, he is gay as a lark,
And will talk in contemptuous tones of the Shark:
But, when the tide rises and sharks are around,
His voice has a timid and tremulous sound."

"That's different from what *I* used to say when I was a child," said the Gryphon.

"Well, *I* never heard it before," said the Mock Turtle; "but it sounds uncommon nonsense."

Alice said nothing; she had sat down²¹ with her face in her hands, wondering if anything would *ever* happen in a natural way again.

"I should like to have it explained," said the Mock Turtle.

"She ca'n't explain it," said the Gryphon hastily. "Go on with the next verse."

"But about his toes?" the Mock Turtle persisted. "How *could* he turn them out with his nose, you know?"

"It's the first position in dancing," Alice said; but was dreadfully puzzled by the whole thing, and longed to change the subject.

"Go on with the next verse," the Gryphon repeated²²: "it begins '*I passed by his garden.*'"

Alice did not dare to disobey, though she felt sure it would all come wrong, and she went on in a trembling voice:—

"I passed by his garden, and marked, with one eye,
How the Owl and the Panther²³ were sharing a pie.²⁴
The Panther took pie-crust, and gravy, and meat,
While the Owl had the dish as its share of the treat.
When the pie was all finished, the Owl, as a boon,
Was kindly permitted to pocket the spoon:
While the Panther received knife and fork with a growl,
And concluded the banquet by——"

"What *is* the use of repeating all that stuff?" the Mock Turtle interrupted, "if you don't explain it as you go on? It's by far the most confusing thing *I* ever heard!"

"Yes, I think you'd better leave off," said the Gryphon, and Alice was only too glad to do so.

"Shall we try another figure of the Lobster-Quadrille?" the Gryphon went on. "Or would you like the Mock Turtle to sing you another²⁵ song?"

"Oh, a song, please, if the Mock Turtle would be so kind," Alice replied, so eagerly that the Gryphon said, in a rather offended tone, "Hm! No accounting for tastes! Sing her '*Turtle Soup,*' will you, old fellow?"

The Mock Turtle sighed deeply, and began, in a voice choked²⁶ with sobs, to sing this:—

"Beautiful Soup, so rich and green,

²⁰First version ends here.

²¹down again

²²repeated impatiently

²³oyster

²⁴first version ends here

²⁵a

²⁶sometimes choked

Waiting in a hot tureen!
Who for such dainties would not stoop?
Soup of the evening, beautiful Soup!
Soup of the evening, beautiful Soup!
Beau—ootiful Soo—oop!
Beau—ootiful Soo—oop!
Soo—oop of the e—e—evening,
Beautiful, beautiful Soup!
“Beautiful Soup! Who cares for fish,
Game, or any other dish?
Who would not give all else for two p
ennyworth only of beautiful Soup?
Pennyworth only of beautiful Soup?
Beau—ootiful Soo—oop!
Beau—ootiful Soo—oop!
Soo—oop of the e—e—evening,
Beautiful, beauti—FUL SOUP!”

“Chorus again!” cried the Gryphon, and the Mock Turtle had just begun to repeat it, when a cry of “The trial’s beginning!” was heard in the distance.

“Come on!” cried the Gryphon, and, taking Alice by the hand, it hurried off, without waiting for the end of the song.

“What trial is it?” Alice panted as she ran; but the Gryphon only answered “Come on!” and ran the faster, while more and more faintly came, carried on the breeze that followed them, the melancholy words:—

“Soo—oop of the e—e—evening,
Beautiful, beautiful Soup!”

Chapter XI. Who Stole the Tarts?

The King and Queen of Hearts were seated on their throne when they arrived, with a great crowd assembled about them—all sorts of little birds and beasts, as well as the whole pack of cards: the Knave was standing before them, in chains, with a soldier on each side to guard him; and near the King was the White Rabbit, with a trumpet in one hand, and a scroll of parchment in the other. In the very middle of the court was a table, with a large dish of tarts upon it: they looked so good, that it made Alice quite hungry to look at them—“I wish they’d get the trial done,” she thought, “and hand round the refreshments!” But there seemed to be no chance of this; so she began looking at everything about her to pass away the time.

Alice had never been in a court of justice before, but she had read about them in books, and she was quite pleased to find that she knew the name of nearly everything there. “That’s the judge,” she said to herself, “because of his great wig.”

The judge, by the way, was the King; and, as he wore his crown over the wig (look at the frontispiece if you want to see how he did it), he did not look at all comfortable, and it was certainly not becoming.

“And that’s the jury-box,” thought Alice; “and those twelve creatures,” (she was obliged to say “creatures,” you see, because some of them were animals, and



(Frontispiece)

some were birds,) "I suppose they are the jurors." She said this last word two or three times over to herself, being rather proud of it: for she thought, and rightly too, that very few little girls of her age knew the meaning of it at all. However, "jury-men" would have done just as well.

The twelve jurors were all writing very busily on slates. "What are they doing?" Alice whispered to the Gryphon. "They ca'n't have anything to put down yet, before the trial's begun."

"They're putting down their names," the Gryphon whispered in reply, "for fear they should forget them before the end of the trial."

"Stupid things!" Alice began in a loud indignant voice; but she stopped hastily, for the White Rabbit cried out "Silence in the court!", and the King put on his spectacles and looked anxiously round, to make out who was talking.

Alice could see, as well as if she were looking over their shoulders, that all the jurors were writing down "Stupid things!" on their slates, and she could even make out that one of them didn't know how to spell "stupid," and that he had to ask his neighbour to tell him. "A nice muddle their slates'll be in, before the trial's over!" thought Alice.

One of the jurors had a pencil that squeaked. This of course, Alice could *not* stand, and she went round the court and got behind him, and very soon found an opportunity of taking it away. She did it so quickly that the poor little juror (it was Bill, the Lizard) could not make out at all what had become of it; so, after hunting all about for it, he was obliged to write with one finger for the rest of the day; and this was of very little use, as it left no mark on the slate.

"Herald, read the accusation!" said the King.

On this the White Rabbit blew three blasts on the trumpet, and then unrolled the parchment-scroll, and read as follows:—



*“The Queen of Hearts, she made some tarts,
All on a summer day:
The Knave of Hearts, he stole those tarts
And took them quite away!”*

Quoted from nursery
rhyme

“Consider your verdict,” the King said to the jury.

“Not yet, not yet!” the Rabbit hastily interrupted. “There’s a great deal to come before that!”

“Call the first witness,” said the King; and the White Rabbit blew three blasts on the trumpet, and called out “First witness!”

The first witness was the Hatter. He came in with a teacup in one hand and a piece of bread-and-butter in the other. “I beg pardon, your Majesty,” he began, “for bringing these in; but I hadn’t quite finished my tea when I was sent for.”

“You ought to have finished,” said the King. “When did you begin?”

The Hatter looked at the March Hare, who had followed him into the court, arm-in-arm with the Dormouse. “Fourteenth of March, I *think* it was,” he said.

“Fifteenth,” said the March Hare.

“Sixteenth,” said²⁷ the Dormouse.

“Write that down,” the King said to the jury; and the jury eagerly wrote down all three dates on their slates, and then added them up, and reduced the answer to shillings and pence.

“Take off your hat,” the King said to the Hatter.

“It isn’t mine,” said the Hatter.

“*Stolen!*” the King exclaimed, turning to the jury, who instantly made a memorandum of the fact.

“I keep them to sell,” the Hatter added as an explanation. “I’ve none of my own. I’m a hatter.”

Here the Queen put on her spectacles, and began staring hard at the Hatter, who turned pale and fidgeted.

“Give your evidence,” said the King; “and don’t be nervous, or I’ll have you executed on the spot.”

This did not seem to encourage the witness at all: he kept shifting from one foot to the other, looking uneasily at the Queen, and in his confusion he bit a large piece out of his teacup instead of the bread-and-butter.

Just at this moment Alice felt a very curious sensation, which puzzled her a good deal until she made out what it was: she was beginning to grow larger again, and she thought at first she would get up and leave the court; but on second thoughts she decided to remain where she was as long as there was room for her.

“I wish you wouldn’t squeeze so.” said the Dormouse, who was sitting next to her. “I can hardly breathe.”

“I ca’n’t help it,” said Alice very meekly: “I’m growing.”

“You’ve no right to grow *here*,” said the Dormouse.

“Don’t talk nonsense,” said Alice more boldly: “you know you’re growing too.”

“Yes, but *I* grow at a reasonable pace,” said the Dormouse: “not in that ridiculous fashion.” And he got up very sulkily and crossed over to the other side of the court.

²⁷added



All this time the Queen had never left off staring at the Hatter, and, just as the Dormouse crossed the court, she said to one of the officers of the court, "Bring me the list of the singers in the last concert!" on which the wretched Hatter trembled so, that he shook off both his shoes²⁸.

"Give your evidence," the King repeated angrily, "or I'll have you executed, whether you're nervous or not."

"I'm a poor man, your Majesty," the Hatter began, in a trembling voice, "and I hadn't begun my tea—not above a week or so—and what with the bread-and-butter getting so thin—and the twinkling of the tea——"

"The twinkling of the *what?*" said the King.

"It *began* with the tea," the Hatter replied.

"Of course twinkling *begins* with a T!" said the King sharply. "Do you take me for a dunce? Go on!"

"I'm a poor man," the Hatter went on, "and most things twinkled after that—only the March Hare said——"

"I didn't!" the March Hare interrupted in a great hurry.

"You did!" said the Hatter.

"I deny it!" said the March Hare.

"He denies it," said the King: "leave out that part."

"Well, at any rate, the Dormouse said——" the Hatter went on, looking anxiously round to see if he would deny it too; but the Dormouse denied nothing, being fast asleep.

"After that," continued the Hatter, "I cut some more bread-and-butter——"

"But what did the Dormouse say?" one of the jury asked.

"That I ca'n't remember," said the Hatter.

"You *must* remember," remarked the King, "or I'll have you executed."

²⁸shook both his shoes off

The miserable Hatter dropped his teacup and bread-and-butter, and went down on one knee. "I'm a poor man, your Majesty," he began.

"You're a *very* poor *speaker*," said the King.

Here one of the guinea-pigs cheered, and was immediately suppressed by the officers of the court. (As that is rather a hard word, I will just explain to you how it was done. They had a large canvas bag, which tied up at the mouth with strings: into this they slipped the guinea-pig, head first, and then sat upon it.)

"I'm glad I've seen that done," thought Alice. "I've so often read in the newspapers, at the end of trials, 'There was some attempts at applause, which was immediately suppressed by the officers of the court,' and I never understood what it meant till now."

"If that's all you know about it, you may stand down," continued the King.

"I ca'n't go no lower," said the Hatter: "I'm on the floor, as it is."

"Then you may *sit* down," the King replied.

Here the other guinea-pig cheered, and was suppressed.



"Come, that finished the guinea-pigs!" thought Alice. "Now we shall get on better."

"I'd rather finish my tea," said the Hatter, with an anxious look at the Queen, who was reading the list of singers.

"You may go," said the King, and the Hatter hurriedly left the court, without even waiting to put his shoes on.

"—and just take his head off outside," the Queen added to one of the officers; but the Hatter was out of sight before the officer could get to the door.

"Call the next witness!" said the King.

The next witness was the Duchess's cook. She carried the pepper-box in her hand, and Alice guessed who it was, even before she got into the court, by the way the people near the door began sneezing all at once.

"Give your evidence," said the King.

"Sha'n't," said the cook.

The King looked anxiously at the White Rabbit, who said, in a low voice, "Your Majesty must cross-examine *this* witness."

"Well, if I must, I must," the King said with a melancholy air, and, after folding his arms and frowning at the cook till his eyes were nearly out of sight, he said, in a deep voice, "What are tarts made of?"

"Pepper, mostly," said the cook.

“Treacle,” said a sleepy voice behind her.

“Collar that Dormouse!” the Queen shrieked out. “Behead that Dormouse! Turn that Dormouse out of court! Suppress him! Pinch him! Off with his whiskers!”

For some minutes the whole court was in confusion, getting the Dormouse turned out, and, by the time they had settled down again, the cook had disappeared.

“Never mind!” said the King, with an air of great relief. “Call the next witness.” And, he added, in an under-tone to the Queen, “Really, my dear, *you* must cross-examine the next witness. It quite makes my forehead ache!”

Alice watched the White Rabbit as he fumbled over the list, feeling very curious to see what the next witness would be like, “—for they haven’t got much evidence *yet*,” she said to herself. Imagine her surprise, when the White Rabbit read out, at the top of his shrill little voice, the name “Alice!”

Chapter XII. Alice’s Evidence

“Here!” cried Alice, quite forgetting in the flurry of the moment how large she had grown in the last few minutes, and she jumped up in such a hurry that she tipped over the jury-box with the edge of her skirt, upsetting all the jury-men on to the heads of the crowd below, and there they lay sprawling about, reminding her very much of a globe of gold-fish she had accidentally upset the week before.

“Oh, I *beg* your pardon!” she exclaimed in a tone of great dismay, and began picking them up again as quickly as she could, for the accident of the gold-fish kept running in her head, and she had a vague sort of idea that they must be collected at once and put back into the jury-box, or they would die.

“The trial cannot proceed,” said the King, in a very grave voice, “until all the jurymen are back in their proper places—*all*,” he repeated with great emphasis, looking hard at Alice as he said do.

Alice looked at the jury-box, and saw that, in her haste, she had put the Lizard in head downwards, and the poor little thing was waving its tail about in a melancholy way, being quite unable to move. She soon got it out again, and put it right; “not that it signifies much,” she said to herself; “I should think it would be *quite* as much use in the trial one way up as the other.”

As soon as the jury had a little recovered from the shock of being upset, and their slates and pencils had been found and handed back to them, they set to work very diligently to write out a history of the accident, all except the Lizard, who seemed too much overcome to do anything but sit with its mouth open, gazing up into the roof of the court.

“What do you know about this business?” the King said to Alice.

“Nothing,” said Alice.

“Nothing *whatever*?” persisted the King.

“Nothing whatever,” said Alice.

“That’s very important,” the King said, turning to the jury. They were just beginning to write this down on their slates, when the White Rabbit interrupted: “*Unimportant*, your Majesty means, of course,” he said, in a very respectful tone, but frowning and making faces at him as he spoke.

“*Unimportant*, of course, I meant,” the King hastily said, and went on to himself in an undertone, “important—unimportant—unimportant—important—” as if he were trying which word sounded best.



Some of the jury wrote it down “important,” and some “unimportant.” Alice could see this, as she was near enough to look over their slates; “but it doesn’t matter a bit,” she thought to herself.

At this moment the King, who had been for some time busily writing in his note-book, called out “Silence!”, and read out from his book, “Rule Forty-two. *All persons more than a mile high to leave the court.*”

Everybody looked at Alice.

“*I’m* not a mile high,” said Alice.

“You are,” said the King.

“Nearly two miles high,” added the Queen.

“Well, I sha’n’t go, at any rate,” said Alice: “besides, that’s not a regular rule: you invented it just now.”

“It’s the oldest rule in the book,” said the King.

“Then it ought to be Number One,” said Alice.

The King turned pale, and shut his note-book hastily. “Consider your verdict,” he said to the jury, in a low trembling voice.

“There’s more evidence to come yet, please your Majesty,” said the White Rabbit, jumping up in a great hurry: “this paper has just been picked up.”

“What’s in it?” said the Queen.

“I haven’t opened it yet,” said the White Rabbit; “but it seems to be a letter, written by the prisoner to—to somebody.”

“It must have been that,” said the King, “unless it was written to nobody, which isn’t usual, you know.”

“Who is it directed to?” said one of the jurymen.

“It isn’t directed at all,” said the White Rabbit: “in fact, there’s nothing written on the *outside*.” He unfolded the paper as he spoke, and added “It isn’t a letter, after all: it’s a set of verses.”

“Are they in the prisoner’s handwriting?” asked another of the jurymen.

“No, they’re not,” said the White Rabbit, “and that’s the queerest thing about it.” (The jury all looked puzzled.)

“He must have imitated somebody else’s hand,” said the King. (The jury all brightened up again.)

“Please your Majesty,” said the Knave, “I didn’t write it, and they ca’n’t prove that I²⁹ did: there’s no name signed at the end.”

“If you didn’t sign it,” said the King, “that only makes the matter worse. You *must* have meant some mischief, or else you’d have signed your name like an honest man.”

There was a general clapping of hands at this: it was the first really clever thing the King had said that day.

“That *proves* his guilt, of course³⁰,” said the Queen: “so off with——.”³¹

“It *doesn’t* prove anything³² of the sort!” said Alice. “Why, you don’t even know what they’re about!”

“Read them,” said the King.

The White Rabbit put on his spectacles. “Where shall I begin, please your Majesty?” he asked.

²⁹prove I

³⁰(missing in first version)

³¹(missing in first version)

³²proves nothing

“Begin at the beginning,” the King said, ³³“and go on till you come to the end: then stop.”

There was dead silence in the court, whilst the White Rabbit read out these verses:—³⁴

*“They told me you had been to her,
And mentioned me to him:
She gave me a good character,
But said I could not swim.*

*He sent them word I had not gone
(We know it to be true):
If she should push the matter on,
What would become of you?*

*I gave her one, they gave him two,
You gave us three or more;
They all returned from him to you,
Though they were mine before.*

*If I or she should chance to be
Involved in this affair,
He trusts to you to set them free,
Exactly as we were.*

*My notion was that you had been
(Before she had this fit)
An obstacle that came between
Him, and ourselves, and it.*

*Don’t let him know she liked them best,
For this must ever be
A secret, kept from all the rest,
Between yourself and me.”*

“That’s the most important piece of evidence we’ve heard yet,” said the King, rubbing his hands; “so now let the jury——”

“If any one of them can explain it,” said Alice, (she had grown so large in the last few minutes that she wasn’t a bit afraid of interrupting him,) “I’ll give him sixpence. *I* don’t believe there’s an atom of meaning in it.”

The jury all wrote down, on their slates, “*She* doesn’t believe there’s an atom of meaning in it,” but none of them attempted to explain the paper.

“If there’s no meaning in it,” said the King, “that saves a world of trouble, you know, as we needn’t try to find any. And yet I don’t know,” he went on, spreading out the verses on his knee, and looking at them with one eye; “I seem to see some meaning in them, after all. ‘—*said I could not swim*—’ you ca’n’t swim, can you?” he added, turning to the Knave.

The Knave shook his head sadly. “Do I look like it?” he said. (Which he certainly did *not*, being made entirely of cardboard.)

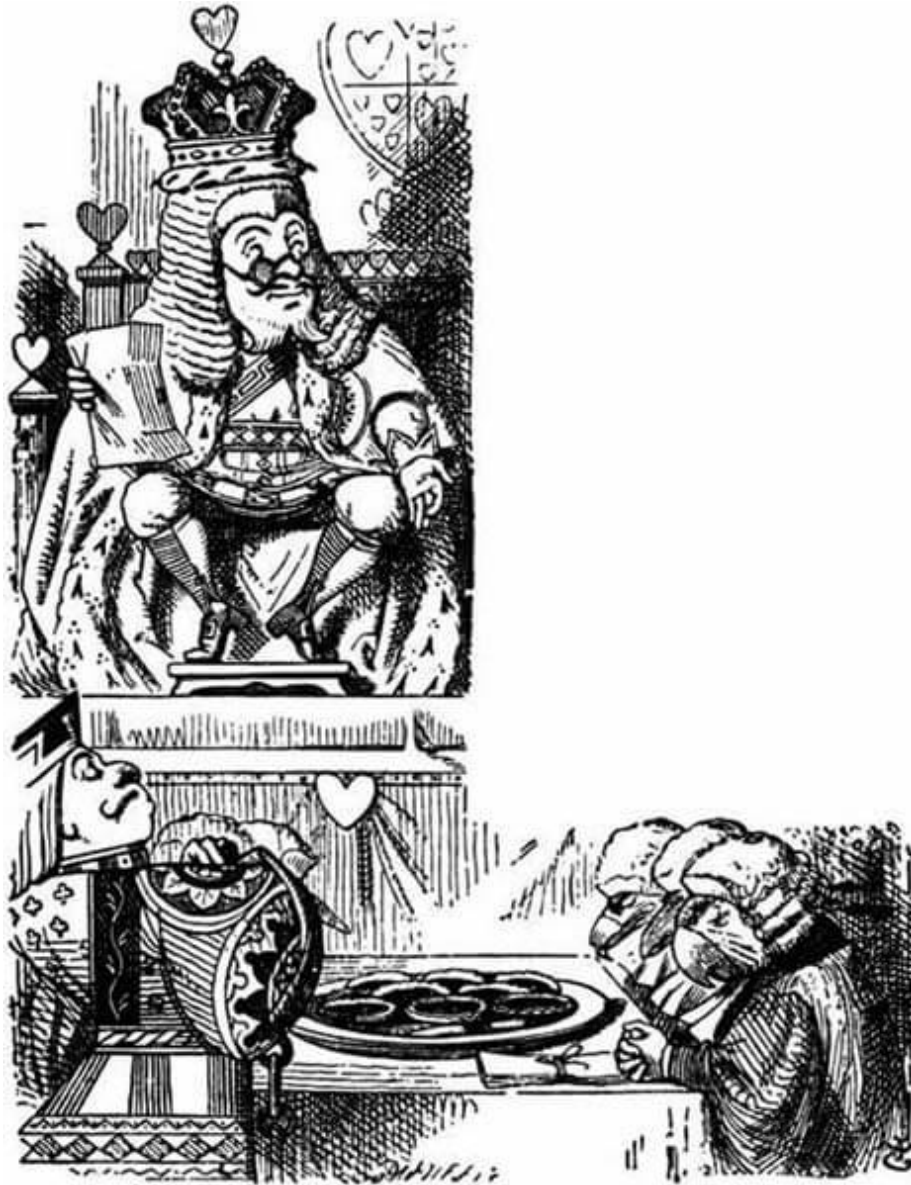
“All right, so far,” said the King; and he went on muttering over the verses to himself: “‘*We know it to be true*’—that’s the jury, of course—‘*If she should*

³³gravely

³⁴These were the verses the White Rabbit read:—

push the matter on’—that must be the Queen—‘What would become of you?’—What, indeed!—³⁵‘I gave her one, they gave him two’—why, that must be what he did with the tarts, you know——”

“But, it goes on ‘they all returned from him to you,’” said Alice.



“Why, there they are?” said the King triumphantly, pointing to the tarts on the table. “Nothing can be clearer than *that*. Then again ‘before she had this fit’—you never had *fits*, my dear, I think?” he said to the Queen.

“Never!” said the Queen, furiously, throwing an inkstand at the Lizard as she spoke. (The unfortunate little Bill had left off writing on his slate with one

³⁵(missing in first version)

finger, as he found it made no mark; but he now hastily began again, using the ink, that was trickling down his face, as long as it lasted.)

“Then the words don’t *fit* you,” said the King, looking round the court with a smile. There was a dead silence.

“It’s a pun!” the King added in an angry tone, and everybody laughed. “Let the jury consider their verdict,” the King said, for about the twentieth time that day.

“No, no!” said the Queen. “Sentence first—verdict afterwards.”

“Stuff and nonsense!” said Alice loudly. “The idea of having the sentence first!”

“Hold your tongue!” said the Queen, turning purple.

“I wo’n’t!” said Alice.

“Off with her head!” the Queen shouted at the top of her voice. Nobody moved.

“Who cares for *you*?” said Alice (she had grown to her full size by this time). “You’re nothing but a pack of cards!”

At this the whole pack rose up into the air, and came flying down upon her; she gave a little scream, half of fright and half of anger, and tried to beat them off, and found herself lying on the bank, with her head in the lap of her sister, who was gently brushing away some dead leaves that had fluttered down from the trees upon her face.

“Wake up, Alice dear!” said her sister. “Why, what a long sleep you’ve had!”

“Oh, I’ve had such a curious dream!” said Alice. And she told her sister, as well as she could remember them, all these strange Adventures of hers that you have just been reading about; and, when she had finished, her sister kissed her, and said “It *was* a curious dream, dear, certainly; but now run in to your tea: it’s getting late.” So Alice got up and ran off, thinking while she ran, as well she might, what a wonderful dream it had been.

But her sister sat still just as she left her, leaning her head on her hand, watching the setting sun, and thinking of little Alice and all her wonderful Adventures, till she too began dreaming after a fashion, and this was her dream:—

First, she dreamed ³⁶about little Alice herself: ³⁷once again the tiny hands were clasped upon her knee, and the bright eager eyes were looking up into hers—she could hear the very tones of her voice, and see that queer little toss of her head to keep back the wandering hair that *would* always get into her eyes—and still as she listened, or seemed to listen, the whole place around her became alive the strange creatures of her little sister’s dream.

The long grass rustled at her feet as the White Rabbit hurried by—the frightened Mouse splashed his way through the neighbouring pool—she could hear the rattle of the teacups as the March Hare and his friends shared their never-ending meal, and the shrill voice of the Queen ordering off her unfortunate guests to execution—once more the pig-baby was sneezing on the Duchess’s knee, while plates and dishes crashed around it—once more the shriek of the Gryphon, the squeaking of the Lizard’s slate-pencil, and the choking of the suppressed guinea-pigs, filled the air, mixed up with the distant sobs of the miserable Mock Turtle.

³⁶of

³⁷and once



So she sat on, with closed eyes, and half believed herself in Wonderland, though she knew she had but to open them again, and all would change to dull reality—the grass would be only rustling in the wind, and the pool rippling to the waving of the reeds—the rattling teacups would change to tinkling sheep-bells, and the Queen’s shrill cries to the voice of the shepherd-boy—and the sneeze of the baby, the shriek of the Gryphon, and all the other queer noises, would change (she knew) to the confused clamour of the busy farm-yard—while the lowing of the cattle in the distance would take the place of the Mock Turtle’s heavy sobs.

Lastly, she pictured to herself how this same little sister of hers would, in the after-time, be herself a grown woman; and how she would keep, through all her riper years, the simple and loving heart of her childhood; and how she would gather about her other little children, and make *their* eyes bright and eager with many a strange tale, perhaps even with the dream of Wonderland of long ago; and how she would feel with all their simple sorrows, and find a pleasure in all their simple joys, remembering her own child-life, and the happy summer days.

2.2 Through the Looking-Glass, and What Alice Found There

Source: Through the Looking-Glass, editions from 1872 (with minor differences as noted) and 1897



Chapter I. Looking-Glass House

One thing was certain, that the *white* kitten had had nothing to do with it—it was the black kitten’s fault entirely. For the white kitten had been having its face washed by the old cat for the last quarter of an hour (and bearing it pretty well, considering): so you see that it *couldn’t* have had any hand in the mischief.

The way Dinah washed her children’s faces was this: first she held the poor thing down by its ear with one paw, and then with the other paw she rubbed its face all over, the wrong way, beginning at the nose: and just now, as I said, she was hard at work on the white kitten, which was lying quite still and trying to purr—no doubt feeling that it was all meant for its good.

But the black kitten had been finished with earlier in the afternoon, and so, while Alice was sitting curled up in a corner of the great arm-chair, half talking to herself and half asleep, the kitten had been having a grand game of romps with the ball of worsted Alice had been trying to wind up, and had been rolling it up and down till it had all come undone again: and there it was, spread over the hearth-rug, all knots and tangles, with the kitten running after its own tail in the middle.

“Oh, you wicked little thing!” cried Alice, catching up the kitten, and giving it a little kiss to make it understand that it was in disgrace. “Really, Dinah ought to have taught you better manners! You *ought*, Dinah, you know you ought!” she added, looking reproachfully at the old cat, and speaking in as cross a voice as she could manage—and then she scrambled back into the arm-chair, taking the kitten and the worsted with her, and began winding up the ball again. But she didn’t get on very fast, as she was talking all the time, sometimes to the kitten, and sometimes to herself. Kitty sat very demurely on her knee, pretending to

watch the progress of the winding, and now and then putting out one paw and gently touching the ball, as if it would be glad to help if it might.

“Do you know what to-morrow is, Kitty?” Alice began. “You’d have guessed if you’d been up in the window with me—only Dinah was making you tidy, so you couldn’t. I was watching the boys getting in sticks for the bonfire—and it wants plenty of sticks, Kitty! Only it got so cold, and it snowed so, they had to leave off. Never mind, Kitty, we’ll go and see the bonfire to-morrow.” Here Alice wound two or three turns of the worsted round the kitten’s neck, just to see how it would look: this led to a scramble, in which the ball rolled down upon the floor, and yards and yards of it got unwound again.



“Do you know, I was so angry, Kitty,” Alice went on, as soon as they were comfortably settled again, “when I saw all the mischief you had been doing, I was very nearly opening the window, and putting you out into the snow! And you’d have deserved it, you little mischievous darling! What have you got to say for yourself? Now don’t interrupt me!” she went on, holding up one finger. “I’m going to tell you all your faults. Number one: you squeaked twice while Dinah was washing your face this morning. Now you ca’n’t deny it, Kitty: I heard you! What’s that you say?” (pretending that the kitten was speaking). “Her paw went into your eye? Well, that’s *your* fault, for keeping your eyes open—if you’d shut them tight up, it wouldn’t have happened. Now don’t make any more excuses, but listen! Number two: you pulled Snowdrop away by the tail just as I had put down the saucer of milk before her! What, you were thirsty, were you? How do you know she wasn’t thirsty too? Now for number three:

you unwound every bit of the worsted while I wasn't looking!

"That's three faults, Kitty, and you've not been punished for any of them yet. You know I'm saving up all your punishments for Wednesday week—Suppose they had saved up all *my* punishments?" she went on, talking more to herself than the kitten. "What *would* they do at the end of a year? I should be sent to prison, I suppose, when the day came. Or—let me see—suppose each punishment was to be going without a dinner: then, when the miserable day came, I should have to go without fifty dinners at once! Well, I shouldn't mind *that* much! I'd far rather go without them than eat them!

"Do you hear the snow against the window-panes, Kitty? How nice and soft it sounds! Just as if some one was kissing the window all over outside. I wonder if the snow *loves* the trees and fields, that it kisses them so gently? And then it covers them up snug, you know, with a white quilt: and perhaps it says 'Go to sleep, darlings, till the summer comes again.' And when they wake up in the summer, Kitty, they dress themselves all in green, and dance about—whenever the wind blows—oh, that's very pretty!" cried Alice, dropping the ball of worsted to clap her hands. "And I do so *wish* it was true! I'm sure the woods look sleepy in the autumn, when the leaves are getting brown.

"Kitty, can you play chess? Now, don't smile, my dear, I'm asking it seriously. Because, when we were playing just now, you watched just as if you understood it: and when I said 'Check!' you purred! Well, it *was* a nice check, Kitty, and really I might have won, if it hadn't been for that nasty Knight, that came wiggling down among my pieces. Kitty, dear, let's pretend——" And here I wish I could tell you half the things Alice used to say, beginning with her favourite phrase "Let's pretend." She had had quite a long argument with her sister only the day before—all because Alice had begun with "Let's pretend we're kings and queens;" and her sister, who liked being very exact, had argued that they couldn't, because there were only two of them, and Alice had been reduced at last to say "Well, *you* can be one of them, then, and *I'll* be all the rest." And once she had really frightened her old nurse by shouting suddenly in her ear, "Nurse! Do let's pretend that I'm a hungry hyæna, and you're a bone."

But this is taking us away from Alice's speech to the kitten. "Let's pretend that you're the Red Queen, Kitty! Do you know, I think if you sat up and folded your arms, you'd look exactly like her. Now do try, there's a dear!" And Alice got the Red Queen off the table, and set it up before the kitten as a model for it to imitate: however, the thing didn't succeed, principally, Alice said, because the kitten wouldn't fold its arms properly. So, to punish it, she held it up to the Looking-glass, that it might see how sulky it was, "—and if you're not good directly," she added, "I'll put you through into Looking-glass House. How would you like *that*?"

"Now, if you'll only attend, Kitty, and not talk so much, I'll tell you all my ideas about Looking-glass House. First, there's the room you can see through the glass—that's just the same as our drawing room, only the things go the other way. I can see all of it when I get upon a chair—all but the bit behind the fireplace. Oh! I do so wish I could see *that* bit! I want so much to know whether they've a fire in the winter: you never *can* tell, you know, unless our fire smokes, and then smoke comes up in that room too—but that may be only pretence, just to make it look as if they had a fire. Well then, the books are something like our books, only the words go the wrong way: I know *that*, because I've held up one of our books to the glass, and then they hold up one in the other room.



“How would you like to live in Looking-glass House, Kitty? I wonder if they’d give you milk in there? Perhaps Looking-glass milk isn’t good to drink—but oh, Kitty! now we come to the passage. You can just see a little *peep* of the passage in Looking-glass House, if you leave the door of our drawing-room wide open: and it’s very like our passage as far as you can see, only you know it may be quite different on beyond. Oh, Kitty, how nice it would be if we could only get through into Looking-glass House! I’m sure it’s got, oh! such beautiful things in it! Let’s pretend there’s a way of getting through into it, somehow, Kitty. Let’s pretend the glass has got all soft like gauze, so that we can get through. Why, it’s turning into a sort of mist now, I declare! It’ll be easy enough to get through——” She was up on the chimney-piece while she said this, though she hardly knew how she had got there. And certainly the glass *was* beginning to melt away, just like a bright silvery mist.



In another moment Alice was through the glass, and had jumped lightly down into the Looking-glass room. The very first thing she did was to look whether there was a fire in the fireplace, and she was quite pleased to find that there was a real one, blazing away as brightly as the one she had left behind. “So I shall be as warm here as I was in the old room,” thought Alice: “warmer, in fact, because there’ll be no one here to scold me away from the fire. Oh, what fun it’ll be, when they see me through the glass in here, and ca’n’t get at me!”

Then she began looking about, and noticed that what could be seen from

the old room was quite common and uninteresting, but that all the rest was as different as possible. For instance, the pictures on the wall next the fire seemed to be all alive, and the very clock on the chimney-piece (you know you can only see the back of it in the Looking-glass) had got the face of a little old man, and grinned at her.

“They don’t keep this room so tidy as the other,” Alice thought to herself, as she noticed several of the chessmen down in the hearth among the cinders; but in another moment, with a little “Oh!” of surprise, she was down on her hands and knees watching them. The chessmen were walking about, two and two!



“Here are the Red King and the Red Queen,” Alice said (in a whisper, for fear of frightening them), “and there are the White King and the White Queen sitting on the edge of the shovel—and here are two castles walking arm in arm—I don’t think they can hear me,” she went on, as she put her head closer down, “and I’m nearly sure they ca’n’t see me. I feel somehow as if I were invisible——”

Here something began squeaking on the table behind Alice, and made her turn her head just in time to see one of the White Pawns roll over and begin kicking: she watched it with great curiosity to see what would happen next.

“It is the voice of my child!” the White Queen cried out, as she rushed past the King, so violently that she knocked him over among the cinders. “My precious Lily! My imperial kitten!” and she began scrambling wildly up the side of the fender.

“Imperial fiddlestick!” said the King, rubbing his nose, which had been hurt by the fall. He had a right to be a *little* annoyed with the Queen, for he was covered with ashes from head to foot.

Alice was very anxious to be of use, and, as the poor little Lily was nearly screaming herself into a fit, she hastily picked up the Queen and set her on the table by the side of her noisy little daughter.

The Queen gasped, and sat down: the rapid journey through the air had quite taken away her breath, and for a minute or two she could do nothing but hug the little Lily in silence. As soon as she had recovered her breath a little, she

called out to the White King, who was sitting sulkily among the ashes, "Mind the volcano!"

"What volcano?" said the King, looking up anxiously into the fire, as if he thought that was the most likely place to find one.

"Blew—me—up," panted the Queen, who was still a little out of breath. "Mind you come up—the regular way—don't get blown up!"

Alice watched the White King as he slowly struggled up from bar to bar, till at last she said "Why, you'll be hours and hours getting to the table, at that rate. I'd far better help you, hadn't I?" But the King took no notice of the question: it was quite clear that he could neither hear her nor see her.



So Alice picked him up very gently, and lifted him across more slowly than she had lifted the Queen, that she mightn't take his breath away; but, before she put him on the table, she thought she might as well dust him a little, he was so covered with ashes.

She said afterwards that she had never seen in all her life such a face as the King made, when he found himself held in the air by an invisible hand, and being dusted: he was far too much astonished to cry out, but his eyes and his mouth went on getting larger and larger, and rounder and rounder, till her hand shook so with laughing that she nearly let him drop upon the floor.

"Oh! *please* don't make such faces, my dear!" she cried out, quite forgetting that the King couldn't hear her. "You make me laugh so that I can hardly hold you! And don't keep your mouth so wide open! All the ashes will get into it—there, now I think you're tidy enough!" she added, as she smoothed his hair, and set him upon the table near the Queen.

The King immediately fell flat on his back, and lay perfectly still; and Alice was a little alarmed at what she had done, and went round the room to see if she could find any water to throw over him. However, she could find nothing but a bottle of ink, and when she got back with it she found he had recovered,

and he and the Queen were talking together in a frightened whisper—so low, that Alice could hardly hear what they said.

The King was saying “I assure you, my dear, I turned cold to the very ends of my whiskers!”

To which the Queen replied “You haven’t got any whiskers.”

“The horror of that moment,” the King went on, “I shall never, *never* forget!”

“You will, though,” the Queen said, “if you don’t make a memorandum of it.”

Alice looked on with great interest as the King took an enormous memorandum-book out of his pocket, and began writing. A sudden thought struck her, and she took hold of the end of the pencil, which came some way over his shoulder, and began writing for him.

The poor King looked puzzled and unhappy, and struggled with the pencil for some time without saying anything; but Alice was too strong for him, and at last he panted out “My dear! I really *must* get a thinner pencil. I ca’n’t manage this one a bit: it writes all manner of things that I don’t intend——”



“What manner of things?” said the Queen, looking over the book (in which Alice had put ‘*The White Knight is sliding down the poker. He balances very badly*’). “That’s not a memorandum of *your* feelings!”

There was a book lying near Alice on the table, and while she sat watching the White King (for she was still a little anxious about him, and had the ink all ready to throw over him, in case he fainted again), she turned over the leaves, to find some part that she could read, “—for it’s all in some language I don’t know,” she said to herself.

It was like this.

JABBERWOCKY.

'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe:
All mimsy were the borogoves,
And the mome raths outgrabe.

She puzzled over this for some time, but at last a bright thought struck her. “Why, it’s a Looking-glass book, of course! And if I hold it up to a glass, the words will all go the right way again.”

This was the poem that Alice read.

JABBERWOCKY.

*'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe:
All mimsy were the borogoves,
And the mome raths outgrabe.*

*“Beware the Jabberwock, my son!
The jaws that bite, the claws that catch!
Beware the Jubjub bird, and shun
The frumious Bandersnatch!”*

*He took his vorpal sword in hand:
Long time the manxome foe he sought—
So rested he by the Tumtum tree,
And stood awhile in thought.*

*And, as in uffish thought he stood,
The Jabberwock, with eyes of flame,
Came whiffling through the tulgey wood,
And burred as it came!*

*One, two! One, two! And through and through
The vorpal blade went snicker-snack!
He left it dead, and with its head
He went galumphing back.*

*“And hast thou slain the Jabberwock?
Come to my arms, my beamish boy!
O frabjous day! Callooh! Callay!”
He chortled in his joy.*

*'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe:
All mimsy were the borogoves,
And the mome raths outgrabe.*

“It seems very pretty,” she said when she had finished it, “but it’s *rather* hard to understand!” (You see she didn’t like to confess, even to herself, that she couldn’t make it out at all.) “Somehow it seems to fill my head with ideas—only I don’t exactly know what they are! However, *somebody* killed *something*: that’s clear, at any rate——”



“But oh!” thought Alice, suddenly jumping up, “if I don’t make haste, I shall have to go back through the Looking-glass, before I’ve seen what the rest of the house is like! Let’s have a look at the garden first!” She was out of the room in a moment, and ran down stairs—or, at least, it wasn’t exactly running, but a new invention of hers for getting down stairs quickly and easily, as Alice said to herself. She just kept the tips of her fingers on the hand-rail, and floated gently down without even touching the stairs with her feet: then she floated on through the hall, and would have gone straight out at the door in the same way, if she hadn’t caught hold of the door-post. She was getting a little giddy with so much floating in the air, and was rather glad to find herself walking again in the natural way.

Chapter II. The Garden of Live Flowers

“I should see the garden far better,” said Alice to herself, “if I could get to the top of that hill: and here’s a path that leads straight to it—at least, no, it doesn’t do *that*——” (after going a few yards along the path, and turning several sharp corners), “but I suppose it will at last. But how curiously it twists! It’s more like a corkscrew than a path! Well, *this* turn goes to the hill, I suppose—no, it doesn’t! This goes straight back to the house! Well then, I’ll try it the other way.”

And so she did: wandering up and down, and trying turn after turn, but always coming back to the house, do what she would. Indeed, once, when she turned a corner rather more quickly than usual, she ran against it before she could stop herself.

“It’s no use talking about it,” Alice said, looking up at the house and pretending it was arguing with her. “I’m *not* going in again yet. I know I should have to get through the Looking-glass again—back into the old room—and there’d be an end of all my adventures!”

So, resolutely turning her back upon the house, she set out once more down the path, determined to keep straight on till she got to the hill. For a few minutes all went on well, and she was just saying “I really *shall* do it this time——” when the path gave a sudden twist and shook itself (as she described it afterwards), and the next moment she found herself actually walking in at the door.

“Oh, it’s too bad!” she cried. “I never saw such a house for getting in the way! Never!”

However, there was the hill full in sight, so there was nothing to be done but start again. This time she came upon a large flower-bed, with a border of daisies, and a willow-tree growing in the middle.

“O Tiger-lily!” said Alice, addressing herself to one that was waving gracefully about in the wind, “I *wish* you could talk!”

“We *can* talk,” said the Tiger-lily, “when there’s anybody worth talking to.”

Alice was so astonished that she couldn’t speak for a minute: it quite seemed to take her breath away. At length, as the Tiger-lily only went on waving about, she spoke again, in a timid voice—almost in a whisper. “And can *all* the flowers talk?”

“As well as *you* can,” said the Tiger-lily. “And a great deal louder.”

“It isn’t manners for us to begin, you know,” said the Rose, “and I really was wondering when you’d speak! Said I to myself, ‘Her face has got *some* sense in



it, though it's not a clever one! Still, you're the right colour, and that goes a long way."

"I don't care about the colour," the Tiger-lily remarked. "If only her petals curled up a little more, she'd be all right."

Alice didn't like being criticized, so she began asking questions. "Aren't you sometimes frightened at being planted out here, with nobody to take care of you?"

"There's the tree in the middle," said the Rose. "What else is it good for?"

"But what could it do, if any danger came?" Alice asked.

"It could bark," said the Rose.

"It says 'Bough-wough!'" cried a Daisy. "That's why its branches are called boughs!"

"Didn't you know *that?*" cried another Daisy. And here they all began shouting together, till the air seemed quite full of little shrill voices. "Silence, every one of you!" cried the Tiger-lily, waving itself passionately from side to side, and trembling with excitement. "They know I ca'n't get at them!" it panted, bending its quivering head towards Alice, "or they wouldn't dare to do it!"

"Never mind!" Alice said in a soothing tone, and, stooping down to the daisies, who were just beginning again, she whispered "If you don't hold your tongues, I'll pick you!"

There was silence in a moment, and several of the pink daisies turned white.

"That's right!" said the Tiger-lily. "The daisies are worst of all. When one speaks, they all begin together, and it's enough to make one wither to hear the way they go on!"

"How is it you can all talk so nicely?" Alice said, hoping to get it into a better temper by a compliment. "I've been in many gardens before, but none of the flowers could talk."

"Put your hand down, and feel the ground," said the Tiger-lily. "Then you'll know why."

Alice did so. "It's very hard," she said; "but I don't see what that has to do with it."

"In most gardens," the Tiger-lily said, "they make the beds too soft—so that the flowers are always asleep."

This sounded a very good reason, and Alice was quite pleased to know it. "I never thought of that before!" she said.

"It's *my* opinion that you never think *at all*," the Rose said, in a rather severe tone.

"I never saw anybody that looked stupider," a Violet said, so suddenly, that Alice quite jumped; for it hadn't spoken before.

"Hold *your* tongue!" cried the Tiger-lily. "As if *you* ever saw anybody! You keep your head under the leaves, and snore away there, till you know no more what's going on in the world, than if you were a bud!"

"Are there any more people in the garden besides me?" Alice said, not choosing to notice the Rose's last remark.

"There's one other flower in the garden that can move about like you," said the Rose. "I wonder how you do it—" ("You're always wondering," said the Tiger-lily), "but she's more bushy than you are."

"Is she like me?" Alice asked eagerly, for the thought crossed her mind, "There's another little girl in the garden, somewhere!"

“Well, she has the same awkward shape as you,” the Rose said: “but she’s redder—and her petals are shorter, I think.”

“They’re¹ done up close, almost like a dahlia,” said the Tiger-lily²: “not tumbled about³, like yours.”

“But that’s not *your* fault,” the Rose added kindly. “You’re beginning to fade, you know—and then one ca’n’t help one’s petals getting a little untidy.”

Alice didn’t like this idea at all: so, to change the subject, she asked “Does she ever come out here?”

“I daresay you’ll see her soon,” said the Rose. “She’s one of the kind that has nine spikes, you know.”⁴

“Where does she wear them⁵?” Alice asked with some curiosity.

“Why, all round her head, of course,” the Rose replied. “I was wondering *you* hadn’t got some too. I thought it was the regular rule.”

“She’s coming!” cried the Larkspur. “I hear her footstep, thump, thump, along the gravel-walk!”

Alice looked round eagerly and found that it was the Red Queen. “She’s grown a good deal!” was her first remark. She had indeed: when Alice first found her in the ashes, she had been only three inches high—and here she was, half a head taller than Alice herself!

“It’s the fresh air that does it,” said the Rose: “wonderfully fine air it is, out here.”

“I think I’ll go and meet her,” said Alice, for, though the flowers were interesting enough, she felt that it would be far grander to have a talk with a real Queen.

“You ca’n’t possibly do that,” said the Rose: “*I* should advise you to walk the other way.”

This sounded nonsense to Alice, so she said nothing, but set off at once towards the Red Queen. To her surprise, she lost sight of her in a moment, and found herself walking in at the front-door again.

A little provoked, she drew back, and after looking everywhere for the Queen (whom she spied out at last, a long way off), she thought she would try the plan, this time, of walking in the opposite direction.

It succeeded beautifully. She had not been walking a minute before she found herself face to face with the Red Queen, and full in sight of the hill she had been so long aiming at.

“Where do you come from?” said the Red Queen. “And where are you going? Look up, speak nicely, and don’t twiddle your fingers all the time.”

Alice attended to all these directions, and explained, as well as she could, that she had lost her way.

“I don’t know what you mean by *your* way,” said the Queen: “all the ways about here belong to *me*—but why did you come out here at all?” she added in a kinder tone. “Curtsey while you’re thinking what to say. It saves time.”

Alice wondered a little at this, but she was too much in awe of the Queen to disbelieve it. “I’ll try it when I go home,” she thought to herself, “the next time I’m a little late for dinner.”

¹Her petals are

²the Tiger-lily interrupted

³about anyhow

⁴“She’s one of the thorny kind.”

⁵the thorns



"It's time for you to answer now," the Queen said, looking at her watch: "open your mouth a *little* wider when you speak, and always say 'your Majesty.'"

"I only wanted to see what the garden was like, your Majesty——"

"That's right," said the Queen, patting her on the head, which Alice didn't like at all: "though, when you say 'garden'—*I've* seen gardens, compared with which this would be a wilderness."

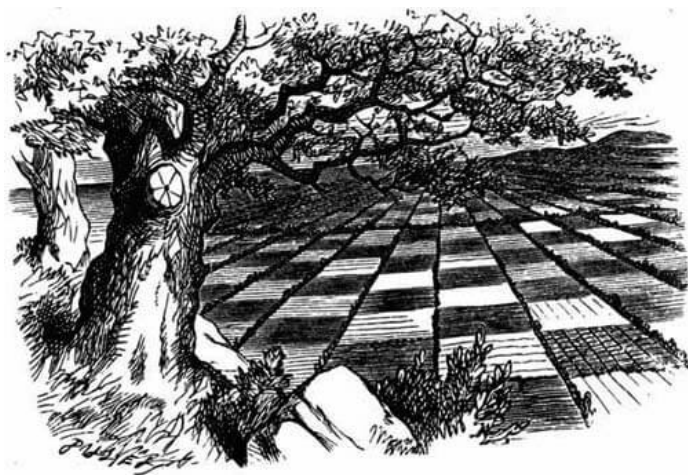
Alice didn't dare to argue the point, but went on: "—and I thought I'd try and find my way to the top of that hill——"

"When you say 'hill,'" the Queen interrupted, "*I* could show you hills, in comparison with which you'd call that a valley."

"No, I shouldn't," said Alice, surprised into contradicting her at last: "a hill *ca'n't* be a valley, you know. That would be nonsense——"

The Red Queen shook her head. "You may call it 'nonsense' if you like," she said, "but *I've* heard nonsense, compared with which that would be as sensible as a dictionary!"

Alice curtsied again, as she was afraid from the Queen's tone that she was a *little* offended: and they walked on in silence till they got to the top of the little hill.



For some minutes Alice stood without speaking, looking out in all directions over the country—and a most curious country it was. There were a number of tiny little brooks running straight across it from side to side, and the ground between was divided up into squares by a number of little green hedges, that reached from brook to brook.

"I declare it's marked out just like a large chess-board!" Alice said at last. "There ought to be some men moving about somewhere—and so there are!" she added in a tone of delight, and her heart began to beat quick with excitement as she went on. "It's a great huge game of chess that's being played—all over the world—if this *is* the world at all, you know. Oh, what fun it is! How I *wish* I was one of them! I wouldn't mind being a Pawn, if only I might join—though of course I should *like* to be a Queen, best."

She glanced rather shyly at the real Queen as she said this, but her companion only smiled pleasantly, and said "That's easily managed. You can be the White Queen's Pawn, if you like, as Lily's too young to play; and you're in the

Second Square to begin with: when you get to the Eighth Square you'll be a Queen——” Just at this moment, somehow or other, they began to run.

Alice never could quite make out, in thinking it over afterwards, how it was that they began: all she remembers is, that they were running hand in hand, and the Queen went so fast that it was all she could do to keep up with her: and still the Queen kept crying “Faster! Faster!”, but Alice felt she *could not* go faster, though she had no breath left to say so.

The most curious part of the thing was, that the trees and the other things round them never changed their places at all: however fast they went, they never seemed to pass anything. “I wonder if all the things move along with us?” thought poor puzzled Alice. And the Queen seemed to guess her thoughts, for she cried “Faster! Don't try to talk!”

Not that Alice had any idea of doing *that*. She felt as if she would never be able to talk again, she was getting so much out of breath: and still the Queen cried “Faster! Faster!”, and dragged her along. “Are we nearly there?” Alice managed to pant out at last.

“Nearly there!” the Queen repeated. “Why, we passed it ten minutes ago! Faster!” And they ran on for a time in silence, with the wind whistling in Alice's ears, and almost blowing her hair off her head, she fancied.



“Now! Now!” cried the Queen. “Faster! Faster!” And they went so fast that at last they seemed to skim through the air, hardly touching the ground with their feet, till suddenly, just as Alice was getting quite exhausted, they stopped, and she found herself sitting on the ground, breathless and giddy.

The Queen propped her up against a tree, and said kindly, “You may rest a little, now.”

Alice looked round her in great surprise. “Why, I do believe we've been under this tree the whole time! Everything's just as it was!”

“Of course it is,” said the Queen. “What would you have it?”

“Well, in *our* country,” said Alice, still panting a little, “you'd generally get to somewhere else—if you ran very fast for a long time, as we've been doing.”

“A slow sort of country!” said the Queen. “Now, *here*, you see, it takes all the running *you* can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!”

“I'd rather not try, please!” said Alice. “I'm quite content to stay here—only

I *am* so hot and thirsty!"

"I know what *you'd* like!" the Queen said good-naturedly, taking a little box out of her pocket. "Have a biscuit?"

Alice thought it would not be civil to say "No," though it wasn't at all what she wanted. So she took it, and ate it as well as she could: and it was *very* dry: and she thought she had never been so nearly choked in all her life.

"While you're refreshing yourself," said the Queen, "I'll just take the measurements." And she took a ribbon out of her pocket, marked in inches, and began measuring the ground, and sticking little pegs in here and there.

"At the end of two yards," she said, putting in a peg to mark the distance, "I shall give you your directions—have another biscuit?"

"No, thank you," said Alice: "one's *quite* enough!"

"Thirst quenched, I hope?" said the Queen.

Alice did not know what to say to this, but luckily the Queen did not wait for an answer, but went on. "At the end of *three* yards I shall repeat them—for fear of your forgetting them. At the end of *four*, I shall say good-bye. And at the end of *five*, I shall go!"

She had got all the pegs put in by this time, and Alice looked on with great interest as she returned to the tree, and then began slowly walking down the row.

At the two-yard peg she faced round, and said "A pawn goes two squares in its first move, you know. So you'll go *very* quickly through the Third Square—by railway, I should think—and you'll find yourself in the Fourth Square in no time. Well, *that* square belongs to Tweedledum and Tweedledee—the Fifth is mostly water—the Sixth belongs to Humpty Dumpty—But you make no remark?"

"I—I didn't know I had to make one—just then," Alice faltered out.

"You *should* have said," the Queen went on in a tone of grave reproof. "It's extremely kind of you to tell me all this'—however, we'll suppose it said—the Seventh Square is all forest—however, one of the Knights will show you the way—and in the Eighth Square we shall be Queens together, and it's all feasting and fun!" Alice got up and curtsayed, and sat down again.

At the next peg the Queen turned again, and this time she said "Speak in French when you ca'n't think of the English for a thing—turn out your toes as you walk—and remember who you are!" She did not wait for Alice to curtsy, this time, but walked on quickly to the next peg, where she turned for a moment to say "Good-bye," and then hurried on to the last.

How it happened, Alice never knew, but exactly as she came to the last peg, she was gone. Whether she vanished into the air, or whether she ran quickly into the wood ("and she *can* run very fast!" thought Alice), there was no way of guessing, but she was gone, and Alice began to remember that she was a Pawn, and that it would soon be time for her to move.

Chapter III. Looking-Glass Insects

Of course the first thing to do was to make a grand survey of the country she was going to travel through. "It's something very like learning geography," thought Alice, as she stood on tiptoe in hopes of being able to see a little further. "Principal rivers—there *are* none. Principal mountains—I'm on the only one, but I don't think it's got any name. Principal towns—why, what *are* those creatures, making honey down there? They ca'n't be bees—nobody ever saw

bees a mile off, you know——” and for some time she stood silent, watching one of them that was bustling about among the flowers, poking its proboscis into them, “just as if it was a regular bee,” thought Alice.

However, this was anything but a regular bee: in fact it was an elephant—as Alice soon found out, though the idea quite took her breath away at first. “And what enormous flowers they must be!” was her next idea. “Something like cottages with the roofs taken off, and stalks put to them—and what quantities of honey they must make! I think I’ll go down and—no, I wo’n’t go *just* yet,” she went on, checking herself just as she was beginning to run down the hill, and trying to find some excuse for turning shy so suddenly. “It’ll never do to go down among them without a good long branch to brush them away—and what fun it’ll be when they ask me how I liked my walk. I shall say ‘Oh, I liked it well enough——’ (here came the favourite little toss of the head), ‘only it *was* so dusty and hot, and the elephants *did* tease so!’

“I think I’ll go down the other way,” she said after a pause; “and perhaps I may visit the elephants later on. Besides, I *do* so want to get into the Third Square!”

So, with this excuse, she ran down the hill, and jumped over the first of the six little brooks.

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“Tickets, please!” said the Guard, putting his head in at the window. In a moment everybody was holding out a ticket: they were about the same size as the people, and quite seemed to fill the carriage.

“Now then! Show your ticket, child!” the Guard went on, looking angrily at Alice. And a great many voices all said together (“like the chorus of a song,” thought Alice) “Don’t keep him waiting, child! Why, his time is worth a thousand pounds a minute!”

“I’m afraid I haven’t got one,” Alice said in a frightened tone: “there wasn’t a ticket-office where I came from.” And again the chorus of voices went on. “There wasn’t room for one where she came from. The land there is worth a thousand pounds an inch!”

“Don’t make excuses,” said the Guard: “you should have bought one from the engine-driver.” And once more the chorus of voices went on with “The man that drives the engine. Why, the smoke alone is worth a thousand pounds a puff!”

Alice thought to herself “Then there’s no use in speaking.” The voices didn’t join in, *this* time, as she hadn’t spoken, but, to her great surprise, they all *thought* in chorus (I hope you understand what *thinking in chorus* means—for I must confess that *I* don’t), “Better say nothing at all. Language is worth a thousand pounds a word!”

“I shall dream about a thousand pounds to-night, I know I shall!” thought Alice.

All this time the Guard was looking at her, first through a telescope, then through a microscope, and then through an opera-glass. At last he said “You’re travelling the wrong way,” and shut up the window, and went away.



“So young a child,” said the gentleman sitting opposite to her, (he was dressed in white paper,) “ought to know which way she’s going, even if she doesn’t know her own name!”

A Goat, that was sitting next to the gentleman in white, shut his eyes and said in a loud voice, “She ought to know her way to the ticket-office, even if she doesn’t know her alphabet!”

There was a Beetle sitting next to the Goat (it was a very queer carriage-full of passengers altogether), and, as the rule seemed to be that they should all speak in turn, *he* went on with “She’ll have to go back from here as luggage!”

Alice couldn’t see who was sitting beyond the Beetle, but a hoarse voice spoke next. “Change engines——” it said, and there it choked and was obliged to leave off.

“It sounds like a horse,” Alice thought to herself. And an extremely small voice, close to her ear, said “You might make a joke on that—something about ‘horse’ and ‘hoarse,’ you know.”

Then a very gentle voice in the distance said, “She must be labelled ‘Lass, with care,’ you know——”

And after that other voices went on (“What a number of people there are in the carriage!” thought Alice), saying “She must go by post, as she’s got a head on her——” “She must be sent as a message by the telegraph——” “She must draw the train herself the rest of the way——,” and so on.

But the gentleman dressed in white paper leaned forwards and whispered in her ear, “Never mind what they all say, my dear, but take a return-ticket every time the train stops.”

“Indeed I sha’n’t!” Alice said rather impatiently. “I don’t belong to this railway journey at all—I was in a wood just now—and I wish I could get back there!”

“You might make a joke on *that*,” said the little voice close to her ear: “something about ‘you *would* if you could,’ you know.”

“Don’t tease so,” said Alice, looking about in vain to see where the voice

came from. “If you’re so anxious to have a joke made, why don’t you make one yourself?”

The little voice sighed deeply. It was *very* unhappy, evidently, and Alice would have said something pitying to comfort it, “if it would only sigh like other people!” she thought. But this was such a wonderfully small sigh, that she wouldn’t have heard it at all, if it hadn’t come *quite* close to her ear. The consequence of this was that it tickled her ear very much, and quite took off her thoughts from the unhappiness of the poor little creature.

“I know you are a friend,” the little voice went on: “a dear friend, and an old friend. And you wo’n’t hurt me, though I *am* an insect.”

“What kind of insect?” Alice inquired, a little anxiously. What she really wanted to know was, whether it could sting or not, but she thought this wouldn’t be quite a civil question to ask.

“What, then you don’t——” the little voice began, when it was drowned by a shrill scream from the engine, and everybody jumped up in alarm, Alice among the rest.

The Horse, who had put his head out of the window, quietly drew it in and said “It’s only a brook we have to jump over.” Everybody seemed satisfied with this, though Alice felt a little nervous at the idea of trains jumping at all. “However, it’ll take us into the Fourth Square, that’s some comfort!” she said to herself. In another moment she felt the carriage rise straight up into the air, and in her fright she caught at the thing nearest to her hand, which happened to be the Goat’s beard.

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But the beard seemed to melt away as she touched it, and she found herself sitting quietly under a tree—while the Gnat (for that was the insect she had been talking to) was balancing itself on a twig just over her head, and fanning her with its wings.

It certainly was a *very* large Gnat: “about the size of a chicken,” Alice thought. Still, she couldn’t feel nervous with it, after they had been talking together so long.

“—then you don’t like *all* insects?” the Gnat went on, as quietly as if nothing had happened.

“I like them when they can talk,” Alice said. “None of them ever talk, where *I* come from.”

“What sort of insects do you rejoice in, where *you* come from?” the Gnat inquired.

“I don’t *rejoice* in insects at all,” Alice explained, “because I’m rather afraid of them—at least the large kinds. But I can tell you the names of some of them.”

“Of course they answer to their names?” the Gnat remarked carelessly.

“I never knew them do it.”

“What’s the use of their having names,” the Gnat said, “if they wo’n’t answer to them?”

“No use to *them*,” said Alice; “but it’s useful to the people that name them, I suppose. If not, why do things have names at all?”

"I ca'n't say," the Gnat replied. "Further on, in the wood down there, they've got no names—however, go on with your list of insects: you're wasting time."

"Well, there's the Horse-fly," Alice began, counting off the names on her fingers.

"All right," said the Gnat. "Half way up that bush, you'll see a Rocking-horse-fly, if you look. It's made entirely of wood, and gets about by swinging itself from branch to branch."



"What does it live on?" Alice asked, with great curiosity. "Sap and sawdust," said the Gnat. "Go on with the list."



Alice looked up at the Rocking-horse-fly with great interest, and made up her mind that it must have been just repainted, it looked so bright and sticky; and then she went on.

"And there's the Dragon-fly."

"Look on the branch above your head," said the Gnat, "and there you'll find a Snap-dragon-fly. Its body is made of plum-pudding, its wings of holly-leaves, and its head is a raisin burning in brandy."

"And what does it live on?" Alice asked, as before.

“Frumenty and mince-pie,” the Gnat replied; “and it makes its nest in a Christmas-box.”

“And then there’s the Butterfly,” Alice went on, after she had taken a good look at the insect with its head on fire, and had thought to herself, “I wonder if that’s the reason insects are so fond of flying into candles—because they want to turn into Snap-dragon-flies!”

“Crawling at your feet,” said the Gnat (Alice drew her feet back in some alarm), “you may observe a Bread-and-butter-fly. Its wings are thin slices of bread-and-butter, its body is a crust, and its head is a lump of sugar.”

“And what does *it* live on?”



“Weak tea with cream in it.”

A new difficulty came into Alice’s head. “Supposing it couldn’t find any?” she suggested.

“Then it would die, of course.”

“But that must happen very often,” Alice remarked thoughtfully.

“It always happens,” said the Gnat.

After this, Alice was silent for a minute or two, pondering. The Gnat amused itself meanwhile by humming round and round her head: at last it settled again and remarked “I suppose you don’t want to lose your name?”

“No, indeed,” Alice said, a little anxiously.

“And yet I don’t know,” the Gnat went on in a careless tone: “only think how convenient it would be if you could manage to go home without it! For instance, if the governess wanted to call you to your lessons, she would call out ‘Come here——,’ and there she would have to leave off, because there wouldn’t be any name for her to call, and of course you wouldn’t have to go, you know.”

“That would never do, I’m sure,” said Alice: “the governess would never think of excusing me lessons for that. If she couldn’t remember my name, she’d call me ‘Miss,’ as the servants do.”

“Well, if she said ‘Miss,’ and didn’t say anything more,” the Gnat remarked, “of course you’d miss your lessons. That’s a joke. I wish *you* had made it.”

“Why do you wish *I* had made it?” Alice asked. “It’s a very bad one.”

But the Gnat only sighed deeply, while two large tears came rolling down its cheeks.

“You shouldn’t make jokes,” Alice said, “if it makes you so unhappy.”

Then came another of those melancholy little sighs, and this time the poor Gnat really seemed to have sighed itself away, for, when Alice looked up, there was nothing whatever to be seen on the twig, and, as she was getting quite chilly with sitting still so long, she got up and walked on.

She very soon came to an open field, with a wood on the other side of it: it looked much darker than the last wood, and Alice felt a *little* timid about going into it. However, on second thoughts, she made up her mind to go on: “for I certainly wo’n’t go *back*,” she thought to herself, and this was the only way to the Eighth Square.

“This must be the wood,” she said thoughtfully to herself, “where things have no names. I wonder what’ll become of *my* name when I go in? I shouldn’t like to lose it at all—because they’d have to give me another, and it would be almost certain to be an ugly one. But then the fun would be trying to find the creature that had got my old name! That’s just like the advertisements, you know, when people lose dogs—‘*answers to the name of "Dash": had on a brass collar*’—just fancy calling everything you met ‘Alice,’ till one of them answered! Only they wouldn’t answer at all, if they were wise.”

She was rambling on in this way when she reached the wood: it looked very cool and shady. “Well, at any rate it’s a great comfort,” she said as she stepped under the trees, “after being so hot, to get into the—into the—into *what?*” she went on, rather surprised at not being able to think of the word. “I mean to get under the—under the—under *this*, you know!” putting her hand on the trunk of the tree. “What *does* it call itself, I wonder? I do believe it’s got no name—why, to be sure it hasn’t!”

She stood silent for a minute, thinking: then she suddenly began again. “Then it really *has* happened, after all! And now, who am I? I *will* remember, if I can! I’m determined to do it!” But being determined didn’t help her much, and all she could say, after a great deal of puzzling, was, “L, I *know* it begins with L!”

Just then a Fawn came wandering by: it looked at Alice with its large gentle eyes, but didn’t seem at all frightened. “Here then! Here then!” Alice said, as she held out her hand and tried to stroke it; but it only started back a little, and then stood looking at her again.

“What do you call yourself?” the Fawn said at last. Such a soft sweet voice it had!

“I wish I knew!” thought poor Alice. She answered, rather sadly, “Nothing, just now.”

“Think again,” it said: “that wo’n’t do.”

Alice thought, but nothing came of it. “Please, would you tell me what *you* call yourself?” she said timidly. “I think that might help a little.”

“I’ll tell you, if you’ll move a little further on,” the Fawn said. “I ca’n’t remember *here*.”

So they walked on together though the wood, Alice with her arms clasped lovingly round the soft neck of the Fawn, till they came out into another open field, and here the Fawn gave a sudden bound into the air, and shook itself free from Alice’s arms. “I’m a Fawn!” it cried out in a voice of delight. “And, dear me! you’re a human child!” A sudden look of alarm came into its beautiful brown eyes, and in another moment it had darted away at full speed.



Alice stood looking after it, almost ready to cry with vexation at having lost her dear little fellow-traveller so suddenly. "However, I know my name now," she said: "that's *some* comfort. Alice—Alice—I wo'n't forget it again. And now, which of these finger-posts ought I to follow, I wonder?"

It was not a very difficult question to answer, as there was only one road through the wood, and the two finger-posts both pointed along it. "I'll settle it," Alice said to herself, "when the road divides and they point different ways."

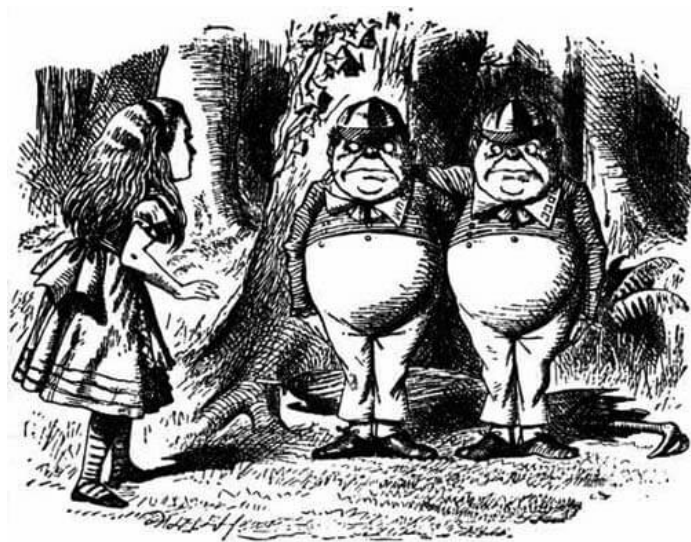
But this did not seem likely to happen. She went on and on, a long way, but, wherever the road divided, there were sure to be two finger-posts pointing the same way, one marked 'TO TWEEDLEDUM'S HOUSE,' and the other 'TO THE HOUSE OF TWEEDLEDEE.'

"I do believe," said Alice at last, "that they live in the *same* house! I wonder I never thought of that before—But I ca'n't stay there long. I'll just call and say 'How d'ye do?' and ask them the way out of the wood. If I could only get to the Eighth Square before it gets dark!" So she wandered on, talking to herself as she went, till, on turning a sharp corner, she came upon two fat little men, so suddenly that she could not help starting back, but in another moment she recovered herself, feeling sure that they must be.

Chapter IV. Tweedledum and Tweedledee

They were standing under a tree, each with an arm round the other's neck, and Alice knew which was which in a moment, because one of them had 'DUM' embroidered on his collar, and the other 'DEE.' "I suppose they've each got 'TWEEDLE' round at the back of the collar," she said to herself.

They stood so still that she quite forgot they were alive, and she was just looking round to see if the word 'TWEEDLE' was written at the back of each collar, when she was startled by a voice coming from the one marked 'DUM.'



"If you think we're wax-works," he said, "you ought to pay, you know. Wax-works weren't made to be looked at for nothing. Nohow!"

“Contrariwise,” added the one marked ‘DEE,’ “if you think we’re alive, you ought to speak.”

“I’m sure I’m very sorry,” was all Alice could say; for the words of the old song kept ringing through her head like the ticking of a clock, and she could hardly help saying them out loud:—

*“Tweedledum and Tweedledee
Agreed to have a battle;
For Tweedledum said Tweedledee
Had spoiled his nice new rattle.*

*Just then flew down a monstrous crow,
As black as a tar-barrel;
Which frightened both the heroes so,
They quite forgot their quarrel.”*

Quoted from nursery
rhyme

“I know what you’re thinking about,” said Tweedledum; “but it isn’t so, nohow.”

“Contrariwise,” continued Tweedledee, “if it was so, it might be; and if it were so, it would be; but as it isn’t, it ain’t. That’s logic.”

“I was thinking,” Alice said very politely, “which is the best way out of this wood: it’s getting so dark. Would you tell me, please?”

But the little men only looked at each other and grinned.

They looked so exactly like a couple of great schoolboys, that Alice couldn’t help pointing her finger at Tweedledum, and saying “First Boy!”

“Nohow!” Tweedledum cried out briskly, and shut his mouth up again with a snap.

“Next Boy!” said Alice, passing on to Tweedledee, though she felt quite certain he would only shout out “Contrariwise!” and so he did.

“You’ve been wrong!” cried Tweedledum. “The first thing in a visit is to say ‘How d’ye do?’ and shake hands!” And here the two brothers gave each other a hug, and then they held out the two hands that were free, to shake hands with her.

Alice did not like shaking hands with either of them first, for fear of hurting the other one’s feelings; so, as the best way out of the difficulty, she took hold of both hands at once: the next moment they were dancing round in a ring. This seemed quite natural (she remembered afterwards), and she was not even surprised to hear music playing: it seemed to come from the tree under which they were dancing, and it was done (as well as she could make it out) by the branches rubbing one across the other, like fiddles and fiddle-sticks.

“But it certainly *was* funny,” (Alice said afterwards, when she was telling her sister the history of all this,) “to find myself singing ‘*Here we go round the mulberry bush.*’ I don’t know when I began it, but somehow I felt as if I’d been singing it a long long time!”

The other two dancers were fat, and very soon out of breath. “Four times round is enough for one dance,” Tweedledum panted out, and they left off dancing as suddenly as they had begun: the music stopped at the same moment.

Then they let go of Alice’s hands, and stood looking at her for a minute: there was a rather awkward pause, as Alice didn’t know how to begin a conversation with people she had just been dancing with. “It would never do to say

'How d'ye do?' *now*," she said to herself: "we seem to have got beyond that, somehow!"

"I hope you're not much tired?" she said at last.

"Nohow. And thank you *very* much for asking," said Tweedledum.

"So *much* obliged!" added Tweedledee. "You like poetry?"

"Ye-es, pretty well—*some* poetry," Alice said doubtfully. "Would you tell me which road leads out of the wood?"

"What shall I repeat to her?" said Tweedledee, looking round at Tweedledum with great solemn eyes, and not noticing Alice's question.

"'The Walrus and the Carpenter' is the longest," Tweedledum replied, giving his brother an affectionate hug.

Tweedledee began instantly:

The sun was shining——"

Here Alice ventured to interrupt him. "If it's *very* long," she said, as politely as she could, "would you please tell me first which road——"

Tweedledee smiled gently, and began again:

*"The sun was shining on the sea,
Shining with all his might:
He did his very best to make
The billows smooth and bright—
And this was odd, because it was
The middle of the night.*

*The moon was shining sulkily,
Because she thought the sun
Had got no business to be there
After the day was done—
'It's very rude of him,' she said,
'To come and spoil the fun!'*

*The sea was wet as wet could be,
The sands were dry as dry.
You could not see a cloud, because
No cloud was in the sky:
No birds were flying overhead—
There were no birds to fly.*

*The Walrus and the Carpenter
Were walking close at hand;
They wept like anything to see
Such quantities of sand:
'If this were only cleared away,'
They said, 'it would be grand!'*

*'If seven maids with seven mops
Swept it for half a year,
Do you suppose,' the Walrus said,
'That they could get it clear?'
'I doubt it,' said the Carpenter,
And shed a bitter tear.*



'O Oysters, come and walk with us!'

The Walrus did beseech.

'A pleasant walk, a pleasant talk,

Along the briny beach:

We cannot do with more than four,

To give a hand to each.'

The eldest Oyster looked at him.

But never a word he said:

The eldest Oyster winked his eye,

And shook his heavy head—

Meaning to say he did not choose

To leave the oyster-bed.

But four young oysters hurried up,

All eager for the treat:

Their coats were brushed, their faces washed,

Their shoes were clean and neat—

And this was odd, because, you know,

They hadn't any feet.

Four other Oysters followed them,

And yet another four;

And thick and fast they came at last,

And more, and more, and more—

All hopping through the frothy waves,

And scrambling to the shore.

The Walrus and the Carpenter

Walked on a mile or so,

And then they rested on a rock

Conveniently low:

And all the little Oysters stood

And waited in a row.

'The time has come,' the Walrus said,

'To talk of many things:

Of shoes—and ships—and sealing-wax—

*Of cabbages—and kings—
And why the sea is boiling hot—
And whether pigs have wings.'*



*'But wait a bit,' the Oysters cried,
'Before we have our chat;
For some of us are out of breath,
And all of us are fat!'
'No hurry!' said the Carpenter.
They thanked him much for that.
'A loaf of bread,' the Walrus said,
'Is what we chiefly need:
Pepper and vinegar besides
Are very good indeed—
Now if you're ready Oysters dear,
We can begin to feed.'
'But not on us!' the Oysters cried,
Turning a little blue.
'After such kindness, that would be
A dismal thing to do!'
'The night is fine,' the Walrus said.
'Do you admire the view?'
'It was so kind of you to come!
And you are very nice!'
The Carpenter said nothing but
'Cut us another slice.
I wish you were not quite so deaf—
I've had to ask you twice!'
'It seems a shame,' the Walrus said,
'To play them such a trick.
After we've brought them out so far,
And made them trot so quick!'
The Carpenter said nothing but
'The butter's spread too thick!'*



*'I weep for you,' the Walrus said:
'I deeply sympathize.'
With sobs and tears he sorted out
Those of the largest size,
Holding his pocket-handkerchief
Before his streaming eyes.
'O Oysters,' said the Carpenter,
'You've had a pleasant run!
Shall we be trotting home again?'
But answer came there none—
And that was scarcely odd, because
They'd eaten every one.'*

"I like the Walrus best," said Alice: "because you see he was a *little* sorry for the poor oysters."

"He ate more than the Carpenter, though," said Tweedledee. "You see he held his handkerchief in front, so that the Carpenter couldn't count how many he took: contrariwise."

"That was mean!" Alice said indignantly. "Then I like the Carpenter best—if he didn't eat so many as the Walrus."

"But he ate as many as he could get," said Tweedledum.

This was a puzzler. After a pause, Alice began, "Well! They were *both* very unpleasant characters——" Here she checked herself in some alarm, at hearing something that sounded to her like the puffing of a large steam-engine in the wood near them, though she feared it was more likely to be a wild beast. "Are there any lions or tigers about here?" she asked timidly.

"It's only the Red King snoring," said Tweedledee.

"Come and look at him!" the brothers cried, and they each took one of Alice's hands, and led her up to where the King was sleeping.

"Isn't he a *lovely* sight?" said Tweedledum.

Alice couldn't say honestly that he was. He had a tall red night-cap on, with a tassel, and he was lying crumpled up into a sort of untidy heap, and snoring loud—"fit to snore his head off!" as Tweedledum remarked.



"I'm afraid he'll catch cold with lying on the damp grass," said Alice, who was a very thoughtful little girl.

"He's dreaming now," said Tweedledee: "and what do you think he's dreaming about?"

Alice said "Nobody can guess that."

"Why, about *you!*" Tweedledee exclaimed, clapping his hands triumphantly. "And if he left off dreaming about you, where do you suppose you'd be?"

"Where I am now, of course," said Alice.

"Not you!" Tweedledee retorted contemptuously. "You'd be nowhere. Why, you're only a sort of thing in his dream!"

"If that there King was to wake," added Tweedledum, "you'd go out—bang!—just like a candle!"

"I shouldn't!" Alice exclaimed indignantly. "Besides, if *I'm* only a sort of thing in his dream, what are *you*, I should like to know?"

"Ditto," said Tweedledum.

"Ditto, ditto!" cried Tweedledee.

He shouted this so loud that Alice couldn't help saying "Hush! You'll be waking him, I'm afraid, if you make so much noise."

"Well, it no use *your* talking about waking him," said Tweedledum, "when you're only one of the things in his dream. You know very well you're not real."

"I *am* real!" said Alice, and began to cry.

"You wo'n't make yourself a bit realler by crying," Tweedledee remarked: "there's nothing to cry about."

"If I wasn't real," Alice said—half-laughing through her tears, it all seemed so ridiculous—"I shouldn't be able to cry."

"I hope you don't suppose those are *real* tears?" Tweedledum interrupted in a tone of great contempt.

"I know they're talking nonsense," Alice thought to herself: "and it's foolish to cry about it." So she brushed away her tears, and went on as cheerfully as she could, "At any rate I'd better be getting out of the wood, for really it's coming on very dark. Do you think it's going to rain?"

Tweedledum spread a large umbrella over himself and his brother, and looked up into it. "No, I don't think it is," he said: "at least—not under *here*. Nohow."

“But it may rain *outside*?”

“It may—if it chooses,” said Tweedledee: “we’ve no objection. Contrariwise.”

“Selfish things!” thought Alice, and she was just going to say “Good-night” and leave them, when Tweedledum sprang out from under the umbrella, and seized her by the wrist.

“Do you see *that*?” he said, in a voice choking with passion, and his eyes grew large and yellow all in a moment, as he pointed with a trembling finger at a small white thing lying under the tree.

“It’s only a rattle,” Alice said, after a careful examination of the little white thing. “Not a rattle-*snake*, you know,” she added hastily, thinking that he was frightened: “only an old rattle—quite old and broken.”



“I knew it was!” cried Tweedledum, beginning to stamp about wildly and tear his hair. “It’s spoilt, of course!” Here he looked at Tweedledee, who immediately sat down on the ground, and tried to hide himself under the umbrella.

Alice laid her hand upon his arm, and said in a soothing tone, “You needn’t be so angry about an old rattle.”

“But it *isn’t* old!” Tweedledum cried, in a greater fury than ever. “It’s *new*, I tell you—I bought it yesterday—my nice NEW RATTLE!” and his voice rose to a perfect scream.

All this time Tweedledee was trying his best to fold up the umbrella, with himself in it: which was such an extraordinary thing to do, that it quite took off Alice’s attention from the angry brother. But he couldn’t quite succeed, and it ended in his rolling over, bundled up in the umbrella, with only his head out: and there he lay, opening and shutting his mouth and his large eyes—“looking more like a fish than anything else,” Alice thought.

“Of course you agree to have a battle?” Tweedledum said in a calmer tone.

“I suppose so,” the other sulkily replied, as he crawled out of the umbrella: “only *she* must help us to dress up, you know.”

So the two brothers went off hand-in-hand into the wood, and returned in a minute with their arms full of things—such as bolsters, blankets, hearth-rugs, table-cloths, dish-covers and coal-scuttles. “I hope you’re a good hand at pinning and tying strings?” Tweedledum remarked. “Every one of these things has got

to go on, somehow or other.”

Alice said afterwards she had never seen such a fuss made about anything in all her life—the way those two bustled about—and the quantity of things they put on—and the trouble they gave her in tying strings and fastening buttons—“Really they’ll be more like bundles of old clothes than anything else, by the time they’re ready!” she said to herself, as she arranged a bolster round the neck of Tweedledee, “to keep his head from being cut off,” as he said.

“You know,” he added very gravely, “it’s one of the most serious things that can possibly happen to one in a battle—to get one’s head cut off.”

Alice laughed loud: but she managed to turn it into a cough, for fear of hurting his feelings.



“Do I look very pale?” said Tweedledum, coming up to have his helmet tied on. (He *called* it a helmet, though it certainly looked much more like a saucepan.)

“Well—yes—a *little*,” Alice replied gently.

“I’m very brave, generally,” he went on in a low voice: “only to-day I happen to have a headache.”

“And *I’ve* got a toothache!” said Tweedledee, who had overheard the remark. “I’m far worse than you!”

“Then you’d better not fight to-day,” said Alice, thinking it a good opportunity to make peace.

“We *must* have a bit of a fight, but I don’t care about going on long,” said Tweedledum. “What’s the time now?”

Tweedledee looked at his watch, and said “Half-past four.”

“Let’s fight till six, and then have dinner,” said Tweedledum.

“Very well,” the other said, rather sadly: “and *she* can watch us—only you’d better not come *very* close,” he added: “I generally hit everything I can see—when I get really excited.”

“And *I* hit every thing within reach,” cried Tweedledum, “whether I can see it or not!”

Alice laughed. “You must hit the *trees* pretty often, I should think,” she said.

Tweedledum looked round him with a satisfied smile. "I don't suppose," he said, "there'll be a tree left standing, for ever so far round, by the time we've finished!"

"And all about a rattle!" said Alice, still hoping to make them a *little* ashamed of fighting for such a trifle.

"I shouldn't have minded it so much," said Tweedledum, "if it hadn't been a new one."

"I wish the monstrous crow would come!" thought Alice.

"There's only one sword, you know," Tweedledum said to his brother: "but *you* can have the umbrella—it's quite as sharp. Only we must begin quick. It's getting as dark as it can."

"And darker," said Tweedledee.

It was getting dark so suddenly that Alice thought there must be a thunderstorm coming on. "What a thick black cloud that is!" she said. "And how fast it comes! Why, I do believe it's got wings!"

"It's the crow!" Tweedledum cried out in a shrill voice of alarm; and the two brothers took to their heels and were out of sight in a moment.

Alice ran a little way into the wood, and stopped under a large tree. "It can never get at me *here*," she thought: "it's far too large to squeeze itself in among the trees. But I wish it wouldn't flap its wings so—it makes quite a hurricane in the wood—here's somebody's shawl being blown away!"

Chapter V. Wool and Water

She caught the shawl as she spoke, and looked about for the owner: in another moment the White Queen came running wildly through the wood, with both arms stretched out wide, as if she were flying, and Alice very civilly went to meet her with the shawl.

"I'm very glad I happened to be in the way," Alice said, as she helped her to put on her shawl again.

The White Queen only looked at her in a helpless frightened sort of way, and kept repeating something in a whisper to herself that sounded like "Bread-and-butter, bread-and-butter," and Alice felt that if there was to be any conversation at all, she must manage it herself. So she began rather timidly: "Am I addressing the White Queen?"

"Well, yes, if you call that a-dressing," the Queen said. "It isn't *my* notion of the thing, at all."

Alice thought it would never do to have an argument at the very beginning of their conversation, so she smiled and said "If your Majesty will only tell me the right way to begin, I'll do it as well as I can."

"But I don't want it done at all!" groaned the poor Queen. "I've been a-dressing myself for the last two hours."

It would have been all the better, as it seemed to Alice, if she had got some one else to dress her, she was so dreadfully untidy. "Every single thing's crooked," Alice thought to herself, "and she's all over pins!—May I put your shawl straight for you?" she added aloud.

"I don't know what's the matter with it!" the Queen said, in a melancholy voice. "It's out of temper, I think. I've pinned it here, and I've pinned it there, but there's no pleasing it!"



"It *ca'n't* go straight, you know, if you pin it all on one side," Alice said, as she gently put it right for her; "and, dear me, what a state your hair is in!"

"The brush has got entangled in it!" the Queen said with a sigh. "And I lost the comb yesterday."

Alice carefully released the brush, and did her best to get the hair into order. "Come, you look rather better now!" she said, after altering most of the pins. "But really you should have a lady's-maid!"

"I'm sure I'll take *you* with pleasure!" the Queen said. "Twopence a week, and jam every other day."

Alice couldn't help laughing, as she said "I don't want you to hire *me*—and I don't care for jam."

"It's very good jam," said the Queen.

"Well, I don't want any *to-day*, at any rate."

"You couldn't have it if you *did* want it," the Queen said. "The rule is, jam to-morrow and jam yesterday—but never jam *to-day*."

"It *must* come sometimes to 'jam to-day,'" Alice objected.

"No, it *ca'n't*," said the Queen. "It's jam every *other* day: to-day isn't any *other* day, you know."

"I don't understand you," said Alice. "It's dreadfully confusing!"

"That's the effect of living backwards," the Queen said kindly: "it always makes one a little giddy at first——"

"Living backwards!" Alice repeated in great astonishment. "I never heard of such a thing!"

"—but there's one great advantage in it, that one's memory works both ways."

"I'm sure *mine* only works one way," Alice remarked. "I *ca'n't* remember things before they happen."

"It's a poor sort of memory that only works backwards," the Queen remarked.

"What sort of things do *you* remember best?" Alice ventured to ask.

"Oh, things that happened the week after next," the Queen replied in a careless tone. "For instance, now," she went on, sticking a large piece of plaster on her finger as she spoke, "there's the King's Messenger. He's in prison now, being punished: and the trial doesn't even begin till next Wednesday: and of course the crime comes last of all."

"Suppose he never commits the crime?" said Alice.

"That would be all the better, wouldn't it?" the Queen said, as she bound the plaster round her finger with a bit of ribbon.

Alice felt there was no denying *that*. "Of course it would be all the better," she said: "but it wouldn't be all the better his being punished."

"You're wrong *there*, at any rate," said the Queen. "Were *you* ever punished?"

"Only for faults," said Alice.

"And you were all the better for it, I know!" the Queen said triumphantly.

"Yes, but then I *had* done the things I was punished for," said Alice: "that makes all the difference."

"But if you *hadn't* done them," the Queen said, "that would have been better still; better, and better, and better!" Her voice went higher with each "better," till it got quite to a squeak at last.

Alice was just beginning to say "There's a mistake somewhere——," when the Queen began screaming, so loud that she had to leave the sentence unfinished.



“Oh, oh, oh!” shouted the Queen, shaking her hand about as if she wanted to shake it off. “My finger’s bleeding! Oh, oh, oh, oh!”

Her screams were so exactly like the whistle of a steam-engine, that Alice had to hold both her hands over her ears.

“What *is* the matter?” she said, as soon as there was a chance of making herself heard. “Have you pricked your finger?”

“I haven’t pricked it *yet*,” the Queen said, “but I soon shall—oh, oh, oh!”

“When do you expect to do it?” Alice asked, feeling very much inclined to laugh.

“When I fasten my shawl again,” the poor Queen groaned out: “the brooch will come undone directly. Oh, oh!” As she said the words the brooch flew open, and the Queen clutched wildly at it, and tried to clasp it again.

“Take care!” cried Alice. “You’re holding it all crooked!” And she caught at the brooch; but it was too late: the pin had slipped, and the Queen had pricked her finger.

“That accounts for the bleeding, you see,” she said to Alice with a smile. “Now you understand the way things happen here.”

“But why don’t you scream *now*?” Alice asked, holding her hands ready to put over her ears again.

“Why, I’ve done all the screaming already,” said the Queen. “What would be the good of having it all over again?”

By this time it was getting light. “The crow must have flown away, I think,” said Alice: “I’m so glad it’s gone. I thought it was the night coming on.”

“I wish *I* could manage to be glad!” the Queen said. “Only I never can remember the rule. You must be very happy, living in this wood, and being glad whenever you like!”

“Only it is so *very* lonely here!” Alice said in a melancholy voice; and, at the thought of her loneliness, two large tears came rolling down her cheeks.

“Oh, don’t go on like that!” cried the poor Queen, wringing her hands in despair. “Consider what a great girl you are. Consider what a long way you’ve come to-day. Consider what o’clock it is. Consider anything, only don’t cry!”

Alice could not help laughing at this, even in the midst of her tears. “Can *you* keep from crying by considering things?” she asked.

“That’s the way it’s done,” the Queen said with great decision: “nobody can do two things at once, you know. Let’s consider your age to begin with—how old are you?”

“I’m seven and a half, exactly.”

“You needn’t say ‘exactly,’” the Queen remarked. “I can believe it without that. Now I’ll give *you* something to believe. I’m just one hundred and one, five months and a day.”

“I ca’n’t believe *that!*” said Alice.

“Ca’n’t you?” the Queen said in a pitying tone. “Try again: draw a long breath, and shut your eyes.”

Alice laughed. “There’s no use trying,” she said: “one *ca’n’t* believe impossible things.”

“I daresay you haven’t had much practice,” said the Queen. “When I was your age, I always did it for half-an-hour a day. Why, sometimes I’ve believed as many as six impossible things before breakfast. There goes the shawl again!”

The brooch had come undone as she spoke, and a sudden gust of wind blew the Queen’s shawl across a little brook. The Queen spread out her arms again,

and went flying after it, and this time she succeeded in catching it for herself. "I've got it!" she cried in a triumphant tone. "Now you shall see me pin it on again, all by myself!"

"Then I hope your finger is better now?" Alice said very politely, as she crossed the little brook after the Queen.

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"Oh, much better!" cried the Queen, her voice rising to a squeak as she went on. "Much be-etter! Be-etter! Be-e-e-etter! Be-e-ehh!" The last word ended in a long bleat, so like a sheep that Alice quite started.



She looked at the Queen, who seemed to have suddenly wrapped herself up in wool. Alice rubbed her eyes, and looked again. She couldn't make out what had happened at all. Was she in a shop? And was that really—was it really a *sheep* that was sitting on the other side of the counter? Rub as she could, she could make nothing more of it: she was in a little dark shop, leaning with her elbows on the counter, and opposite to her was an old Sheep, sitting in an arm-chair, knitting, and every now and then leaving off to look at her through a great pair of spectacles.

“What is it you want to buy?” the Sheep said at last, looking up for a moment from her knitting.

“I don’t *quite* know yet,” Alice said very gently. “I should like to look all round me first, if I might.”

“You may look in front of you, and on both sides, if you like,” said the Sheep; “but you can’t look *all* round you—unless you’ve got eyes at the back of your head.”

But these, as it happened, Alice had *not* got: so she contented herself with turning round, looking at the shelves as she came to them.

The shop seemed to be full of all manner of curious things—but the oddest part of it all was, that whenever she looked hard at any shelf, to make out exactly what it had on it, that particular shelf was always quite empty, though the others round it were crowded as full as they could hold.

“Things flow about so here!” she said at last in a plaintive tone, after she had spent a minute or so in vainly pursuing a large bright thing, that looked sometimes like a doll and sometimes like a work-box, and was always in the shelf next above the one she was looking at. “And this one is the most provoking of all—but I’ll tell you what——” she added, as a sudden thought struck her, “I’ll follow it up to the very top shelf of all. It’ll puzzle it to go through the ceiling, I expect!”

But even this plan failed: the ‘thing’ went through the ceiling as quietly as possible, as if it were quite used to it.

“Are you a child or a teetotum?” the Sheep said, as she took up another pair of needles. “You’ll make me giddy soon, if you go on turning round like that.” She was now working with fourteen pairs at once, and Alice couldn’t help looking at her in great astonishment.

“How *can* she knit with so many?” the puzzled child thought to herself. “She gets more and more like a porcupine every minute!”

“Can you row?” the Sheep asked, handing her a pair of knitting-needles as she spoke.

“Yes, a little—but not on land—and not with needles——” Alice was beginning to say, when suddenly the needles turned into oars in her hands, and she found they were in a little boat, gliding along between banks: so there was nothing for it but to do her best.

“Feather!” cried the Sheep, as she took up another pair of needles.

This didn’t sound like a remark that needed any answer: so Alice said nothing, but pulled away. There was something very queer about the water, she thought, as every now and then the oars got fast in it, and would hardly come out again.

“Feather! Feather!” the Sheep cried again, taking more needles. “You’ll be catching a crab directly.”

“A dear little crab!” thought Alice. “I should like that.”

“Didn’t you hear me say ‘Feather’?” the Sheep cried angrily, taking up quite a bunch of needles.

“Indeed I did,” said Alice: “you’ve said it very often—and very loud. Please where *are* the crabs?”

“In the water, of course!” said the Sheep, sticking some of the needles into her hair, as her hands were full. “Feather, I say!”

“*Why* do you say ‘Feather’ so often?” Alice asked at last, rather vexed. “I’m not a bird!”

"You are," said the Sheep: "you're a little goose."

This offended Alice a little, so there was no more conversation for a minute or two, while the boat glided gently on, sometimes among beds of weeds (which made the oars stick fast in the water, worse than ever), and sometimes under trees, but always with the same tall river-banks frowning over their heads.

"Oh, please! There are some scented rushes!" Alice cried in a sudden transport of delight. "There really are—and *such* beauties!"

"You needn't say 'please' to *me* about 'em," the Sheep said, without looking up from her knitting: "I didn't put 'em there, and I'm not going to take 'em away."

"No, but I meant—please, may we wait and pick some?" Alice pleaded. "If you don't mind stopping the boat for a minute."

"How am *I* to stop it?" said the Sheep. "If you leave off rowing, it'll stop of itself."

So the boat was left to drift down the stream as it would, till it glided gently in among the waving rushes. And then the little sleeves were carefully rolled up, and the little arms were plunged in elbow-deep to get hold of the rushes a good long way down before breaking them off—and for a while Alice forgot all about the Sheep and the knitting, as she bent over the side of the boat, with just the ends of her tangled hair dipping into the water—while with bright eager eyes she caught at one bunch after another of the darling scented rushes.

"I only hope the boat wo'n't tipple over!" she said to herself. "Oh, *what* a lovely one! Only I couldn't quite reach it." And it certainly *did* seem a little provoking ("almost as if it happened on purpose," she thought) that, though she managed to pick plenty of beautiful rushes as the boat glided by, there was always a more lovely one that she couldn't reach.

"The prettiest are always further!" she said at last, with a sigh at the obstinacy of the rushes in growing so far off, as, with flushed cheeks and dripping hair and hands, she scrambled back into her place, and began to arrange her new-found treasures.

What mattered it to her just then that the rushes had begun to fade, and to lose all their scent and beauty, from the very moment that she picked them? Even real scented rushes, you know, last only a very little while—and these, being dream-rushes, melted away almost like snow, as they lay in heaps at her feet—but Alice hardly noticed this, there were so many other curious things to think about.

They hadn't gone much farther before the blade of one of the oars got fast in the water and *wouldn't* come out again (so Alice explained it afterwards), and the consequence was that the handle of it caught her under the chin, and, in spite of a series of little shrieks of 'Oh, oh, oh!' from poor Alice, it swept her straight off the seat, and down among the heap of rushes.

However, she wasn't a bit hurt, and was soon up again: the Sheep went on with her knitting all the while, just as if nothing had happened. "That was a nice crab you caught!" she remarked, as Alice got back into her place, very much relieved to find herself still in the boat.

"Was it? I didn't see it," said Alice, peeping cautiously over the side of the boat into the dark water. "I wish it hadn't let go—I should so like to see a little crab to take home with me!" But the Sheep only laughed scornfully, and went on with her knitting.

"Are there many crabs here?" said Alice.

“Crabs, and all sorts of things,” said the Sheep: “plenty of choice, only make up your mind. Now, what *do* you want to buy?”



“To buy!” Alice echoed in a tone that was half astonished and half frightened—for the oars, and the boat, and the river, had vanished all in a moment, and she was back again in the little dark shop.

“I should like to buy an egg, please,” she said timidly. “How do you sell them?”

“Fivepence farthing for one—twopence for two,” the Sheep replied.

“Then two are cheaper than one?” Alice said in a surprised tone, taking out her purse.

“Only you *must* eat them both, if you buy two,” said the Sheep.

“Then I’ll have *one*, please,” said Alice, as she put the money down on the counter. For she thought to herself, “They mightn’t be at all nice, you know.”

The Sheep took the money, and put it away in a box: then she said “I never put things into people’s hands—that would never do—you must get it for yourself.” And so saying, she went off to the other end of the shop, and set the egg upright on a shelf.

“I wonder *why* it wouldn’t do?” thought Alice, as she groped her way among the tables and chairs, for the shop was very dark towards the end. “The egg seems to get further away the more I walk towards it. Let me see, is this a chair? Why, it’s got branches, I declare! How very odd to find trees growing

here! And actually here's a little brook! Well, this is the very queerest shop I ever saw!"

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So she went on, wondering more and more at every step, as everything turned into a tree the moment she came up to it, and she quite expected the egg to do the same.

Chapter VI. Humpty Dumpty

However, the egg only got larger and larger, and more and more human: when she had come within a few yards of it, she saw that it had eyes and a nose and mouth; and, when she had come close to it, she saw clearly that it was HUMPTY DUMPTY himself. "It ca'n't be anybody else!" she said to herself. "I'm as certain of it, as if his name were written all over his face!"

It might have been written a hundred times, easily, on that enormous face. Humpty Dumpty was sitting, with his legs crossed like a Turk, on the top of a high wall—such a narrow one that Alice quite wondered how he could keep his balance—and, as his eyes were steadily fixed in the opposite direction, and he didn't take the least notice of her, she thought he must be a stuffed figure, after all.

"And how exactly like an egg he is!" she said aloud, standing with her hands ready to catch him, for she was every moment expecting him to fall.

"It's *very* provoking," Humpty Dumpty said after a long silence, looking away from Alice as he spoke, "to be called an egg—*very!*"

"I said you *looked* like an egg, Sir," Alice gently explained. "And some eggs are very pretty, you know," she added, hoping to turn her remark into a sort of a compliment.

"Some people," said Humpty Dumpty, looking away from her as usual, "have no more sense than a baby!"

Alice didn't know what to say to this: it wasn't at all like conversation, she thought, as he never said anything to *her*; in fact, his last remark was evidently addressed to a tree—so she stood and softly repeated to herself:—

*"Humpty Dumpty sat on a wall:
Humpty Dumpty had a great fall.
All the King's horses and all the King's men
Couldn't put Humpty Dumpty in his place again."*

Quoted from nursery rhyme

"That last line is much too long for the poetry," she added, almost out loud, forgetting that Humpty Dumpty would hear her.

"Don't stand chattering to yourself like that," Humpty Dumpty said, looking at her for the first time, "but tell me your name and your business."

"My *name* is Alice, but——"

"It's a stupid name enough!" Humpty Dumpty interrupted impatiently. "What does it mean?"

"*Must* a name mean something?" Alice asked doubtfully.

“Of course it must,” Humpty Dumpty said with a short laugh: “*my* name means the shape I am—and a good handsome shape it is, too. With a name like yours, you might be any shape, almost.”

“Why do you sit out here all alone?” said Alice, not wishing to begin an argument.

“Why, because there’s nobody with me!” cried Humpty Dumpty. “Did you think I didn’t know the answer to *that*? Ask another.”

“Don’t you think you’d be safer down on the ground?” Alice went on, not with any idea of making another riddle, but simply in her good-natured anxiety for the queer creature. “That wall is so *very* narrow!”

“What tremendously easy riddles you ask!” Humpty Dumpty growled out. “Of course I don’t think so! Why, if ever I *did* fall off—which there’s no chance of—but *if* I did——” Here he pursed his lips, and looked so solemn and grand that Alice could hardly help laughing.

“*If I did* fall,” he went on, “*the King has promised me*—ah, you may turn pale, if you like! You didn’t think I was going to say that, did you? *The King has promised me—with his very own mouth—to—to——*”

“To send all his horses and all his men,” Alice interrupted, rather unwisely.

“Now I declare that’s too bad!” Humpty Dumpty cried, breaking into a sudden passion. “You’ve been listening at doors—and behind trees—and down chimneys—or you couldn’t have known it!”

“I haven’t, indeed!” Alice said very gently. “It’s in a book.”



“Ah, well! They may write such things in a *book*,” Humpty Dumpty said in a calmer tone. “That’s what you call a History of England, that is. Now, take a good look at me! I’m one that has spoken to a King, *I* am: mayhap you’ll never see such another: and, to show you I’m not proud, you may shake hands with me!” And he grinned almost from ear to ear, as he leant forwards (and as nearly as possible fell off the wall in doing so) and offered Alice his hand. She watched him a little anxiously as she took it. “If he smiled much more, the ends of his mouth might meet behind,” she thought: “and then I don’t know *what* would happen to his head! I’m afraid it would come off!”

“Yes, all his horses and all his men,” Humpty Dumpty went on. “They’d pick me up again in a minute, *they* would! However, this conversation is going on a little too fast: let’s go back to the last remark but one.”

“I’m afraid I ca’n’t quite remember it,” Alice said, very politely.

“In that case we start *afresh*⁶,” said Humpty Dumpty, “and it’s my turn to choose a subject——” (“He talks about it just as if it was a game!” thought Alice.) “So here’s a question for you. How old did you say you were?”

Alice made a short calculation, and said “Seven years and six months.”

“Wrong!” Humpty Dumpty exclaimed triumphantly. “You never said a word like it!”

“I though you meant ‘How old *are* you?’” Alice explained.

“If I’d meant that, I’d have said it,” said Humpty Dumpty.

Alice didn’t want to begin another argument, so she said nothing.

“Seven years and six months!” Humpty Dumpty repeated thoughtfully. “An uncomfortable sort of age. Now if you’d asked *my* advice, I’d have said ‘Leave off at seven’——but it’s too late now.”

“I never ask advice about growing,” Alice said indignantly.

“Too proud?” the other inquired.

Alice felt even more indignant at this suggestion. “I mean,” she said, “that one ca’n’t help growing older.”

“*One* ca’n’t, perhaps,” said Humpty Dumpty; “but *two* can. With proper assistance, you might have left off at seven.”

“What a beautiful belt you’ve got on!” Alice suddenly remarked. (They had had quite enough of the subject of age, she thought: and, if they really were to take turns in choosing subjects, it was *her* turn now.) “At least,” she corrected herself on second thoughts, “a beautiful cravat, I should have said—no, a belt, I mean—I beg your pardon!” she added in dismay, for Humpty Dumpty looked thoroughly offended, and she began to wish she hadn’t chosen that subject. “If I only knew,” she thought to herself, “which was neck and which was waist!”

Evidently Humpty Dumpty was very angry, though he said nothing for a minute or two. When he *did* speak again, it was in a deep growl.

“It is a—*most—provoking—*thing,” he said at last, “when a person doesn’t know a cravat from a belt!”

“I know it’s very ignorant of me,” Alice said, in so humble a tone that Humpty Dumpty relented.

“It’s a cravat, child, and a beautiful one, as you say. It’s a present from the White King and Queen. There now!”

“Is it really?” said Alice, quite pleased to find that she *had* chosen a good subject, after all.

⁶fresh

“They gave it me,” Humpty Dumpty continued thoughtfully, as he crossed one knee over the other and clasped his hands round it, “they gave it me—for an un-birthday present.”

“I beg your pardon?” Alice said with a puzzled air.

“I’m not offended,” said Humpty Dumpty.

“I mean, what *is* an un-birthday present?”

“A present given when it isn’t your birthday, of course.”

Alice considered a little. “I like birthday presents best,” she said at last.

“You don’t know what you’re talking about!” cried Humpty Dumpty. “How many days are there in a year?”

“Three hundred and sixty-five,” said Alice.

“And how many birthdays have you?”

“One.”

“And if you take one from three hundred and sixty-five, what remains?”

“Three hundred and sixty-four, of course.”

Humpty Dumpty looked doubtful. “I’d rather see that done on paper,” he said.

Alice couldn’t help smiling as she took out her memorandum-book, and worked the sum for him:

$$\begin{array}{r} 365 \\ \underline{1} \\ 364 \end{array}$$

Humpty Dumpty took the book, and looked at it carefully. “That seems to be done right——” he began.

“You’re holding it upside down!” Alice interrupted.

“To be sure I was!” Humpty Dumpty said gaily, as she turned it round for him. “I thought it looked a little queer. As I was saying, that *seems* to be done right—though I haven’t time to look it over thoroughly just now—and that shows that there are three hundred and sixty-four days when you might get un-birthday presents——”

“Certainly,” said Alice.

“And only *one* for birthday presents, you know. There’s glory for you!”

“I don’t know what you mean by ‘glory,’” Alice said.

Humpty Dumpty smiled contemptuously. “Of course you don’t—till I tell you. I meant ‘there’s a nice knock-down argument for you!’”

“But ‘glory’ doesn’t mean ‘a nice knock-down argument,’” Alice objected.

“When *I* use a word,” Humpty Dumpty said in rather a scornful tone, “it means just what I choose it to mean—neither more nor less.”

“The question is,” said Alice, “whether you *can* make words mean so many different things.”

“The question is,” said Humpty Dumpty, “which is to be master——that’s all.”

Alice was too much puzzled to say anything; so after a minute Humpty Dumpty began again. “They’ve a temper, some of them—particularly verbs: they’re the proudest—adjectives you can do anything with, but not verbs—however, *I* can manage the whole lot of them! Impenetrability! That’s what *I* say!”

“Would you tell me, please,” said Alice, “what that means?”

“Now you talk like a reasonable child,” said Humpty Dumpty, looking very much pleased. “I meant by ‘impenetrability’ that we’ve had enough of that subject, and it would be just as well if you’d mention what you mean to do next, as I suppose you don’t mean to stop here all the rest of your life.”

“That’s a great deal to make one word mean,” Alice said in a thoughtful tone.

“When I make a word do a lot of work like that,” said Humpty Dumpty, “I always pay it extra.”

“Oh!” said Alice. She was too much puzzled to make any other remark.

“Ah, you should see ’em come round me of a Saturday night,” Humpty Dumpty went on, wagging his head gravely from side to side, “for to get their wages, you know.”

(Alice didn’t venture to ask what he paid them with; and so you see I ca’n’t tell *you*.)

“You seem very clever at explaining words, Sir,” said Alice. “Would you kindly tell me the meaning of the poem called ‘Jabberwocky’?”

“Let’s hear it,” said Humpty Dumpty. “I can explain all the poems that were ever invented—and a good many that haven’t been invented just yet.”

This sounded very hopeful, so Alice repeated the first verse:—

*“’Twas brillig, and the slithy toves
Did gyre and gimble in the wabe;
All mimsy were the borogoves,
And the mome raths outgrabe.”*

“That’s enough to begin with,” Humpty Dumpty interrupted: “there are plenty of hard words there. ‘*Brillig*’ means four o’clock in the afternoon—the time when you begin *broiling* things for dinner.”

“That’ll do very well,” said Alice: “and ‘*slithy*’?”

“Well, ‘*slithy*’ means ‘lithe and slimy.’ ‘Lithe’ is the same as ‘active.’ You see it’s like a portmanteau—there are two meanings packed up into one word.”

“I see it now,” Alice remarked thoughtfully: “and what are ‘*toves*’?”

“Well, ‘*toves*’ are something like badgers—they’re something like lizards—and they’re something like corkscrews.”

“They must be very curious-looking creatures.”

“They are that,” said Humpty Dumpty: “also they make their nests under sun-dials—also they live on cheese.”

“And what’s to ‘*gyre*’ and to ‘*gimble*’?”

“To ‘*gyre*’ is to go round and round like a gyroscope. To ‘*gimble*’ is to make holes like a gimblet.”

“And ‘*the wabe*’ is the grass-plot round a sun-dial, I suppose?” said Alice, surprised at her own ingenuity.

“Of course it is. It’s called ‘*wabe*,’ you know, because it goes a long way before it, and a long way behind it——”

“And a long way beyond it on each side,” Alice added.

“Exactly so. Well then, ‘*mimsy*’ is ‘flimsy and miserable’ (there’s another portmanteau for you). And a ‘*borogove*’ is a thin shabby-looking bird with its feathers sticking out all round—something like a live mop.”

“And then ‘*mome raths*’?” said Alice. “I’m afraid I’m giving you a great deal of trouble.”



“Well, a ‘*rath*’ is a sort of green pig: but ‘*mome*’ I’m not certain about. I think it’s short for ‘from home’—meaning that they’d lost their way, you know.”

“And what does ‘*outgrabe*’ mean?”

“Well, ‘*outgrabing*’ is something between bellowing and whistling, with a kind of sneeze in the middle: however, you’ll hear it done, maybe—down in the wood yonder—and when you’ve once heard it you’ll be *quite* content. Who’s been repeating all that hard stuff to you?”

“I read it in a book,” said Alice. “But I *had* some poetry repeated to me much easier than that, by—Tweedledee, I think it was.”

“As to poetry, you know,” said Humpty Dumpty, stretching out one of his great hands, “I can repeat poetry as well as other folk, if it comes to that——”

“Oh, it needn’t come to that!” Alice hastily said, hoping to keep him from beginning.

“The piece I’m going to repeat,” he went on without noticing her remark, “was written entirely for your amusement.”

Alice felt that in that case she really *ought* to listen to it; so she sat down, and said “Thank you” rather sadly.

*“In winter, when the fields are white,
I sing this song for your delight——”*

only I don’t sing it,” he added, as an explanation.

“I see you don’t,” said Alice.

“If you can *see* whether I’m singing or not, you’ve sharper eyes than most.” Humpty Dumpty remarked severely. Alice was silent.

*“In spring, when woods are getting green,
I’ll try and tell you what I mean:”*

“Thank you very much,” said Alice.

*“In summer, when the days are long,
Perhaps you’ll understand the song:
In autumn, when the leaves are brown,
Take pen and ink, and write it down.”*

“I will, if I can remember it so long,” said Alice.

“You needn’t go on making remarks like that,” Humpty Dumpty said: “they’re not sensible, and they put me out.”

*“I sent a message to the fish:
I told them ‘This is what I wish.’
The little fishes of the sea,
They sent an answer back to me.
The little fishes’ answer was
‘We cannot do it, Sir, because——’”*

“I’m afraid I don’t quite understand,” said Alice.

“It gets easier further on,” Humpty Dumpty replied.

*"I sent to them again to say
 'It will be better to obey.'
 The fishes answered with a grin,
 'Why, what a temper you are in!'
 I told them once, I told them twice:
 They would not listen to advice.
 I took a kettle large and new,
 Fit for the deed I had to do.
 My heart went hop, my heart went thump:
 I filled the kettle at the pump.
 Then some one came to me and said,
 'The little fishes are in bed.'
 I said to him, I said it plain,
 'Then you must wake them up again.'
 I said it very loud and clear:
 I went and shouted in his ear."*

Humpty Dumpty raised his voice almost to a scream as he repeated this verse, and Alice thought with a shudder, "I wouldn't have been the messenger for *anything!*"

*"But he was very stiff and proud:
 He said 'You needn't shout so loud!
 And he was very proud and stiff:
 He said 'I'd go and wake them, if——'
 I took a corkscrew from the shelf:
 I went to wake them up myself.
 And when I found the door was locked,
 I pulled and pushed and kicked and knocked.
 And when I found the door was shut,
 I tried to turn the handle, but——"*

There was a long pause.

"Is that all?" Alice timidly asked.

"That's all," said Humpty Dumpty. "Good-bye."

This was rather sudden, Alice thought: but, after such a *very* strong hint that she ought to be going, she felt that it would hardly be civil to stay. So she got up, and held out her hand. "Good-bye, till we meet again!" she said as cheerfully as she could.

"I shouldn't know you again if we *did* meet," Humpty Dumpty replied in a discontented tone, giving her one of his fingers to shake: "you're so exactly like other people."

"The face is what one goes by, generally," Alice remarked in a thoughtful tone.

"That's just what I complain of," said Humpty Dumpty. "Your face is the same as everybody has—the two eyes, so——" (marking their places in the air with this thumb) "nose in the middle, mouth under. It's always the same. Now



if you had the two eyes on the same side of the nose, for instance—or the mouth at the top—that would be *some* help.”

“It wouldn’t look nice,” Alice objected. But Humpty Dumpty only shut his eyes, and said “Wait till you’ve tried.”

Alice waited a minute to see if he would speak again, but, as he never opened his eyes or took any further notice of her, she said “Good-bye!” once more, and, getting no answer to this, she quietly walked away: but she couldn’t help saying to herself, as she went, “Of all the unsatisfactory——” (she repeated this aloud, as it was a great comfort to have such a long word to say) “of all the unsatisfactory people I *ever* met——” She never finished the sentence, for at this moment a heavy crash shook the forest from end to end.

Chapter VII. The Lion and the Unicorn

The next moment soldiers came running through the wood, at first in twos and threes, then ten or twenty together, and at last in such crowds that they seemed to fill the whole forest. Alice got behind a tree, for fear of being run over, and watched them go by.

She thought that in all her life she had never seen soldiers so uncertain on their feet: they were always tripping over something or other, and whenever one went down, several more always fell over him, so that the ground was soon covered with little heaps of men.



Then came the horses. Having four feet, these managed rather better than the foot-soldiers; but even *they* stumbled now and then; and it seemed to be a regular rule that, whenever a horse stumbled, the rider fell off instantly. The confusion got worse every moment, and Alice was very glad to get out of the wood into an open place, where she found the White King seated on the ground, busily writing in his memorandum-book.

"I've sent them all!" the King cried in a tone of delight, on seeing Alice. "Did you happen to meet any soldiers, my dear, as you came through the wood?"

"Yes, I did," said Alice: "several thousand, I should think."

"Four thousand two hundred and seven, that's the exact number," the King said, referring to his book. "I couldn't send all the horses, you know, because two of them are wanted in the game. And I haven't sent the two Messengers, either. They're both gone to the town. Just look along the road, and tell me if you can see either of them."

"I see nobody on the road," said Alice.

"I only wish *I* had such eyes," the King remarked in a fretful tone. "To be able to see Nobody! And at that distance, too! Why, it's as much as *I* can do to see real people, by this light!"

All this was lost on Alice, who was still looking intently along the road, shading her eyes with one hand. "I see somebody now!" she exclaimed at last. "But he's coming very slowly—and what curious attitudes he goes into!" (For the Messenger kept skipping up and down, and wriggling like an eel, as he came along, with his great hands spread out like fans on each side.)

"Not at all," said the King. "He's an Anglo-Saxon Messenger—and those are Anglo-Saxon attitudes. He only does them when he's happy. His name is Haigha." (He pronounced it so as to rhyme with 'mayor'.)

"I love my love with an H," Alice couldn't help beginning, "because he is Happy. I hate him with an H, because he is Hideous. I fed him with—with—with Ham-sandwiches and Hay. His name is Haigha, and he lives—"

"He lives on the Hill," the King remarked simply, without the least idea that he was joining in the game, while Alice was still hesitating for the name of a town beginning with H. "The other Messenger's called Hatta. I must have *two*, you know—to come and go. One to come, and one to go."

"I beg your pardon?" said Alice.

"It isn't respectable to beg," said the King.

"I only meant that I didn't understand," said Alice. "Why one to come and one to go?"

"Don't I tell you?" the King repeated impatiently. "I must have *two*—to fetch and carry. One to fetch, and one to carry."

At this moment the Messenger arrived: he was far too much out of breath to say a word, and could only wave his hands about, and make the most fearful faces at the poor King.

"This young lady loves you with an H," the King said, introducing Alice in the hope of turning off the Messenger's attention from himself—but it _{was} of no⁷ use—the Anglo-Saxon attitudes only got more extraordinary every moment, while the great eyes rolled wildly from side to side.

"You alarm me!" said the King. "I feel faint—Give me a ham sandwich!"

⁷was no



On which the Messenger, to Alice's great amusement, opened a bag that hung round his neck, and handed a sandwich to the King, who devoured it greedily.

"Another sandwich!" said the King.

"There's nothing but hay left now," the Messenger said, peeping into the bag.

"Hay, then," the King murmured in a faint whisper.

Alice was glad to see that it revived him a good deal. "There's nothing like eating hay when you're faint," he remarked to her, as he munched away.

"I should think throwing cold water over you would be better," Alice suggested: "—or some sal-volatile."

"I didn't say there was nothing *better*," the King replied. "I said there was nothing *like* it." Which Alice did not venture to deny.

"Who did you pass on the road?" the King went on, holding out his hand to the Messenger for some more hay.

"Nobody," said the Messenger.

"Quite right," said the King: "this young lady saw him too. So of course Nobody walks slower than you."

"I do my best," the Messenger said in a sullen tone. "I'm sure nobody walks much faster than I do!"

"He ca'n't do that," said the King, "or else he'd have been here first. However, now you've got your breath, you may tell us what's happened in the town."

"I'll whisper it," said the Messenger, putting his hands to his mouth in the shape of a trumpet and stooping so as to get close to the King's ear. Alice was sorry for this, as she wanted to hear the news too. However, instead of whispering, he simply shouted at the top of his voice, "They're at it again!"

"Do you call *that* a whisper?" cried the poor King, jumping up and shaking himself. "If you do such a thing again, I'll have you buttered! It went through and through my head like an earthquake!"

"It would have to be a very tiny earthquake!" thought Alice. "Who are at it again?" she ventured to ask.

"Why, the Lion and the Unicorn, of course," said the King.

"Fighting for the crown?"

"Yes, to be sure," said the King: "and the best of the joke is, that it's *my* crown all the while! Let's run and see them." And they trotted off, Alice repeating to herself, as she ran, the words of the old song:—

*"The Lion and the Unicorn were fighting for the crown:
The Lion beat the Unicorn all round the town.
Some gave them white bread, some gave them brown;
Some gave them plum-cake and drummed them out of town."*

Quoted from nursery
rhyme

"Does—the one—that wins—get the crown?" she asked, as well as she could, for the run was putting her quite out of breath.

"Dear me, no!" said the King. "What an idea!"

"Would you—be good enough——" Alice panted out, after running a little further, "to stop a minute—just to get—one's breath again?"

"I'm *good* enough," the King said, "only I'm not *strong* enough. You see, a minute goes by so fearfully quick. You might as well try to stop a Bandersnatch!"

Alice had no more breath for talking; so they trotted on in silence, till they came in sight of a great crowd, in the middle of which the Lion and Unicorn were fighting. They were in such a cloud of dust, that at first Alice could not make out which was which; but she soon managed to distinguish the Unicorn by his horn.

They placed themselves close to where Hatta, the other messenger, was standing watching the fight, with a cup of tea in one hand and a piece of bread-and-butter in the other.

"He's only just out of prison, and he hadn't finished his tea when he was sent in," Haigha whispered to Alice: "and they only give them oyster-shells in there—so you see he's very hungry and thirsty. How are you, dear child?" he went on, putting his arm affectionately round Hatta's neck.

Hatta looked round and nodded, and went on with his bread-and-butter.

"Were you happy in prison, dear child?" said Haigha.

Hatta looked round once more, and this time a tear or two trickled down his cheek; but not a word would he say.

"Speak, ca'n't you!" Haigha cried impatiently. But Hatta only munched away, and drank some more tea.

"Speak, wo'n't you!" cried the King. "How are they getting on with the fight?"

Hatta made a desperate effort, and swallowed a large piece of bread-and-butter. "They're getting on very well," he said in a choking voice: "each of them has been down about eighty-seven times."

"Then I suppose they'll soon bring the white bread and the brown?" Alice ventured to remark.

"It's waiting for 'em now," said Hatta; "this is a bit of it as I'm eating."

There was a pause in the fight just then, and the Lion and the Unicorn sat down, panting, while the King called out "Ten minutes allowed for refreshments!" Haigha and Hatta set to work at once, carrying rough trays of white and brown bread. Alice took a piece to taste, but it was *very* dry.



"I don't think they'll fight any more to-day," the King said to Hatta: "go and order the drums to begin." And Hatta went bounding away like a grasshopper.

For a minute or two Alice stood silent, watching him. Suddenly she brightened up. "Look, look!" she cried, pointing eagerly. "There's the White Queen running across the country! She came flying out of the wood over yonder— How fast those Queens *can* run!"

"There's some enemy after her, no doubt," the King said, without even looking round. "That wood's full of them."

"But aren't you going to run and help her?" Alice asked, very much surprised at his taking it so quietly.

"No use, no use!" said the King. "She runs so fearfully quick. You might as well try to catch a Bandersnatch! But I'll make a memorandum about her, if you like—She's a dear good creature," he repeated softly to himself, as he opened his memorandum-book. "Do you spell 'creature' with a double 'e'?"

At this moment the Unicorn sauntered by them, with his hands in his pockets. "I had the best of it this time?" he said to the King, just glancing at him as he passed.

"A little—a little," the King replied, rather nervously. "You shouldn't have run him through with your horn, you know."

"It didn't hurt him," the Unicorn said carelessly, and he was going on, when his eye happened to fall upon Alice: he turned round rather instantly, and stood for some time looking at her with an air of the deepest disgust.

"What—is—this?" he said at last.

"This is a child!" Haigha replied eagerly, coming in front of Alice to introduce her, and spreading out both his hands towards her in an Anglo-Saxon attitude. "We only found it to-day. It's as large as life, and twice as natural!"

"I always thought they were fabulous monsters!" said the Unicorn. "Is it alive?"

"It can talk," said Haigha solemnly.

The Unicorn looked dreamily at Alice, and said "Talk, child."

Alice could not help her lips curling up into a smile as she began: "Do you

know, I always thought Unicorns were fabulous monsters, too? I never saw one alive before!”

“Well, now that we *have* seen each other,” said the Unicorn, “if you’ll believe in me, I’ll believe in you. Is that a bargain?”

“Yes, if you like,” said Alice.

“Come, fetch out the plum-cake, old man!” the Unicorn went on, turning from her to the King. “None of your brown bread for me!”

“Certainly—certainly!” the King muttered, and beckoned to Haigha. “Open the bag!” he whispered. “Quick! Not that one—that’s full of hay!”

Haigha took a large cake out of the bag, and gave it to Alice to hold, while he got out a dish and carving-knife. How they all came out of it Alice couldn’t guess. It was just like a conjuring-trick, she thought.



The Lion had joined them while this was going on: he looked very tired and sleepy, and his eyes were half shut. “What’s this!” he said, blinking lazily at Alice, and speaking in a deep hollow tone that sounded like the tolling of a great bell.

“Ah, what *is* it, now?” the Unicorn cried eagerly. “You’ll never guess! *I* couldn’t.”

The Lion looked at Alice wearily. “Are you animal—or vegetable—or mineral?” he said, yawning at every other word.

“It’s a fabulous monster!” the Unicorn cried out, before Alice could reply.

“Then hand round the plum-cake, Monster,” the Lion said, lying down and putting his chin on his paws. “And sit down, both of you,” (to the King and the Unicorn): “fair play with the cake, you know!”

The King was evidently very uncomfortable at having to sit down between the two great creatures; but there was no other place for him.

“What a fight we might have for the crown, *now!*” the Unicorn said, looking slyly up at the crown, which the poor King was nearly shaking off his head, he trembled so much.

“I should win easy,” said the Lion.

“I’m not so sure of that,” said the Unicorn.

“Why, I beat you all round the town, you chicken!” the Lion replied angrily, half getting up as he spoke.

Here the King interrupted, to prevent the quarrel going on: he was very nervous, and his voice quite quivered. “All round the town?” he said. “That’s a good long way. Did you go by the old bridge, or the market-place? You get the best view by the old bridge.”

“I’m sure I don’t know,” the Lion growled out as he lay down again. “There was too much dust to see anything. What a time the Monster is, cutting up that cake!”

Alice had seated herself on the bank of a little brook, with the great dish on her knees, and was sawing away diligently with the knife. “It’s very provoking!” she said, in reply to the Lion (she was getting quite used to being called ‘the Monster’). “I’ve cut several slices already, but they always join on again!”

“You don’t know how to manage Looking-glass cakes,” the Unicorn remarked. “Hand it round first, and cut it afterwards.”

This sounded nonsense, but Alice very obediently got up, and carried the dish round, and the cake divided itself into three pieces as she did so. “*Now* cut it up,” said the Lion, as she returned to her place with the empty dish.

“I say, this isn’t fair!” cried the Unicorn, as Alice sat with the knife in her hand, very much puzzled how to begin. “The Monster has given the Lion twice as much as me!”

“She’s kept none for herself, anyhow,” said the Lion. “Do you like plum-cake, Monster?”

But before Alice could answer him, the drums began.

Where the noise came from, she couldn’t make out: the air seemed full of it, and it rang through and through her head till she felt quite deafened. She started to her feet and sprang across the little brook in her terror,

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* * * *

and had just time to see the Lion and the Unicorn rise to their feet, with angry looks at being interrupted in their feast, before she dropped to her knees, and put her hands over her ears, vainly trying to shut out the dreadful uproar.

“If *that* doesn’t ‘drum them out of town,’” she thought to herself, “nothing ever will!”

Chapter VIII. “It’s my own Invention”

After a while the noise seemed gradually to die away, till all was dead silence, and Alice lifted up her head in some alarm. There was no one to be seen, and her first thought was that she must have been dreaming about the Lion and the Unicorn and those queer Anglo-Saxon Messengers. However, there was the great dish still lying at her feet, on which she had tried to cut the plum-cake, “So I wasn’t dreaming, after all,” she said to herself, “unless—unless we’re all part of the same dream. Only I do hope it’s *my* dream, and not the Red King’s! I don’t like belonging to another person’s dream,” she went on in a rather complaining tone: “I’ve a great mind to go and wake him, and see what happens!”

At this moment her thoughts were interrupted by a loud shouting of “Ahoy! Ahoy! Check!” and a Knight, dressed in crimson armour, came galloping down



upon her, brandishing a great club. Just as he reached her, the horse stopped suddenly: "You're my prisoner!" the Knight cried, as he tumbled off his horse.

Startled as she was, Alice was more frightened for him than for herself at the moment, and watched him with some anxiety as he mounted again. As soon as he was comfortably in the saddle, he began once more "You're my——" but here another voice broke in "Ahoy! Ahoy! Check!" and Alice looked round in some surprise for the new enemy.

This time it was a White Knight. He drew up at Alice's side, and tumbled off his horse just as the Red Knight had done: then he got on again, and the two Knights sat and looked at each other for some time without speaking. Alice looked from one to the other in some bewilderment.

"She's *my* prisoner, you know!" the Red Knight said at last.

"Yes, but then *I* came and rescued her!" the White Knight replied.

"Well, we must fight for her, then," said the Red Knight, as he took up his helmet (which hung from the saddle, and was something the shape of a horse's head) and put it on.

"You will observe the Rules of Battle, of course?" the White Knight remarked, putting on his helmet too.

"I always do," said the Red Knight, and they began banging away at each other with such fury that Alice got behind a tree to be out of the way of the blows.



"I wonder, now, what the Rules of Battle are," she said to herself, as she watched the fight, timidly peeping out from her hiding-place. "One Rule seems to be, that if one Knight hits the other, he knocks him off his horse; and, if he misses, he tumbles off himself—and another Rule seems to be that they hold their clubs with their arms, as if they were Punch and Judy—What a noise

they make when they tumble! Just like a whole set of fire-irons falling into the fender! And how quiet the horses are! They let them get on and off them just as if they were tables!"

Another Rule of Battle, that Alice had not noticed, seemed to be that they always fell on their heads; and the battle ended with their both falling off in this way, side by side. When they got up again, they shook hands, and then the Red Knight mounted and galloped off.

"It was a glorious victory, wasn't it?" said the White Knight, as he came up panting.

"I don't know," Alice said doubtfully. "I don't want to be anybody's prisoner. I want to be a Queen."

"So you will, when you've crossed the next brook," said the White Knight. "I'll see you safe to the end of the wood—and then I must go back, you know. That's the end of my move."

"Thank you very much," said Alice. "May I help you off with your helmet?" It was evidently more than he could manage by himself: however she managed to shake him out of it at last.

"Now one can breathe more easily," said the Knight, putting back his shaggy hair with both hands, and turning his gentle face and large mild eyes to Alice. She thought she had never seen such a strange-looking soldier in all her life.

He was dressed in tin armour, which seemed to fit him very badly, and he had a queer-shaped little deal box fastened across his shoulder, upside-down, and with the lid hanging open. Alice looked at it with great curiosity.

"I see you're admiring my little box," the Knight said in a friendly tone. "It's my own invention—to keep clothes and sandwiches in. You see I carry it upside-down, so that the rain ca'n't get in."

"But the things can get *out*," Alice gently remarked. "Do you know the lid's open?"

"I didn't know it," the Knight said, a shade of vexation passing over his face. "Then all the things must have fallen out! And the box is no use without them." He unfastened it as he spoke, and was just going to throw it into the bushes, when a sudden thought seemed to strike him, and he hung it carefully on a tree. "Can you guess why I did that?" he said to Alice.

Alice shook her head.

"In hopes some bees may make a nest in it—then I should get the honey."

"But you've got a bee-hive—or something like one—fastened to the saddle," said Alice.

"Yes, it's a very good bee-hive," the Knight said in a discontented tone, "one of the best kind. But not a single bee has come near it yet. And the other thing is a mouse-trap. I suppose the mice keep the bees out—or the bees keep the mice out, I don't know which."

"I was wondering what the mouse-trap was for," said Alice. "It isn't very likely there would be any mice on the horse's back."

"Not very likely, perhaps," said the Knight: "but, if they *do* come, I don't choose to have them running all about."

"You see," he went on after a pause, "it's as well to be provided for *everything*. That's the reason the horse has all those anklets round his feet."

"But what are they for?" Alice asked in a tone of great curiosity.

"To guard against the bites of sharks," the Knight replied. "It's an invention

of my own. And now help me on. I'll go with you to the end of the wood—
What's that dish for?"

"It's meant for plum-cake," said Alice.

"We'd better take it with us," the Knight said. "It'll come in handy if we find any plum-cake. Help me to get it into this bag."

This took a very long time to manage, though Alice held the bag open very carefully, because the Knight was so *very* awkward in putting in the dish: the first two or three times that he tried he fell in himself instead. "It's rather a tight fit, you see," he said, as they got it in at last; "there are so many candlesticks in the bag." And he hung it to the saddle, which was already loaded with bunches of carrots, and fire-irons, and many other things.

"I hope you've got your hair well fastened on?" he continued, as they set off.

"Only in the usual way," Alice said, smiling.

"That's hardly enough," he said, anxiously. "You see the wind is so *very* strong here. It's as strong as soup."

"Have you invented a plan for keeping the hair from being blown *off*⁸?" Alice enquired.

"Not yet," said the Knight. "But I've got a plan for keeping it from *falling* off."

"I should like to hear it, very much."

"First you take an upright stick," said the Knight. "Then you make your hair creep up it, like a fruit-tree. Now the reason hair falls off is because it hangs *down*—things never fall *upwards*, you know. It's a plan of my own invention. You may try it if you like."

It didn't sound a comfortable plan, Alice thought, and for a few minutes she walked on in silence, puzzling over the idea, and every now and then stopping to help the poor Knight, who certainly was *not* a good rider.

Whenever the horse stopped (which it did very often), he fell off in front; and, whenever it went on again (which it generally did rather suddenly), he fell off behind. Otherwise he kept on pretty well, except that he had a habit of now and then falling off sideways; and, as he generally did this on the side on which Alice was walking, she soon found that it was the best plan not to walk *quite* close to the horse.

"I'm afraid you've not had much practice in riding," she ventured to say, as she was helping him up from his fifth tumble.

The Knight looked very much surprised, and a little offended at the remark. "What makes you say that?" he asked, as he scrambled back into the saddle, keeping hold of Alice's hair with one hand, to save himself from falling over on the other side.

"Because people don't fall off quite so often, when they've had much practice."

"I've had plenty of practice," the Knight said very gravely: "plenty of practice!"

Alice could think of nothing better to say than "Indeed?" but she said it as heartily as she could. They went on a little way in silence after this, the Knight with his eyes shut, muttering to himself, and Alice watching anxiously for the next tumble.

⁸Mistakenly "of" in later editions



“The great art of riding,” the Knight suddenly began in a loud voice, waving his right arm as he spoke, “is to keep——” Here the sentence ended as suddenly as it had begun, as the Knight fell heavily on the top of his head exactly in the path where Alice was walking. She was quite frightened this time, and said in an anxious tone, as she picked him up, “I hope no bones are broken?”

“None to speak of,” the Knight said, as if he didn’t mind breaking two or three of them. “The great art of riding, as I was saying, is—to keep your balance properly. Like this, you know——”

He let go the bridle, and stretched out both his arms to show Alice what he meant, and this time he fell flat on his back, right under the horse’s feet.

“Plenty of practice!” he went on repeating, all the time that Alice was getting him on his feet again. “Plenty of practice!”

“It’s too ridiculous!” cried Alice, losing all her patience this time. “You ought to have a wooden horse on wheels, that you ought!”

“Does that kind go smoothly?” the Knight asked in a tone of great interest, clasping his arms round the horse’s neck as he spoke, just in time to save himself from tumbling off again.

“Much more smoothly than a live horse,” Alice said, with a little scream of laughter, in spite of all she could do to prevent it.

“I’ll get one,” the Knight said thoughtfully to himself. “One or two—several.”

There was a short silence after this, and then the Knight went on again. “I’m a great hand at inventing things. Now, I daresay you noticed, that last time you picked me up, that I was looking rather thoughtful?”

“You *were* a little grave,” said Alice.



(Frontispiece)

“Well, just then I was inventing a new way of getting over a gate—would you like to hear it?”

“Very much indeed,” Alice said politely.

“I’ll tell you how I came to think of it,” said the Knight. “You see, I said to myself ‘The only difficulty is with the feet: the *head* is high enough already.’ Now, first I put my head on the top of the gate—then the head’s high enough—then I stand on my head—then the feet are high enough, you see—then I’m over, you see.”

“Yes, I suppose you’d be over when that was done,” Alice said thoughtfully: “but don’t you think it would be rather hard?”

“I haven’t tried it yet,” the Knight said, gravely; “so I ca’n’t tell for certain—but I’m afraid it *would* be a little hard.”

He looked so vexed at the idea, that Alice changed the subject hastily. “What a curious helmet you’ve got!” she said cheerfully. “Is that your invention too?”

The Knight looked down proudly at his helmet, which hung from the saddle. “Yes,” he said; “but I’ve invented a better one than that—like a sugar-loaf. When I used to wear it, if I fell off the horse, it always touched the ground directly. So I had a *very* little way to fall, you see—But there *was* the danger of falling *into* it, to be sure. That happened to me once—and the worst of it was, before I could get out again, the other White Knight came and put it on. He thought it was his own helmet.”

The Knight looked so solemn about it that Alice did not dare to laugh. “I’m afraid you must have hurt him,” she said in a trembling voice, “being on the top of his head.”

“I had to kick him, of course,” the Knight said, very seriously. “And then he took the helmet off again—but it took hours and hours to get me out. I was as fast as—as lightning, you know.”

“But that’s a different kind of fastness,” Alice objected.

The Knight shook his head. “It was all kinds of fastness with me, I can assure you!” he said. He raised his hands in some excitement as he said this, and instantly rolled out of the saddle, and fell headlong into a deep ditch.

Alice ran to the side of the ditch to look for him. She was rather startled by the fall, as for some time he had kept on very well, and she was afraid that he really *was* hurt this time. However, though she could see nothing but the soles of his feet, she was much relieved to hear that he was talking on in his usual tone. “All kinds of fastness,” he repeated: “but it was careless of him to put another man’s helmet on—with the man in it, too.”

“How *can* you go on talking so quietly, head downwards?” Alice asked, as she dragged him out by the feet, and laid him in a heap on the bank.

The Knight looked surprised at the question. “What does it matter where my body happens to be?” he said. “My mind goes on working all the same. In fact, the more head-downwards I am, the more I keep inventing new things.”

“Now the cleverest thing of the sort that I ever did,” he went on after a pause, “was inventing a new pudding during the meat-course.”

“In time to have it cooked for the next course?” said Alice. “Well, that *was* quick work, certainly!”

“Well, not the *next* course,” the Knight said in a slow thoughtful tone: “no, certainly not the next *course*.”

“Then it would have to be the next day. I suppose you wouldn’t have two pudding-courses in one dinner?”



“Well, not the *next* day,” the Knight repeated as before: “not the next *day*. In fact,” he went on, holding his head down, and his voice getting lower and lower, “I don’t believe that pudding ever *was* cooked! In fact, I don’t believe that pudding ever *will* be cooked! And yet it was a very clever pudding to invent.”

“What did you mean it to be made of?” Alice asked, hoping to cheer him up, for the poor Knight seemed quite low-spirited about it.

“It began with blotting-paper,” the Knight answered with a groan.

“That wouldn’t be very nice, I’m afraid——”

“Not very nice *alone*,” he interrupted, quite eagerly: “but you’ve no idea what a difference it makes, mixing it with other things—such as gunpowder and sealing-wax. And here I must leave you.” They had just come to the end of the wood.

Alice could only look puzzled: she was thinking of the pudding.

“You are sad,” the Knight said in an anxious tone: “let me sing you a song to comfort you.”

“Is it very long?” Alice asked, for she had heard a good deal of poetry that day.

“It’s long,” said the Knight, “but it’s very, *very* beautiful. Everybody that hears me sing it—either it brings the *tears* into their eyes, or else——”

“Or else what?” said Alice, for the Knight had made a sudden pause.

“Or else it doesn’t, you know. The name of the song is called ‘*Haddock’s Eyes*.’”

“Oh, that’s the name of the song, is it?” Alice said, trying to feel interested.

“No, you don’t understand,” the Knight said, looking a little vexed. “That’s what the name is *called*. The name really *is* ‘*The Aged Aged Man*.’”

“Then I ought to have said ‘That’s what the *song* is called’?” Alice corrected herself.

“No, you oughtn’t: that’s quite another thing! The *song* is called ‘*Ways And Means*’: but that’s only what it’s *called*, you know!”

“Well, what *is* the song, then?” said Alice, who was by this time completely bewildered.

"I was coming to that," the Knight said. "The song really *is* 'A-sitting on A Gate': and the tune's my own invention."

So saying, he stopped his horse and let the reins fall on its neck: then, slowly beating time with one hand, and with a faint smile lighting up his gentle foolish face, as if he enjoyed the music of his song, he began.

Of all the strange things that Alice saw in her journey Through The Looking-Glass, this was the one that she always remembered most clearly. Years afterwards she could bring the whole scene back again, as if it had been only yesterday—the mild blue eyes and kindly smile of the Knight—the setting sun gleaming through his hair, and shining on his armour in a blaze of light that quite dazzled her—the horse quietly moving about, with the reins hanging loose on his neck, cropping the grass at her feet—and the black shadows of the forest behind—all this she took in like a picture, as, with one hand shading her eyes, she leant against a tree, watching the strange pair, and listening, in a half-dream, to the melancholy music of the song.

"But the tune *isn't* his own invention," she said to herself: "it's 'I give thee all, I can no more.'" She stood and listened very attentively, but no tears came into her eyes.

Quoted from *My Heart and Lute* by Thomas Moore

*"I'll tell thee everything I can:
There's little to relate.
I saw an aged aged man,
A-sitting on a gate.
'Who are you, aged man?' I said.
'And how is it you live?'
And his answer trickled through my head,
Like water through a sieve.
He said 'I look for butterflies
That sleep among the wheat:
I make them into mutton-pies,
And sell them in the street.
I sell them unto men,' he said,
'Who sail on stormy seas;
And that's the way I get my bread—
A trifle, if you please.'
But I was thinking of a plan
To dye one's whiskers green,
And always use so large a fan
That they could not be seen.
So, having no reply to give
To what the old man said,
I cried 'Come, tell me how you live!'
And thumped him on the head.
His accents mild took up the tale:
He said 'I go my ways,
And when I find a mountain-rill,
I set it in a blaze;
And thence they make a stuff they call
Rolands' Macassar-Oil—*

Parody on *Resolution and Independence* by William Wordsworth

*Yet twopence-halfpenny is all
 They give me for my toil.'*
*But I was thinking of a way
 To feed oneself on batter,
 And so go on from day to day
 Getting a little fatter.
 I shook him well from side to side,
 Until his face was blue:
 'Come, tell me how you live,' I cried,
 'And what it is you do!'*



*He said 'I hunt for haddocks' eyes
 Among the heather bright,
 And work them into waistcoat-buttons
 In the silent night.
 And these I do not sell for gold
 Or coin of silvery shine,
 But for a copper halfpenny,
 And that will purchase nine.
 'I sometimes dig for buttered rolls,
 Or set limed twigs for crabs:
 I sometimes search the grassy knolls
 For wheels of Hansom-cabs.
 And that's the way' (he gave a wink)
 'By which I get my wealth—
 And very gladly will I drink
 Your Honour's noble health.'*
*I heard him then, for I had just
 Completed my design
 To keep the Menai bridge from rust*

*By boiling it in wine.
 I thanked him much for telling me
 The way he got his wealth,
 But chiefly for his wish that he
 Might drink my noble health.
 And now, if e'er by chance I put
 My fingers into glue,
 Or madly squeeze a right-hand foot
 Into a left-hand shoe,
 Or if I drop upon my toe
 A very heavy weight,
 I weep, for it reminds me so,
 Of that old man I used to know—
 Whose look was mild, whose speech was slow,
 Whose hair was whiter than the snow,
 Whose face was very like a crow,
 With eyes, like cinders, all aglow,
 Who seemed distracted with his woe,
 Who rocked his body to and fro,
 And muttered mumblingly and low,
 As if his mouth were full of dough,
 Who snorted like a buffalo—
 That summer evening, long ago,
 A-sitting on a gate.”*

As the Knight sang the last words of the ballad, he gathered up the reins, and turned his horse's head along the road by which they had come. "You've only a few yards to go," he said, "down the hill and over that little brook, and then you'll be a Queen—but you'll stay and see me off first?" he added as Alice turned with an eager look in the direction to which he pointed. "I sha'n't be long. You'll wait and wave your handkerchief when I get to that turn in the road! I think it'll encourage me, you see."

"Of course I'll wait," said Alice: "and thank you very much for coming so far—and for the song—I liked it very much."

"I hope so," the Knight said doubtfully: "but you didn't cry so much as I thought you would."

So they shook hands, and then the Knight rode slowly away into the forest. "It wo'n't take long to see him *off*, I expect," Alice said to herself, as she stood watching him. "There he goes! Right on his head as usual! However, he gets on again pretty easily—that comes of having so many things hung round the horse——" So she went on talking to herself, as she watched the horse walking leisurely along the road, and the Knight tumbling off, first on one side and then on the other. After the fourth or fifth tumble he reached the turn, and then she waved her handkerchief to him, and waited till he was out of sight.

"I hope it encouraged him," she said, as she turned to run down the hill: "and now for the last brook, and to be a Queen! How grand it sounds!" A very few steps brought her to the edge of the brook. "The Eighth Square at last!" she cried as she bounded across,

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and threw herself down to rest on a lawn as soft as moss, with little flower-beds dotted about it here and there. “Oh, how glad I am to get here! And what *is* this on my head?” she exclaimed in a tone of dismay, as she put her hands up to something very heavy, that fitted tight all round her head.

“But how *can* it have got there without my knowing it?” she said to herself, as she lifted it off, and set it on her lap to make out what it could possibly be.

It was a golden crown.

Chapter IX. Queen Alice

“Well, this *is* grand!” said Alice. “I never expected I should be a Queen so soon—and I’ll tell you what it is, your Majesty,” she went on, in a severe tone

(she was always rather fond of scolding herself), "it'll never do for you to be lolling about on the grass like that! Queens have to be dignified, you know!"

So she got up and walked about—rather stiffly just at first, as she was afraid that the crown might come off: but she comforted herself with the thought that there was nobody to see her, "and if I really am a Queen," she said as she sat down again, "I shall be able to manage it quite well in time."

Everything was happening so oddly that she didn't feel a bit surprised at finding the Red Queen and the White Queen sitting close to her, one on each side: she would have liked very much to ask them how they came there, but she feared it would not be quite civil. However, there would be no harm, she thought, in asking if the game was over. "Please, would you tell me——" she began, looking timidly at the Red Queen.

"Speak when you're spoken to!" the Queen sharply interrupted her.

"But if everybody obeyed that rule," said Alice, who was always ready for a little argument, "and if you only spoke when you were spoken to, and the other person always waited for *you* to begin, you see nobody would ever say anything, so that——"

"Ridiculous!" cried the Queen. "Why, don't you see, child——" here she broke off with a frown, and, after thinking for a minute, suddenly changed the subject of the conversation. "What do you mean by 'If you really are a Queen'? What right have you to call yourself so? You ca'n't be a Queen, you know, till you've passed the proper examination. And the sooner we begin it, the better."

"I only said 'if'!" poor Alice pleaded in a piteous tone.

The two Queens looked at each other, and the Red Queen remarked, with a little shudder, "She *says* she only said 'if'——"

"But she said a great deal more than that!" the White Queen moaned, wringing her hands. "Oh, ever so much more than that!"

"So you did, you know," the Red Queen said to Alice. "Always speak the truth—think before you speak—and write it down afterwards."

"I'm sure I didn't mean——" Alice was beginning, but the Red Queen interrupted her impatiently.

"That's just what I complain of! You *should* have meant! What do you suppose is the use of child without any meaning? Even a joke should have some meaning—and a child's more important than a joke, I hope. You couldn't deny that, even if you tried with both hands."

"I don't deny things with my *hands*," Alice objected.

"Nobody said you did," said the Red Queen. "I said you couldn't if you tried."

"She's in that state of mind," said the White Queen, "that she wants to deny *something*—only she doesn't know what to deny!"

"A nasty, vicious temper," the Red Queen remarked; and then there was an uncomfortable silence for a minute or two.

The Red Queen broke the silence by saying, to the White Queen, "I invite you to Alice's dinner-party this afternoon."

The White Queen smiled feebly, and said "And I invite *you*."

"I didn't know I was to have a party at all," said Alice; "but, if there *is* to be one, I think *I* ought to invite the guests."

"We gave you the opportunity of doing it," the Red Queen remarked: "but I daresay you've not had many lessons in manners yet?"

"Manners are not taught in lessons," said Alice. "Lessons teach you to do sums, and things of that sort."

"Can you do Addition?" the White Queen asked. "What's one and one and one and one and one and one and one and one and one and one?"

"I don't know," said Alice. "I lost count."

"She ca'n't do Addition," the Red Queen interrupted. "Can you do Subtraction? Take nine from eight."

"Nine from eight I ca'n't, you know," Alice replied very readily: "but——"

"She ca'n't do Subtraction," said the White Queen. "Can you do Division? Divide a loaf by a knife—what's the answer to *that*?"

"I suppose——" Alice was beginning, but the Red Queen answered for her. "Bread-and-butter, of course. Try another Subtraction sum. Take a bone from a dog: what remains?"



Alice considered. "The bone wouldn't remain, of course, if I took it—and the dog wouldn't remain: it would come to bite me—and I'm sure *I* shouldn't remain!"

"Then you think nothing would remain?" said the Red Queen.

"I think that's the answer."

"Wrong, as usual," said the Red Queen: "the dog's temper would remain."

"But I don't see how——"

"Why, look here!" the Red Queen cried. "The dog would lose its temper, wouldn't it?"

"Perhaps it would," Alice replied cautiously.

"Then if the dog went away, its temper would remain!" the Queen exclaimed triumphantly.

Alice said, as gravely as she could, "They might go different ways." But she couldn't help thinking to herself "What dreadful nonsense we *are* talking!"

"She ca'n't do sums a *bit*!" the Queens said together, with great emphasis.

"Can *you* do sums?" Alice said, turning suddenly on the White Queen, for she didn't like being found fault with so much.

The Queen gasped and shut her eyes. "I can do Addition," she said, "if you give me time—but I ca'n't do Subtraction, under *any* circumstances!"

"Of course you know your ABC?" said the Red Queen.

"To be sure I do," said Alice.

"So do I," the White Queen whispered: "we'll often say it over together, dear. And I'll tell you a secret—I can read words of one letter! Isn't *that* grand! However, don't be discouraged. You'll come to it in time."

Here the Red Queen began again. "Can you answer useful questions?" she said. "How is bread made?"

"I know *that!*" Alice cried eagerly. "You take some flour——"

"Where do you pick the flower?" the White Queen asked. "In a garden or in the hedges?"

"Well, it isn't *picked* at all," Alice explained: "it's *ground*——"

"How many acres of ground?" said the White Queen. "You mustn't leave out so many things."

"Fan her head!" the Red Queen anxiously interrupted. "She'll be feverish after so much thinking." So they set to work and fanned her with bunches of leaves, till she had to beg them to leave off, it blew her hair about so.

"She's all right again now," said the Red Queen. "Do you know Languages? What's the French for fiddle-de-dee?"

"Fiddle-de-dee's not English," Alice replied gravely.

"Who ever said it was?" said the Red Queen.

Alice thought she saw a way out of the difficulty, this time. "If you'll tell me what language 'fiddle-de-dee' is, I'll tell you the French for it!" she exclaimed triumphantly.

But the Red Queen drew herself up rather stiffly, and said "Queens never make bargains."

"I wish Queens never asked questions," Alice thought to herself.

"Don't let us quarrel," the White Queen said in an anxious tone. "What is the cause of lightning?"

"The cause of lightning," Alice said very decidedly, for she felt quite certain about this, "is the thunder—no, no!" she hastily corrected herself. "I meant the other way."

"It's too late to correct it," said the Red Queen: "when you've once said a thing, that fixes it, and you must take the consequences."

"Which reminds me——" the White Queen said, looking down and nervously clasping and unclasping her hands, "we had *such* a thunderstorm last Tuesday—I mean one of the last set of Tuesdays, you know."

Alice was puzzled. "In *our* country," she remarked, "there's only one day at a time."

The Red Queen said "That's a poor thin way of doing things. Now *here*, we mostly have days and nights two or three at a time, and sometimes in the winter we take as many as five nights together—for warmth, you know."

"Are five nights warmer than one night, then?" Alice ventured to ask.

"Five times as warm, of course."

"But they should be five times as *cold*, by the same rule——"

"Just so!" cried the Red Queen. "Five times as warm, *and* five times as cold—just as I'm five times as rich as you are, *and* five times as clever!"

Alice sighed and gave it up. "It's exactly like a riddle with no answer!" she thought.

"Humpty Dumpty saw it too," the White Queen went on in a low voice, more as if she were talking to herself. "He came to the door with a corkscrew in his hand——"

“What did he want?” said the Red Queen.

“He said he *would* come in,” the White Queen went on, “because he was looking for a hippopotamus. Now, as it happened, there wasn’t such a thing in the house, that morning.”

“Is there generally?” Alice asked in an astonished tone.

“Well, only on Thursdays,” said the Queen.

“I know what he came for,” said Alice: “he wanted to punish the fish, because——”

Here the White Queen began again. “It was *such* a thunderstorm, you ca’n’t think!” (“She *never* could, you know,” said the Red Queen.) “And part of the roof came off, and ever so much thunder got in—and it went rolling round the room in great lumps—and knocking over the tables and things—till I was so frightened, I couldn’t remember my own name!”

Alice thought to herself “I never should *try* to remember my name in the middle of an accident! Where would be the use of it?” but she did not say this aloud, for fear of hurting the poor Queen’s feeling.

“Your Majesty must excuse her,” the Red Queen said to Alice, taking one of the White Queen’s hands in her own, and gently stroking it: “she means well, but she ca’n’t help saying foolish things, as a general rule.”

The White Queen looked timidly at Alice, who felt she *ought* to say something kind, but really couldn’t think of anything at the moment.

“She never was really well brought up,” the Red Queen went on: “but it’s amazing how good-tempered she is! Pat her on the head, and see how pleased she’ll be!” But this was more than Alice had courage to do.

“A little kindness—and putting her hair in papers—would do wonders with her——”

The White Queen gave a deep sigh, and laid her head on Alice’s shoulder. “I *am* so sleepy!” she moaned.

“She’s tired, poor thing!” said the Red Queen. “Smooth her hair—lend her your nightcap—and sing her a soothing lullaby.”

“I haven’t got a nightcap with me,” said Alice, as she tried to obey the first direction: “and I don’t know any soothing lullabies.”

“I must do it myself, then,” said the Red Queen, and she began:—

*“Hush-a-by lady, in Alice’s lap!
Till the feast’s ready, we’ve time for a nap:
When the feast’s over, we’ll go to the ball—
Red Queen, and White Queen, and Alice, and all!”*

Parody on nursery
rhyme *Rock-a-bye
Baby*

“And now you know the words,” she added, as she put her head down on Alice’s other shoulder, “just sing it through to *me*. I’m getting sleepy, too.” In another moment both Queens were fast asleep, and snoring loud.

“What *am* I to do?” exclaimed Alice, looking about in great perplexity, as first one round head, and then the other, rolled down from her shoulder, and lay like a heavy lump in her lap. “I don’t think it *ever* happened before, that any one had to take care of two Queens asleep at once! No, not in all the History of England—it couldn’t, you know, because there never was more than one Queen at a time. Do wake up, you heavy things!” she went on in an impatient tone; but there was no answer but a gentle snoring.



The snoring got more distinct every minute, and sounded more like a tune: at last she could even make out words, and she listened so eagerly that, when the two great heads suddenly vanished from her lap, she hardly missed them.

She was standing before an arched doorway, over which were the words "QUEEN ALICE" in large letters, and on each side of the arch there was a bell-handle; one was marked "Visitors' Bell," and the other "Servants' Bell."

"I'll wait till the song's over," thought Alice, "and then I'll ring—the—*which* bell must I ring?" she went on, very much puzzled by the names. "I'm not a visitor, and I'm not a servant. There *ought* to be one marked 'Queen,' you know——"

Just then the door opened a little way, and a creature with a long beak put its head out for a moment and said "No admittance till the week after next!" and shut the door again with a bang.

Alice knocked and rang in vain for a long time; but at last a very old Frog, who was sitting under a tree, got up and hobbled slowly towards her: he was dressed in bright yellow, and had enormous boots on.

"What is it, now?" the Frog said in a deep hoarse whisper.

Alice turned round, ready to find fault with anybody. "Where's the servant whose business it is to answer the door?" she began angrily.

"Which door?" said the Frog.

Alice almost stamped with irritation at the slow drawl in which he spoke. "*This* door, of course!"

The Frog looked at the door with his large dull eyes for a minute: then he went nearer and rubbed it with his thumb, as if he were trying whether the paint would come off: then he looked at Alice.

"To answer the door?" he said. "What's it been asking of?" He was so hoarse that Alice could scarcely hear him.

"I don't know what you mean," she said.

"I speaks English, doesn't I?" the Frog went on. "Or are you deaf? What did it ask you?"

"Nothing!" Alice said impatiently. "I've been knocking at it!"

"Shouldn't do that—shouldn't do that——" the Frog muttered. "Vexes it, you know." Then he went up and gave the door a kick with one of his great feet.



“You let *it* alone,” he panted out, as he hobbled back to his tree, “and it’ll let *you* alone, you know.”

At this moment the door was flung open, and a shrill voice was heard singing:—

*“To the Looking-Glass world it was Alice that said
I’ve a sceptre in hand, I’ve a crown on my head.
Let the Looking-Glass creatures, whatever they be
Come and dine with the Red Queen, the White Queen, and me.”*

Parody on *Bonny Dundee* (*The Doom of Devorgoil*) by Walter Scott

And hundreds of voices joined in the chorus:—

*“Then fill up the glasses as quick as you can,
And sprinkle the table with buttons and bran:
Put cats in the coffee, and mice in the tea—
And welcome Queen Alice with thirty-times-three!”*

Then followed a confused noise of cheering, and Alice thought to herself “Thirty times three makes ninety. I wonder if any one’s counting?” In a minute there was silence again, and the same shrill voice sang another verse:—

*“‘O Looking-Glass creatures,’ quoth Alice, ‘draw near!
'Tis an honour to see me, a favour to hear:
'Tis a privilege high to have dinner and tea
Along with the Red Queen, the White Queen, and me!’”*

Then came the chorus again:—

*“Then fill up the glasses with treacle and ink,
Or anything else that is pleasant to drink:
Mix sand with the cider, and wool with the wine—
And welcome Queen Alice with ninety-times-nine!”*

“Ninety times nine!” Alice repeated in despair, “Oh, that’ll never be done! I’d better go in at once——” and in she went, and there was a dead silence the moment she appeared.

Alice glanced nervously along the table, as she walked up the large hall, and noticed that there were about fifty guests, of all kinds: some were animals, some birds, and there were even a few flowers among them. “I’m glad they’ve come without waiting to be asked,” she thought: “I should never have known who were the right people to invite!”

There were three chairs at the head of the table: the Red and White Queens had already taken two of them, but the middle one was empty. Alice sat down in it, rather uncomfortable at the silence, and longing for some one to speak.

At last the Red Queen began. “You’ve missed the soup and fish,” she said. “Put on the joint!” And the waiters set a leg of mutton before Alice, who looked at it rather anxiously, as she had never had to carve a joint before.

“You look a little shy: let me introduce you to that leg of mutton,” said the Red Queen. “Alice——Mutton: Mutton——Alice.” The leg of mutton got up in the dish and made a little bow to Alice; and Alice returned the bow, not knowing whether to be frightened or amused.



“May I give you a slice?” she said, taking up the knife and fork, and looking from one Queen to the other.

“Certainly not,” the Red Queen said, very decidedly: “it isn’t etiquette to cut any one you’ve been introduced to. Remove the joint!” And the waiters carried it off, and brought a large plum-pudding in its place.

“I wo’n’t be introduced to the pudding, please,” Alice said rather hastily, “or we shall get no dinner at all. May I give you some?”

But the Red Queen looked sulky, and growled “Pudding——Alice: Alice——Pudding. Remove the pudding!”, and the waiters took it away so quickly that Alice couldn’t return its bow.

However, she didn’t see why the Red Queen should be the only one to give orders; so, as an experiment, she called out “Waiter! Bring back the pudding!”, and there it was again in a moment, like a conjuring-trick. It was so large that she couldn’t help feeling a *little* shy with it, as she had been with the mutton: however, she conquered her shyness by a great effort, and cut a slice and handed it to the Red Queen.

“What impertinence!” said the Pudding. “I wonder how you’d like it, if I were to cut a slice out of *you*, you creature!”

It spoke in a thick, suety sort of voice, and Alice hadn’t a word to say in reply: she could only sit and look at it and gasp.

“Make a remark,” said the Red Queen: “it’s ridiculous to leave all the conversation to the pudding!”

“Do you know, I’ve had such a quantity of poetry repeated to me to-day,” Alice began, a little frightened at finding that, the moment she opened her lips, there was dead silence, and all eyes were fixed upon her; “and it’s a very curious thing, I think—every poem was about fishes in some way. Do you know why they’re so fond of fishes, all about here?”

She spoke to the Red Queen, whose answer was a little wide of the mark. “As to fishes,” she said, very slowly and solemnly, putting her mouth close to Alice’s ear, “her White Majesty knows a lovely riddle—all in poetry—all about fishes. Shall she repeat it?”

“Her Red Majesty’s very kind to mention it,” the White Queen murmured into Alice’s other ear, in a voice like the cooing of a pigeon. “It would be *such* a treat! May I?”

“Please do,” Alice said very politely.

The White Queen laughed with delight, and stroked Alice’s cheek. Then she began:

*“‘First, the fish must be caught.’
That is easy: a baby, I think, could have caught it.
‘Next, the fish must be bought.’
That is easy: a penny, I think, would have bought it.
‘Now cook me the fish!’
That is easy, and will not take more than a minute.
‘Let it lie in a dish!’
That is easy, because it already is in it.
‘Bring it here! Let me sup!’
It is easy to set such a dish on the table.
‘Take the dish-cover up!’*

*Ah, that is so hard that I fear I'm unable!
For it holds it like glue—
Holds the lid to the dish, while it lies in the middle:
Which is easiest to do,
Un-dish-cover the fish, or dishcover the riddle?"*

"Take a minute to think about it, and then guess," said the Red Queen. "Meanwhile, we'll drink your health—Queen Alice's health!" she screamed at the top of her voice, and all the guests began drinking it directly, and very queerly they managed it: some of them put their glasses upon their heads like extinguishers, and drank all that trickled down their faces—others upset the decanters, and drank the wine as it ran off the edges of the table—and three of them (who looked like kangaroos) scrambled into the dish of roast mutton, and began eagerly lapping up the gravy, "just like pigs in a trough!" thought Alice.

"You ought to return thanks in a neat speech," the Red Queen said, frowning at Alice as she spoke.

"We must support you, you know," the White Queen whispered, as Alice got up to do it, very obediently, but a little frightened.

"Thank you very much," she whispered in reply, "but I can do quite well without."

"That wouldn't be at all the thing," the Red Queen said very decidedly: so Alice tried to submit to it with a good grace.

("And they *did* push so!" she said afterwards, when she was telling her sister the history of the feast. "You would have thought they wanted to squeeze me flat!")

In fact it was rather difficult for her to keep in her place while she made her speech: the two Queens pushed her so, one on each side, that they nearly lifted her up into the air. "I rise to return thanks——" Alice began: and she really *did* rise as she spoke, several inches; but she got hold of the edge of the table, and managed to pull herself down again.

"Take care of yourself!" screamed the White Queen, seizing Alice's hair with both her hands. "Something's going to happen!"

And then (as Alice afterwards described it) all sorts of things happened in a moment. The candles all grew up to the ceiling, looking something like a bed of rushes with fireworks at the top. As to the bottles, they each took a pair of plates, which they hastily fitted on as wings, and so, with forks for legs, went fluttering about in all directions: "and very like birds they look," Alice thought to herself, as well as she could in the dreadful confusion that was beginning.

At this moment she heard a hoarse laugh at her side, and turned to see what was the matter with the White Queen; but, instead of the Queen, there was the leg of mutton sitting in the chair. "Here I am!" cried a voice from the soup-tureen, and Alice turned again, just in time to see the Queen's broad good-natured face grinning at her for a moment over the edge of the tureen, before she disappeared into the soup.

There was not a moment to be lost. Already several of the guests were lying down in the dishes, and the soup-ladle was walking up the table towards Alice's chair, and beckoning to her impatiently to get out of its way.

"I ca'n't stand this any longer!" she cried, as she jumped up and seized the table-cloth with both hands: one good pull, and plates, dishes, guests, and candles came crashing down together in a heap on the floor.



“And as for *you*,” she went on, turning fiercely upon the Red Queen, whom she considered as the cause of all the mischief—but the Queen was no longer at her side—she had suddenly dwindled down to the size of a little doll, and was now on the table, merrily running round and round after her own shawl, which was trailing behind her.

At any other time, Alice would have felt surprised at this, but she was far too much excited to be surprised at anything *now*. “As for *you*,” she repeated, catching hold of the little creature in the very act of jumping over a bottle which had just lighted upon the table, “I’ll shake you into a kitten, that I will!”



Chapter X. Shaking

She took her off the table as she spoke, and shook her backwards and forwards with all her might.

The Red Queen made no resistance whatever: only her face grew very small, and her eyes got large and green: and still, as Alice went on shaking her, she kept on growing shorter—and fatter—and softer—and rounder—and——

Chapter XI. Waking

——and it really *was* a kitten, after all.



Chapter XII. Which Dreamed It?

“Your Red Majesty shouldn’t purr so loud,” Alice said, rubbing her eyes, and addressing the kitten, respectfully, yet with some severity. “You woke me out of oh! such a nice dream! And you’ve been along with me, Kitty—all through the Looking-Glass world. Did you know it, dear?”

It is a very inconvenient habit of kittens (Alice had once made the remark) that, whatever you say to them, they *always* purr. “If they would only purr for ‘yes’ and mew for ‘no,’ or any rule of that sort,” she had said, “so that one could

keep up a conversation! But how *can* you talk with a person if they *always* say the same thing?"

On this occasion the kitten only purred: and it was impossible to guess whether it meant 'yes' or 'no.'

So Alice hunted among the chessmen on the table till she had found the Red Queen: then she went down on her knees on the hearth-rug, and put the kitten and the Queen to look at each other. "Now, Kitty!" she cried, clapping her hands triumphantly. "Confess that was what you turned into!"

("But it wouldn't look at it," she said, when she was explaining the thing afterwards to her sister: "it turned away its head, and pretended not to see it: but it looked a *little* ashamed of itself, so I think it *must* have been the Red Queen.")

"Sit up a little more stiffly, dear!" Alice cried with a merry laugh. "And curtsy while you're thinking what to—what to purr. It saves time, remember!" And she caught it up and gave it one little kiss, "just in honour of having been a Red Queen."



"Snowdrop, my pet!" she went on, looking over her shoulder at the White Kitten, which was still patiently undergoing its toilet, "when *will* Dinah have finished with your White Majesty, I wonder? That must be the reason you were so untidy in my dream.—Dinah! do you know that you're scrubbing a White Queen? Really, it's most disrespectful of you!

"And what did *Dinah* turn to, I wonder?" she prattled on, as she settled comfortably down, with one elbow in the rug, and her chin in her hand, to watch the kittens. "Tell me, Dinah, did you turn to Humpty Dumpty? I *think*

you did—however, you'd better not mention it to your friends just yet, for I'm not sure.

“By the way, Kitty, if only you'd been really with me in my dream, there was one thing you *would* have enjoyed—I had such a quantity of poetry said to me, all about fishes! To-morrow morning you shall have a real treat. All the time you're eating your breakfast, I'll repeat 'The Walrus and the Carpenter' to you; and then you can make believe it's oysters, dear!

“Now, Kitty, let's consider who it was that dreamed it all. This is a serious question, my dear, and you should *not* go on licking your paw like that—as if Dinah hadn't washed you this morning! You see, Kitty, it *must* have been either me or the Red King. He was part of my dream, of course—but then I was part of his dream, too! *Was* it the Red King, Kitty? You were his wife, my dear, so you ought to know—Oh, Kitty, *do* help to settle it! I'm sure your paw can wait!” But the provoking kitten only began on the other paw, and pretended it hadn't heard the question.

Which do *you* think it was?

2.3 Alice's Adventures under Ground

Source: Alice's Adventures under Ground (concluding image only in original manuscript, all images in book are monochrome, of poorer quality, and sometimes slightly clipped)

Other versions:

→ 2.1, p. 101

→ 2.4, p. 302

Chapter I



Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, and where is the use of a book, thought Alice, without pictures or conversations? So she was considering in her own mind, (as well as she could, for the hot day made her feel very sleepy and stupid,) whether the pleasure of making a daisy-chain was worth the trouble of getting up and picking the daisies, when a white rabbit with pink eyes ran close by her.

There was nothing very remarkable in that, nor did Alice think it so *very* much out of the way to hear the rabbit say to itself “dear, dear! I shall be too late!” (when she thought it over afterwards, it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but when the rabbit actually *took a watch out of its waistcoat-pocket*, looked at it, and then hurried on, Alice started to her feet, for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket or a watch to take out of it, and, full of curiosity, she hurried across the field after it, and was just in time to see it pop down a large rabbit-hole under the hedge. In a moment down went Alice after it, never once considering how in the world she was to get out again.

The rabbit-hole went straight on like a tunnel for some way, and then dipped suddenly down, so suddenly, that Alice had not a moment to think about stopping herself, before she found herself falling down what seemed a deep well.

Either the well was very deep, or she fell very slowly, for she had plenty of time as she went down to look about her, and to wonder what would happen next. First, she tried to look down and make out what she was coming to, but it was too dark to see anything: then, she looked at the sides of the well, and noticed that they were filled with cupboards and book-shelves: here and there were maps and pictures hung on pegs. She took a jar down off one of the shelves as she passed: it was labelled "Orange Marmalade," but to her great disappointment it was empty: she did not like to drop the jar, for fear of killing somebody underneath, so managed to put it into one of the cupboards as she fell past it.

"Well!" thought Alice to herself, "after such a fall as this, I shall think nothing of tumbling down stairs! How brave they'll all think me at home! Why, I wouldn't say anything about it, even if I fell off the top of the house!" (which was most likely true.)

Down, down, down. Would the fall *never* come to an end? "I wonder how many miles I've fallen by this time?" she said aloud, "I must be getting somewhere near the centre of the earth. Let me see: that would be four thousand miles down, I think—" (for you see Alice had learnt several things of this sort in her lessons in the schoolroom, and though this was not a *very* good opportunity of showing off her knowledge, as there was no one to hear her, still it was good practice to say it over,) "yes that's the right distance, but then what Longitude or Latitude-line shall I be in?" (Alice had no idea what Longitude was, or Latitude either, but she thought they were nice grand words to say.)

Presently she began again: "I wonder if I shall fall right *through* the earth! How funny it'll be to come out among the people that walk with their heads downwards! But I shall have to ask them what the name of the country is, you know. Please, Ma'am, is this New Zealand or Australia?"—and she tried to curtsy as she spoke (fancy *curtseying* as you're falling through the air! do you think you could manage it?) "and what an ignorant little girl she'll think me for asking! No, it'll never do to ask: perhaps I shall see it written up somewhere."

Down, down, down: there was nothing else to do, so Alice soon began talking again. "Dinah will miss me very much tonight, I should think!" (Dinah was the cat.) "I hope they'll remember her saucer of milk at tea-time! Oh, dear Dinah, I wish I had you here! There are no mice in the air, I'm afraid, but you might catch a bat, and that's very like a mouse, you know, my dear. But do cats eat bats, I wonder?" And here Alice began to get rather sleepy, and kept on saying to herself, in a dreamy sort of way "do cats eat bats? do cats eat bats?" and sometimes, "do bats eat cats?" for, as she couldn't answer either question, it didn't much matter which way she put it. She felt that she was dozing off, and had just begun to dream that she was walking hand in hand with Dinah, and was saying to her very earnestly, "Now, Dinah, my dear, tell me the truth. Did you ever eat a bat?" when suddenly, bump! bump! down she came upon a heap of sticks and shavings, and the fall was over.

Alice was not a bit hurt, and jumped on to her feet directly: she looked up, but it was all dark overhead; before her was another long passage, and the white rabbit was still in sight, hurrying down it. There was not a moment to be lost: away went Alice like the wind, and just heard it say, as it turned a corner, "my ears and whiskers, how late it's getting!" She turned the corner after it, and instantly found herself in a long, low hall, lit up by a row of lamps which hung from the roof.

There were doors all round the hall, but they were all locked, and when



Alice had been all round it, and tried them all, she walked sadly down the middle, wondering how she was ever to get out again: suddenly she came upon a little three-legged table, all made of solid glass; there was nothing lying upon it, but a tiny golden key, and Alice's first idea was that it might belong to one of the doors of the hall, but alas! either the locks were too large, or the key too small, but at any rate it would open none of them. However, on the second time round, she came to a low curtain, behind which was a door about eighteen inches high: she tried the little key in the keyhole, and it fitted! Alice opened the door, and looked down a small passage, not larger than a rat-hole, into the loveliest garden you ever saw. How she longed to get out of that dark hall, and wander about among those beds of bright flowers and those cool fountains, but she could not even get her head through the doorway, "and even if my head would go through," thought poor Alice, "it would be very little use without my shoulders. Oh, how I wish I could shut up like a telescope! I think I could, if I only knew how to begin." For, you see, so many out-of-the-way things had happened lately, that Alice began to think very few things indeed were really impossible.

There was nothing else to do, so she went back to the table, half hoping she might find another key on it, or at any rate a book of rules for shutting up people like telescopes: this time there was a little bottle on it—"which certainly was not there before" said Alice—and tied round the neck of the bottle was a paper label with the words **DRINK ME** beautifully printed on it in large letters.

It was all very well to say "drink me," "but I'll look first," said the wise

little Alice, “and see whether the bottle’s marked “poison” or not,” for Alice had read several nice little stories about children that got burnt, and eaten up by wild beasts, and other unpleasant things, because they *would* not remember the simple rules their friends had given them, such as, that, if you get into the fire, it will burn you, and that, if you cut your finger very deeply with a knife, it generally bleeds, and she had never forgotten that, if you drink a bottle marked “poison,” it is almost certain to disagree with you, sooner or later.

However, this bottle was *not* marked poison, so Alice tasted it, and finding it very nice, (it had, in fact, a sort of mixed flavour of cherry-tart, custard, pine-apple, roast turkey, toffy, and hot buttered toast,) she very soon finished it off.

* * * * *

“What a curious feeling!” said Alice, “I must be shutting up like a telescope.”

It was so indeed: she was now only ten inches high, and her face brightened up as it occurred to her that she was now the right size for going through the little door into that lovely garden. First, however, she waited for a few minutes to see whether she was going to shrink any further: she felt a little nervous about this, “for it might end, you know,” said Alice to herself, “in my going out altogether, like a candle, and what should I be like then, I wonder?” and she tried to fancy what the flame of a candle is like after the candle is blown out, for she could not remember having ever seen one. However, nothing more happened so she decided on going into the garden at once, but, alas for poor Alice! when she got to the door, she found she had forgotten the little golden key, and when she went back to the table for the key, she found she could not possibly reach it: she could see it plainly enough through the glass, and she tried her best to climb up one of the legs of the table, but it was too slippery, and when she had tired herself out with trying, the poor little thing sat down and cried.



“Come! there’s no use in crying!” said Alice to herself rather sharply, “I advise you to leave off this minute!” (she generally gave herself very good advice, and sometimes scolded herself so severely as to bring tears into her eyes, and once she remembered boxing her own ears for having been unkind to herself in a

game of croquet she was playing with herself, for this curious child was very fond of pretending to be two people,) “but it’s no use now,” thought poor Alice, “to pretend to be two people! Why, there’s hardly enough of me left to make one respectable person!”

Soon her eyes fell on a little ebony box lying under the table: she opened it, and found in it a very small cake, on which was lying a card with the words **EAT ME** beautifully printed on it in large letters. “I’ll eat,” said Alice, “and if it makes me larger, I can reach the key, and if it makes me smaller, I can creep under the door, so either way I’ll get into the garden, and I don’t care which happens!”

She ate a little bit, and said anxiously to herself “which way? which way?” and laid her hand on the top of her head to feel which way it was growing, and was quite surprised to find that she remained the same size: to be sure this is what generally happens when one eats cake, but Alice had got into the way of expecting nothing but out-of-the-way things to happen, and it seemed quite dull and stupid for things to go on in the common way.

So she set to work, and very soon finished off the cake.

* * * * *

“Curiouser and curiouser!” cried Alice, (she was so surprised that she quite forgot how to speak good English,) “now I’m opening out like the largest telescope that ever was! Goodbye, feet!” (for when she looked down at her feet, they seemed almost out of sight, they were getting so far off,) “oh, my poor little feet, I wonder who will put on your shoes and stockings for you now, dears? I’m sure I can’t! I shall be a great deal too far off to bother myself about you: you must manage the best way you can—but I must be kind to them,” thought Alice, “or perhaps they won’t walk the way I want to go! Let me see: I’ll give them a new pair of boots every Christmas.”

And she went on planning to herself how she would manage it “they must go by the carrier,” she thought, “and how funny it’ll seem, sending presents to one’s own feet! And how odd the directions will look!

ALICE’S RIGHT FOOT, ESQ.

THE CARPET,

with ALICE’S LOVE.

oh dear! what nonsense I am talking!”

Just at this moment, her head struck against the roof of the hall: in fact, she was now rather more than nine feet high, and she at once took up the little golden key, and hurried off to the garden door.

Poor Alice! it was as much as she could do, lying down on one side, to look through into the garden with one eye, but to get through was more hopeless than ever: she sat down and cried again.

“You ought to be ashamed of yourself,” said Alice, “a great girl like you,” (she might well say this,) “to cry in this way! Stop this instant, I tell you!” But she cried on all the same, shedding gallons of tears, until there was a large pool, about four inches deep, all round her, and reaching half way across the hall. After a time, she heard a little pattering of feet in the distance, and dried her eyes to see what was coming. It was the white rabbit coming back again, splendidly dressed, with a pair of white kid gloves in one hand, and a nosegay in the other. Alice was ready to ask help of any one, she felt so desperate, and as

the rabbit passed her, she said, in a low, timid voice, “If you please, Sir—” the rabbit started violently, looked up once into the roof of the hall, from which the voice seemed to come, and then dropped the nosegay and the white kid gloves, and skurried away into the darkness, as hard as it could go.



Alice took up the nosegay and gloves, and found the nosegay so delicious that she kept smelling at it all the time she went on talking to herself—“dear, dear! how queer everything is today! and yesterday everything happened just as usual: I wonder if I was changed in the night? Let me think: was I the same when I got up this morning? I think I remember feeling rather different. But if I’m not the same, who in the world am I? Ah, that’s the great puzzle!” And she began thinking over all the children she knew of the same age as herself, to see if she could have been changed for any of them.

“I’m sure I’m not Gertrude,” she said, “for her hair goes in such long ringlets, and mine doesn’t go in ringlets at all—and I’m sure I ca’n’t be Florence, for I know all sorts of things, and she, oh! she knows such a very little! Besides, *she’s* she, and *I’m* I, and—oh dear! how puzzling it all is! I’ll try if I know all the things I used to know. Let me see: four times five is twelve, and four times six is thirteen, and four times seven is fourteen—oh dear! I shall never get to twenty at this rate! But the Multiplication Table don’t signify—let’s try Geography. London is the capital of France, and Rome is the capital of Yorkshire, and Paris—oh dear! dear! *that’s* all wrong, I’m certain! I must have been changed for Florence! I’ll try and say “How doth the little,” and she crossed her hands on her lap, and began, but her voice sounded hoarse and strange, and the words did not sound the same as they used to do:

“How doth the little crocodile
Improve its shining tail,
And pour the waters of the Nile

Parody on *How Doth
the Little Busy Bee*
by Isaac Watts

On every golden scale!
“How cheerfully it seems to grin!
How neatly spreads its claws!
And welcomes little fishes in
With gently-smiling jaws!”

“I’m sure those are not the right words,” said poor Alice, and her eyes filled with tears as she thought “I must be Florence after all, and I shall have to go and live in that poky little house, and have next to no toys to play with, and oh! ever so many lessons to learn! No! I’ve made up my mind about it: if I’m Florence, I’ll stay down here! It’ll be no use their putting their heads down and saying ‘come up, dear!’ I shall only look up and say ‘who am I then? answer me that first, and then, if I like being that person, I’ll come up: if not, I’ll stay down here till I’m somebody else—but, oh dear!” cried Alice with a sudden burst of tears, “I do wish they *would* put their heads down! I am so tired of being all alone here!”

As she said this, she looked down at her hands, and was surprised to find she had put on one of the rabbit’s little gloves while she was talking. “How *can* I have done that?” thought she, “I must be growing small again.” She got up and went to the table to measure herself by it, and found that, as nearly as she could guess, she was now about two feet high, and was going on shrinking rapidly: soon she found out that the reason of it was the nosegay she held in her hand: she dropped it hastily, just in time to save herself from shrinking away altogether, and found that she was now only three inches high.

“Now for the garden!” cried Alice, as she hurried back to the little door, but the little door was locked again, and the little gold key was lying on the glass table as before, and “things are worse than ever!” thought the poor little girl, “for I never was as small as this before, never! And I declare it’s too bad, it is!”



At this moment her foot slipped, and splash! she was up to her chin in salt water. Her first idea was that she had fallen into the sea: then she remembered that she was under ground, and she soon made out that it was the pool of tears

she had wept when she was nine feet high. "I wish I hadn't cried so much!" said Alice, as she swam about, trying to find her way out, "I shall be punished for it now, I suppose, by being drowned in my own tears! Well! that'll be a queer thing, to be sure! However, every thing is queer today." Very soon she saw something splashing about in the pool near her: at first she thought it must be a walrus or a hippopotamus, but then she remembered how small she was herself, and soon made out that it was only a mouse, that had slipped in like herself.

"Would it be any use, now," thought Alice, "to speak to this mouse? The rabbit is something quite out-of-the-way, no doubt, and so have I been, ever since I came down here, but that is no reason why the mouse should not be able to talk. I think I may as well try."

So she began: "oh Mouse, do you know how to get out of this pool? I am very tired of swimming about here, oh Mouse!" The mouse looked at her rather inquisitively, and seemed to her to wink with one of its little eyes, but it said nothing.



"Perhaps it doesn't understand English," thought Alice; "I daresay it's a French mouse, come over with William the Conqueror!" (for, with all her knowledge of history, Alice had no very clear notion how long ago anything had happened,) so she began again: "où est ma chatte?" which was the first sentence out of her French lesson-book. The mouse gave a sudden jump in the pool, and seemed to quiver with fright: "oh, I beg your pardon!" cried Alice hastily, afraid that she had hurt the poor animal's feelings, "I quite forgot you didn't like cats!"

"Not like cats!" cried the mouse, in a shrill, passionate voice, "would *you* like cats if you were me?"

"Well, perhaps not," said Alice in a soothing tone, "don't be angry about it. And yet I wish I could show you our cat Dinah: I think you'd take a fancy to cats if you could only see her. She is such a dear quiet thing," said Alice, half to herself, as she swam lazily about in the pool, "she sits purring so nicely by the fire, licking her paws and washing her face: and she is such a nice soft thing to nurse, and she's such a capital one for catching mice—oh! I beg your pardon!" cried poor Alice again, for this time the mouse was bristling all over, and she felt certain that it was really offended, "have I offended you?"

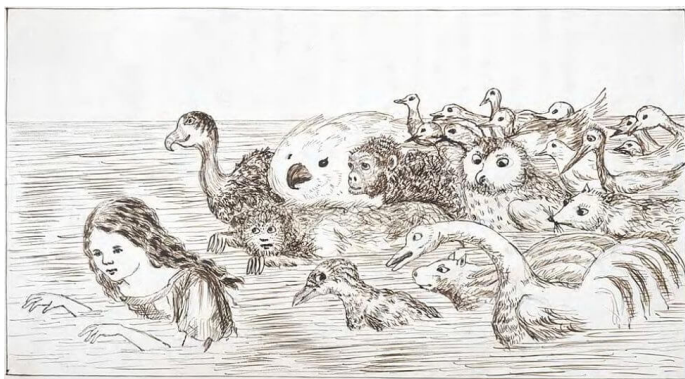
"Offended indeed!" cried the mouse, who seemed to be positively trembling with rage, "our family always *hated* cats! Nasty, low, vulgar things! Don't talk to me about them any more!"

Quoted from *La Bagatelle: Intended to introduce children of three or four years old to some knowledge of the French language*

“I won’t indeed!” said Alice, in a great hurry to change the conversation, “are you—are you—fond of—dogs?” The mouse did not answer, so Alice went on eagerly: “there is such a nice little dog near our house I should like to show you! A little bright-eyed terrier, you know, with oh! such long curly brown hair! And it’ll fetch things when you throw them, and it’ll sit up and beg for its dinner, and all sorts of things—I ca’n’t remember half of them—and it belongs to a farmer, and he says it kills all the rats and—oh dear!” said Alice sadly, “I’m afraid I’ve offended it again!” for the mouse was swimming away from her as hard as it could go, and making quite a commotion in the pool as it went.

So she called softly after it: “mouse dear! Do come back again, and we won’t talk about cats and dogs any more, if you don’t like them!” When the mouse heard this, it turned and swam slowly back to her: its face was quite pale, (with passion, Alice thought,) and it said in a trembling low voice “let’s get to the shore, and then I’ll tell you my history, and you’ll understand why it is I hate cats and dogs.”

It was high time to go, for the pool was getting quite full of birds and animals that had fallen into it. There was a Duck and a Dodo, a Lory and an Eaglet, and several other curious creatures. Alice led the way, and the whole party swam to the shore.



Chapter II

They were indeed a curious looking party that assembled on the bank—the birds with draggled feathers, the animals with their fur clinging close to them—all dripping wet, cross, and uncomfortable. The first question of course was, how to get dry: they had a consultation about this, and Alice hardly felt at all surprised at finding herself talking familiarly with the birds, as if she had known them all her life. Indeed, she had quite a long argument with the Lory, who at last turned sulky, and would only say “I am older than you, and must know best,” and this Alice would not admit without knowing how old the Lory was, and as the Lory positively refused to tell its age, there was nothing more to be said.

At last the mouse, who seemed to have some authority among them, called out “sit down, all of you, and attend to me! I’ll soon make you dry enough!” They all sat down at once, shivering, in a large ring, Alice in the middle, with her eyes anxiously fixed on the mouse, for she felt sure she would catch a bad cold if she did not get dry very soon.



“Ahem!” said the mouse, with a self-important air, “are you all ready? This is the driest thing I know. Silence all round, if you please!

“William the Conqueror, whose cause was favoured by the pope, was soon submitted to by the English, who wanted leaders, and had been of late much accustomed to usurpation and conquest. Edwin and Morcar, the earls of Mercia and Northumbria—”

“Ugh!” said the Lory with a shiver.

“I beg your pardon?” said the mouse, frowning, but very politely, “did you speak?”

“Not I!” said the Lory hastily.

“I thought you did,” said the mouse, “I proceed. Edwin and Morcar, the earls of Mercia and Northumbria, declared for him; and even Stigand, the patriotic archbishop of Canterbury, found it advisable to go with Edgar Atheling to meet William and offer him the crown. William’s conduct was at first moderate—how are you getting on now, dear?” said the mouse, turning to Alice as it spoke.

“As wet as ever,” said poor Alice, “it doesn’t seem to dry me at all.”

“In that case,” said the Dodo solemnly, rising to his feet, “I move that the meeting adjourn, for the immediate adoption of more energetic remedies—”

“Speak English!” said the Duck, “I don’t know the meaning of half those long words, and what’s more, I don’t believe you do either!” And the Duck quacked a comfortable laugh to itself. Some of the other birds tittered audibly.

“I only meant to say,” said the Dodo in a rather offended tone, “that I know of a house near here, where we could get the young lady and the rest of the party dried, and then we could listen comfortably to the story which I think you were good enough to promise to tell us,” bowing gravely to the mouse.

The mouse made no objection to this, and the whole party moved along the river bank, (for the pool had by this time begun to flow out of the hall, and the edge of it was fringed with rushes and forget-me-nots,) in a slow procession, the Dodo leading the way. After a time the Dodo became impatient, and, leaving the Duck to bring up the rest of the party, moved on at a quicker pace with Alice, the Lory, and the Eaglet, and soon brought them to a little cottage, and

Quoted from *Short Course of History* by Havilland Chepmell

there they sat snugly by the fire, wrapped up in blankets, until the rest of the party had arrived, and they were all dry again.

Then they all sat down again in a large ring on the bank, and begged the mouse to begin his story.

“Mine is a long and a sad tale!” said the mouse, turning to Alice, and sighing.

“It *is* a long tail, certainly,” said Alice, looking down with wonder at the mouse’s tail, which was coiled nearly all round the party, “but why do you call it sad?” and she went on puzzling about this as the mouse went on speaking, so that her idea of the tale was something like this:

We lived beneath the mat
Warm and snug and fat
But one woe, & that
Was the cat!

To our joys
a clog, In
our eyes a
fog, On our
hearts a log
Was the dog!

When the
cat’s away,
Then
the mice
will
play,
But, alas!
one day, (So they say)

Came the dog and
 cat, Hunting
 for a
 rat,
 Crushed
 the mice
 all flat;
 Each
 one
 as
 he
 sat
 Underneath the mat,
 Warm,
 & snug, & fat—
 Think of that!

“You are not attending!” said the mouse to Alice severely, “what are you thinking of?”

“I beg your pardon,” said Alice very humbly, “you had got to the fifth bend, I think?”

“I had *not!*” cried the mouse, sharply and very angrily.

“A knot!” said Alice, always ready to make herself useful, and looking anxiously about her, “oh, do let me help to undo it!”

“I shall do nothing of the sort!” said the mouse, getting up and walking away from the party, “you insult me by talking such nonsense!”

“I didn’t mean it!” pleaded poor Alice, “but you’re so easily offended, you know.”

The mouse only growled in reply.

“Please come back and finish your story!” Alice called after it, and the others all joined in chorus “yes, please do!” but the mouse only shook its ears, and walked quickly away, and was soon out of sight.

“What a pity it wouldn’t stay!” sighed the Lory, and an old Crab took the opportunity of saying to its daughter “Ah, my dear! let this be a lesson to you never to lose *your* temper!” “Hold your tongue, Ma!” said the young Crab, a little snappishly, “you’re enough to try the patience of an oyster!”

“I wish I had our Dinah here, I know I do!” said Alice aloud, addressing no one in particular, “*she’d* soon fetch it back!”

“And who is Dinah, if I might venture to ask the question?” said the Lory.

Alice replied eagerly, for she was always ready to talk about her pet, “Dinah’s

our cat. And she's such a capital one for catching mice, you can't think! And oh! I wish you could see her after the birds! Why, she'll eat a little bird as soon as look at it!"

This answer caused a remarkable sensation among the party: some of the birds hurried off at once; one old magpie began wrapping itself up very carefully, remarking "I really must be getting home: the night air does not suit my throat," and a canary called out in a trembling voice to its children "come away from her, my dears, she's no fit company for you!" On various pretexts, they all moved off, and Alice was soon left alone.



She sat for some while sorrowful and silent, but she was not long before she recovered her spirits, and began talking to herself again as usual: "I do wish some of them had stayed a little longer! and I was getting to be such friends with them—really the Lory and I were almost like sisters! and so was that dear little Eaglet! And then the Duck and the Dodo! How nicely the Duck sang to us as we came along through the water: and if the Dodo hadn't known the way to that nice little cottage, I don't know when we should have got dry again—" and there is no knowing how long she might have prattled on in this way, if she had not suddenly caught the sound of pattering feet.

It was the white rabbit, trotting slowly back again, and looking anxiously about it as it went, as if it had lost something, and she heard it muttering to itself "the Marchioness! the Marchioness! oh my dear paws! oh my fur and whiskers! She'll have me executed, as sure as ferrets are ferrets! Where *can* I have dropped them, I wonder?" Alice guessed in a moment that it was looking for the nosegay and the pair of white kid gloves, and she began hunting for them, but they were now nowhere to be seen—everything seemed to have changed since her swim in the pool, and her walk along the river-bank with its fringe of rushes and forget-me-nots, and the glass table and the little door had vanished.

Soon the rabbit noticed Alice, as she stood looking curiously about her, and at once said in a quick angry tone, "why, Mary Ann! what *are* you doing out here? Go home this moment, and look on my dressing-table for my gloves and nosegay, and fetch them here, as quick as you can run, do you hear?" and Alice was so much frightened that she ran off at once, without saying a word, in the direction which the rabbit had pointed out.

She soon found herself in front of a neat little house, on the door of which was a bright brass plate with the name **W. RABBIT, ESQ.** She went in, and



hurried upstairs, for fear she should meet the real Mary Ann and be turned out of the house before she had found the gloves: she knew that one pair had been lost in the hall, “but of course,” thought Alice, “it has plenty more of them in its house. How queer it seems to be going messages for a rabbit! I suppose Dinah’ll be sending me messages next!” And she began fancying the sort of things that would happen: “Miss Alice! come here directly and get ready for your walk!” “Coming in a minute, nurse! but I’ve got to watch this mousehole till Dinah comes back, and see that the mouse doesn’t get out—” “only I don’t think,” Alice went on, “that they’d let Dinah stop in the house, if it began ordering people about like that!”

By this time she had found her way into a tidy little room, with a table in the window on which was a looking-glass and, (as Alice had hoped,) two or three pairs of tiny white kid gloves: she took up a pair of gloves, and was just going to leave the room, when her eye fell upon a little bottle that stood near the looking-glass: there was no label on it this time with the words “drink me,” but nonetheless she uncorked it and put it to her lips: “I know something interesting is sure to happen,” she said to herself, “whenever I eat or drink anything, so I’ll see what this bottle does. I do hope it’ll make me grow larger, for I’m quite tired of being such a tiny little thing!”

It did so indeed, and much sooner than she expected: before she had drunk half the bottle, she found her head pressing against the ceiling, and she stooped to save her neck from being broken, and hastily put down the bottle, saying to herself “that’s quite enough—I hope I sha’n’t grow any more—I wish I hadn’t drunk so much!”

Alas! it was too late: she went on growing and growing, and very soon had to kneel down: in another minute there was not room even for this, and she tried the effect of lying down, with one elbow against the door, and the other arm curled round her head. Still she went on growing, and as a last resource



she put one arm out of the window, and one foot up the chimney, and said to herself “now I can do no more—what *will* become of me?”



Luckily for Alice, the little magic bottle had now had its full effect, and she grew no larger; still it was very uncomfortable, and as there seemed to be no sort of chance of ever getting out of the room again, no wonder she felt unhappy. “It was much pleasanter at home,” thought poor Alice, “when one wasn’t always growing larger and smaller, and being ordered about by mice and rabbits—I almost wish I hadn’t gone down that rabbit-hole, and yet, and yet—it’s rather curious, you know, this sort of life. I do wonder what *can* have happened to me! When I used to read fairy-tales, I fancied that sort of thing never happened, and now here I am in the middle of one! There out to be a book written about me, that there ought! and when I grow up I’ll write one—but I’m grown up now” said she in a sorrowful tone, “at least there’s no room to grow up any more *here*.”

“But then,” thought Alice, “shall I *never* get any older than I am now? That’ll be a comfort, one way—never to be an old woman—but then—always to have lessons to learn! Oh, I shouldn’t like *that*!”

“Oh, you foolish Alice!” she said again, “how can you learn lessons in here? Why, there’s hardly room for you, and no room at all for any lesson-books!”

And so she went on, taking first one side, and then the other, and making quite a conversation of it altogether, but after a few minutes she heard a voice outside, which made her stop to listen.

“Mary Ann! Mary Ann!” said the voice, “fetch me my gloves this moment!” Then came a little pattering of feet on the stairs: Alice knew it was the rabbit coming to look for her, and she trembled till she shook the house, quite forgetting that she was now about a thousand times as large as the rabbit, and had no reason to be afraid of it. Presently the rabbit came to the door, and tried to open it, but as it opened inwards, and Alice’s elbow was against it, the attempt proved a failure. Alice heard it say to itself “then I’ll go round and get in at the window.”

“*That* you wo’n’t!” thought Alice, and, after waiting till she fancied she heard the rabbit, just under the window, she suddenly spread out her hand, and made a snatch in the air. She did not get hold of anything, but she heard a little shriek and a fall and a crash of breaking glass, from which she concluded that it was just possible it had fallen into a cucumber-frame, or something of the sort.

Next came an angry voice—the rabbit’s—“Pat, Pat! where are you?” And



then a voice she had never heard before, “shure then I’m here! digging for apples, anyway, yer honour!”

“Digging for apples indeed!” said the rabbit angrily, “here, come and help me out of *this*!”—Sound of more breaking glass.

“Now, tell me, Pat, what is that coming out of the window?”

“Shure it’s an arm, yer honour!” (He pronounced it “arrum”.)

“An arm, you goose! Who ever saw an arm that size? Why, it fills the whole window, don’t you see?”

“Shure, it does, yer honour, but it’s an arm for all that.”

“Well, it’s no business there: go and take it away!”

There was a long silence after this, and Alice could only hear whispers now and then, such as “shure I don’t like it, yer honour, at all at all!” “do as I tell you, you coward!” and at last she spread out her hand again and made another snatch in the air. This time there were *two* little shrieks, and more breaking glass—“what a number of cucumber-frames there must be!” thought Alice, “I wonder what they’ll do next! As for pulling me out of the window, I only wish they *could*! I’m sure *I* don’t want to stop in here any longer!”

She waited for some time without hearing anything more: at last came a rumbling of little cart-wheels, and the sound of a good many voices all talking together: she made out the words “where’s the other ladder?—why, I hadn’t to bring but one, Bill’s got the other—here, put ’em up at this corner—no, tie ’em together first—they don’t reach high enough yet—oh, they’ll do well enough, don’t be particular—here, Bill! catch hold of this rope—will the roof bear?—mind that loose slate—oh, it’s coming down! heads below!” (a loud crash) “now, who did that?—it was Bill, I fancy—who’s to go down the chimney?—nay, *I* sha’n’t! *you* do it!—*that* I won’t then—Bill’s got to go down—here, Bill! the

master says you've to go down the chimney!"

"Oh, so Bill's got to come down the chimney, has he?" said Alice to herself, "why, they seem to put everything upon Bill! I wouldn't be in Bill's place for a good deal: the fireplace is a pretty tight one, but I *think* I can kick a little!"



She drew her foot as far down the chimney as she could, and waited till she heard a little animal (she couldn't guess what sort it was) scratching and scrambling in the chimney close above her: then, saying to herself "this is Bill," she gave one sharp kick, and waited again to see what would happen next.

The first thing was a general chorus of "there goes Bill!" then the rabbit's voice alone "catch him, you by the hedge!" then silence, and then another confusion of voices, "how was it, old fellow? what happened to you? tell us all about it."

Last came a little feeble squeaking voice, ("that's Bill" thought Alice,) which said "well, I hardly know—I'm all of a fluster myself—something comes at me like a Jack-in-the-box, and the next minute up I goes like a rocket!" "And so you did, old fellow!" said the other voices.

"We must burn the house down!" said the voice of the rabbit, and Alice called out as loud as she could "if you do, I'll set Dinah at you!" This caused silence again, and while Alice was thinking "but how can I get Dinah here?" she found to her great delight that she was getting smaller: very soon she was able to get up out of the uncomfortable position in which she had been lying, and in two or three minutes more she was once more three inches high.

She ran out of the house as quick as she could, and found quite a crowd of little animals waiting outside—guinea-pigs, white mice, squirrels, and "Bill" a little green lizard, that was being supported in the arms of one of the guinea-

pigs, while another was giving it something out of a bottle. They all made a rush at her the moment she appeared, but Alice ran her hardest, and soon found herself in a thick wood.



Chapter III



“The first thing I’ve got to do,” said Alice to herself, as she wandered about in the wood, “is to grow to my right size, and the second thing is to find my way into that lovely garden. I think that will be the best plan.”

It sounded an excellent plan, no doubt, and very neatly and simply arranged: the only difficulty was, that she had not the smallest idea how to set about it,

and while she was peering anxiously among the trees round her, a little sharp bark just over her head made her look up in a great hurry.

An enormous puppy was looking down at her with large round eyes, and feebly stretching out one paw, trying to reach her: "poor thing!" said Alice in a coaxing tone, and she tried hard to whistle to it, but she was terribly alarmed all the while at the thought that it might be hungry, in which case it would probably devour her in spite of all her coaxing. Hardly knowing what she did, she picked up a little bit of stick, and held it out to the puppy: whereupon the puppy jumped into the air off all its feet at once, and with a yelp of delight rushed at the stick, and made believe to worry it then Alice dodged behind a great thistle to keep herself from being run over, and, the moment she appeared at the other side, the puppy made another dart at the stick, and tumbled head over heels in its hurry to get hold: then Alice, thinking it was very like having a game of play with a cart-horse, and expecting every moment to be trampled under its feet, ran round the thistle again: then the puppy began a series of short charges at the stick, running a very little way forwards each time and a long way back, and barking hoarsely all the while, till at last it sat down a good way off, panting, with its tongue hanging out of its mouth, and its great eyes half shut.

This seemed to Alice a good opportunity for making her escape. She set off at once, and ran till the puppy's bark sounded quite faint in the distance, and till she was quite tired and out of breath.

"And yet what a dear little puppy it was!" said Alice, as she leant against a buttercup to rest herself, and fanned herself with her hat. "I should have liked teaching it tricks, if—if I'd only been the right size to do it! Oh! I'd nearly forgotten that I've got to grow up again! Let me see; how *is* it to be managed? I suppose I ought to eat or drink something or other, but the great question is what?"

The great question certainly was, what? Alice looked all round her at the flowers and the blades of grass but could not see anything that looked like the right thing to eat under the circumstances. There was a large mushroom near her, about the same height as herself, and when she had looked under it, and on both sides of it, and behind it, it occurred to her to look and see what was on the top of it.

She stretched herself up on tiptoe, and peeped over the edge of the mushroom, and her eyes immediately met those of a large blue caterpillar, which was sitting with its arms folded, quietly smoking a long hookah, and taking not the least notice of her or of anything else.

For some time they looked at each other in silence: at last the caterpillar took the hookah out of its mouth, and languidly addressed her.

"Who are you?" said the caterpillar.

This was not an encouraging opening for a conversation: Alice replied rather shyly, "I—I hardly know, sir, just at present—at least I know who I *was* when I got up this morning, but I think I must have been changed several times since that."

"What do you mean by that?" said the caterpillar, "explain yourself!"

"I ca'n't explain *myself*, I'm afraid, sir," said Alice, "because I'm not myself, you see."

"I don't see," said the caterpillar.



"I'm afraid I ca'n't put it more clearly," Alice replied very politely, "for I ca'n't understand it myself, and really to be so many different sizes in one day is very confusing."

"It isn't," said the caterpillar.

"Well, perhaps you haven't found it so yet," said Alice, "but when you have to turn into a chrysalis, you know, and then after that into a butterfly, I should think it'll feel a little queer, don't you think so?"

"Not a bit," said the caterpillar.

"All I know is," said Alice, "it would feel queer to *me*."

"*You!*" said the caterpillar contemptuously, "who are you?"

Which brought them back again to the beginning of the conversation: Alice felt a little irritated at the caterpillar making such *very* short remarks, and she drew herself up and said very gravely "I think you ought to tell me who *you* are, first."

"Why?" said the caterpillar.

Here was another puzzling question: and as Alice had no reason ready, and the caterpillar seemed to be in a very bad temper, she turned round and walked away.

"Come back!" the caterpillar called after her, "I've something important to say!"

This sounded promising: Alice turned and came back again.

"Keep your temper," said the caterpillar.

"Is that all?" said Alice, swallowing down her anger as well as she could.

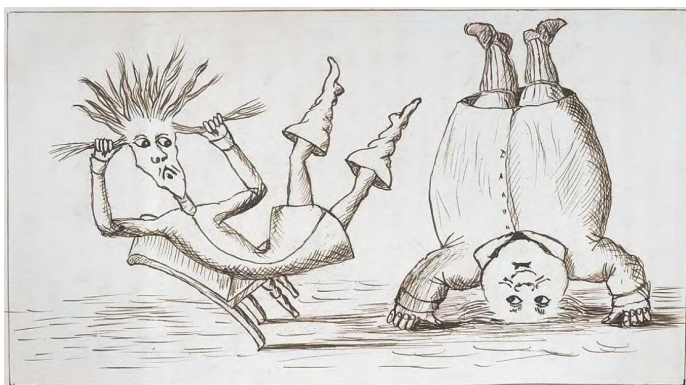
“No,” said the caterpillar.

Alice thought she might as well wait, as she had nothing else to do, and perhaps after all the caterpillar might tell her something worth hearing. For some minutes it puffed away at its hookah without speaking, but at last it unfolded its arms, took the hookah out of its mouth again, and said “so you think you’re changed, do you?”

“Yes, sir,” said Alice, “I ca’n’t remember the things I used to know—I’ve tried to say “How doth the little busy bee” and it came all different!”

“Try and repeat “You are old, father William,”” said the caterpillar.

Alice folded her hands, and began:



1.

“You are old, father William,” the young man said,

“And your hair is exceedingly white:

And yet you incessantly stand on your head—

Do you think, at your age, it is right?”

2.

“In my youth,” father William replied to his son,

“I feared it *might* injure the brain

But now that I’m perfectly sure I have none,

Why, I do it again and again.”

Parody on *The Old Man's Comforts and How He Gained Them*
by Robert Southey



3.

“You are old,” said the youth, “as I mentioned before,
And have grown most uncommonly fat:
Yet you turned a back-somersault in at the door—
Pray what is the reason of that?”

4.

“In my youth,” said the sage, as he shook his gray locks,
“I kept all my limbs very supple,
By the use of this ointment, five shillings the box—
Allow me to sell you a couple.”

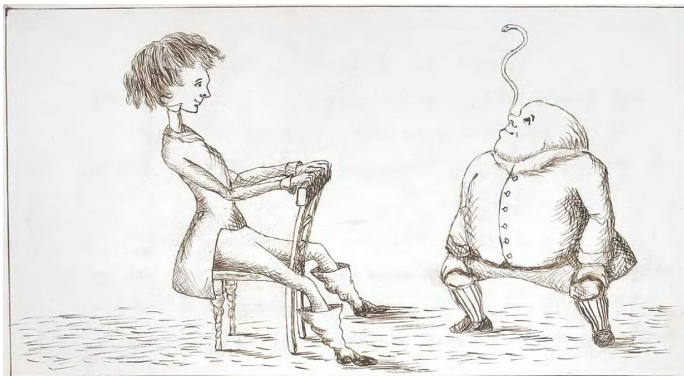


5.

“You are old,” said the youth, “and your jaws are too weak
For anything tougher than suet:
Yet you eat all the goose, with the bones and the beak—
Pray, how did you manage to do it?”

6.

“In my youth,” said the old man, “I took to the law,
And argued each case with my wife,
And *the muscular strength, which it gave to my jaw,*
Has lasted the rest of my life.”



7.

“You are old,” said the youth; “one would hardly suppose
That your eye was as steady as ever:
Yet you balanced an eel on the end of your nose—
What made you so *awfully* clever?”

8.

“I have answered three questions, and that is enough,”
Said his father, “don’t give yourself airs!
Do you think I can listen all day to such stuff?
Be off, or I’ll kick you down stairs!”

“That is not said right,” said the caterpillar.

“Not *quite* right, I’m afraid,” said Alice timidly, “some of the words have got altered.”

“It is wrong from beginning to end,” said the caterpillar decidedly, and there was silence for some minutes: the caterpillar was the first to speak.

“What size do you want to be?” it asked.

“Oh, I’m not particular as to size,” Alice hastily replied, “only one doesn’t like changing so often, you know.”

“Are you content now?” said the caterpillar.

“Well, I should like to be a *little* larger, sir, if you wouldn’t mind,” said Alice, “three inches is such a wretched height to be.”

“It is a very good height indeed!” said the caterpillar loudly and angrily, rearing itself straight up as it spoke (it was exactly three inches high).

“But I’m not used to it!” pleaded poor Alice in a piteous tone, and she thought to herself “I wish the creatures wouldn’t be so easily offended!”

“You’ll get used to it in time,” said the caterpillar, and it put the hookah into its mouth, and began smoking again.

This time Alice waited quietly until it chose to speak again: in a few minutes the caterpillar took the hookah out of its mouth, and got down off the mushroom, and crawled away into the grass, merely remarking as it went; “the top will make you grow taller, and the stalk will make you grow shorter.”

“The top of *what?* the stalk of *what?*” thought Alice.

“Of the mushroom,” said the caterpillar, just as if she had asked it aloud, and in another moment was out of sight.

Alice remained looking thoughtfully at the mushroom for a minute, and then picked it and carefully broke it in two, taking the stalk in one hand, and the top in the other. “*Which* does the stalk do?” she said, and nibbled a little bit of it to try; the next moment she felt a violent blow on her chin: it had struck her foot!

She was a good deal frightened by this very sudden change, but as she did not shrink any further, and had not dropped the top of the mushroom, she did not give up hope yet. There was hardly room to open her mouth, with her chin pressing against her foot, but she did it at last, and managed to bite off a little bit of the top of the mushroom.

* * * * *

“Come! my head’s free at last!” said Alice in a tone of delight, which changed into alarm in another moment, when she found that her shoulders were nowhere



to be seen: she looked down upon an immense length of neck, which seemed to rise like a stalk out of a sea of green leaves that lay far below her.

“What *can* all that green stuff be?” said Alice, “and where *have* my shoulders got to? And oh! my poor hands! how is it I ca’n’t see you?” She was moving them about as she spoke, but no result seemed to follow, except a little rustling among the leaves. Then she tried to bring her head down to her hands, and was delighted to find that her neck would bend about easily in every direction, like a serpent. She had just succeeded in bending it down in a beautiful zig-zag, and was going to dive in among the leaves, which she found to be the tops of the trees of the wood she had been wandering in, when a sharp hiss made her draw back: a large pigeon had flown into her face, and was violently beating her with its wings.

“Serpent!” screamed the pigeon.

“I’m *not* a serpent!” said Alice indignantly, “let me alone!”

“I’ve tried every way!” the pigeon said desperately, with a kind of sob: “nothing seems to suit ‘em!”

“I haven’t the least idea what you mean,” said Alice.

“I’ve tried the roots of trees, and I’ve tried banks, and I’ve tried hedges,” the pigeon went on without attending to her, “but them serpents! There’s no pleasing ‘em!”

Alice was more and more puzzled, but she thought there was no use in saying anything till the pigeon had finished.

“As if it wasn’t trouble enough hatching the eggs!” said the pigeon, “without being on the look out for serpents, day and night! Why, I haven’t had a wink of sleep these three weeks!”

“I’m very sorry you’ve been annoyed,” said Alice, beginning to see its meaning.



“And just as I’d taken the highest tree in the wood,” said the pigeon raising its voice to a shriek, “and was just thinking I was free of ’em at last, they must needs come down from the sky! Ugh! Serpent!”

“But I’m *not* a serpent,” said Alice, “I’m a—I’m a—”

“Well! *What* are you?” said the pigeon, “I see you’re trying to invent something.”

“I—I’m a little girl,” said Alice, rather doubtfully, as she remembered the number of changes she had gone through.

“A likely story indeed!” said the pigeon, “I’ve seen a good many of them in my time, but never *one* with such a neck as yours! No, you’re a serpent, I know *that* well enough! I suppose you’ll tell me next that you never tasted an egg!”

“I *have* tasted eggs, certainly,” said Alice, who was a very truthful child, “but indeed I do’n’t want any of yours. I do’n’t like them raw.”

“Well, be off, then!” said the pigeon, and settled down into its nest again. Alice crouched down among the trees, as well as she could, as her neck kept getting entangled among the branches, and several times she had to stop and untwist it. Soon she remembered the pieces of mushroom which she still held in her hands, and set to work very carefully, nibbling first at one and then at the other, and growing sometimes taller and sometimes shorter, until she had succeeded in bringing herself down to her usual size.

It was so long since she had been of the right size that it felt quite strange at first, but she got quite used to it in a minute or two, and began talking to herself as usual: “well! there’s half my plan done now! How puzzling all these changes are! I’m never sure what I’m going to be, from one minute to another! However, I’ve got to my right size again: the next thing is, to get into that beautiful garden—how *is* that to be done, I wonder?”

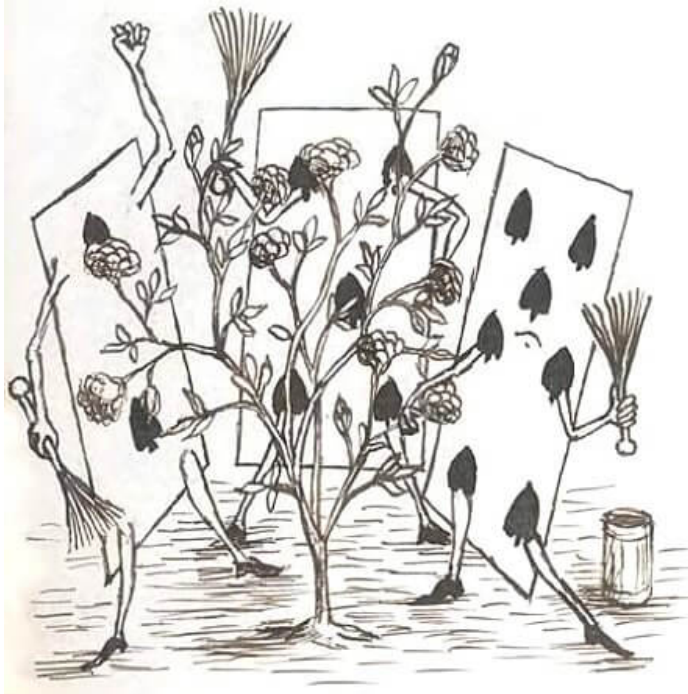
Just as she said this, she noticed that one of the trees had a doorway leading

right into it. "That's very curious!" she thought, "but everything's curious today: I may as well go in." And in she went.

Once more she found herself in the long hall, and close to the little glass table: "now, I'll manage better this time" she said to herself, and began by taking the little golden key, and unlocking the door that led into the garden. Then she set to work eating the pieces of mushroom till she was about fifteen inches high: then she walked down the little passage: and *then*—she found herself at last in the beautiful garden, among the bright flowerbeds and the cool fountains.



Chapter IV



A large rose tree stood near the entrance of the garden: the roses on it were white, but there were three gardeners at it, busily painting them red. This Alice thought a very curious thing, and she went near to watch them, and just as she came up she heard one of them say “look out, Five! Don’t go splashing paint over me like that!”

“I couldn’t help it,” said Five in a sulky tone, “Seven jogged my elbow.”

On which Seven lifted up his head and said “that’s right, Five! Always lay the blame on others!”

“*You’d* better not talk!” said Five, “I heard the Queen say only yesterday she thought of having you beheaded!”

“What for?” said the one who had spoken first.

“That’s not your business, Two!” said Seven.

“Yes, it *is* his business!” said Five, “and I’ll tell him: it was for bringing in tulip-roots to the cook instead of potatoes.”

Seven flung down his brush, and had just begun “well! Of all the unjust things—” when his eye fell upon Alice, and he stopped suddenly; the others looked round, and all of them took off their hats and bowed low.

“Would you tell me, please,” said Alice timidly, “why you are painting those roses?”

Five and Seven looked at Two, but said nothing: Two began, in a low voice, “why, Miss, the fact is, this ought to have been a red rose tree, and we put a white one in by mistake, and if the Queen was to find it out, we should all have our heads cut off. So, you see, we’re doing our best, before she comes, to—” At this moment Five, who had been looking anxiously across the garden called out

“the Queen! the Queen!” and the three gardeners instantly threw themselves flat upon their faces. There was a sound of many footsteps, and Alice looked round, eager to see the Queen.

First came ten soldiers carrying clubs; these were all shaped like the three gardeners, flat and oblong, with their hands and feet at the corners: next the ten courtiers; these were all ornamented with diamonds, and walked two and two, as the soldiers did. After these came the Royal children: there were ten of them, and the little dears came jumping merrily along, hand in hand, in couples: they were all ornamented with hearts. Next came the guests, mostly kings and queens, among whom Alice recognised the white rabbit: it was talking in a hurried nervous manner, smiling at everything that was said, and went by without noticing her. Then followed the Knave of Hearts, carrying the King’s crown on a cushion, and, last of all this grand procession, came **THE KING AND QUEEN OF HEARTS**.



When the procession came opposite to Alice, they all stopped and looked at her, and the Queen said severely “who is this?” She said it to the Knave of Hearts, who only bowed and smiled in reply.

“Idiot!” said the Queen, turning up her nose, and asked Alice “what’s your name?”

“My name is Alice, so please your Majesty,” said Alice boldly, for she thought to herself “why, they’re only a pack of cards! I needn’t be afraid of them!”

“Who are these?” said the Queen, pointing to the three gardeners lying round the rose tree, for, as they were lying on their faces, and the pattern on their backs was the same as the rest of the pack, she could not tell whether they were gardeners, or soldiers, or courtiers, or three of her own children.

“How should *I* know?” said Alice, surprised at her own courage, “it’s no business of *mine*.”

The Queen turned crimson with fury, and, after glaring at her for a minute, began in a voice of thunder “off with her—”

“Nonsense!” said Alice, very loudly and decidedly, and the Queen was silent.

The King laid his hand upon her arm, and said timidly “remember, my dear! She is only a child!”

The Queen turned angrily away from him, and said to the Knave “turn them over!”

The Knave did so, very carefully, with one foot.

"Get up!" said the Queen, in a shrill loud voice, and the three gardeners instantly jumped up, and began bowing to the King, the Queen, the Royal children, and everybody else.

"Leave off that!" screamed the Queen, "you make me giddy." And then, turning to the rose tree, she went on "what *have* you been doing here?"

"May it please your Majesty," said Two very humbly, going down on one knee as he spoke, "we were trying—"

"*I see!*" said the Queen, who had meantime been examining the roses, "off with their heads!" and the procession moved on, three of the soldiers remaining behind to execute the three unfortunate gardeners, who ran to Alice for protection.

"You sha'n't be beheaded!" said Alice, and she put them into her pocket: the three soldiers marched once round her, looking for them, and then quietly marched off after the others.

"Are their heads off?" shouted the Queen.

"Their heads are gone," the soldiers shouted in reply, "if it please your Majesty!"

"That's right!" shouted the Queen, "can you play croquet?"

The soldiers were silent, and looked at Alice, as the question was evidently meant for her.

"Yes!" shouted Alice at the top of her voice.

"Come on then!" roared the Queen, and Alice joined the procession, wondering very much what would happen next.

"It's—it's a very fine day!" said a timid little voice: she was walking by the white rabbit, who was peeping anxiously into her face.

"Very," said Alice, "where's the Marchioness?"

"Hush, hush!" said the rabbit in a low voice, "she'll hear you. The Queen's the Marchioness: didn't you know that?"

"No, I didn't," said Alice, "what of?"

"Queen of Hearts," said the rabbit in a whisper, putting its mouth close to her ear, "and Marchioness of Mock Turtles."

"What are *they?*" said Alice, but there was no time for the answer, for they had reached the croquet-ground, and the game began instantly.

Alice thought she had never seen such a curious croquet-ground in all her life: it was all in ridges and furrows: the croquet-balls were live hedgehogs, the mallets live ostriches, and the soldiers had to double themselves up, and stand on their feet and hands, to make the arches.

The chief difficulty which Alice found at first was to manage her ostrich: she got its body tucked away, comfortably enough, under her arm, with its legs hanging down, but generally, just as she had got its neck straightened out nicely, and was going to give a blow with its head, it *would* twist itself round, and look up into her face, with such a puzzled expression that she could not help bursting out laughing: and when she had got its head down, and was going to begin again, it was very confusing to find that the hedgehog had unrolled itself, and was in the act of crawling away: besides all this, there was generally a ridge or a furrow in her way, wherever she wanted to send the hedgehog to, and as the doubled-up soldiers were always getting up and walking off to other parts of the ground, Alice soon came to the conclusion that it was a very difficult game indeed.



The players all played at once without waiting for turns, and quarrelled all the while at the tops of their voices, and in a very few minutes the Queen was in a furious passion, and went stamping about and shouting “off with his head!” of “off with her head!” about once in a minute. All those whom she sentenced were taken into custody by the soldiers, who of course had to leave off being arches to do this, so that, by the end of half an hour or so, there were no arches left, and all the players, except the King, the Queen, and Alice, were in custody, and under sentence of execution.

Then the Queen left off, quite out of breath, and said to Alice “have you seen the Mock Turtle?”

“No,” said Alice, “I don’t even know what a Mock Turtle is.”

“Come on then,” said the Queen, “and it shall tell you its history.”

As they walked off together, Alice heard the King say in a low voice, to the company generally, “you are all pardoned.”

“Come, that’s a good thing!” thought Alice, who had felt quite grieved at the number of executions which the Queen had ordered.



They very soon came upon a Gryphon, which lay fast asleep in the sun: (if you don’t know what a Gryphon is, look at the picture): “Up, lazy thing!” said the Queen, “and take this young lady to see the Mock Turtle, and to hear its history. I must go back and see after some executions I ordered,” and she walked off, leaving Alice with the Gryphon. Alice did not quite like the look of the creature, but on the whole she thought it quite as safe to stay as to go after that savage Queen: so she waited.

The Gryphon sat up and rubbed its eyes: then it watched the Queen till she was out of sight: then it chuckled. “What fun!” said the Gryphon, half to itself, half to Alice.

“What *is* the fun?” said Alice.

“Why, *she*,” said the Gryphon; “it’s all her fancy, that: they never executes nobody, you know: come on!”

“Everybody says ‘come on!’ here,” thought Alice as she walked slowly after the Gryphon; “I never was ordered about so before in all my life—never!”

They had not gone far before they saw the Mock Turtle in the distance, sitting sad and lonely on a little ledge of rock, and, as they came nearer, Alice could here it sighing as if its heart would break. She pitied it deeply: “what is its sorrow?” she asked the Gryphon, and the Gryphon answered, very nearly in



the same words as before, "it's all its fancy, that: it hasn't got no sorrow, you know: come on!"

So they went up to the Mock Turtle, who looked at them with large eyes full of tears, but said nothing.

"This here young lady" said the Gryphon, "wants for to know your history, she do."

"I'll tell it," said the Mock Turtle, in a deep hollow tone, "sit down, and don't speak till I've finished."

So they sat down, and no one spoke for some minutes: Alice thought to herself "I don't see how it can *ever* finish, if it doesn't begin," but she waited patiently.

"Once," said the Mock Turtle at last, with a deep sigh, "I was a real Turtle."

These words were followed by a very long silence, broken only by an occasional exclamation of "hjkrrh!" from the Gryphon, and the constant heavy sobbing of the Mock Turtle. Alice was very nearly getting up and saying, "thank you, sir, for your interesting story," but she could not help thinking there *must* be more to come, so she sat still and said nothing.

"When we were little," the Mock Turtle went on, more calmly, though still sobbing a little now and then, "we went to school in the sea. The master was an old Turtle—we used to call him Tortoise—"

"Why did you call him Tortoise, if he wasn't one?" asked Alice.

"We called him Tortoise because he taught us," said the Mock Turtle angrily, "really you are very dull!"

"You ought to be ashamed of yourself for asking such a simple question," added the Gryphon, and then they both sat silent and looked at poor Alice, who felt ready to sink into the earth: at last the Gryphon said to the Mock Turtle, "get on, old fellow! Don't be all day!" and the Mock Turtle went on in these words:

"You may not have lived much under the sea—" ("I haven't," said Alice,) "and perhaps you were never even introduced to a lobster—" (Alice began to say "I once tasted—" but hastily checked herself, and said "no, never," instead,) "so you can have no idea what a delightful thing a Lobster Quadrille is!"

"No, indeed," said Alice, "what sort of a thing is it?"

"Why," said the Gryphon, "you form into a line along the sea shore—"

"Two lines!" cried the Mock Turtle, "seals, turtles, salmon, and so on—advance twice—"

"Each with a lobster as partner!" cried the Gryphon.

"Of course," the Mock Turtle said, "advance twice, set to partners—"

"Change lobsters, and retire in same order—" interrupted the Gryphon.

"Then, you know," continued the Mock Turtle, "you throw the—"

"The lobsters!" shouted the Gryphon, with a bound into the air.

"As far out to sea as you can—"

"Swim after them!" screamed the Gryphon.

"Turn a somersault in the sea!" cried the Mock Turtle, capering wildly about.

"Change lobsters again!" yelled the Gryphon at the top of its voice, "and then—"

"That's all," said the Mock Turtle, suddenly dropping its voice, and the two creatures, who had been jumping about like mad things all this time, sat down again very sadly and quietly, and looked at Alice.

"It must be a very pretty dance," said Alice timidly.



“Would you like to see a little of it?” said the Mock Turtle.

“Very much indeed,” said Alice.

“Come, let’s try the first figure!” said the Mock Turtle to the Gryphon, “we can do it without lobsters, you know. Which shall sing?”

“Oh! *you* sing!” said the Gryphon, “I’ve forgotten the words.”



So they began solemnly dancing round and round Alice, every now and then treading on her toes when they came too close, and waving their fore-paws to mark the time, while the Mock Turtle sang, slowly and sadly, these words:

“Beneath the waters *of* the sea
Are lobsters thick as thick can be—
They love to dance with you and me,
My own, my gentle Salmon!”

Parody on Negro
minstrel song *Sally
Come Up*

The Gryphon joined in singing the chorus, which was:

“Salmon come up! Salmon go down!
Salmon come twist your tail around!
Of all the fishes *of* the sea
There’s none so good as Salmon!”

“Thank you,” said Alice, feeling very glad that the figure was over.

“Shall we try the second figure?” said the Gryphon, “or would you prefer a song?”

“Oh, a song, please!” Alice replied, so eagerly, that the Gryphon said, in a rather offended tone, “hm! no accounting for tastes! Sing her ‘Mock Turtle Soup’, will you, old fellow!”

The Mock Turtle sighed deeply, and began, in a voice sometimes choked with sobs, to sing this:

“Beautiful Soup, so rich and green,
 Waiting in a hot tureen!
 Who for such dainties would not stoop?
 Soup of the evening, beautiful Soup!
 Soup of the evening, beautiful Soup!
 Beau—ootiful Soo—oop!
 Beau—ootiful Soo—oop!
 Soo—oop of the e—e—evening,
 Beautiful beautiful Soup!”

Parody on *Star of the Evening* by James M. Sayles

“Chorus again!” cried the Gryphon, and the Mock Turtle had just begun to repeat it, when a cry of “the trial’s beginning!” was heard in the distance.

“Come on!” cried the Gryphon, and, taking Alice by the hand, he hurried off, without waiting for the end of the song.

“What trial is it?” panted Alice as she ran, but the Gryphon only answered “come on!” and ran the faster, and more and more faintly came, borne on the breeze that followed them, the melancholy words:

 “Soo—oop of the e—e—evening,
 Beautiful beautiful Soup!”

The King and Queen were seated on their throne when they arrived, with a great crowd assembled around them: the Knave was in custody: and before the King stood the white rabbit, with a trumpet in one hand, and a scroll of parchment in the other.

“Herald! read the accusation!” said the King.

On this the white rabbit blew three blasts on the trumpet, and then unrolled the parchment scroll, and read as follows:

 “The Queen of Hearts she made some tarts
 All on a summer day:
 The Knave of Hearts he stole those tarts,
 And took them quite away!”

Quoted from nursery rhyme

“Now for the evidence,” said the King, “and then the sentence.”

“No!” said the Queen, “first the sentence, and then the evidence!”

“Nonsense!” cried Alice, so loudly that everybody jumped, “the idea of having the sentence first!”

“Hold your tongue!” said the Queen.

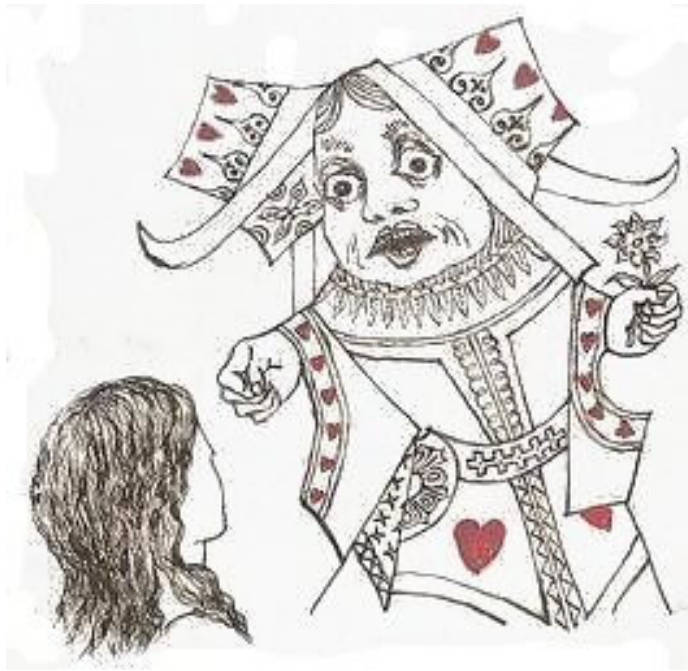
“I won’t!” said Alice, “you’re nothing but a pack of cards! Who cares for you?”

At this the whole pack rose up into the air, and came flying down upon her: she gave a little scream of fright, and tried to beat them off, and found herself lying on the bank, with her head in the lap of her sister, who was gently brushing away some leaves that had fluttered down from the trees on to her face.

“Wake up! Alice dear!” said her sister, “what a nice long sleep you’ve had!”

“Oh, I’ve had such a curious dream!” said Alice, and she told her sister all her *Adventures Under Ground*, as you have read them, and when she had finished, her sister kissed her and said “it *was* a curious dream, dear, certainly! But now run in to your tea: it’s getting late.”





So Alice ran off, thinking while she ran (as well she might) what a wonderful dream it had been.

But her sister sat there some while longer, watching the setting sun, and thinking of little Alice and her Adventures, till she too began dreaming after a fashion, and this was her dream:

She saw an ancient city, and a quiet river winding near it along the plain, and up the stream went slowly gliding a boat with a merry party of children on board—she could hear their voices and laughter like music over the water—and among them was another little Alice, who sat listening with bright eager eyes to a tale that was being told, and she listened for the words of the tale, and lo! it was the dream of her own little sister. So the boat wound slowly along, beneath the bright summer-day, with its merry crew and its music of voices and laughter, till it passed round one of the many turnings of the stream, and she saw it no more.

Then she thought, (in a dream within the dream, as it were,) how this same little Alice would, in the after-time, be herself a grown woman: and how she would keep, through her riper years, the simple and loving heart of her childhood: and how she would gather around her other little children, and make *their* eyes bright and eager with many a wonderful tale, perhaps even with these very adventures of the little Alice of long-ago: and how she would feel with all their simple sorrows, and find a pleasure in all their simple joys, remembering her own child-life, and the happy summer days.



The final image is not included in the book, in the manuscript it is pasted on a drawing:



2.4 The Nursery “Alice”

Source: The Nursery “Alice”

Other versions:

→ 2.1, p. 101

→ 2.3, p. 262



I. The White Rabbit

Once upon a time, there was a little girl called Alice: and she had a very curious dream.

Would you like to hear what it was that she dreamed about?

Well, this was the *first* thing that happened. A White Rabbit came running by, in a great hurry; and, just as it passed Alice, it stopped, and took its watch out of its pocket.

Wasn't *that* a funny thing? Did *you* ever see a Rabbit that had a watch, and a pocket to put it in? Of course, when a Rabbit has a watch, it *must* have

a pocket to put it in: it would never do to carry it about in its mouth—and it wants its hands sometimes, to run about with.

Hasn't it got pretty pink eyes (I think *all* White Rabbits have pink eyes); and pink ears; and a nice brown coat; and you can just see its red pocket-handkerchief peeping out of its coat-pocket: and, what with its blue neck-tie and its yellow waistcoat, it really is *very* nicely dressed.

“Oh dear, oh dear!” said the Rabbit. “I shall be too late!” *What* would it be too late *for*, I wonder? Well, you see, it had to go and visit the Duchess (you'll see a picture of the Duchess, soon, sitting in her kitchen): and the Duchess was a very cross old lady: and the Rabbit *knew* she'd be very angry indeed if he kept her waiting. So the poor thing was as frightened as frightened could be (Don't you see how he's trembling? Just shake the book a little, from side to side, and you'll soon see him tremble), because he thought the Duchess would have his head cut off, for a punishment. That was what the Queen of Hearts used to do, when *she* was angry with people (you'll see a picture of *her*, soon): at least she used to *order* their heads to be cut off, and she always *thought* it was done, though they never *really* did it.

And so, when the White Rabbit ran away, Alice wanted to see what would happen to it: so she ran after it: and she ran, and she ran, till she tumbled right down the rabbit-hole.

And then she had a very long fall indeed. Down, and down, and down, till she began to wonder if she was going right *through* the World, so as to come out on the other side!

It was just like a very deep well: only there was no water in it. If anybody *really* had such a fall as that, it would kill them, most likely: but you know it doesn't hurt a bit to fall in a *dream*, because, all the time you *think* you're falling, you really *are* lying somewhere, safe and sound, and fast asleep!

However, this terrible fall came to an end at last, and down came Alice on a heap of sticks and dry leaves. But she wasn't a bit hurt, and up she jumped, and ran after the Rabbit again.

And so that was the beginning of Alice's curious dream. And, next time you see a White Rabbit, try and fancy *you're* going to have a curious dream, just like dear little Alice.

II. How Alice Grew Tall

And so, after Alice had tumbled down the rabbit-hole, and had run a long long way underground, all of a sudden she found herself in a great hall, with doors all round it.

But all the Doors were locked: so, you see, poor Alice couldn't get out of the hall: and that made her very sad.

However, after a little while, she came to a little table, all made of glass, with three legs (There are *two* of the legs in the picture, and just the *beginning* of the other leg, do you see?), and on the table was a little key: and she went round the hall, and tried if she could unlock any of the doors with it.

Poor Alice! The key wouldn't unlock *any* of the doors. But at last she came upon a tiny little door: and oh, how glad she was, when she found the key would fit it!

So she unlocked the tiny little door, and she stooped down and looked through it, and what do you think she saw? Oh, such a beautiful garden!



And she did so *long* to go into it! But the door was *far* too small. She couldn't squeeze herself through, any more than *you* could squeeze yourself into a mouse-hole!

So poor little Alice locked up the door, and took the key back to the table again: and *this* time she found quite a new thing on it (now look at the picture again), and what do you think it was? It was a little bottle, with a label tied to it, with the words "DRINK ME" on the label.

So she tasted it: and it was *very* nice: so she set to work, and drank it up. And then *such* a curious thing happened to her! You'll never guess what it was: so I shall have to tell you. She got smaller, and smaller, till at last she was just the size of a little doll!

Then she said to herself "*Now* I'm the right size to get through the little door!" And away she ran. But, when she got there, the door was locked, and the key was on the top of the table, and she couldn't reach it! *Wasn't* it a pity she had locked up the door again?

Well, the next thing she found was a little cake: and it had the words "EAT ME" marked on it. So of course she set to work and ate it up. And *then* what do you think happened to her? No, you'll never guess! I shall have to tell you again.

She grew, and she grew, and she grew. Taller than she was before! Taller than *any* child! Taller than any grown-up person! Taller, and taller, and taller! Just look at the picture, and you'll *see* how tall she got!

Which would *you* have liked the best, do you think, to be a little tiny Alice, no larger than a kitten, or a great tall Alice, with your head always knocking against the ceiling?



III. The Pool of Tears

Perhaps you think Alice must have been very much pleased, when she had eaten the little cake, to find herself growing so tremendously tall? Because of course it would be easy enough, *now*, to reach the little key off the glass table, and to open the little tiny door.

Well, of course she could do *that*: but what good was it to get the door open, when she couldn't get *through*? She was worse off than ever, poor thing! She could just manage, by putting her head down, close to the ground, to *look* through with one eye! But that was *all* she could do. No wonder the poor tall child sat down and cried as if her heart would break.

So she cried, and she cried. And her tears ran down the middle of the hall, like a deep river. And very soon there was quite a large Pool of Tears, reaching half-way down the hall.

And there she might have staid, till this very day, if the White Rabbit hadn't happened to come through the hall, on his way to visit the Duchess. He was dressed up as grand as grand could be, and he had a pair of white kid gloves in one hand, and a little fan in the other hand: and he kept on muttering to himself "Oh, the Duchess, the Duchess! Oh, *won't* she be savage if I've kept her waiting!"

But he didn't see Alice, you know. So when she began to say "If you please, Sir——" her voice seemed to come from the top of the hall, because her head was so high up. And the Rabbit was dreadfully frightened: and he dropped the gloves and the fan, and ran away as hard as he could go.

Then a *very* curious thing indeed happened. Alice took up the fan, and began to fan herself with it: and, lo and behold, she got quite small again, and, all in a minute, she was just about the size of a mouse!



Now look at the picture, and you'll soon guess what happened next. It looks just like the sea, doesn't it? But it *really* is the Pool of Tears—all made of *Alice's* tears, you know!

And Alice has tumbled into the Pool: and the Mouse has tumbled in: and there they are, swimming about together.

Doesn't Alice look pretty, as she swims across the picture? You can just see

her blue stockings, far away under the water.

But why is the Mouse swimming away from Alice in such a hurry? Well, the reason is, that Alice began talking about cats and dogs: and a Mouse always *hates* talking about cats and dogs!

Suppose you were swimming about, in a Pool of your own Tears: and suppose somebody began talking to *you* about lesson-books and bottles of medicine, wouldn't *you* swim away as hard as you could go?

IV. The Caucus-Race

When Alice and the Mouse had got out of the Pool of Tears, of course they were very wet: and so were a lot of other curious creatures, that had tumbled in as well. There was a Dodo (that's the great bird, in front, leaning on a walking-stick); and a Duck; and a Lory (that's just behind the Duck, looking over its head); and an Eaglet (that's on the left-hand side of the Lory); and several others.

Well, and so they didn't know how in the world they were to get dry again. But the Dodo—who was a very wise bird—told them the right way was to have a Caucus-Race. And what do you think *that* was?

You don't know? Well, you *are* an ignorant child! Now, be very attentive, and I'll soon cure you of your ignorance!

First, you must have a *racecourse*. It ought to be a *sort* of circle, but it doesn't much matter *what* shape it is, so long as it goes a good way round, and joins on to itself again.

Then, you must put all the *racers* on the course, here and there: it doesn't matter *where*, so long as you don't crowd them too much together.

Then, you needn't say "One, two, three, and away!" but let them all set off running just when they like, and leave off just when they like.

So all these creatures, Alice and all, went on running round and round, till they were all quite dry again. And then the Dodo said *everybody* had won, and *everybody* must have prizes!

Of course *Alice* had to give them their prizes. And she had nothing to give them but a few comfits she happened to have in her pocket. And there was just one a-piece, all round. And there was no prize for Alice!

So what do you think they did? Alice had nothing left but her thimble. Now look at the picture, and you'll see what happened.

"Hand it over here!" said the Dodo.

Then the Dodo took the thimble and handed it back to Alice, and said "We beg your acceptance of this elegant thimble!" And then all the other creatures cheered.

Wasn't *that* a curious sort of present to give her? Suppose they wanted to give *you* a birthday-present, would you rather they should go to you toy-cupboard, and pick out your nicest doll, and say "Here, my love, here's a lovely birthday-present for you!" or would you like them to give you something *new*, something that *didn't* belong to you before?

V. Bill, the Lizard

Now I'm going to tell you about Alice's Adventures in the White Rabbit's house.



Do you remember how the Rabbit dropped his gloves and his fan, when he was so frightened at hearing Alice's voice, that seemed to come down from the sky? Well, of course he couldn't go to visit the Duchess *without* his gloves and his fan: so, after a bit, he came back again to look for them.

By this time the Dodo and all the other curious creatures had gone away, and Alice was wandering about all alone.

So what do you think he did? Actually he thought she was his housemaid, and began ordering her about! "Mary Ann!" he said. "Go home this very minute, and fetch me a pair of gloves and a fan! Quick, now!"

Perhaps he couldn't see very clearly with his pink eyes: for I'm sure Alice doesn't look very *like* a housemaid, *does* she? However she was a very good-natured little girl: so she wasn't a bit offended, but ran off to the Rabbit's house as quick as she could.

It was lucky she found the door open: for, if she had had to ring, I suppose the *real* Mary Ann would have come to open the door: and she would *never* have let Alice come in. And I'm sure it was *very* lucky she didn't meet the real Mary Ann, as she trotted upstairs: for I'm afraid she would have taken Alice for a robber!

So at last she found her way into the Rabbit's room: and there was a pair of gloves lying on the table, and she was just going to take them up and go away, when she happened to see a little bottle on the table. And of course it had the words "DRINK ME!" on the label. And of course Alice drank some!

Well, I think that was *rather* lucky, too: don't *you*? For, if she *hadn't* drunk any, all this wonderful adventure, that I'm about to tell you about, wouldn't have happened at all. And wouldn't *that* have been a pity?

You're getting so used to Alice's Adventures, that I daresay you can guess

what happened next? If you ca'n't, I'll tell you.



She grew, and she grew, and she grew. And in a very short time the room was full of *Alice*: just in the same way as a jar is full of jam! There was *Alice* all the way up to the ceiling: and *Alice* in every corner of the room!

The door opened inwards: so of course there wasn't any room to open it: so when the Rabbit got tired of waiting, and came to fetch his gloves for himself, of course he couldn't get in.

So what do you think he did? (Now we come to the picture). He sent Bill, the Lizard, up to the roof of the house, and told him to get down the chimney. But Alice happened to have one of her feet in the fire-place: so, when she heard Bill coming down the chimney, she just gave a little tiny kick, and away went Bill, flying up into the sky!

Poor little Bill! Don't you pity him very much? How frightened he must have been!

VI. The Dear Little Puppy

Well, it doesn't look such a very *little* Puppy, does it? But then, you see, Alice had grown very small-indeed: and *that's* what makes the Puppy look so large. When Alice had eaten one of those little magic cakes, that she found in the White Rabbit's house, it made her get quite small, directly, so that she could get through the door: or else she could *never* have got out of the house again. Wouldn't *that* have been a pity? Because then she wouldn't have dreamed all the other curious things that we're going to read about.

So it really *was* a *little* Puppy, you see. And isn't it a little *pet*? And look at the way it's barking at the little stick that Alice is holding out for it! You can see she was a *little* afraid of it, all the time, because she's got behind that great thistle, for fear it should run over her. That would have been just about as bad, for *her*, as it would be for *you* to be run over by a waggon and four horses!

Have you got a little pet puppy at *your* home? If you have, I hope you're always kind to it, and give it nice things to eat.

Once upon a time, I knew some little children, about as big as you; and they had a little pet dog of their own; and it was called *Dash*. And this is what they told me about its birthday-treat.

"Do you know, one day we remembered it was Dash's birthday that day. So we said 'Let's give Dash a nice birthday-treat, like what we have on *our* birthdays!' So we thought and we thought 'Now, what is it *we* like best of all, on *our* birthdays?' And we thought and we thought. And at last we all called out together 'Why, it's *oatmeal-porridge*, of course!' So of course we thought Dash would be *quite* sure to like it very much, too.

"So we went to the cook, and we got her to make a saucerful of nice oatmeal-porridge. And then we called Dash into the house, and we said 'Now, Dash, you're going to have your birthday-treat!' We expect Dash would jump for joy: but it didn't, one bit!



“So we put the saucer down before it, and we said ‘Now, Dash, don’t be greedy! Eat it nicely, like a good dog!’

“So Dash just tasted it with the tip of its tongue: and then it made, oh, such a horrid face! And then, do you know, it did *hate* it so, it wouldn’t eat a bit more of it! So we had to put it all down its throat with a spoon!”

I wonder if Alice will give *this* little Puppy some porridge? I don’t think she *can*, because she hasn’t got any with her. I can’t see any saucer in the picture.

VII. The Blue Caterpillar

Would you like to know what happened to Alice, after she had got away from the Puppy? It was far too large an animal, you know, for *her* to play with. (I don’t suppose *you* would much enjoy playing with a young Hippopotamus, would you? You would always be expecting to be crushed as flat as a pancake under its great heavy feet!) So Alice was very glad to run away, while it wasn’t looking.

Well, she wandered up and down, and didn’t know what in the world to do, to make herself grow up to her right size again. Of course she knew that she had to eat or drink *something*: that was the regular rule, you know: but she couldn’t guess *what* thing.



However, she soon came to a great mushroom, that was so tall that she couldn't see over the top of it without standing on tip-toe. And what do you think she saw? Something that I'm sure *you* never talked to, in all your life!

It was a large Blue Caterpillar.

I'll tell you, soon, what Alice and the Caterpillar talked about: but first let us have a good look at the picture.

That curious thing, standing in front of the Caterpillar, is called a "hookah": and it's used for smoking. The smoke comes through that long tube, that winds round and round like a serpent.

And do you see its long nose and chin? At least, they *look* exactly like a nose and chin, don't they? But they really *are* two of its legs. You know a Caterpillar has got *quantities* of legs: you can see some more of them, further down.

What a bother it must be to a Caterpillar, counting over such a lot of legs, every night, to make sure it hasn't lost any of them!

And *another* great bother must be, having to settle *which* leg it had better move first. I think, if *you* had forty or fifty legs, and if you wanted to go a walk, you'd be such a time in settling which leg to begin with, that you'd never go a walk at all!

And what did Alice and the Caterpillar *talk* about, I wonder?

Well, Alice told it how *very* confusing it was, being first one size and then another.

And the Caterpillar asked her if she liked the size she was, just then.

And Alice said she would like to be just a *little* bit larger—three inches was such a *wretched* height to be! (Just mark off three inches on the wall, about the length of your middle finger, and you'll see what size she was.)

And the Caterpillar told her one side of the mushroom would make her grow *taller*, and the other side would make her grow *shorter*.

So Alice took two little bits of it with her to nibble, and managed to make herself quite a nice comfortable height, before she went on to visit the Duchess.



VIII. The Pig-Baby

Would you like to hear about Alice's visit to the Duchess? It was a very interesting visit indeed, I can assure you.

Of course she knocked at the door to begin with: but nobody came: so she had to open it for herself.

Now, if you look at the picture, you'll see exactly what Alice saw when she got inside.

The door led right into the kitchen, you see. The Duchess sat in the middle of the room, nursing the Baby. The Baby was howling. The soup was boiling. The Cook was stirring the soup. The Cat—it was a *Cheshire* Cat—was grinning, as Cheshire Cats always do. All these things were happening just as Alice went in.

The Duchess has a beautiful cap and gown, hasn't she? But I'm afraid she *hasn't* got a very beautiful *face*.

The Baby—well, I daresay you've seen *several* nicer babies than *that*: and more good-tempered ones, too. However, take a good look at it, and we'll see if you know it again, next time you meet it!

The Cook—well, you *may* have seen nicer cooks, once or twice.

But I'm nearly sure you've *never* seen a nicer *Cat*! Now *have* you? And *wouldn't* you like to have a Cat of your own, just like that one, with lovely green eyes, and smiling so sweetly?

The Duchess was very rude to Alice. And no wonder. Why, she even called her own *Baby* "Pig!" And it *wasn't* a Pig, *was* it? And she ordered the Cook to chop off Alice's head: though of course the Cook didn't do it: and at last she threw the Baby at her! So Alice caught the Baby, and took it away with her: and I think that was about the best thing she could do.

So she wandered away, through the wood, carrying the ugly little thing with her. And a great job it was to keep hold of it, it wriggled about so. But at last she found out that the *proper* way was, to keep tight hold of its left foot and its right ear.

But don't *you* try to hold on to a Baby like that, my Child! There are not many babies that *like* being nursed in *that* way!

Well, and so the Baby kept grunting, and grunting, so that Alice had to say to it, quite seriously, "If you're going to turn into a *Pig*, my dear, I'll have nothing more to do with you. Mind now!"

And at last she looked down into its face, and what *do* you think had happened to it? Look at the picture, and see if you can guess.

"Why, *that's* not the Baby that Alice was nursing, is it?"

Ah, I *knew* you wouldn't know it again, though I told you to take a good look at it! Yes, it *is* the Baby. And it's turned into a little *Pig*!

So Alice put it down, and let it trot away into the wood. And she said to herself "It was a *very* ugly *Baby*: but it makes rather a handsome *Pig*, I think."

Don't you think she was right?

IX. The Cheshire-Cat

All alone, all alone! Poor Alice! No Baby, not even a *Pig* to keep her company!

So you may be sure she was very glad indeed, when she saw the Cheshire-Cat, perched up in a tree, over her head.



The Cat has a very nice smile, no doubt: but just look what a lot of teeth it's got! Isn't Alice just a *little* shy of it?

Well, yes, a *little*. But then, it couldn't help having teeth, you know: and it *could* have helped smiling, supposing it had been cross. So, on the whole, she was *glad*.

Doesn't Alice look very prim, holding her head so straight up, and with her hands behind her, just as if she were going to say her lessons to the Cat!



And that reminds me. There's a little lesson I want to teach *you*, while we're looking at this picture of Alice and the Cat. Now don't be in a bad temper about it, my dear Child! It's a very *little* lesson indeed!

Do you see that Fox-Glove growing close to the tree? And do you know why it's called a *Fox-Glove*? Perhaps you think it's got something to do with a Fox? No indeed! *Foxes* never wear Gloves!

The right word is "*Folk's-Gloves*." Did you ever hear that Fairies used to be called "the good *Folk*"?

Now we've finished the lesson, and we'll wait a minute, till you've got your

temper again.

Well? Do you feel quite good-natured again? No temper-ache? No crossness about the corners of the mouth? Then we'll go on.

"Cheshire Puss!" said Alice. (*Wasn't* that a pretty name for a Cat?) "Would you tell me which way I ought to go from here?"

And so the Cheshire-Cat told her which way she ought to go, if she wanted to visit the Hatter, and which way to go, to visit the March Hare. "They're both mad!" said the Cat.

And then the Cat vanished away, just like the flame of a candle when it goes out!

So Alice set off, to visit the March Hare. And as she went along, there was the Cat again! And she told it she didn't *like* it coming and going so quickly.



So this time the Cat vanished quite slowly, beginning with the tail, and ending with the grin. Wasn't *that* a curious thing, a Grin without any Cat? Would you like to see one?

If you turn up the corner of this leaf, you'll have Alice looking at the Grin: and she doesn't look a bit more frightened than when she was looking at the Cat, *does* she?

X. The Mad Tea-Party

This is the Mad Tea-Party. You see Alice had left the Cheshire-Cat, and had gone off to see the March Hare and the Hatter, as the Cheshire-Cat had advised her: and she found them having tea under a great tree, with a Dormouse sitting between them.

There were only those three at the table, but there were quantities of tea-cups set all along it. You ca'n't see all the table, you know, and even in the bit you *can* see there are nine cups, counting the one the Mach Hare has got in his hand.

That's the March Hare, with the long ears, and straws mixed up with his hair. The straws showed he was mad—I don't know why. Never twist up straws among *your* hair, for fear people should think you're mad!

There was a nice green arm-chair at the end of the table, that looked as if it was just meant for Alice: so she went and sat down in it.

Then she had quite a long talk with the March Hare and the Hatter. The Dormouse didn't say much. You see it was fast asleep generally, and it only just woke up for a moment, now and then.

As long as it was asleep, it was very useful to the March Hare and the Hatter, because it had a nice round soft head, just like a pillow: so they could put their elbows on it, and lean across it, and talk to each other quite comfortably. You wouldn't like people to use *your* head for a pillow, *would* you? But if you were fast asleep, like the Dormouse, you wouldn't feel it: so I suppose you wouldn't care about it.



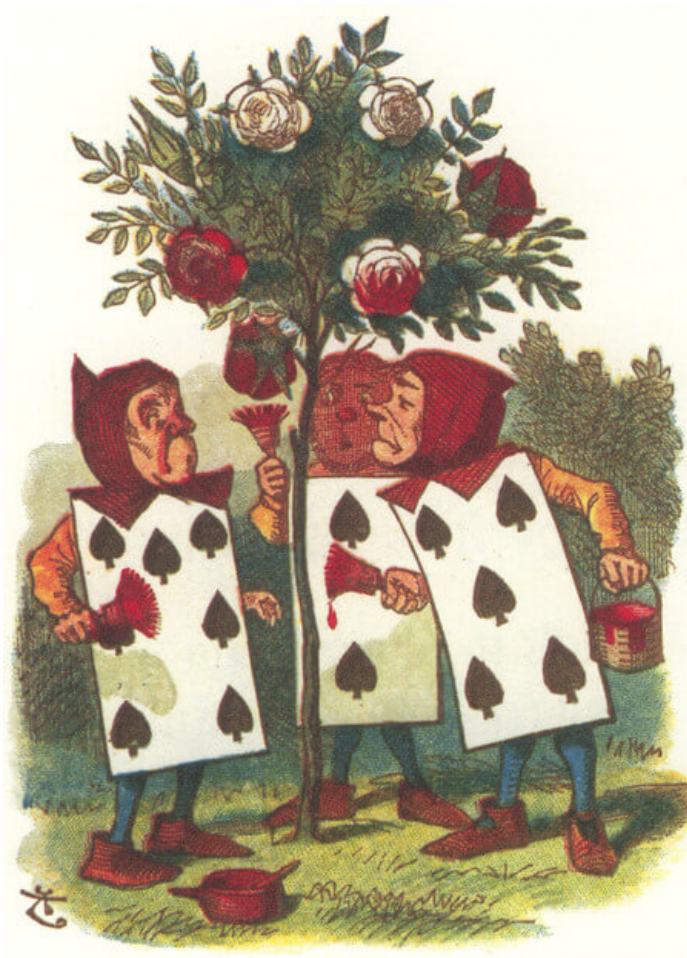
I'm afraid they gave Alice *very* little to eat and drink. However, after a bit, she helped herself to some tea and bread-and-butter: only I don't quite see where she *got* the bread-and-butter: and she had no plate for it. Nobody seems to have a plate except the Hatter. I believe the March Hare must have had one as well: because, when they all moved one place on (that was the rule at this curious tea-party), and Alice had to go into the place of the March Hare, she found he had just upset the milk-jug into his plate. So I suppose his plate and the milk-jug are hidden behind that large tea-pot.

The Hatter used to carry about hats to sell: and even the one that he's got on his head is meant to be sold. You see it's got its price marked on it—a "10" and a "6"—that means "ten shillings and sixpence." Wasn't that a funny way of selling hats? And hasn't he got a beautiful neck-tie on? Such a lovely yellow tie, with large red spots.

He has just got up to say to Alice "Your hair wants cutting!" That was a rude thing to say, *wasn't* it? And do you think her hair *does* want cutting? I think it's a very pretty length—just the right length.

XI. The Queen's Garden

This is a little bit of the beautiful garden I told you about. You see Alice had managed at last to get quite small, so that she could go through the little door. I suppose she was about as tall as a mouse, if it stood on its hind-legs: so of course this was a *very* tiny rose-tree: and these are *very* tiny gardeners.



What funny little men they are! But *are* they men, do you think? I think they must be live cards, with just a head, and arms, and legs, so as to *look* like little men. And what *are* they doing with that red paint, I wonder? Well, you see, this is what they told Alice. The Queen of Hearts wanted to have a *red* rose-tree just in that corner: and these poor little gardeners had made a great mistake, and had put in a *white* one instead: and they were so frightened about it, because the Queen was *sure* to be angry, and then she would order all their heads to be cut off!

She was a dreadfully savage Queen, and that was the way she always did, when she was angry with people. "Off with their head!" They didn't *really* cut their heads off, you know: because nobody ever obeyed her: but that was what she always *said*.

Now ca'n't you guess what the poor little gardeners are trying to do? They're trying to paint the roses *red*, and they're in a great hurry to get it done before the Queen comes. And then *perhaps* the Queen won't find out it was a *white* rose-tree to begin with: and then *perhaps* the little men won't get their heads cut off!

You see there were *five* large white roses on the tree—such a job to get them all painted red! But they've got three and a half done, now, and if only they wouldn't stop to talk—work away, little men, *do* work away! Or the Queen will be coming before it's done! And if she finds any *white* roses on the tree, do you know what will happen? It will be "Off with their heads!" Oh, work away, my little men! Hurry, hurry!

The Queen has come! And *isn't* she angry? Oh, my poor little Alice!

XII. The Lobster-Quadrille

Did you ever play at Croquet? There are large wooden balls, painted with different colours, that you have to roll about; and arches of wire, that you have to send them through; and great wooden mallets, with long handles, to knock the balls about with.

Now look at the picture, and you'll see that *Alice* has just been playing a Game of Croquet.

"But she *couldn't* play, with that great red what's-its-name in her arms! Why, how could she hold the mallet?"

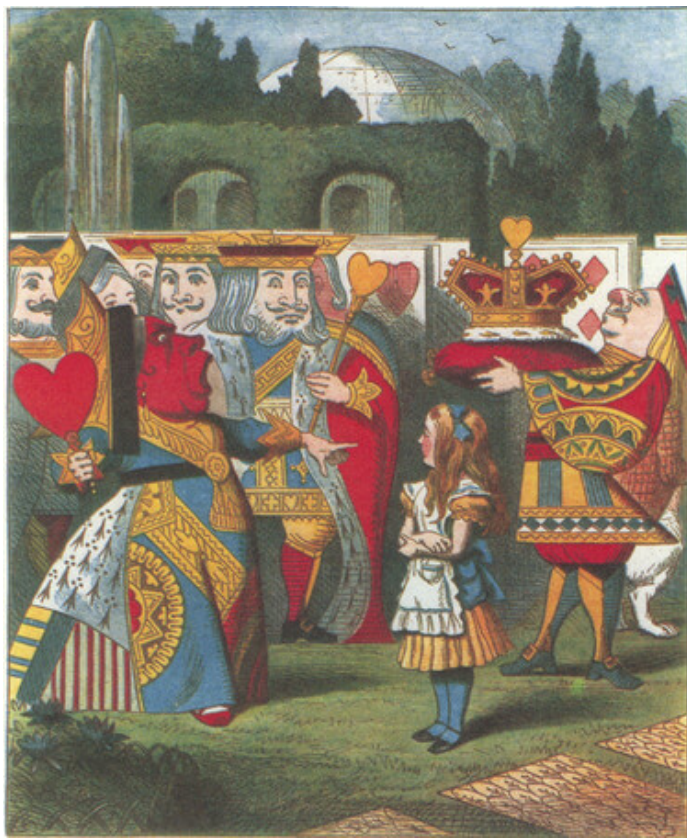
Why, my dear Child, that great red what's-its-name (its *real* name is "*a Flamingo*") *is* the mallet! In this Croquet-Game, the balls were live *Hedge-hogs*—you know a hedge-hog can roll itself up into a ball?—and the mallets were live *Flamingos*!

So Alice is just resting from the Game, for a minute, to have a chat with that dear old thing, the Duchess: and of course she keeps her mallet under her arm, so as not to lose it.

"But I don't think she *was* a dear old thing, one bit! To call her Baby a *Pig*, and to want to chop off Alice's head!"

Oh, that was only a joke, about chopping off Alice's head: and as to the Baby—why, it *was* a Pig, you know! And just look at her *smile*! Why, it's wider than all Alice's head: and yet you can only see half of it!

Well, they'd only had a *very* little chat, when the Queen came and took Alice away, to see the Gryphon and the Mock Turtle.





You don't know what a Gryphon is? Well! Do you know anything? That's the question. However, look at the picture. That creature with a red head, and red claws, and green scales, is the Gryphon. Now you know.

And the other's the Mock Turtle. It's got a calf's-head, because calf's-head is used to make Mock Turtle Soup. Now you know.

"But what are they doing, going round and round Alice like that?"

Why, I thought of course you'd know that! They're dancing a Lobster-Quadrille.



And next time *you* meet a Gryphon and a Mock Turtle, I daresay they'll dance it for *you*, if you ask them prettily. Only don't let them come *quite* close, or they'll be treading on your toes, as they did on poor Alice's.

XIII. Who Stole the Tarts?

Did you ever hear how the Queen of Hearts made some tarts? And can you tell me what became of them?

"Why, of *course* I can! Doesn't the song tell all about it?"

*The Queen of Hearts, she made some tarts:
All on a summer day:
The Knave of Hearts, he stole those tarts,
And took them quite away!"*

Quoted from nursery rhyme

Well, yes, the *Song* says so. But it would never do to punish the poor Knave, just because there was a *Song* about him. They had to take him prisoner, and put chains on his wrists, and bring him before the King of Hearts, so that there might be a regular trial.



(Frontispiece)

Now, if you look at the big picture, at the beginning of this book, you'll see what a grand thing a trial is, when the Judge is a King!

The King is very grand, *isn't* he? But he doesn't look very *happy*. I think that big crown, on the top of his wig, must be *very* heavy and uncomfortable. But he had to wear them *both*, you see, so that people might know he was a Judge *and* a King.

And *doesn't* the Queen look cross? She can see the dish of tarts on the table, that she had taken such trouble to make. And she can see the bad Knave (do you see the chains hanging from his wrists?) that stole them away from her: so I don't think it's any wonder if she *does* feel a *little* cross.

The White Rabbit is standing near the King, reading out the *Song*, to tell

everybody what a bad Knave he is: and the Jury (you can just see two of them, up in the Jury-box, the Frog and the Duck) have to settle whether he's "guilty" or "not guilty."

Now I'll tell you about the accident that happened to Alice.

You see, she was sitting close by the Jury-box: and she was called as a witness. You know what a "witness" is? A "witness" is a person who has seen the prisoner do whatever he's accused of, or at any rate knows *something* that's important in the trial.

But *Alice* hadn't seen the Queen *make* the tarts: and she hadn't seen the Knave *take* the tarts: and, in fact, she didn't know anything about it: so why in the world they wanted *her* to be a witness, I'm sure *I* ca'n't tell you!

Anyhow, they *did* want her. And the White Rabbit blew his big trumpet, and shouted out "Alice!" And so Alice jumped up in a great hurry. And then—

And then what *do* you think happened? Why, her skirt caught against the Jury-box, and tipped it over, and all the poor little Jurors came tumbling out of it!



Let's try if we can make out all the twelve. You know there ought to be twelve to make up a Jury. I can see the Frog, and the Dormouse, and the Rat and the Ferret, and the Hedgehog, and the Lizard, and the Bantam-Cock, and the Mole, and the Duck, and the Squirrel, and a screaming bird, with a long beak, just behind the Mole.

But that only makes eleven: we must find one more creature.

Oh, do you see a little white head, coming out behind the Mole, and just under the Duck's beak? That makes up the twelve.

Mr. Tenniel says the screaming bird is a *Storkling* (of course you know what *that is?*) and the little white head is a *Mouseling*. Isn't it a little *darling?*

Alice picked them all up again, very carefully, and I hope they weren't *much* hurt!

XIV. The Shower of Cards

Oh dear, oh dear! What *is* it all about? And what's happening to Alice?

Well, I'll tell you all about it, as well I can. The way the trial ended was this. The King wanted the Jury to settle whether the Knave of Hearts was *guilty* or *not guilty*—that means that they were to settle whether *he* had stolen the Tarts, or if somebody else had taken them. But the wicked Queen wanted to have his *punishment* settled, first of all. That wasn't at all fair, *was* it? Because, you know, supposing he never *took* the Tarts, then of course he oughtn't to be punished. Would *you* like to be punished for something you hadn't done?



So Alice said “Stuff and nonsense!”

So the Queen said “Off with her head!” (Just what she always said, when she was angry.)

So Alice said “Who cares for *you*? You’re nothing but a pack of cards!”

So they were *all* very angry, and flew up into the air, and came tumbling down again, all over Alice, just like a shower of rain.

And I think you’ll *never* guess what happened next. The next thing was, Alice woke up out of her curious dream. And she found that the cards were only some leaves off the tree, that the wind had blown down upon her face.

Wouldn’t it be a nice thing to have a curious dream, just like Alice?

The best plan is this. First lie down under a tree, and wait till a White Rabbit runs by, with a watch in his hand: then shut your eyes, and pretend to be dear little Alice.

Good-bye, Alice dear, good-bye!

2.5 Sylvie and Bruno

Source: Sylvie and Bruno

Chapter I. Less Bread! More Taxes!

—and then all the people cheered again, and one man, who was more excited than the rest, flung his hat high into the air, and shouted (as well as I could make out) “Who roar for the Sub-Warden?” *Everybody* roared, but whether it was for the Sub-Warden, or not, did not clearly appear: some were shouting “Bread!” and some “Taxes!”, but no one seemed to know what it was they really wanted.

All this I saw from the open window of the Warden’s breakfast-saloon, looking across the shoulder of the Lord Chancellor, who had sprung to his feet the moment the shouting began, almost as if he had been expecting it, and had rushed to the window which commanded the best view of the market-place.

“What *can* it all mean?” he kept repeating to himself, as, with his hands clasped behind him, and his gown floating in the air, he paced rapidly up and down the room. “I never heard such shouting before—and at this time of the morning, too! And with such unanimity! Doesn’t it strike *you* as very remarkable?”

I represented, modestly, that to *my* ears it appeared that they were shouting for different things, but the Chancellor would not listen to my suggestion for a moment. “They all shout the same words, I assure you!” he said: then, leaning well out of the window, he whispered to a man who was standing close underneath, “Keep ’em together, ca’n’t you? The Warden will be here directly. Give ’em the signal for the march up!” All this was evidently not meant for *my* ears, but I could scarcely help hearing it, considering that my chin was almost on the Chancellor’s shoulder.

The ‘march up’ was a very curious sight: a straggling procession of men, marching two and two, began from the other side of the market-place, and advanced in an irregular zig-zag fashion towards the Palace, wildly tacking from side to side, like a sailing vessel making way against an unfavourable wind—so that the head of the procession was often further from us at the end of one tack than it had been at the end of the previous one.

Yet it was evident that all was being done under orders, for I noticed that all eyes were fixed on the man who stood just under the window, and to whom the Chancellor was continually whispering. This man held his hat in one hand and a little green flag in the other: whenever he waved the flag the procession advanced a little nearer, when he dipped it they sidled a little farther off, and whenever he waved his hat they all raised a hoarse cheer. “Hoo-roah!” they cried, carefully keeping time with the hat as it bobbed up and down. “Hoo-roah! Noo! Consti! Tooshun! Less! Bread! More! Taxes!”

“That’ll do, that’ll do!” the Chancellor whispered. “Let ’em rest a bit till I give you the word. He’s not here yet!” But at this moment the great folding-doors of the saloon were flung open, and he turned with a guilty start to receive His High Excellency. However it was only Bruno, and the Chancellor gave a little gasp of relieved anxiety.



The march-up

"Morning!" said the little fellow, addressing the remark, in a general sort of way, to the Chancellor and the waiters. "Doos oo know where Sylvie is? I's looking for Sylvie!"

"She's with the Warden, I believe, y'reince!" the Chancellor replied with a low bow. There was, no doubt, a certain amount of absurdity in applying this title (which, as of course you see without my telling you, was nothing but 'your Royal Highness' condensed into one syllable) to a small creature whose father was merely the Warden of Outland: still, large excuse must be made for a man who had passed several years at the Court of Fairyland, and had there acquired the almost impossible art of pronouncing five syllables as one.

But the bow was lost upon Bruno, who had run out of the room, even while the great feat of The Unpronounceable Monosyllable was being triumphantly performed.

Just then, a single voice in the distance was understood to shout "A speech from the Chancellor!" "Certainly, my friends!" the Chancellor replied with extraordinary promptitude. "You shall have a speech!" Here one of the waiters, who had been for some minutes busy making a queer-looking mixture of egg and sherry, respectfully presented it on a large silver salver. The Chancellor took it haughtily, drank it off thoughtfully, smiled benevolently on the happy waiter as he set down the empty glass, and began. To the best of my recollection this is what he said.

"Ahem! Ahem! Ahem! Fellow-sufferers, or rather suffering fellows——" ("Don't call 'em names!" muttered the man under the window. "I didn't say *felons*!" the Chancellor explained.) "You may be sure that I always sympa——" ("Ear, 'ear!" shouted the crowd, so loudly as quite to drown the orator's thin squeaky voice) "—that I always sympa——" he repeated. ("Don't simper quite so much!" said the man under the window. "It makes yer look a idiot!") And, all this time, "Ear, 'ear!" went rumbling round the market-place, like a peal of thunder.) "That I always *sympathise*!" yelled the Chancellor, the first moment there was silence. "But your *true* friend is the *Sub-Warden*! Day and night he is brooding on your wrongs—I should say your *rights*—that is to say your *wrongs*—no, I mean your *rights*——" ("Don't talk no more!" growled the man under the window. "You're making a mess of it!") At this moment the Sub-Warden entered the saloon. He was a thin man, with a mean and crafty face, and a greenish-yellow complexion; and he crossed the room very slowly, looking suspiciously about him as if he thought there might be a savage dog hidden somewhere. "Bravo!" he cried, patting the Chancellor on the back. "You did that speech very well indeed. Why, you're a born orator, man!"

"Oh, that's nothing!" the Chancellor replied, modestly, with downcast eyes. "Most orators are *born*, you know."

The Sub-Warden thoughtfully rubbed his chin. "Why, so they are!" he admitted. "I never considered it in that light. Still, you did it very well. A word in your ear!"

The rest of their conversation was all in whispers: so, as I could hear no more, I thought I would go and find Bruno.

I found the little fellow standing in the passage, and being addressed by one of the men in livery, who stood before him, nearly bent double from extreme respectfulness, with his hands hanging in front of him like the fins of a fish. "His High Excellency," this respectful man was saying, "is in his Study, y'reince!" (He didn't pronounce this quite so well as the Chancellor.) Thither Bruno trotted,

and I thought it well to follow him.

The Warden, a tall dignified man with a grave but very pleasant face, was seated before a writing-table, which was covered with papers, and holding on his knee one of the sweetest and loveliest little maidens it has ever been my lot to see. She looked four or five years older than Bruno, but she had the same rosy cheeks and sparkling eyes, and the same wealth of curly brown hair. Her eager smiling face was turned upwards towards her father's, and it was a pretty sight to see the mutual love with which the two faces—one in the Spring of Life, the other in its late Autumn—were gazing on each other.

"No, you've never seen him," the old man was saying: "you couldn't, you know, he's been away so long—traveling from land to land, and seeking for health, more years than you've been alive, little Sylvie!"

Here Bruno climbed upon his other knee, and a good deal of kissing, on a rather complicated system, was the result.

"He only came back last night," said the Warden, when the kissing was over: "he's been traveling post-haste, for the last thousand miles or so, in order to be here on Sylvie's birthday. But he's a very early riser, and I dare say he's in the Library already. Come with me and see him. He's always kind to children. You'll be sure to like him."

"Has the Other Professor come too?" Bruno asked in an awe-struck voice.

"Yes, they arrived together. The Other Professor is—well, you won't like him quite so much, perhaps. He's a little more *dreamy*, you know."

"I wiss *Sylvie* was a little more dreamy," said Bruno.

"What *do* you mean, Bruno?" said Sylvie.

Bruno went on addressing his father. "She says she *ca'n't*, oo know. But I thinks it isn't *ca'n't*, it's *wo'n't*."

"Says she *ca'n't* dream!" the puzzled Warden repeated.

"She *do* say it," Bruno persisted. "When I says to her 'Let's stop lessons!', she says 'Oh, I *ca'n't* *dream* of letting oo stop yet!'"

"He always wants to stop lessons," Sylvie explained, "five minutes after we begin!"

"Five minutes' lessons a day!" said the Warden. "You won't learn much at *that* rate, little man!"

"That's just what Sylvie says," Bruno rejoined. "She says I *wo'n't* learn my lessons. And I tells her, over and over, I *ca'n't* learn 'em. And what doos oo think she says? She says 'It isn't *ca'n't*, it's *wo'n't*!'"

"Let's go and see the Professor," the Warden said, wisely avoiding further discussion. The children got down off his knees, each secured a hand, and the happy trio set off for the Library—followed by me. I had come to the conclusion by this time that none of the party (except, for a few moments, the Lord Chancellor) was in the least able to see me.

"What's the matter with him?" Sylvie asked, walking with a little extra sedateness, by way of example to Bruno at the other side, who never ceased jumping up and down.

"What *was* the matter—but I hope he's all right now—was lumbago, and rheumatism, and that kind of thing. He's been curing *himself*, you know: he's a very learned doctor. Why, he's actually *invented* three new diseases, besides a new way of breaking your collar-bone!"

"Is it a nice way?" said Bruno.



Visiting the professor

“Well, hum, not *very*,” the Warden said, as we entered the Library. “And here *is* the Professor. Good morning, Professor! Hope you’re quite rested after your journey!”

A jolly-looking, fat little man, in a flowery dressing-gown, with a large book under each arm, came trotting in at the other end of the room, and was going straight across without taking any notice of the children. “I’m looking for Vol. Three,” he said. “Do you happen to have seen it?”

“You don’t see my *children*, Professor!” the Warden exclaimed, taking him by the shoulders and turning him round to face them.

The Professor laughed violently: then he gazed at them through his great spectacles, for a minute or two, without speaking.

At last he addressed Bruno. “I hope you have had a good night, my child?”

Bruno looked puzzled. “I’s had the same night *oo’ve* had,” he replied. “There’s only been *one* night since yesterday!”

It was the Professor’s turn to look puzzled now. He took off his spectacles, and rubbed them with his handkerchief. Then he gazed at them again. Then he turned to the Warden. “Are they bound?” he enquired.

“No, we aren’t,” said Bruno, who thought himself quite able to answer *this* question.

The Professor shook his head sadly. “Not even half-bound?”

“Why *would* we be half-bound?” said Bruno. “We’re not prisoners!”

But the Professor had forgotten all about them by this time, and was speaking to the Warden again. “You’ll be glad to hear,” he was saying, “that the Barometer’s beginning to move——”

“Well, which way?” said the Warden—adding to the children, “Not that *I* care, you know. Only *he* thinks it affects the weather. He’s a wonderfully clever man, you know. Sometimes he says things that only the Other Professor can understand. Sometimes he says things that *nobody* can understand! Which way is it, Professor? Up or down?”

“Neither!” said the Professor, gently clapping his hands. “It’s going sideways—if I may so express myself.”

“And what kind of weather does *that* produce?” said the Warden. “Listen, children! Now you’ll hear something worth knowing!”

“Horizontal weather,” said the Professor, and made straight for the door, very nearly trampling on Bruno, who had only just time to get out of his way.

“*Isn’t* he learned?” the Warden said, looking after him with admiring eyes. “Positively he runs over with learning!”

“But he needn’t run over *me*!” said Bruno.

The Professor was back in a moment: he had changed his dressing-gown for a frock-coat, and had put on a pair of very strange-looking boots, the tops of which were open umbrellas. “I thought you’d like to see them,” he said. “*These* are the boots for horizontal weather!”

“But what’s the use of wearing umbrellas round one’s knees?”

“In *ordinary* rain,” the Professor admitted, “they would *not* be of much use. But if ever it rained *horizontally*, you know, they would be invaluable—simply invaluable!”

“Take the Professor to the breakfast-saloon, children,” said the Warden. “And tell them not to wait for me. I had breakfast early, as I’ve some business to attend to.” The children seized the Professor’s hands, as familiarly as if they had known him for years, and hurried him away. I followed respectfully behind.

Chapter II. L’Amie Inconnue

As we entered the breakfast-saloon, the Professor was saying “—and he had breakfast by himself, early: so he begged you wouldn’t wait for him, my Lady. This way, my Lady,” he added, “this way!” And then, with (as it seemed to me) most superfluous politeness, he flung open the door of my compartment, and ushered in “—a young and lovely lady!” I muttered to myself with some bitterness. “And this is, of course, the opening scene of Vol. I. *She* is the Heroine. And *I* am one of those subordinate characters that only turn up when needed for the development of her destiny, and whose final appearance is outside the church, waiting to greet the Happy Pair!”

“Yes, my Lady, change at Fayfield,” were the next words I heard (oh that too obsequious Guard!), “next station but one.” And the door closed, and the lady settled down into her corner, and the monotonous throb of the engine (making one feel as if the train were some gigantic monster, whose very circulation we could feel) proclaimed that we were once more speeding on our way. “The lady had a perfectly formed nose,” I caught myself saying to myself, “hazel eyes, and lips——” and here it occurred to me that to see, for myself, what “the lady” was really like, would be more satisfactory than much speculation.

I looked round cautiously, and—was entirely disappointed of my hope. The veil, which shrouded her whole face, was too thick for me to see more than the glitter of bright eyes and the hazy outline of what *might* be a lovely oval



Boots for horizontal weather

face, but might also, unfortunately, be an equally *unlovely* one. I closed my eyes again, saying to myself “—couldn’t have a better chance for an experiment in Telepathy! I’ll *think out* her face, and afterwards test the portrait with the original.”

At first, no result at all crowned my efforts, though I ‘divided my swift mind,’ now hither, now thither, in a way that I felt sure would have made Æneas green with envy: but the dimly-seen oval remained as provokingly blank as ever—a mere Ellipse, as if in some mathematical diagram, without even the Foci that might be made to do duty as a nose and a mouth. Gradually, however, the conviction came upon me that I could, by a certain concentration of thought, *think the veil away*, and so get a glimpse of the mysterious face—as to which the two questions, “is she pretty?” and “is she plain?”, still hung suspended, in my mind, in beautiful equipoise.

Success was partial—and fitful—still there *was* a result: ever and anon, the veil seemed to vanish, in a sudden flash of light: but, before I could fully realise the face, all was dark again. In each such glimpse, the face seemed to grow more childish and more innocent: and, when I had at last *thought* the veil entirely away, it was, unmistakably, the sweet face of little Sylvie!

“So, either I’ve been dreaming about Sylvie,” I said to myself, “and this is the reality. Or else I’ve really been with Sylvie, and this is a dream! Is Life itself a dream, I wonder?”

To occupy the time, I got out the letter, which had caused me to take this sudden railway-journey from my London home down to a strange fishing-town on the North coast, and read it over again:—

“*Dear old Friend,*

“I’m sure it will be as great a pleasure to me, as it can possibly be to you, to meet once more after so many years: and of course I shall be ready to give you all the benefit of such medical skill as I have: only, you know, one mustn’t violate professional etiquette! And you are already in the hands of a first-rate London doctor, with whom it would be utter affectation for me to pretend to compete. (I make no doubt he is right in saying the heart is affected: all your symptoms point that way.) One thing, at any rate, I have already done in my doctorial capacity—secured you a bedroom on the ground-floor, so that you will not need to ascend the stairs at all.

“I shall expect you by last train on Friday, in accordance with your letter: and, till then, I shall say, in the words of the old song, ‘Oh for Friday night! Friday’s lang a-coming!’

“Yours always, Arthur Forester.

“P.S. Do you believe in Fate?”

This Postscript puzzled me sorely. “He is far too sensible a man,” I thought, “to have become a Fatalist. And yet what else can he mean by it?” And, as I folded up the letter and put it away, I inadvertently repeated the words aloud. “Do you believe in Fate?”

The fair ‘Incognita’ turned her head quickly at the sudden question. “No, I don’t!” she said with a smile. “Do you?”

“I—I didn’t mean to ask the question!” I stammered, a little taken aback at having begun a conversation in so unconventional a fashion.

The lady’s smile became a laugh—not a mocking laugh, but the laugh of a happy child who is perfectly at her ease. “Didn’t you?” she said. “Then it was a case of what you Doctors call ‘unconscious cerebration’?”

Quoted from *Idylls of the King* by Alfred Lord Tennyson

Quoted from *Oh for Friday Night!* by John Clark Milne

"I am no Doctor," I replied. "Do I look so like one? Or what makes you think it?"

She pointed to the book I had been reading, which was so lying that its title, "Diseases of the Heart," was plainly visible.

"One needn't be a *Doctor*," I said, "to take an interest in medical books. There's another class of readers, who are yet more deeply interested——"

"You mean the *Patients*?" she interrupted, while a look of tender pity gave new sweetness to her face. "But," with an evident wish to avoid a possibly painful topic, "one needn't be *either*, to take an interest in books of *Science*. Which contain the greatest amount of Science, do you think, the books, or the minds?"

"Rather a profound question for a lady!" I said to myself, holding, with the conceit so natural to Man, that Woman's intellect is essentially shallow. And I considered a minute before replying. "If you mean *living* minds, I don't think it's possible to decide. There is so much *written* Science that no living person has ever *read*: and there is so much *thought-out* Science that hasn't yet been *written*. But, if you mean the whole human race, then I think the *minds* have it: everything, recorded in *books*, must have once been in some *mind*, you know."

"Isn't that rather like one of the Rules in Algebra?" my Lady enquired. ("*Algebra* too!" I thought with increasing wonder.) "I mean, if we consider thoughts as *factors*, may we not say that the Least Common Multiple of all the *minds* contains that of all the *books*; but not the other way?"

"Certainly we may!" I replied, delighted with the illustration. "And what a grand thing it would be," I went on dreamily, thinking aloud rather than talking, "if we could only *apply* that Rule to books! You know, in finding the Least Common Multiple, we strike out a quantity wherever it occurs, except in the term where it is raised to its highest power. So we should have to erase every recorded thought, except in the sentence where it is expressed with the greatest intensity."

My Lady laughed merrily. "*Some* books would be reduced to blank paper, I'm afraid!" she said.

"They would. Most libraries would be terribly diminished in *bulk*. But just think what they would gain in *quality*!"

"When will it be done?" she eagerly asked. "If there's any chance of it in *my* time, I think I'll leave off reading, and wait for it!"

"Well, perhaps in another thousand years or so——"

"Then there's no use waiting!" said my Lady. "Let's sit down. Uggug, my pet, come and sit by me!"

"Anywhere but by *me*!" growled the Sub-Warden. "The little wretch always manages to upset his coffee!"

I guessed at once (as perhaps the reader will also have guessed, if, like myself, he is *very* clever at drawing conclusions) that my Lady was the Sub-Warden's wife, and that Uggug (a hideous fat boy, about the same age as Sylvie, with the expression of a prize-pig) was their son. Sylvie and Bruno, with the Lord Chancellor, made up a party of seven.

"And you actually got a plunge-bath every morning?" said the Sub-Warden, seemingly in continuation of a conversation with the Professor. "Even at the little roadside-inns?"

"Oh, certainly, certainly!" the Professor replied with a smile on his jolly face. "Allow me to explain. It is, in fact, a very simple problem in Hydrodynamics.



A portable plunge-bath

(That means a combination of Water and Strength.) If we take a plunge-bath, and a man of great strength (such as myself) about to plunge into it, we have a perfect example of this science. I am bound to admit," the Professor continued, in a lower tone and with downcast eyes, "that we need a man of *remarkable* strength. He must be able to spring from the floor to about twice his own height, gradually turning over as he rises, so as to come down again head first."

"Why, you need a *flea*, not a *man*!" exclaimed the Sub-Warden.

"Pardon me," said the Professor. "This particular kind of bath is *not* adapted for a flea. Let us suppose," he continued, folding his table-napkin into a graceful festoon, "that this represents what is perhaps *the* necessity of this Age—the Active Tourist's Portable Bath. You may describe it briefly, if you like," looking at the Chancellor, "by the letters A. T. P. B."

The Chancellor, much disconcerted at finding everybody looking at him, could only murmur, in a shy whisper, "Precisely so!"

"One great advantage of this plunge-bath," continued the Professor, "is that it requires only half-a-gallon of water——"

"I don't call it a *plunge*-bath," His Sub-Excellency remarked, "unless your Active Tourist goes *right under*!"

"But he *does* go right under," the old man gently replied. "The A. T. hangs up the P. B. on a nail—*thus*. He then empties the water-jug into it—places the empty jug below the bag—leaps into the air—descends head-first into the bag—the water rises round him to the top of the bag—and there you are!" he triumphantly concluded. "The A. T. is as much under water as if he'd gone a mile or two down into the Atlantic!"

"And he's drowned, let us say, in about four minutes——"

"By no means!" the Professor answered with a proud smile. "After about a minute, he quietly turns a tap at the lower end of the P. B.—all the water runs back into the jug—and there you are again!"

"But how in the world is he to get *out* of the bag again?"

"*That*, I take it," said the Professor, "is the most beautiful part of the whole invention. All the way up the P. B., inside, are loops for the thumbs; so it's something like going up-stairs, only perhaps less comfortable; and, by the time the A. T. has risen out of the bag, all but his head, he's sure to topple over, one

way or the other—the Law of Gravity secures *that*. And there he is on the floor again!”

“A little bruised, perhaps?”

“Well, yes, a little bruised; but *having had his plunge-bath*: that’s the great thing.”

“Wonderful! It’s almost beyond belief!” murmured the Sub-Warden. The Professor took it as a compliment, and bowed with a gratified smile.

“*Quite* beyond belief!” my Lady added—meaning, no doubt, to be more complimentary still. The Professor bowed, but he didn’t smile *this* time.

“I can assure you,” he said earnestly, “that, *provided the bath was made*, I used it every morning. I certainly *ordered* it—that I am clear about—my only doubt is, whether the man ever finished making it. It’s difficult to remember, after so many years——”

At this moment the door, very slowly and creakingly, began to open, and Sylvie and Bruno jumped up, and ran to meet the well-known footstep.

Chapter III. Birthday-Presents

“It’s my brother!” the Sub-Warden exclaimed, in a warning whisper. “Speak out, and be quick about it!”

The appeal was evidently addressed to the Lord Chancellor, who instantly replied, in a shrill monotone, like a little boy repeating the alphabet, “As I was remarking, your Sub-Excellency, this portentous movement——”

“You began too soon!” the other interrupted, scarcely able to restrain himself to a whisper, so great was his excitement. “He couldn’t have heard you. Begin again!”

“As I was remarking,” chanted the obedient Lord Chancellor, “this portentous movement has already assumed the dimensions of a Revolution!”

“And what *are* the dimensions of a Revolution?” The voice was genial and mellow, and the face of the tall dignified old man, who had just entered the room, leading Sylvie by the hand, and with Bruno riding triumphantly on his shoulder, was too noble and gentle to have scared a less guilty man: but the Lord Chancellor turned pale instantly, and could hardly articulate the words “The dimensions—your—your High Excellency? I—I—scarcely comprehend!”

“Well, the length, breadth, and thickness, if you like it better!” And the old man smiled, half-contemptuously.

The Lord Chancellor recovered himself with a great effort, and pointed to the open window. “If your High Excellency will listen for a moment to the shouts of the exasperated populace——” (“of the exasperated populace!” the Sub-Warden repeated in a louder tone, as the Lord Chancellor, being in a state of abject terror, had dropped almost into a whisper)“—you will understand what it is they want.”

And at that moment there surged into the room a hoarse confused cry, in which the only clearly audible words were “Less—bread—More—taxes!” The old man laughed heartily. “What in the world——” he was beginning; but the Chancellor heard him not. “Some mistake!” he muttered, hurrying to the window, from which he shortly returned with an air of relief. “*Now* listen!” he exclaimed, holding up his hand impressively. And now the words came quite distinctly, and with the regularity of the ticking of a clock, “More—bread—Less—taxes!”

"More bread!" the Warden repeated in astonishment. "Why, the new Government Bakery was opened only last week, and I gave orders to sell the bread at cost-price during the present scarcity! What *can* they expect more?"

"The Bakery's closed, y'reince!" the Chancellor said, more loudly and clearly than he had spoken yet. He was emboldened by the consciousness that *here*, at least, he had evidence to produce: and he placed in the Warden's hands a few printed notices, that were lying ready, with some open ledgers, on a side-table.

"Yes, yes, *I* see!" the Warden muttered, glancing carelessly through them. "Order countermanded by my brother, and supposed to be *my* doing! Rather sharp practice! It's all right!" he added in a louder tone. "My name is signed to it: so I take it on myself. But what do they mean by 'Less Taxes'? How *can* they be less? I abolished the last of them a month ago!"

"It's been put on again, y'reince, and by y'reince's own orders!", and other printed notices were submitted for inspection.

The Warden, whilst looking them over, glanced once or twice at the Sub-Warden, who had seated himself before one of the open ledgers, and was quite absorbed in adding it up; but he merely repeated "It's all right. I accept it as my doing."

"And they do say," the Chancellor went on sheepishly—looking much more like a convicted thief than an Officer of State, "that a change of Government, by the abolition of the Sub-Warden—I mean," he hastily added, on seeing the Warden's look of astonishment, "the abolition of the *office* of Sub-Warden, and giving the present holder the right to act as *Vice*-Warden whenever the Warden is absent—would appease all this seedling discontent. I mean," he added, glancing at a paper he held in his hand, "all this *seething* discontent!"

"For fifteen years," put in a deep but very harsh voice, "my husband has been acting as Sub-Warden. It is too long! It is much too long!" My Lady was a vast creature at all times: but, when she frowned and folded her arms, as now, she looked more gigantic than ever, and made one try to fancy what a haystack would look like, if out of temper.

"He would distinguish himself as a Vice!" my Lady proceeded, being far too stupid to see the double meaning of her words. "There has been no such Vice in Outland for many a long year, as he would be!"

"What course would *you* suggest, Sister?" the Warden mildly enquired.

My Lady stamped, which was undignified: and snorted, which was ungraceful. "This is no *jesting* matter!" she bellowed.

"I will consult my brother," said the Warden. "Brother!"

"—and seven makes a hundred and ninety-four, which is sixteen and twopence," the Sub-Warden replied. "Put down two and carry sixteen."

The Chancellor raised his hands and eyebrows, lost in admiration. "*Such* a man of business!" he murmured.

"Brother, could I have a word with you in my Study?" the Warden said in a louder tone. The Sub-Warden rose with alacrity, and the two left the room together.

My Lady turned to the Professor, who had uncovered the urn, and was taking its temperature with his pocket-thermometer. "Professor!" she began, so loudly and suddenly that even Uggug, who had gone to sleep in his chair, left off snoring and opened one eye. The Professor pocketed his thermometer in a moment, clasped his hands, and put his head on one side with a meek smile.

"You were teaching my son before breakfast, I believe?" my Lady loftily remarked. "I hope he strikes you as having talent?"

"Oh, very much so indeed, my Lady!" the Professor hastily replied, unconsciously rubbing his ear, while some painful recollection seemed to cross his mind. "I was very forcibly struck by His Magnificence, I assure you!"

"He is a charming boy!" my Lady exclaimed. "Even his snores are more musical than those of other boys!"

If that *were* so, the Professor seemed to think, the snores of *other* boys must be something too awful to be endured: but he was a cautious man, and he said nothing.

"And he's so clever!" my Lady continued. "No one will enjoy your Lecture more—by the way, have you fixed the time for it yet? You've never given one, you know: and it was promised years ago, before you——"

"Yes, yes, my Lady, *I* know! Perhaps next Tuesday—or Tuesday week——"

"That will do very well," said my Lady, graciously. "Of course you will let the Other Professor lecture as well?"

"I think *not*, my Lady," the Professor said with some hesitation. "You see, he always stands with his back to the audience. It does very well for *reciting*; but for *lecturing*——"

"You are quite right," said my Lady. "And, now I come to think of it, there would hardly be time for more than *one* Lecture. And it will go off all the better, if we begin with a Banquet, and a Fancy-dress Ball——"

"It will indeed!" the Professor cried, with enthusiasm.

"I shall come as a Grass-hopper," my Lady calmly proceeded. "What shall *you* come as, Professor?"

The Professor smiled feebly. "I shall come as—as early as I can, my Lady!"

"You mustn't come in before the doors are opened," said my Lady.

"I ca'n't," said the Professor. "Excuse me a moment. As this is Lady Sylvie's birthday, I would like to——" and he rushed away.

Bruno began feeling in his pockets, looking more and more melancholy as he did so: then he put his thumb in his mouth, and considered for a minute: then he quietly left the room.

He had hardly done so before the Professor was back again, quite out of breath. "Wishing you many happy returns of the day, my dear child!" he went on, addressing the smiling little girl, who had run to meet him. "Allow me to give you a birthday-present. It's a second-hand pincushion, my dear. And it only cost fourpence-halfpenny!"

"Thank you, it's *very* pretty!" And Sylvie rewarded the old man with a hearty kiss.

"And the *pins* they gave me for nothing!" the Professor added in high glee. "Fifteen of em, and only *one* bent!"

"I'll make the bent one into a *hook*!" said Sylvie. "To catch Bruno with, when he runs away from his lessons!"

"You ca'n't guess what *my* present is!" said Uggug, who had taken the butter-dish from the table, and was standing behind her, with a wicked leer on his face.

"No, I ca'n't guess," Sylvie said without looking up. She was still examining the Professor's pincushion.

"It's *this*!" cried the bad boy, exultingly, as he emptied the dish over her, and then, with a grin of delight at his own cleverness, looked round for applause.

Sylvie coloured crimson, as she shook off the butter from her frock: but she kept her lips tight shut, and walked away to the window, where she stood looking out and trying to recover her temper.

Uggug's triumph was a very short one: the Sub-Warden had returned, just in time to be a witness of his dear child's playfulness, and in another moment a skilfully-applied box on the ear had changed the grin of delight into a howl of pain.

"My darling!" cried his mother, enfolding him in her fat arms. "Did they box his ears for nothing? A precious pet!"

"It's not for *nothing*!" growled the angry father. "Are you aware, Madam, that *I* pay the house-bills, out of a fixed annual sum? The loss of all that wasted butter falls on *me*! Do you hear, Madam!"

"Hold your tongue, Sir!" My Lady spoke very quietly—almost in a whisper. But there was something in her *look* which silenced him. "Don't you see it was only a *joke*? And a very clever one, too! He only meant that he loved nobody *but* her! And, instead of being pleased with the compliment, the spiteful little thing has gone away in a huff!"

The Sub-Warden was a very good hand at changing a subject. He walked across to the window. "My dear," he said, "is that a *pig* that I see down below, rooting about among your flower-beds?"

"A *pig*!" shrieked my Lady, rushing madly to the window, and almost pushing her husband out, in her anxiety to see for herself. "Whose pig is it? How did it get in? Where's that crazy Gardener gone?"

At this moment Bruno re-entered the room, and passing Uggug (who was blubbering his loudest, in the hope of attracting notice) as if he was quite used to that sort of thing, he ran up to Sylvie and threw his arms round her. "I went to my toy-cupboard," he said with a very sorrowful face, "to see if there were *somefin* fit for a present for oo! And there isn't *nuffin*! They's *all* broken, every one! And I haven't got *no* money left, to buy oo a birthday-present! And I ca'n't give oo nuffin but *this*!" ("*This*" was a very earnest hug and a kiss.)

"Oh, thank you, darling!" cried Sylvie. "I like *your* present best of all!" (But if so, why did she give it back so quickly?)

His Sub-Excellency turned and patted the two children on the head with his long lean hands. "Go away, dears!" he said. "There's business to talk over."

Sylvie and Bruno went away hand in hand: but, on reaching the door, Sylvie came back again and went up to Uggug timidly. "I don't mind about the butter," she said, "and I—I'm sorry he hurt you!" And she tried to shake hands with the little ruffian: but Uggug only blubbered louder, and wouldn't make friends. Sylvie left the room with a sigh.

The Sub-Warden glared angrily at his weeping son. "Leave the room, Sirrah!" he said, as loud as he dared. His wife was still leaning out of the window, and kept repeating "I *ca'n't* see that pig! Where *is* it?"

"It's moved to the right—now it's gone a little to the left," said the Sub-Warden: but he had his back to the window, and was making signals to the Lord Chancellor, pointing to Uggug and the door, with many a cunning nod and wink.

The Chancellor caught his meaning at last, and, crossing the room, took that interesting child by the ear—the next moment he and Uggug were out of the room, and the door shut behind them: but not before one piercing yell had rung through the room, and reached the ears of the fond mother.



Removal of Uggug

“What *is* that hideous noise?” she fiercely asked, turning upon her startled husband.

“It’s some hyæna—or other,” replied the Sub-Warden, looking vaguely up to the ceiling, as if that was where they usually were to be found. “Let us to business, my dear. Here comes the Warden.” And he picked up from the floor a wandering scrap of manuscript, on which I just caught the words ‘after which Election duly holden the said Sibimet and Tabikat his wife may at their pleasure assume Imperial—’ before, with a guilty look, he crumpled it up in his hand.

Chapter IV. A Cunning Conspiracy

The Warden entered at this moment: and close behind him came the Lord Chancellor, a little flushed and out of breath, and adjusting his wig, which appeared to have been dragged partly off his head.

“But where is my precious child?” my Lady enquired, as the four took their seats at the small side-table devoted to ledgers and bundles and bills.

“He left the room a few minutes ago—with the Lord Chancellor,” the Sub-Warden briefly explained.

“Ah!” said my Lady, graciously smiling on that high official. “Your Lordship has a very *taking* way with children! I doubt if any one could *gain the ear* of my darling Uggug so quickly as *you* can!” For an entirely stupid woman, my Lady’s remarks were curiously full of meaning, of which she herself was wholly unconscious.

The Chancellor bowed, but with a very uneasy air. “I think the Warden was about to speak,” he remarked, evidently anxious to change the subject.

But my Lady would not be checked. “He is a clever boy,” she continued with enthusiasm, “but he needs a man like your Lordship to *draw him out!*”

The Chancellor bit his lip, and was silent. He evidently feared that, stupid as she looked, she understood what she said *this* time, and was having a joke at his expense. He might have spared himself all anxiety: whatever accidental meaning her *words* might have, she *herself* never meant anything at all.

"It is all settled!" the Warden announced, wasting no time over preliminaries. "The Sub-Wardenship is abolished, and my brother is appointed to act as Vice-Warden whenever I am absent. So, as I am going abroad for a while, he will enter on his new duties at once."

"And there will really be a Vice after all?" my Lady enquired.

"I hope so!" the Warden smilingly replied.

My Lady looked much pleased, and tried to clap her hands: but you might as well have knocked two feather-beds together, for any noise it made. "When my husband is Vice," she said, "it will be the same as if we had a *hundred* Vices!"

"Hear, hear!" cried the Sub-Warden.

"You seem to think it very remarkable," my Lady remarked with some severity, "that your wife should speak the truth!"

"No, not *remarkable* at all!" her husband anxiously explained. "*Nothing* is remarkable that *you* say, sweet one!"

My Lady smiled approval of the sentiment, and went on. "And am I Vice-Wardenship?"

"If you choose to use that title," said the Warden: "but 'Your Excellency' will be the proper style of address. And I trust that both '*His* Excellency' and '*Her* Excellency' will observe the Agreement I have drawn up. The provision I am *most* anxious about is this." He unrolled a large parchment scroll, and read aloud the words "'*item*, that we will be kind to the poor.' The Chancellor worded it for me," he added, glancing at that great Functionary. "I suppose, now, that word '*item*' has some deep legal meaning?"

"Undoubtedly!" replied the Chancellor, as articulately as he could with a pen between his lips. He was nervously rolling and unrolling several other scrolls, and making room among them for the one the Warden had just handed to him. "These are merely the rough copies," he explained: "and, as soon as I have put in the final corrections—" making a great commotion among the different parchments, "—a semi-colon or two that I have accidentally omitted—" here he darted about, pen in hand, from one part of the scroll to another, spreading sheets of blotting-paper over his corrections, "all will be ready for signing."

"Should it not be read out, first?" my Lady enquired.

"No need, no need!" the Sub-Warden and the Chancellor exclaimed at the same moment, with feverish eagerness.

"No need at all," the Warden gently assented. "Your husband and I have gone through it together. It provides that he shall exercise the full authority of Warden, and shall have the disposal of the annual revenue attached to the office, until my return, or, failing that, until Bruno comes of age: and that he shall then hand over, to myself or to Bruno as the case may be, the Wardenship, the unspent revenue, and the contents of the Treasury, which are to be preserved, intact, under his guardianship."

All this time the Sub-Warden was busy, with the Chancellor's help, shifting the papers from side to side, and pointing out to the Warden the place where he was to sign. He then signed it himself, and my Lady and the Chancellor added their names as witnesses.

"Short partings are best," said the Warden. "All is ready for my journey. My children are waiting below to see me off." He gravely kissed my Lady, shook hands with his brother and the Chancellor, and left the room.

The three waited in silence till the sound of wheels announced that the Warden was out of hearing: then, to my surprise, they broke into peals of



'What a game!'

uncontrollable laughter.

"What a game, oh, what a game!" cried the Chancellor. And he and the Vice-Warden joined hands, and skipped wildly about the room. My Lady was too dignified to skip, but she laughed like the neighing of a horse, and waved her handkerchief above her head: it was clear to her very limited understanding that *something* very clever had been done, but what it *was* she had yet to learn.

"You said I should hear all about it when the Warden had gone," she remarked, as soon as she could make herself heard.

"And so you shall, Tabby!" her husband graciously replied, as he removed the blotting-paper, and showed the two parchments lying side by side. "This is the one he read but didn't sign: and this is the one he signed but didn't read! You see it was all covered up, except the place for signing the names——"

"Yes, yes!" my Lady interrupted eagerly, and began comparing the two Agreements. "'Item, that he shall exercise the authority of Warden, in the Warden's absence.' Why, that's been changed into 'shall be absolute governor for life, with the title of Emperor, if elected to that office by the people.' What! Are you *Emperor*, darling?"

"Not yet, dear," the Vice-Warden replied. "It won't do to let this paper be seen, just at present. All in good time."

My Lady nodded, and read on. "'Item, that we will be kind to the poor.' Why, that's omitted altogether!"

"Course it is!" said her husband. "*We're* not going to bother about the wretches!"

"*Good*," said my Lady, with emphasis, and read on again. "'Item, that the contents of the Treasury be preserved intact.' Why, that's altered into 'shall be at the absolute disposal of the Vice-Warden'! Well, Sibby, that *was* a clever trick! *All* the Jewels, only think! May I go and put them on directly?"

"Well, not *just* yet, Lovey," her husband uneasily replied. "You see the public mind isn't quite *ripe* for it yet. We must feel our way. Of course we'll have the coach-and-four out, at once. And I'll take the title of Emperor, as soon as we can safely hold an Election. But they'll hardly stand our using the *Jewels*, as long as they know the Warden's alive. We must spread a report of his death. A little Conspiracy——"

"A Conspiracy!" cried the delighted lady, clapping her hands. "Of all things, I *do* like a Conspiracy! It's so interesting!"

The Vice-Warden and the Chancellor interchanged a wink or two. "Let her conspire to her heart's content!" the cunning Chancellor whispered. "It'll do no harm!"

"And when will the Conspiracy——"

"Hist!" her husband hastily interrupted her, as the door opened, and Sylvie and Bruno came in, with their arms twined lovingly round each other—Bruno sobbing convulsively, with his face hidden on his sister's shoulder, and Sylvie more grave and quiet, but with tears streaming down her cheeks.

"Mustn't cry like that!" the Vice-Warden said sharply, but without any effect on the weeping children. "Cheer 'em up a bit!" he hinted to my Lady.

"*Cake!*" my Lady muttered to herself with great decision, crossing the room and opening a cupboard, from which she presently returned with two slices of plum-cake. "Eat, and don't cry!" were her short and simple orders: and the poor children sat down side by side, but seemed in no mood for eating.

For the second time the door opened—or rather was *burst* open, this time, as Uggug rushed violently into the room, shouting "that old Beggar's come again!"

"He's not to have any food——" the Vice-Warden was beginning, but the Chancellor interrupted him. "It's all right," he said, in a low voice: "the servants have their orders."

"He's just under here," said Uggug, who had gone to the window, and was looking down into the court-yard.

"Where, my darling?" said his fond mother, flinging her arms round the neck of the little monster. All of us (except Sylvie and Bruno, who took no notice of what was going on) followed her to the window. The old Beggar looked up at us with hungry eyes. "Only a crust of bread, your Highness!" he pleaded. He was a fine old man, but looked sadly ill and worn. "A crust of bread is what I crave!" he repeated. "A single crust, and a little water!"

"Here's some water, drink this!" Uggug bellowed, emptying a jug of water over his head.

"Well done, my boy!" cried the Vice-Warden. "That's the way to settle such folk!"

"Clever boy!" the Wardeness chimed in. "*Hasn't* he good spirits?"

"Take a stick to him!" shouted the Vice-Warden, as the old Beggar shook the water from his ragged cloak, and again gazed meekly upwards.

"Take a red-hot poker to him!" my Lady again chimed in.

Possibly there was no red-hot poker handy: but some *sticks* were forthcoming in a moment, and threatening faces surrounded the poor old wanderer, who waved them back with quiet dignity. "No need to break my old bones," he said. "I am going. Not even a crust!"

"Poor, *poor* old man!" exclaimed a little voice at my side, half choked with sobs. Bruno was at the window, trying to throw out his slice of plum-cake, but Sylvie held him back.

"He *shall* have my cake!" Bruno cried, passionately struggling out of Sylvie's arms.

"Yes, yes, darling!" Sylvie gently pleaded. "But don't *throw* it out! He's gone away, don't you see? Let's go after him." And she led him out of the room, unnoticed by the rest of the party, who were wholly absorbed in watching the old Beggar.



'Drink this!'

The Conspirators returned to their seats, and continued their conversation in an undertone, so as not to be heard by Uggug, who was still standing at the window.

“By the way, there was something about Bruno succeeding to the Wardenship,” said my Lady. “How does *that* stand in the new Agreement?”

The Chancellor chuckled. “Just the same, word for word,” he said, “with *one* exception, my Lady. Instead of ‘Bruno,’ I’ve taken the liberty to put in——” he dropped his voice to a whisper, “—to put in ‘Uggug,’ you know!”

“Uggug, indeed!” I exclaimed, in a burst of indignation I could no longer control. To bring out even that one word seemed a gigantic effort: but, the cry once uttered, all effort ceased at once: a sudden gust swept away the whole scene, and I found myself sitting up, staring at the young lady in the opposite corner of the carriage, who had now thrown back her veil, and was looking at me with an expression of amused surprise.

Chapter V. A Beggar’s Palace

That I had said *something*, in the act of waking, I felt sure: the hoarse stifled cry was still ringing in my ears, even if the startled look of my fellow-traveler had not been evidence enough: but what could I possibly say by way of apology?

“I hope I didn’t frighten you?” I stammered out at last. “I have no idea what I said. I was dreaming.”

“You said ‘*Uggug indeed!*’” the young lady replied, with quivering lips that *would* curve themselves into a smile, in spite of all her efforts to look grave. “At least—you didn’t *say* it—you *shouted* it!”

“I’m very sorry,” was all I could say, feeling very penitent and helpless. “She *has* Sylvie’s eyes!” I thought to myself, half-doubting whether, even now, I were fairly awake. “And that sweet look of innocent wonder is all Sylvie’s, too. But Sylvie *hasn’t* got that calm resolute mouth—nor that far-away look of dreamy sadness, like one that has had some deep sorrow, very long ago——” And the thick-coming fancies almost prevented my hearing the lady’s next words.

“If you had had a ‘Shilling Dreadful’ in your hand,” she proceeded, “something about Ghosts—or Dynamite—or Midnight Murder—one could understand it: those things aren’t worth the shilling, unless they give one a Nightmare. But really—with only a *medical treatise*, you know——” and she glanced, with a pretty shrug of contempt, at the book over which I had fallen asleep.

Her friendliness, and utter unreserve, took me aback for a moment; yet there was no touch of forwardness, or boldness, about the child—for child, almost, she seemed to be: I guessed her at scarcely over twenty—all was the innocent frankness of some angelic visitant, new to the ways of earth and the conventionalisms—or, if you will, the barbarisms—of Society. “Even so,” I mused, “will *Sylvie* look and speak, in another ten years.”

“You don’t care for Ghosts, then,” I ventured to suggest, “unless they are really terrifying?”

“Quite so,” the lady assented. “The regular Railway-Ghosts—I mean the Ghosts of ordinary Railway-literature—are very poor affairs. I feel inclined to say, with Alexander Selkirk, ‘Their tameness is shocking to me’! And they never do any Midnight Murders. They couldn’t ‘welter in gore,’ to save their lives!”

“‘Weltering in gore’ is a very expressive phrase, certainly. Can it be done in *any* fluid, I wonder?”

Quoted from *The Solitude of Alexander Selkirk* by William Cowper

“I think *not*,” the lady readily replied—quite as if she had thought it out, long ago. “It has to be something *thick*. For instance, you might welter in bread-sauce. That, being *white*, would be more suitable for a Ghost, supposing it wished to welter!”

“You have a real good *terrifying* Ghost in that book?” I hinted.

“How *could* you guess?” she exclaimed with the most engaging frankness, and placed the volume in my hands. I opened it eagerly, with a not unpleasant thrill (like what a good ghost-story gives one) at the ‘uncanny’ coincidence of my having so unexpectedly divined the subject of her studies.

It was a book of Domestic Cookery, open at the article ‘Bread Sauce.’

I returned the book, looking, I suppose, a little blank, as the lady laughed merrily at my discomfiture. “It’s far more exciting than some of the modern ghosts, I assure you! Now there was a Ghost last month—I don’t mean a *real* Ghost in—in Supernature—but in a Magazine. It was a perfectly *flavourless* Ghost. It wouldn’t have frightened a mouse! It wasn’t a Ghost that one would even offer a chair to!”

“Three score years and ten, baldness, and spectacles, have their advantages after all!” I said to myself. “Instead of a bashful youth and maiden, gasping out monosyllables at awful intervals, here we have an old man and a child, quite at their ease, talking as if they had known each other for years! Then you think,” I continued aloud, “that we ought *sometimes* to ask a Ghost to sit down? But have we any authority for it? In Shakespeare, for instance—there are plenty of ghosts *there*—does Shakespeare ever give the stage-direction ‘*hands chair to Ghost*’?”

The lady looked puzzled and thoughtful for a moment: then she *almost* clapped her hands. “Yes, yes, he *does*!” she cried. “He makes Hamlet say ‘*Rest, rest, perturbed Spirit!*’”

“And that, I suppose, means an easy-chair?”

“An American rocking-chair, I *think*——”

“Fayfield Junction, my Lady, change for Elveston!” the guard announced, flinging open the door of the carriage: and we soon found ourselves, with all our portable property around us, on the platform.

The accommodation, provided for passengers waiting at this Junction, was distinctly inadequate—a single wooden bench, apparently intended for three sitters only: and even this was already partially occupied by a very old man, in a smock frock, who sat, with rounded shoulders and drooping head, and with hands clasped on the top of his stick so as to make a sort of pillow for that wrinkled face with its look of patient weariness.

“Come, you be off!” the Station-master roughly accosted the poor old man. “You be off, and make way for your betters! This way, my Lady!” he added in a perfectly different tone. “If your Ladyship will take a seat, the train will be up in a few minutes.” The cringing servility of his manner was due, no doubt, to the address legible on the pile of luggage, which announced their owner to be “Lady Muriel Orme, passenger to Elveston, *via* Fayfield Junction.”

As I watched the old man slowly rise to his feet, and hobble a few paces down the platform, the lines came to my lips:—

“From sackcloth couch the Monk arose,
With toil his stiffen’d limbs he rear’d;
A hundred years had flung their snows

Quoted from *Hamlet*
by William
Shakespeare

Quoted from *The Lay
of the Last Minstrel*
by Sir Walter Scott

On his thin locks and floating beard.”



‘Come, you be off!’

But the lady scarcely noticed the little incident. After one glance at the ‘banished man,’ who stood tremulously leaning on his stick, she turned to me. “This is *not* an American rocking-chair, by any means! Yet may I say,” slightly changing her place, so as to make room for me beside her, “may I say, in Hamlet’s words, ‘Rest, rest——’” she broke off with a silvery laugh.

“—perturbed Spirit!” I finished the sentence for her. “Yes, that describes a railway-traveler *exactly!* And here is an instance of it,” I added, as the tiny local train drew up alongside the platform, and the porters bustled about, opening carriage-doors—one of them helping the poor old man to hoist himself into a third-class carriage, while another of them obsequiously conducted the lady and myself into a first-class.

She paused, before following him, to watch the progress of the other passenger. “Poor old man!” she said. “How weak and ill he looks! It was a shame to let him be turned away like that. I’m very sorry——” At this moment it

dawned on me that these words were not addressed to *me*, but that she was unconsciously thinking aloud. I moved away a few steps, and waited to follow her into the carriage, where I resumed the conversation.

"Shakespeare *must* have traveled by rail, if only in a dream: 'perturbed Spirit' is such a happy phrase."

"'Perturbed' referring, no doubt," she rejoined, "to the sensational booklets peculiar to the Rail. If Steam has done nothing else, it has at least added a whole new Species to English Literature!"

"No doubt of it," I echoed. "The true origin of all our medical books—and all our cookery-books——"

"No, no!" she broke in merrily. "I didn't mean *our* Literature! *We* are quite abnormal. But the booklets—the little thrilling romances, where the Murder comes at page fifteen, and the Wedding at page forty—surely *they* are due to Steam?"

"And when we travel by Electricity—if I may venture to develop your theory—we shall have leaflets instead of booklets, and the Murder and the Wedding will come on the same page."

"A development worthy of Darwin!" the lady exclaimed enthusiastically. "Only *you* reverse his theory. Instead of developing a mouse into an elephant, you would develop an elephant into a mouse!" But here we plunged into a tunnel, and I leaned back and closed my eyes for a moment, trying to recall a few of the incidents of my recent dream.

"I thought I saw——" I murmured sleepily: and then the phrase insisted on conjugating itself, and ran into "you thought you saw—he thought he saw——" and then it suddenly went off into a song:—

"He thought he saw an Elephant,
That practised on a fife:
He looked again, and found it was
A letter from his wife.
'At length I realise,' he said,
'The bitterness of Life!'"

And what a wild being it was who sang these wild words! A Gardener he seemed to be—yet surely a mad one, by the way he brandished his rake—madder, by the way he broke, ever and anon, into a frantic jig—maddest of all, by the shriek in which he brought out the last words of the stanza!

It was so far a description of himself that he had the *feet* of an Elephant: but the rest of him was skin and bone: and the wisps of loose straw, that bristled all about him, suggested that he had been originally stuffed with it, and that nearly all the stuffing had come out.

Sylvie and Bruno waited patiently till the end of the first verse. Then Sylvie advanced alone (Bruno having suddenly turned shy) and timidly introduced herself with the words "Please, I'm Sylvie!"

"And who's that other thing?" said the Gardener.

"What thing?" said Sylvie, looking round. "Oh, that's Bruno. He's my brother."

"Was he your brother yesterday?" the Gardener anxiously enquired.

"Course I were!" cried Bruno, who had gradually crept nearer, and didn't at all like being talked about without having his share in the conversation.



The gardener

“Ah, well!” the Gardener said with a kind of groan. “Things change so, here. Whenever I look again, it’s sure to be something different! Yet I does my duty! I gets up wriggle-early at five——”

“If I was *oo*,” said Bruno, “I wouldn’t wriggle so early. It’s as bad as being a worm!” he added, in an undertone to Sylvie.

“But you shouldn’t be lazy in the morning, Bruno,” said Sylvie. “Remember, it’s the *early* bird that picks up the worm!”

“It may, if it likes!” Bruno said with a slight yawn. “I don’t like eating worms, one bit. I always stop in bed till the early bird has picked them up!”

“I wonder you’ve the face to tell me such fibs!” cried the Gardener.

To which Bruno wisely replied “Oo don’t want a *face* to tell fibs wiz—only a *mouf*.”

Sylvie discreetly changed the subject. “And did you plant all these flowers?” she said. “What a lovely garden you’ve made! Do you know, I’d like to live here *always*!”

“In the winter-nights——” the Gardener was beginning.

“But I’d nearly forgotten what we came about!” Sylvie interrupted. “Would you please let us through into the road? There’s a poor old beggar just gone out—and he’s very hungry—and Bruno wants to give him his cake, you know!”

“It’s as much as my place is worth!” the Gardener muttered, taking a key from his pocket, and beginning to unlock a door in the garden-wall.

“How much *are* it wurf?” Bruno innocently enquired.

But the Gardener only grinned. “That’s a secret!” he said. “Mind you come back quick!” he called after the children, as they passed out into the road. I had just time to follow them, before he shut the door again.

We hurried down the road, and very soon caught sight of the old Beggar, about a quarter of a mile ahead of us, and the children at once set off running to overtake him. Lightly and swiftly they skimmed over the ground, and I could not in the least understand how it was I kept up with them so easily. But the unsolved problem did not worry me so much as at another time it might have done, there were so many other things to attend to.

The old Beggar must have been very deaf, as he paid no attention whatever to Bruno’s eager shouting, but trudged wearily on, never pausing until the child got in front of him and held up the slice of cake. The poor little fellow was quite out of breath, and could only utter the one word “Cake!”—not with the gloomy decision with which Her Excellency had so lately pronounced it, but with a sweet childish timidity, looking up into the old man’s face with eyes that loved ‘all things both great and small.’

The old man snatched it from him, and devoured it greedily, as some hungry wild beast might have done, but never a word of thanks did he give his little benefactor—only growled “More, more!” and glared at the half-frightened children.

“There *is* no more!” Sylvie said with tears in her eyes. “I’d eaten mine. It was a shame to let you be turned away like that. I’m very sorry——”

I lost the rest of the sentence, for my mind had recurred, with a great shock of surprise, to Lady Muriel Orme, who had so lately uttered these very words of Sylvie’s—yes, and in Sylvie’s own voice, and with Sylvie’s gentle pleading eyes!

“Follow me!” were the next words I heard, as the old man waved his hand, with a dignified grace that ill suited his ragged dress, over a bush, that stood by the road side, which began instantly to sink into the earth. At another

Quoted from *The Rime of the Ancient Mariner* by Samuel Taylor Coleridge

time I might have doubted the evidence of my eyes, or at least have felt some astonishment: but, in *this* strange scene, my whole being seemed absorbed in strong curiosity as to what would happen next.

When the bush had sunk quite out of our sight, marble steps were seen, leading downwards into darkness. The old man led the way, and we eagerly followed.

The staircase was so dark, at first, that I could only just see the forms of the children, as, hand-in-hand, they groped their way down after their guide: but it got lighter every moment, with a strange silvery brightness, that seemed to exist in the air, as there were no lamps visible; and, when at last we reached a level floor, the room, in which we found ourselves, was almost as light as day.

It was eight-sided, having in each angle a slender pillar, round which silken draperies were twined. The wall between the pillars was entirely covered, to the height of six or seven feet, with creepers, from which hung quantities of ripe fruit and of brilliant flowers, that almost hid the leaves. In another place, perchance, I might have wondered to see fruit and flowers growing together: here, my chief wonder was that neither fruit nor flowers were such as I had ever seen before. Higher up, each wall contained a circular window of coloured glass; and over all was an arched roof, that seemed to be spangled all over with jewels.

With hardly less wonder, I turned this way and that, trying to make out how in the world we had come in: for there was no door: and all the walls were thickly covered with the lovely creepers.

“We are safe here, my darlings!” said the old man, laying a hand on Sylvie’s shoulder, and bending down to kiss her. Sylvie drew back hastily, with an offended air: but in another moment, with a glad cry of “Why, it’s *Father!*”, she had run into his arms.

“Father! Father!” Bruno repeated: and, while the happy children were being hugged and kissed, I could but rub my eyes and say “Where, then, are the rags gone to?”; for the old man was now dressed in royal robes that glittered with jewels and gold embroidery, and wore a circlet of gold around his head.

Chapter VI. The Magic Locket

“Where are we, father?” Sylvie whispered, with her arms twined closely around the old man’s neck, and with her rosy cheek lovingly pressed to his.

“In Elfland, darling. It’s one of the provinces of Fairyland.”

“But I thought Elfland was *ever* so far from Outland: and we’ve come such a *tiny* little way!”

“You came by the Royal Road, sweet one. Only those of royal blood can travel along it: but *you’ve* been royal ever since I was made King of Elfland—that’s nearly a month ago. They sent *two* ambassadors, to make sure that their invitation to me, to be their new King, should reach me. One was a Prince; so *he* was able to come by the Royal Road, and to come invisibly to all but me: the other was a Baron; so *he* had to come by the common road, and I dare say he hasn’t even *arrived* yet.”

“Then how far have we come?” Sylvie enquired.

“Just a thousand miles, sweet one, since the Gardener unlocked that door for you.”

“A thousand miles!” Bruno repeated. “And may I eat one?”

“Eat a *mile*, little rogue?”



A beggar's palace (Frontispiece)

"No," said Bruno. "I mean may I eat one of that fruits?"

"Yes, child," said his father: "and then you'll find out what *Pleasure* is like—the *Pleasure* we all seek so madly, and enjoy so mournfully!"

Bruno ran eagerly to the wall, and picked a fruit that was *shaped* something like a banana, but had the *colour* of a strawberry.

He ate it with beaming looks, that became gradually more gloomy, and were very blank indeed by the time he had finished.

"It hasn't got no taste at all!" he complained. "I couldn't feel nuffin in my mouf! It's a—what's that hard word, Sylvie?"

"It was a *Phlizz*," Sylvie gravely replied. "Are they *all* like that, father?"

"They're all like that to *you*, darling, because you don't belong to Elfland—yet. But to *me* they are real."

Bruno looked puzzled. "I'll try anuvver kind of fruits!" he said, and jumped down off the King's knee. "There's some lovely striped ones, just like a rainbow!" And off he ran.

Meanwhile the Fairy-King and Sylvie were talking together, but in such low tones that I could not catch the words: so I followed Bruno, who was picking and eating other kinds of fruit, in the vain hope of finding *some* that had a taste. I tried to pick some myself—but it was like grasping air, and I soon gave up the attempt and returned to Sylvie.

"Look well at it, my darling," the old man was saying, "and tell me how you like it."

"It's just *lovely*," cried Sylvie, delightedly. "Bruno, come and look!" And she held up, so that he might see the light through it, a heart-shaped Locket, apparently cut out of a single jewel, of a rich blue colour, with a slender gold chain attached to it.

"It are welly pretty," Bruno more soberly remarked: and he began spelling out some words inscribed on it. "All—will—love—Sylvie," he made them out at last. "And so they doos!" he cried, clasping his arms round her neck. "*Everybody* loves Sylvie!"

"But *we* love her best, don't we, Bruno?" said the old King, as he took possession of the Locket. "Now, Sylvie, look at *this*." And he showed her, lying on the palm of his hand, a Locket of a deep crimson colour, the same shape as the blue one and, like it, attached to a slender golden chain.

"Lovelier and lovelier!" exclaimed Sylvie, clasping her hands in ecstasy. "Look, Bruno!"

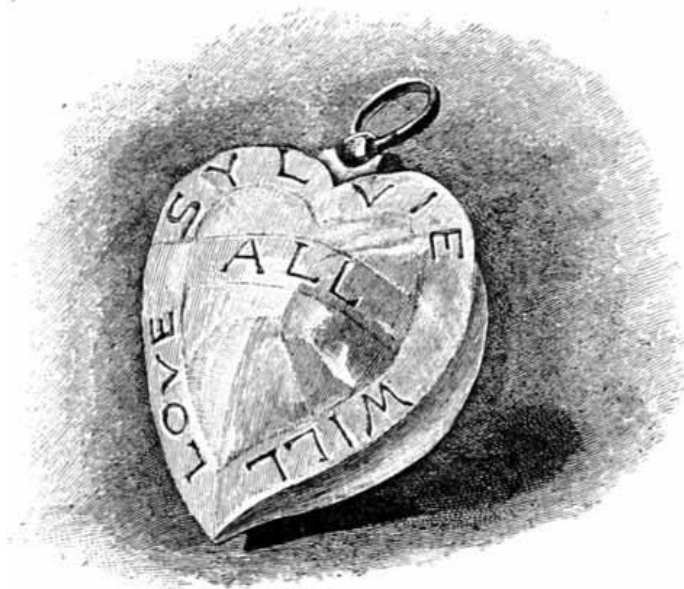
"And there's words on this one, too," said Bruno. "Sylvie—will—love—all."

"Now you see the difference," said the old man: "different colours and different words. Choose one of them, darling. I'll give you whichever you like best."

Sylvie whispered the words, several times over, with a thoughtful smile, and then made her decision. "It's *very* nice to be loved," she said: "but it's nicer to love other people! May I have the red one, Father?"

The old man said nothing: but I could see his eyes fill with tears, as he bent his head and pressed his lips to her forehead in a long loving kiss. Then he undid the chain, and showed her how to fasten it round her neck, and to hide it away under the edge of her frock. "It's for you to *keep*, you know," he said in a low voice, "not for other people to *see*. You'll remember how to use it?"

"Yes, I'll remember," said Sylvie.



The crimson locket

“And now, darlings, it’s time for you to go back, or they’ll be missing you, and then that poor Gardener will get into trouble!”

Once more a feeling of wonder rose in my mind as to how in the world we were to *get* back again—since I took it for granted that, wherever the children went, *I* was to go—but no shadow of doubt seemed to cross *their* minds, as they hugged and kissed him, murmuring, over and over again, “Good-bye, darling Father!” And then, suddenly and swiftly, the darkness of midnight seemed to close in upon us, and through the darkness harshly rang a strange wild song:—

“He thought he saw a Buffalo
Upon the chimney-piece:
He looked again, and found it was
His Sisters Husband’s Niece.
‘Unless you leave this house,’ he said,
‘I’ll send for the Police!’”

“That was *me!*” he added, looking out at us, through the half-opened door, as we stood waiting in the road. “And that’s what I’d have done—as sure as potatoes aren’t radishes—if she hadn’t have taken herself off! But I always loves my *pay-rints* like anything.”

“Who are oor *pay-rints*?” said Bruno.

“Them as pay *rint* for me, a course!” the Gardener replied. “You can come in now, if you like.”

He flung the door open as he spoke, and we got out, a little dazzled and stupefied (at least *I* felt so) at the sudden transition from the half-darkness of the railway-carriage to the brilliantly-lighted platform of Elveston Station.

A footman, in a handsome livery, came forwards and respectfully touched his hat. “The carriage is here, my Lady,” he said, taking from her the wraps



'He thought he saw a Buffalo'

and small articles she was carrying; and Lady Muriel, after shaking hands and bidding me "Good-night!" with a pleasant smile, followed him.

It was with a somewhat blank and lonely feeling that I betook myself to the van from which the luggage was being taken out: and, after giving directions to have my boxes sent after me, I made my way on foot to Arthur's lodgings, and soon lost my lonely feeling in the hearty welcome my old friend gave me, and the cozy warmth and cheerful light of the little sitting-room into which he led me.

"Little, as you see, but quite enough for us two. Now, take the easy-chair, old fellow, and let's have another look at you! Well, you *do* look a bit pulled down!" and he put on a solemn professional air. "I prescribe Ozone, *quant. suff.* Social dissipation, *fiant pilulæ quam plurimæ*: to be taken, feasting, three times a day!"

"But, Doctor!" I remonstrated. "Society doesn't 'receive' three times a day!"

"That's all *you* know about it!" the young Doctor gaily replied. "At home, lawn-tennis, 3 P.M. At home, kettledrum, 5 P.M. At home, music (Elveston doesn't give dinners), 8 P.M. Carriages at 10. There you are!"

It sounded very pleasant, I was obliged to admit. "And I know some of the *lady*-society already," I added. "One of them came in the same carriage with me."

"What was she like? Then perhaps I can identify her."

"The *name* was Lady Muriel Orme. As to what she was *like*—well, *I* thought her very beautiful. Do you know her?"

"Yes—I do know her." And the grave Doctor coloured slightly as he added

“Yes, I agree with you. She *is* beautiful.”

“*I* quite lost my heart to her!” I went on mischievously. “We talked——”

“Have some supper!” Arthur interrupted with an air of relief, as the maid entered with the tray. And he steadily resisted all my attempts to return to the subject of Lady Muriel until the evening had almost worn itself away. Then, as we sat gazing into the fire, and conversation was lapsing into silence, he made a hurried confession.

“I hadn’t meant to tell you anything about her,” he said (naming no names, as if there were only one ‘she’ in the world!) “till you had seen more of her, and formed your own judgment of her: but somehow you surprised it out of me. And I’ve not breathed a word of it to any one else. But I can trust *you* with a secret, old friend! Yes! It’s true of *me*, what I suppose *you* said in jest.”

“In the merest jest, believe me!” I said earnestly. “Why, man, I’m three times her age! But if she’s *your* choice, then I’m sure she’s all that is good and——”

“—and sweet,” Arthur went on, “and pure, and self-denying, and true-hearted, and——” he broke off hastily, as if he could not trust himself to say more on a subject so sacred and so precious. Silence followed: and I leaned back drowsily in my easy-chair, filled with bright and beautiful imaginings of Arthur and his lady-love, and of all the peace and happiness in store for them.

I pictured them to myself walking together, lingeringly and lovingly, under arching trees, in a sweet garden of their own, and welcomed back by their faithful gardener, on their return from some brief excursion.

It seemed natural enough that the gardener should be filled with exuberant delight at the return of so gracious a master and mistress—and how strangely childlike they looked! I could have taken them for Sylvie and Bruno—less natural that he should show it by such wild dances, such crazy songs!

“He thought he saw a Rattlesnake
That questioned him in Greek:
He looked again, and found it was
The Middle of Next Week.
‘The one thing I regret,’ he said,
‘Is that it cannot speak!’”

—least natural of all that the Vice-Warden and ‘my Lady’ should be standing close beside me, discussing an open letter, which had just been handed to him by the Professor, who stood, meekly waiting, a few yards off.

“If it were not for those two brats,” I heard him mutter, glancing savagely at Sylvie and Bruno, who were courteously listening to the Gardener’s song, “there would be no difficulty whatever.”

“Let’s hear that bit of the letter again,” said my Lady. And the Vice-Warden read aloud:—

“——and we therefore entreat you graciously to accept the Kingship, to which you have been unanimously elected by the Council of Elfland: and that you will allow your son Bruno—of whose goodness, cleverness, and beauty, reports have reached us—to be regarded as Heir-Apparent.”

“But what’s the difficulty?” said my Lady.

“Why, don’t you see? The Ambassador, that brought this, is waiting in the house: and he’s sure to see Sylvie and Bruno: and then, when he sees Uggug, and remembers all that about ‘goodness, cleverness, and beauty,’ why, he’s sure to——”

“And *where* will you find a better boy than *Uggug*?” my Lady indignantly interrupted. “Or a wittier, or a lovelier?”

To all of which the Vice-Warden simply replied “Don’t you be a great blethering goose! Our only chance is to keep those two brats out of sight. If *you* can manage *that*, you may leave the rest to *me*. *I’ll* make him believe Uggug to be a model of cleverness and all that.”

“We must change his name to Bruno, of course?” said my Lady.

The Vice-Warden rubbed his chin. “Humph! No!” he said musingly. “Wouldn’t do. The boy’s such an utter idiot, he’d never learn to answer to it.”

“*Idiot*, indeed!” cried my Lady. “He’s no more an idiot than *I* am!”

“You’re right, my dear,” the Vice-Warden soothingly replied. “He isn’t, indeed!”

My Lady was appeased. “Let’s go in and receive the Ambassador,” she said, and beckoned to the Professor. “Which room is he waiting in?” she inquired.

“In the Library, Madam.”

“And *what* did you say his name was?” said the Vice-Warden.

The Professor referred to a card he held in his hand. “His Adiposity the Baron Doppelgeist.”

“Why does he come with such a funny name?” said my Lady.

“He couldn’t well change it on the journey,” the Professor meekly replied, “because of the luggage.”

“*You* go and receive him,” my Lady said to the Vice-Warden, “and *I’ll* attend to the children.”

Chapter VII. The Baron’s Embassy

I was following the Vice-Warden, but, on second thoughts, went after my Lady, being curious to see how she would manage to keep the children out of sight.

I found her holding Sylvie’s hand, and with her other hand stroking Bruno’s hair in a most tender and motherly fashion: both children were looking bewildered and half-frightened.

“My own darlings,” she was saying, “I’ve been planning a little treat for you! The Professor shall take you a long walk into the woods this beautiful evening: and you shall take a basket of food with you, and have a little picnic down by the river!”

Bruno jumped, and clapped his hands. “That *are* nice!” he cried. “Aren’t it, Sylvie?”

Sylvie, who hadn’t quite lost her surprised look, put up her mouth for a kiss. “Thank you *very* much,” she said earnestly.

My Lady turned her head away to conceal the broad grin of triumph that spread over her vast face, like a ripple on a lake. “Little simpletons!” she muttered to herself, as she marched up to the house. I followed her in.

“Quite so, your Excellency,” the Baron was saying as we entered the Library. “All the infantry were under *my* command.” He turned, and was duly presented to my Lady.

“A *military* hero?” said my Lady. The fat little man simpered. “Well, yes,” he replied, modestly casting down his eyes. “My ancestors were all famous for military genius.”

My Lady smiled graciously. “It often runs in families,” she remarked: “just as a love for pastry does.”

The Baron looked slightly offended, and the Vice-Warden discreetly changed the subject. "Dinner will soon be ready," he said. "May I have the honour of conducting your Adiposity to the guest-chamber?"

"Certainly, certainly!" the Baron eagerly assented. "It would never do to keep *dinner* waiting!" And he almost trotted out of the room after the Vice-Warden.

He was back again so speedily that the Vice-Warden had barely time to explain to my Lady that her remark about "a love for pastry" was "unfortunate. You might have seen, with half an eye," he added, "that that's *his* line. Military genius, indeed! Pooh!"

"Dinner ready yet?" the Baron enquired, as he hurried into the room.

"Will be in a few minutes," the Vice-Warden replied. "Meanwhile, let's take a turn in the garden. You were telling me," he continued, as the trio left the house, "something about a great battle in which you had the command of the infantry——"

"True," said the Baron. "The enemy, as I was saying, far outnumbered us: but I marched my men right into the middle of—what's that?" the Military Hero exclaimed in agitated tones, drawing back behind the Vice-Warden, as a strange creature rushed wildly upon them, brandishing a spade.

"It's only the Gardener!" the Vice-Warden replied in an encouraging tone. "Quite harmless, I assure you. Hark, he's singing! It's his favorite amusement."

And once more those shrill discordant tones rang out:—

"He thought he saw a Banker's Clerk
Descending from the bus:
He looked again, and found it was
A Hippopotamus:
'If this should stay to dine,' he said,
'There won't be much for us!'"

Throwing away the spade, he broke into a frantic jig, snapping his fingers, and repeating, again and again

"There won't be much for us!
There won't be much for us!"

Once more the Baron looked slightly offended, but the Vice-Warden hastily explained that the song had no allusion to *him*, and in fact had no meaning at all. "You didn't mean anything by it, now *did* you?" He appealed to the Gardener, who had finished his song, and stood, balancing himself on one leg, and looking at them, with his mouth open.

"I never means nothing," said the Gardener: and Uggug luckily came up at the moment, and gave the conversation a new turn.

"Allow me to present my son," said the Vice-Warden; adding, in a whisper, "one of the best and cleverest boys that ever lived! I'll contrive for you to see some of his cleverness. He knows everything that other boys *don't* know; and in archery, in fishing, in painting, and in music, his skill is—but you shall judge for yourself. You see that target over there? He shall shoot an arrow at it. Dear boy," he went on aloud, "his Adiposity would like to see you shoot. Bring his Highness' bow and arrows!"

Uggug looked very sulky as he received the bow and arrow, and prepared to shoot. Just as the arrow left the bow, the Vice-Warden trod heavily on the toe of the Baron, who yelled with the pain.



'It was a Hippopotamus'

"Ten thousand pardons!" he exclaimed. "I stepped back in my excitement. See! It is a bull's-eye!"

The Baron gazed in astonishment. "He held the bow so awkwardly, it seemed impossible!" he muttered. But there was no room for doubt: there was the arrow, right in the centre of the bull's-eye!

"The lake is close by," continued the Vice-Warden. "Bring his Highness' fishing-rod!" And Uggug most unwillingly held the rod, and dangled the fly over the water.

"A beetle on your arm!" cried my Lady, pinching the poor Baron's arm worse than if ten lobsters had seized it at once. "*That* kind is poisonous," she explained. "But *what* a pity! You missed seeing the fish pulled out!"

An enormous dead cod-fish was lying on the bank, with the hook in its mouth.

"I had always fancied," the Baron faltered, "that cod were *salt-water* fish?"

"Not in *this* country," said the Vice-Warden. "Shall we go in? Ask my son some question on the way—*any* subject you like!" And the sulky boy was violently shoved forwards, to walk at the Baron's side.

"Could your Highness tell me," the Baron cautiously began, "how much seven times nine would come to?"

"Turn to the left!" cried the Vice-Warden, hastily stepping forwards to show the way—so hastily, that he ran against his unfortunate guest, who fell heavily on his face.

"*So* sorry!" my Lady exclaimed, as she and her husband helped him to his feet again. "My son was in the act of saying 'sixty-three' as you fell!"

The Baron said nothing: he was covered with dust, and seemed much hurt, both in body and mind. However, when they had got him into the house, and given him a good brushing, matters looked a little better.

Dinner was served in due course, and every fresh dish seemed to increase the good-humour of the Baron: but all efforts, to get him to express his opinion as to Uggug's cleverness, were in vain, until that interesting youth had left the room, and was seen from the open window, prowling about the lawn with a little basket, which he was filling with frogs.

"So fond of Natural History as he is, dear boy!" said the doting mother. "Now *do* tell us, Baron, what you think of him!"

"To be perfectly candid," said the cautious Baron, "I would like a *little* more evidence. I think you mentioned his skill in——"

"Music?" said the Vice-Warden. "Why, he's simply a prodigy! You shall hear him play the piano." And he walked to the window. "Ug—I mean my boy! Come in for a minute, *and bring the music-master with you!* To turn over the music for him," he added as an explanation.

Uggug, having filled his basket with frogs, had no objection to obey, and soon appeared in the room, followed by a fierce-looking little man, who asked the Vice-Warden "Vot music vill you haf?"

"The Sonata that His Highness plays so charmingly," said the Vice-Warden.

"His Highness haf not——" the music-master began, but was sharply stopped by the Vice-Warden.

"Silence, Sir! Go and turn over the music for his Highness. My dear," (to the Wardeness) "will you show him what to do? And meanwhile, Baron, I'll just show you a most interesting map we have—of Outland, and Fairyland, and that sort of thing."



The map of Fairyland

By the time my Lady had returned, from explaining things to the music-master, the map had been hung up, and the Baron was already much bewildered by the Vice-Warden's habit of pointing to one place while he shouted out the name of another.

My Lady joining in, pointing out other places, and shouting other names, only made matters worse; and at last the Baron, in despair, took to pointing out places for himself, and feebly asked "Is that great yellow splotch *Fairyland*?"

"Yes, that's Fairyland," said the Vice-Warden: "and you might as well give him a hint," he muttered to my Lady, "about going back to-morrow. He eats like a shark! It would hardly do for *me* to mention it."

His wife caught the idea, and at once began giving hints of the most subtle and delicate kind. "Just see what a short way it is back to Fairyland! Why, if you started to-morrow morning, you'd get there in very little more than a week!"

The Baron looked incredulous. "It took me a full month to *come*," he said. "But it's ever so much shorter, going *back*, you know!"

The Baron looked appealingly to the Vice-Warden, who chimed in readily. "You can go back *five* times, in the time it took you to come here *once*—if you start to-morrow morning!"

All this time the Sonata was pealing through the room. The Baron could not help admitting to himself that it was being magnificently played: but he tried in vain to get a glimpse of the youthful performer. Every time he had nearly succeeded in catching sight of him, either the Vice-Warden or his wife was sure to get in the way, pointing out some new place on the map, and deafening him with some new name.

He gave in at last, wished a hasty good-night, and left the room, while his host and hostess interchanged looks of triumph.

"Deftly done!" cried the Vice-Warden. "Craftily contrived! But what means all that tramping on the stairs?" He half-opened the door, looked out, and added in a tone of dismay, "The Baron's boxes are being carried down!"

"And what means all that rumbling of wheels?" cried my Lady. She peeped through the window curtains. "The Baron's carriage has come round!" she groaned.

At this moment the door opened: a fat, furious face looked in: a voice, hoarse with passion, thundered out the words "My room is full of frogs—I leave you!": and the door closed again.

And still the noble Sonata went pealing through the room: but it was *Arthur's* masterly touch that roused the echoes, and thrilled my very soul with the tender music of the immortal 'Sonata Pathetique': and it was not till the last note had died away that the tired but happy traveler could bring himself to utter the words "good-night!" and to seek his much-needed pillow.

Chapter VIII. A Ride On A Lion

The next day glided away, pleasantly enough, partly in settling myself in my new quarters, and partly in strolling round the neighbourhood, under Arthur's guidance, and trying to form a general idea of Elveston and its inhabitants. When five o'clock arrived, Arthur proposed—without any embarrassment this time—to take me with him up to 'the Hall,' in order that I might make acquaintance with the Earl of Ainslie, who had taken it for the season, and renew acquaintance with his daughter Lady Muriel.

My first impressions of the gentle, dignified, and yet genial old man were entirely favourable: and the *real* satisfaction that showed itself on his daughter's face, as she met me with the words "this is indeed an unlooked-for pleasure!", was very soothing for whatever remains of personal vanity the failures and disappointments of many long years, and much buffeting with a rough world, had left in me.

Yet I noted, and was glad to note, evidence of a far deeper feeling than mere friendly regard, in her meeting with Arthur—though this was, as I gathered, an almost daily occurrence—and the conversation between them, in which the Earl and I were only occasional sharers, had an ease and a spontaneity rarely met with except between *very* old friends: and, as I knew that they had not known each other for a longer period than the summer which was now rounding into autumn, I felt certain that 'Love,' and Love alone, could explain the phenomenon.

"How convenient it would be," Lady Muriel laughingly remarked, *à propos* of my having insisted on saving her the trouble of carrying a cup of tea across the room to the Earl, "if cups of tea had no weight at all! Then perhaps ladies would *sometimes* be permitted to carry them for short distances!"

"One can easily imagine a situation," said Arthur, "where things would *necessarily* have no weight, relatively to each other, though each would have its usual weight, looked at by itself."

"Some desperate paradox!" said the Earl. "Tell us how it could be. We shall never guess it."

"Well, suppose this house, just as it is, placed a few billion miles above a planet, and with nothing else near enough to disturb it: of course it falls *to* the planet?"

The Earl nodded. "Of course—though it might take some centuries to do it."

"And is five-o'clock-tea to be going on all the while?" said Lady Muriel.

"That, and other things," said Arthur. "The inhabitants would live their lives, grow up and die, and still the house would be falling, falling, falling! But now as to the relative weight of things. Nothing can be *heavy*, you know, except by *trying* to fall, and being prevented from doing so. You all grant that?"

We all granted that.

“Well, now, if I take this book, and hold it out at arms length, of course I feel its *weight*. It is trying to fall, and I prevent it. And, if I let go, it falls to the floor. But, if we were all falling together, it couldn't be *trying* to fall any quicker, you know: for, if I let go, what more could it do than fall? And, as my hand would be falling too—at the same rate—it would never leave it, for that would be to get ahead of it in the race. And it could never overtake the falling floor!”

“I see it clearly,” said Lady Muriel. “But it makes one dizzy to think of such things! How *can* you make us do it?”

“There is a more curious idea yet,” I ventured to say. “Suppose a cord fastened to the house, from below, and pulled down by some one on the planet. Then of course the *house* goes faster than its natural rate of falling: but the furniture—with our noble selves—would go on falling at their old pace, and would therefore be left behind.”

“Practically, we should rise to the ceiling,” said the Earl. “The inevitable result of which would be concussion of brain.”

“To avoid that,” said Arthur, “let us have the furniture fixed to the floor, and ourselves tied down to the furniture. Then the five-o'clock-tea could go on in peace.”

“With one little drawback!” Lady Muriel gaily interrupted. “We should take the *cups* down with us: but what about the *tea*?”

“I had forgotten the *tea*,” Arthur confessed. “*That*, no doubt, would rise to the ceiling—unless you chose to drink it on the way!”

“Which, I think, is *quite* nonsense enough for one while!” said the Earl. “What news does this gentleman bring us from the great world of London?”

This drew *me* into the conversation, which now took a more conventional tone. After a while, Arthur gave the signal for our departure, and in the cool of the evening we strolled down to the beach, enjoying the silence, broken only by the murmur of the sea and the far-away music of some fishermen's song, almost as much as our late pleasant talk.

We sat down among the rocks, by a little pool, so rich in animal, vegetable, and zoöphytic—or whatever is the right word—life, that I became entranced in the study of it, and, when Arthur proposed returning to our lodgings, I begged to be left there for a while, to watch and muse alone.

The fishermen's song grew ever nearer and clearer, as their boat stood in for the beach; and I would have gone down to see them land their cargo of fish, had not the microcosm at my feet stirred my curiosity yet more keenly.

One ancient crab, that was for ever shuffling frantically from side to side of the pool, had particularly fascinated me: there was a vacancy in its stare, and an aimless violence in its behaviour, that irresistibly recalled the Gardener who had befriended Sylvie and Bruno: and, as I gazed, I caught the concluding notes of the tune of his crazy song.

The silence that followed was broken by the sweet voice of Sylvie. “Would you please let us out into the road?”

“What! After that old beggar again?” the Gardener yelled, and began singing:—

“He thought he saw a Kangaroo
That worked a coffee-mill:

He looked again, and found it was
A Vegetable-Pill.
'Were I to swallow this,' he said,
'I should be very ill!'"

"We don't want him to swallow *anything*," Sylvie explained. "He's not hungry. But we want to see him. So will you please——"



'He thought he saw a Kangaroo'

"Certainly!" the Gardener promptly replied. "I *always* please. Never displeases nobody. There you are!" And he flung the door open, and let us out upon the dusty high-road.

We soon found our way to the bush, which had so mysteriously sunk into the ground: and here Sylvie drew the Magic Locket from its hiding-place, turned it over with a thoughtful air, and at last appealed to Bruno in a rather helpless way. "What *was* it we had to do with it, Bruno? It's all gone out of my head!"

"Kiss it!" was Bruno's invariable recipe in cases of doubt and difficulty. Sylvie kissed it, but no result followed.

"Rub it the wrong way," was Bruno's next suggestion.

"Which *is* the wrong way?" Sylvie most reasonably enquired. The obvious plan was to try *both* ways.

Rubbing from left to right had no visible effect whatever.

From right to left—"Oh, stop, Sylvie!" Bruno cried in sudden alarm. "Whatever *is* going to happen?"

For a number of trees, on the neighbouring hillside, were moving slowly upwards, in solemn procession: while a mild little brook, that had been rippling

at our feet a moment before, began to swell, and foam, and hiss, and bubble, in a truly alarming fashion.



The mouse-lion

“Rub it some other way!” cried Bruno. “Try up-and-down! Quick!”

It was a happy thought. Up-and-down did it: and the landscape, which had been showing signs of mental aberration in various directions, returned to its normal condition of sobriety—with the exception of a small yellowish-brown mouse, which continued to run wildly up and down the road, lashing its tail like a little lion.

“Let’s follow it,” said Sylvie: and this also turned out a happy thought. The mouse at once settled down into a business-like jog-trot, with which we could easily keep pace. The only phenomenon, that gave me any uneasiness, was the rapid increase in the *size* of the little creature we were following, which became every moment more and more like a real lion.

Soon the transformation was complete: and a noble lion stood patiently waiting for us to come up with it. No thought of fear seemed to occur to the children, who patted and stroked it as if it had been a Shetland-pony.

“Help me up!” cried Bruno. And in another moment Sylvie had lifted him upon the broad back of the gentle beast, and seated herself behind him, pillion-fashion. Bruno took a good handful of mane in each hand, and made believe to guide this new kind of steed. “Gee-up!” seemed quite sufficient by way of *verbal* direction: the lion at once broke into an easy canter, and we soon found ourselves in the depths of the forest. I say ‘*we*,’ for I am certain that *I* accompanied them—though *how* I managed to keep up with a cantering lion I am wholly unable to explain. But I was certainly one of the party when we came upon an old beggar-man cutting sticks, at whose feet the lion made a profound obeisance, Sylvie and Bruno at the same moment dismounting, and leaping into the arms of their father.

“From bad to worse!” the old man said to himself, dreamily, when the children had finished their rather confused account of the Ambassador’s visit, gathered no doubt from general report, as they had not seen him themselves. “From bad to worse! That is their destiny. I see it, but I cannot alter it. The selfishness of a mean and crafty man—the selfishness of an ambitious and silly woman—the selfishness of a spiteful and loveless child—all tend one way, from bad to worse!

And you, my darlings, must suffer it awhile, I fear. Yet, when things are at their worst, you can come to me. I can do but little as yet——”

Gathering up a handful of dust and scattering it in the air, he slowly and solemnly pronounced some words that sounded like a charm, the children looking on in awe-struck silence:—

“Let craft, ambition, spite,
Be quenched in Reason’s night,
Till weakness turn to might,
Till what is dark be light,
Till what is wrong be right!”

The cloud of dust spread itself out through the air, as if it were alive, forming curious shapes that were for ever changing into others.

“It makes letters! It makes words!” Bruno whispered, as he clung, half-frightened, to Sylvie. “Only I *ca’n’t* make them out! Read them, Sylvie!”

“I’ll try,” Sylvie gravely replied. “Wait a minute—if only I could see that word——”

“I should be very ill!” a discordant voice yelled in our ears.

“‘Were I to swallow this,’ he said,
‘I should be very ill!’”

Chapter IX. A Jester And A Bear

Yes, we were in the garden once more: and, to escape that horrid discordant voice, we hurried indoors, and found ourselves in the library—Uggug blubbing, the Professor standing by with a bewildered air, and my Lady, with her arms clasped round her son’s neck, repeating, over and over again, “and *did* they give him nasty lessons to learn? My own pretty pet!”

“What’s all this noise about?” the Vice-Warden angrily enquired, as he strode into the room. “And who put the hat-stand here?” And he hung his hat up on Bruno, who was standing in the middle of the room, too much astonished by the sudden change of scene to make any attempt at removing it, though it came down to his shoulders, making him look something like a small candle with a large extinguisher over it.

The Professor mildly explained that His Highness had been graciously pleased to say he wouldn’t do his lessons.

“Do your lessons this instant, you young cub!” thundered the Vice-Warden. “And take *this!*” and a resounding box on the ear made the unfortunate Professor reel across the room.

“Save me!” faltered the poor old man, as he sank, half-fainting, at my Lady’s feet.

“Shave you? Of course I will!” my Lady replied, as she lifted him into a chair, and pinned an anti-macassar round his neck. “Where’s the razor?”

The Vice-Warden meanwhile had got hold of Uggug, and was belabouring him with his umbrella. “Who left this loose nail in the floor?” he shouted. “Hammer it in, I say! Hammer it in!” Blow after blow fell on the writhing Uggug, till he dropped howling to the floor.



'Hammer it in!'

Then his father turned to the 'shaving' scene which was being enacted, and roared with laughter. "Excuse me, dear, I ca'n't help it!" he said as soon as he could speak. "You *are* such an utter donkey! Kiss me, Tabby!"

And he flung his arms round the neck of the terrified Professor, who raised a wild shriek, but whether he received the threatened kiss or not I was unable to see, as Bruno, who had by this time released himself from his extinguisher, rushed headlong out of the room, followed by Sylvie; and I was so fearful of being left alone among all these crazy creatures that I hurried after them.

"We must go to Father!" Sylvie panted, as they ran down the garden. "I'm *sure* things are at their worst! I'll ask the Gardener to let us out again."

"But we ca'n't *walk* all the way!" Bruno whimpered. "How I *wiss* we had a coach-and-four, like Uncle!"

And, shrill and wild, rang through the air the familiar voice:—

"He thought he saw a Coach-and-Four
That stood beside his bed:
He looked again, and found it was
A Bear without a Head.
'Poor thing,' he said, 'poor silly thing!
It's waiting to be fed!"



A Bear without a Head

“No, I ca’n’t let you out again!” he said, before the children could speak. “The Vice-Warden gave it me, he did, for letting you out last time! So be off with you!” And, turning away from them, he began digging frantically in the middle of a gravel-walk, singing, over and over again,

“‘Poor thing,’ he said, ‘poor silly thing!
It’s waiting to be fed!’”

but in a more musical tone than the shrill screech in which he had begun.

The music grew fuller and richer at every moment: other manly voices joined in the refrain: and soon I heard the heavy thud that told me the boat had touched the beach, and the harsh grating of the shingle as the men dragged it up. I roused myself, and, after lending them a hand in hauling up their boat, I lingered yet awhile to watch them disembark a goodly assortment of the hard-won ‘treasures of the deep.’

When at last I reached our lodgings I was tired and sleepy, and glad enough to settle down again into the easy-chair, while Arthur hospitably went to his cupboard, to get me out some cake and wine, without which, he declared, he could not, as a doctor, permit my going to bed.

And how that cupboard-door *did* creak! It surely could not be *Arthur*, who was opening and shutting it so often, moving so restlessly about, and muttering like the soliloquy of a tragedy-queen!

No, it was a *female* voice. Also the figure—half-hidden by the cupboard-door—was a *female* figure, massive, and in flowing robes. Could it be the landlady? The door opened, and a strange man entered the room.

“What *is* that donkey doing?” he said to himself, pausing, aghast, on the threshold.

The lady, thus rudely referred to, was his wife. She had got one of the cupboards open, and stood with her back to him, smoothing down a sheet of brown paper on one of the shelves, and whispering to herself “So, so! Deftly done! Craftily contrived!”

Her loving husband stole behind her on tiptoe, and tapped her on the head. “Boh!” he playfully shouted at her ear. “Never tell me again I ca’n’t say ‘boh’ to a goose!”

My Lady wrung her hands. “Discovered!” she groaned. “Yet no—he is one of us! Reveal it not, oh Man! Let it bide its time!”

“Reveal *what* not?” her husband testily replied, dragging out the sheet of brown paper. “What are you hiding here, my Lady? I insist upon knowing!”

My Lady cast down her eyes, and spoke in the littlest of little voices. “Don’t make fun of it, Benjamin!” she pleaded. “It’s—it’s—don’t you understand? It’s a DAGGER!”

“And what’s *that* for?” sneered His Excellency. “We’ve only got to make people *think* he’s dead! We haven’t got to *kill* him! And made of tin, too!” he snarled, contemptuously bending the blade round his thumb. “Now, Madam, you’ll be good enough to explain. First, what do you call me *Benjamin* for?”

“It’s part of the Conspiracy, Love! One *must* have an alias, you know——”

“Oh, an *alias*, is it? Well! And next, what did you get this dagger for? Come, no evasions! You ca’n’t deceive *me*!”

“I got it for—for—for——” the detected Conspirator stammered, trying her best to put on the assassin-expression that she had been practising at the looking-glass. “For——”

“For *what*, Madam!”

“Well, for eighteenpence, if you *must* know, dearest! That’s what I got it for, on my——”

“Now *don’t* say your Word and Honour!” groaned the other Conspirator. “Why, they aren’t worth half the money, put together!”

“On my *birthday*,” my Lady concluded in a meek whisper. “One *must* have a dagger, you know. It’s part of the——”

“Oh, don’t talk of Conspiracies!” her husband savagely interrupted, as he tossed the dagger into the cupboard. “You know about as much how to manage a Conspiracy as if you were a chicken. Why, the first thing is to get a disguise. Now, just look at this!”

And with pardonable pride he fitted on the cap and bells, and the rest of the Fool’s dress, and winked at her, and put his tongue in his cheek. “Is *that* the sort of thing, now?” he demanded.

My Lady’s eyes flashed with all a Conspirator’s enthusiasm. “The very thing!” she exclaimed, clapping her hands. “You do look, oh, such a *perfect* Fool!”

The Fool smiled a doubtful smile. He was not quite clear whether it was a compliment or not, to express it so plainly. “You mean a Jester? Yes, that’s what I intended. And what do you think *your* disguise is to be?” And he proceeded to unfold the parcel, the lady watching him in rapture.

“Oh, how lovely!” she cried, when at last the dress was unfolded. “What a *splendid* disguise! An Esquimaux peasant-woman!”

“An Esquimaux peasant, indeed!” growled the other. “Here, put it on, and look at yourself in the glass. Why, it’s a *Bear*, ca’n’t you use your eyes?” He checked himself suddenly, as a harsh voice yelled through the room

“He looked again, and found it was
A Bear without a Head!”

But it was only the Gardener, singing under the open window. The Vice-Warden stole on tip-toe to the window, and closed it noiselessly, before he ventured to go on. “Yes, Lovey, a *Bear*: but not without a *head*, I hope! You’re the Bear, and me the Keeper. And if any one knows us, they’ll have sharp eyes, that’s all!”

“I shall have to practise the steps a bit,” my Lady said, looking out through the Bear’s mouth: “one ca’n’t help being rather human just at first, you know. And of course you’ll say ‘Come up, Bruin!’, won’t you?”

“Yes, of course,” replied the Keeper, laying hold of the chain, that hung from the Bear’s collar, with one hand, while with the other he cracked a little whip. “Now go round the room in a sort of a dancing attitude. Very good, my dear, very good. Come up, Bruin! Come up, I say!”

He roared out the last words for the benefit of Uggug, who had just come into the room, and was now standing, with his hands spread out, and eyes and mouth wide open, the very picture of stupid amazement. “Oh, my!” was all he could gasp out.

The Keeper pretended to be adjusting the bear’s collar, which gave him an opportunity of whispering, unheard by Uggug, “*my* fault, I’m afraid! Quite forgot to fasten the door. Plot’s ruined if *he* finds it out! Keep it up a minute or two longer. Be savage!” Then, while seeming to pull it back with all his strength,



‘Come up, Bruin!’

he let it advance upon the scared boy: my Lady, with admirable presence of mind, kept up what she no doubt intended for a savage growl, though it was more like the purring of a cat: and Uggug backed out of the room with such haste that he tripped over the mat, and was heard to fall heavily outside—an accident to which even his doting mother paid no heed, in the excitement of the moment.

The Vice-Warden shut and bolted the door. “Off with the disguises!” he panted. “There’s not a moment to lose. He’s sure to fetch the Professor, and we couldn’t take *him* in, you know!” And in another minute the disguises were stowed away in the cupboard, the door unbolted, and the two Conspirators seated lovingly side-by-side on the sofa, earnestly discussing a book the Vice-Warden had hastily snatched off the table, which proved to be the City-Directory of the capital of Outland.

The door opened, very slowly and cautiously, and the Professor peeped in, Uggug’s stupid face being just visible behind him.

“It is a beautiful arrangement!” the Vice-Warden was saying with enthusiasm. “You see, my precious one, that there are fifteen houses in Green Street, *before* you turn into West Street.”

“*Fifteen* houses! Is it *possible*?” my Lady replied. “I thought it was fourteen!” And, so intent were they on this interesting question, that neither of them even looked up till the Professor, leading Uggug by the hand, stood close before them.

My Lady was the first to notice their approach. “Why, here’s the Professor!” she exclaimed in her blandest tones. “And my precious child too! Are lessons over?”

“A strange thing has happened!” the Professor began in a trembling tone. “His Exalted Fatness” (this was one of Uggug’s many titles) “tells me he has just

seen, in this very room, a Dancing-Bear and a Court-Jester!"

The Vice-Warden and his wife shook with well-acted merriment.

"Not in *this* room, darling!" said the fond mother. "We've been sitting here this hour or more, reading——," here she referred to the book lying on her lap, "—reading the—the City-Directory."

"Let me feel your pulse, my boy!" said the anxious father. "Now put out your tongue. Ah, I thought so! He's a little feverish, Professor, and has had a bad dream. Put him to bed at once, and give him a cooling draught."

"I ain't been dreaming!" his Exalted Fatness remonstrated, as the Professor led him away.

"Bad grammar, Sir!" his father remarked with some sternness. "Kindly attend to *that* little matter, Professor, as soon as you have corrected the feverishness. And, by the way, Professor!" (The Professor left his distinguished pupil standing at the door, and meekly returned.) "There is a rumour afloat, that the people wish to elect an—in point of fact, an—you understand that I mean an——"

"Not *another Professor!*" the poor old man exclaimed in horror.

"No! Certainly not!" the Vice-Warden eagerly explained. "Merely an *Emperor*, you understand."

"An *Emperor!*" cried the astonished Professor, holding his head between his hands, as if he expected it to come to pieces with the shock. "What will the Warden——"

"Why, the *Warden* will most likely *be* the new Emperor!" my Lady explained. "Where could we find a better? Unless, perhaps——" she glanced at her husband.

"Where indeed!" the Professor fervently responded, quite failing to take the hint.

The Vice-Warden resumed the thread of his discourse. "The reason I mentioned it, Professor, was to ask *you* to be so kind as to preside at the Election. You see it would make the thing *respectable*—no suspicion of anything underhand——"

"I fear I ca'n't, your Excellency!" the old man faltered. "What will the Warden——"

"True, true!" the Vice-Warden interrupted. "Your position, as Court-Professor, makes it awkward, I admit. Well, well! Then the Election shall be held without you."

"Better so, than if it were held *within* me!" the Professor murmured with a bewildered air, as if he hardly knew what he was saying. "Bed, I think your Highness said, and a cooling-draught?" And he wandered dreamily back to where Uggug sulkily awaited him.

I followed them out of the room, and down the passage, the Professor murmuring to himself, all the time, as a kind of aid to his feeble memory, "C, C, C; Couch, Cooling-Draught, Correct-Grammar," till, in turning a corner, he met Sylvie and Bruno, so suddenly that the startled Professor let go of his fat pupil, who instantly took to his heels.

Chapter X. The Other Professor

"We were looking for you!" cried Sylvie, in a tone of great relief. "We *do* want you so much, you ca'n't think!"

“What is it, dear children?” the Professor asked, beaming on them with a very different look from what Uggug ever got from him.

“We want you to speak to the Gardener for us,” Sylvie said, as she and Bruno took the old man’s hands and led him into the hall.

“He’s ever so unkind!” Bruno mournfully added. “They’s *all* unkind to us, now that Father’s gone. The Lion were *much* nicer!”

“But you must explain to me, please,” the Professor said with an anxious look, “*which* is the Lion, and *which* is the Gardener. It’s *most* important not to get two such animals confused together. And one’s very liable to do it in their case—both having mouths, you know——”

“Doos oo *always* confuses two animals together?” Bruno asked.

“Pretty often, I’m afraid,” the Professor candidly confessed. “Now, for instance, there’s the rabbit-hutch and the hall-clock.” The Professor pointed them out. “One gets a little confused with *them*—both having doors, you know. Now, only yesterday—would you believe it?—I put some lettuces into the clock, and tried to wind up the rabbit!”

“Did the rabbit *go*, after oo wounded it up?” said Bruno.

The Professor clasped his hands on the top of his head, and groaned. “Go? I should think it *did* go! Why, it’s *gone*! And where ever it’s gone to—that’s what I *ca’n’t* find out! I’ve done my best—I’ve read all the article ‘Rabbit’ in the great dictionary——Come in!”

“Only the tailor, Sir, with your little bill,” said a meek voice outside the door.

“Ah, well, I can soon settle *his* business,” the Professor said to the children, “if you’ll just wait a minute. How much is it, this year, my man?” The tailor had come in while he was speaking.

“Well, it’s been a doubling so many years, you see,” the tailor replied, a little gruffly, “and I think I’d like the money now. It’s two thousand pound, it is!”

“Oh, that’s nothing!” the Professor carelessly remarked, feeling in his pocket, as if he always carried at least *that* amount about with him. “But wouldn’t you like to wait just another year, and make it *four* thousand? Just think how rich you’d be! Why, you might be a *King*, if you liked!”

“I don’t know as I’d care about being a *King*,” the man said thoughtfully. “But it *dew* sound a powerful sight o’ money! Well, I think I’ll wait——”

“Of course you will!” said the Professor. “There’s good sense in *you*, I see. Good-day to you, my man!”

“Will you ever have to pay him that four thousand pounds?” Sylvie asked as the door closed on the departing creditor.

“*Never*, my child!” the Professor replied emphatically. “He’ll go on doubling it, till he dies. You see it’s *always* worth while waiting another year, to get twice as much money! And now what would you like to do, my little friends? Shall I take you to see the Other Professor? This would be an excellent opportunity for a visit,” he said to himself, glancing at his watch: “he generally takes a short rest—of fourteen minutes and a half—about this time.”

Bruno hastily went round to Sylvie, who was standing at the other side of the Professor, and put his hand into hers. “I *thinks* we’d like to go,” he said doubtfully: “only please let’s go all together. It’s best to be on the safe side, oo know!”

“Why, you talk as if you were *Sylvie*!” exclaimed the Professor.

"I know I did," Bruno replied very humbly. "I quite forgot I wasn't Sylvie. Only I fought he might be rarer fierce!"

The Professor laughed a jolly laugh. "Oh, he's quite tame!" he said. "He never bites. He's only a little—a little *dreamy*, you know." He took hold of Bruno's other hand, and led the children down a long passage I had never noticed before—not that there was anything remarkable in *that*: I was constantly coming on new rooms and passages in that mysterious Palace, and very seldom succeeded in finding the old ones again.

Near the end of the passage the Professor stopped. "This is his room," he said, pointing to the solid wall.

"We can't get in through *there*!" Bruno exclaimed.

Sylvie said nothing, till she had carefully examined whether the wall opened anywhere. Then she laughed merrily: "You're playing us a trick, you dear old thing!" she said. "There's no *door* here!"

"There isn't any door to the room," said the Professor. "We shall have to climb in at the window."



The Other Professor

So we went into the garden, and soon found the window of the Other Professor's room. It was a ground-floor window, and stood invitingly open: the Professor first lifted the two children in, and then he and I climbed in after them.

The Other Professor was seated at a table, with a large book open before him, on which his forehead was resting: he had clasped his arms round the book, and was snoring heavily. "He usually reads like that," the Professor remarked, "when the book's very interesting: and then sometimes it's very difficult to get him to attend!"

This seemed to be one of the difficult times: the Professor lifted him up, once or twice, and shook him violently: but he always returned to his book the moment he was let go of, and showed by his heavy breathing that the book was as interesting as ever.

"How dreamy he is!" the Professor exclaimed. "He must have got to a *very* interesting part of the book!" And he rained quite a shower of thumps on the Other Professor's back, shouting "Hoy! Hoy!" all the time. "Isn't it *wonderful* that he should be so dreamy?" he said to Bruno.

"If he's always as *sleepy* as that," Bruno remarked, "a *course* he's dreamy!"
"But what are we to *do*?" said the Professor. "You see he's quite wrapped up in the book!"

"Suppose oo *shuts* the book?" Bruno suggested.

"That's it!" cried the delighted Professor. "Of course that'll do it!" And he shut up the book so quickly that he caught the Other Professor's nose between the leaves, and gave it a severe pinch.

The Other Professor instantly rose to his feet, and carried the book away to the end of the room, where he put it back in its place in the book-case. "I've been reading for eighteen hours and three-quarters," he said, "and now I shall rest for fourteen minutes and a half. Is the Lecture all ready?"

"Very nearly," the Professor humbly replied. "I shall ask you to give me a hint or two—there will be a few little difficulties——"

"And a Banquet, I think you said?"

"Oh, yes! The Banquet comes *first*, of course. People never enjoy Abstract Science, you know, when they're ravenous with hunger. And then there's the Fancy-Dress-Ball. Oh, there'll be lots of entertainment!"

"Where will the Ball come in?" said the Other Professor.

"I *think* it had better come at the beginning of the Banquet—it brings people together so nicely, you know."

"Yes, that's the right order. First the Meeting: then the Eating: then the Treating—for I'm sure any Lecture *you* give us will be a treat!" said the Other Professor, who had been standing with his back to us all this time, occupying himself in taking the books out, one by one, and turning them upside-down. An easel, with a black board on it, stood near him: and, every time that he turned a book upside-down, he made a mark on the board with a piece of chalk.

"And as to the 'Pig-Tale'—which *you* have so kindly promised to give us—" the Professor went on, thoughtfully rubbing his chin. "I think that had better come at the *end* of the Banquet: then people can listen to it quietly."

"Shall I *sing* it?" the Other Professor asked, with a smile of delight.

"If you *can*," the Professor replied, cautiously.

"Let me try," said the Other Professor, seating himself at the pianoforte. "For the sake of argument, let us assume that it begins on A flat." And he struck the note in question. "La, la, la! I think that's within an octave of it." He struck the note again, and appealed to Bruno, who was standing at his side. "Did I sing it like *that*, my child?"

"No, oo didn't," Bruno replied with great decision. "It were more like a duck."

"Single notes are apt to have that effect," the Other Professor said with a sigh. "Let me try a whole verse.

There was a Pig, that sat alone,
Beside a ruined Pump.
By day and night he made his moan:
It would have stirred a heart of stone
To see him wring his hoofs and groan,
Because he could not jump.

Would you call that a tune, Professor?" he asked, when he had finished.

The Professor considered a little. “Well,” he said at last, “some of the notes are the same as others—and some are different—but I should hardly call it a *tune*.”

“Let me try it a bit by myself,” said the Other Professor. And he began touching the notes here and there, and humming to himself like an angry blue-bottle.

“How do you like his singing?” the Professor asked the children in a low voice.

“It isn’t very *beautiful*,” Sylvie said, hesitatingly.

“It’s very extremely *ugly*!” Bruno said, without any hesitation at all.

“All extremes are bad,” the Professor said, very gravely. “For instance, Sobriety is a very good thing, when practised *in moderation*: but even Sobriety, when carried to an *extreme*, has its disadvantages.”

“What are its disadvantages?” was the question that rose in my mind—and, as usual, Bruno asked it for me. “What *are* its lizard bandages?”

“Well, this is *one* of them,” said the Professor. “When a man’s tipsy (that’s one extreme, you know), he sees one thing as two. But, when he’s *extremely* sober (that’s the other extreme), he sees two things as one. It’s equally inconvenient, whichever happens.”

“What does ‘inconvenient’ mean?” Bruno whispered to Sylvie.

“The difference between ‘convenient’ and ‘inconvenient’ is best explained by an example,” said the Other Professor, who had overheard the question. “If you’ll just think over any Poem that contains the two words—such as——”

The Professor put his hands over his ears, with a look of dismay. “If you once let him begin a *Poem*,” he said to Sylvie, “he’ll never leave off again! He never does!”

“Did he ever begin a Poem and not leave off again?” Sylvie enquired.

“Three times,” said the Professor.

Bruno raised himself on tiptoe, till his lips were on a level with Sylvie’s ear. “What became of them three Poems?” he whispered. “Is he saying them all, now?”

“Hush!” said Sylvie. “The Other Professor is speaking!”

“I’ll say it very quick,” murmured the Other Professor, with downcast eyes, and melancholy voice, which contrasted oddly with his face, as he had forgotten to leave off smiling. (“At least it wasn’t exactly a *smile*,” as Sylvie said afterwards: “it looked as if his mouth was made that shape.”)

“Go on then,” said the Professor. “*What must be must be.*”

“Remember that!” Sylvie whispered to Bruno, “It’s a very good rule for whenever you hurt yourself.”

“And it’s a very good rule for whenever I make a noise,” said the saucy little fellow. “So *you* remember it too, Miss!”

“Whatever *do* you mean?” said Sylvie, trying to frown, a thing she never managed particularly well.

“Oftens and oftens,” said Bruno, “haven’t oo told me ‘There mustn’t be so much noise, Bruno!’ when I’ve tolded oo ‘There *must*!’ Why, there isn’t no rules at all about ‘There mustn’t’! But oo never believes *me*!”

“As if any one *could* believe *you*, you wicked wicked boy!” said Sylvie. The *words* were severe enough, but I am of opinion that, when you are really *anxious* to impress a criminal with a sense of his guilt, you ought not to pronounce the sentence with your lips *quite* close to his cheek—since a kiss at the end of it, however accidental, weakens the effect terribly.

Chapter XI. Peter and Paul

“As I was saying,” the Other Professor resumed, “if you’ll just think over any Poem, that contains the words—such as

‘Peter is poor,’ said noble Paul,
‘And I have always been his friend:
And, though my means to give are small,
At least I can afford to *lend*.
How few, in this cold age of greed,
Do good, except on selfish grounds!
But I can feel for Peter’s need,
And *I will lend him fifty pounds!*’

How great was Peter’s joy to find
His friend in such a genial vein!
How cheerfully the bond he signed,
To pay the money back again!
‘We ca’n’t,’ said Paul, ‘be too precise:
’Tis best to fix the very day:
So, by a learned friend’s advice,
I’ve made it Noon, the Fourth of May.’



‘How cheerfully the bond he signed!’

‘But this is April!’ Peter said.

'The First of April, as I think.
 Five little weeks will soon be fled:
 One scarcely will have time to wink!
 Give me a year to speculate—
 To buy and sell—to drive a trade—'
 Said Paul 'I cannot change the date.
 On May the Fourth it must be paid.'
 'Well, well!' said Peter, with a sigh.
 'Hand me the cash, and I will go.
 I'll form a Joint-Stock Company,
 And turn an honest pound or so.'
 'I'm grieved,' said Paul, 'to seem unkind:
 The money shall of course be lent:
 But, for a week or two, I find
 It will not be convenient.'
 So, week by week, poor Peter came
 And turned in heaviness away;
 For still the answer was the same,
 'I cannot manage it to-day.'
 And now the April showers were dry—
 The five short weeks were nearly spent—
 Yet still he got the old reply,
 'It is not quite convenient!'

The Fourth arrived, and punctual Paul
 Came, with his legal friend, at noon.
 'I thought it best,' said he, 'to call:
 One cannot settle things too soon.'
 Poor Peter shuddered in despair:
 His flowing locks he wildly tore:
 And very soon his yellow hair
 Was lying all about the floor.

The legal friend was standing by,
 With sudden pity half unmanned:
 The tear-drop trembled in his eye,
 The signed agreement in his hand:
 But when at length the legal soul
 Resumed its customary force,
 'The Law,' he said, 'we ca'n't control:
 Pay, or the Law must take its course!'

Said Paul, 'How bitterly I rue
 That fatal morning when I called!
 Consider, Peter, what you do!
 You won't be richer when you're bald!
 Think you, by rending curls away,
 To make your difficulties less?
 Forbear this violence, I pray:
 You do but add to my distress!'

'Not willingly would I inflict,'



'Poor Peter shuddered in despair'

Said Peter, 'on that noble heart
One needless pang. Yet why so strict?
Is *this* to act a friendly part?
However legal it may be
To pay what never has been lent,
This style of business seems to me
Extremely inconvenient!

'No Nobleness of soul have I,
Like *some* that in this Age are found!
(Paul blushed in sheer humility,
And cast his eyes upon the ground.)
'This debt will simply swallow all,
And make my life a life of woe!
'Nay, nay, my Peter!' answered Paul.
'You must not rail on Fortune so!

'You have enough to eat and drink:
You are respected in the world:
And at the barber's, as I think,
You often get your whiskers curled.
Though Nobleness you ca'n't attain—
To any very great extent—
The path of Honesty is plain,
However inconvenient!'

'Tis true,' said Peter, 'I'm alive:
I keep my station in the world:
Once in the week I just contrive
To get my whiskers oiled and curled.
But my assets are very low:
My little income's overspent:
To trench on capital, you know,
Is always inconvenient!'

'But pay your debts!' cried honest Paul.
'My gentle Peter, pay your debts!
What matter if it swallows all
That you describe as your "assets"?
Already you're an hour behind:
Yet Generosity is best.
It pinches me—but never mind!
I will not charge you interest!'

'How good! How great!' poor Peter cried.
'Yet I must sell my Sunday wig—
The scarf-pin that has been my pride—
My grand piano—and my pig!
Full soon his property took wings:
And daily, as each treasure went,
He sighed to find the state of things
Grow less and less convenient.

Weeks grew to months, and months to years:

Peter was worn to skin and bone:
 And once he even said, with tears,
 'Remember, Paul, that promised Loan!'
 Said Paul 'I'll lend you, when I can,
 All the spare money I have got—
 Ah, Peter, you're a happy man!
 Yours is an enviable lot!



'Such boots as this you seldom see'

'I'm getting stout, as you may see:
 It is but seldom I am well:
 I cannot feel my ancient glee
 In listening to the dinner-bell:
 But you, you gambol like a boy,
 Your figure is so spare and light:
 The dinner-bell's a note of joy
 To such a healthy appetite!

Said Peter 'I am well aware
 Mine is a state of happiness:
 And yet how gladly could I spare
 Some of the comforts I possess!
 What *you* call healthy appetite
 I feel as Hunger's savage tooth:

And, when no dinner is in sight,
 The dinner-bell's a sound of ruth!
 'No scare-crow would accept this coat:
 Such boots as these you seldom see.
 Ah, Paul, a single five-pound-note
 Would make another man of me!'

Said Paul 'It fills me with surprise
 To hear you talk in such a tone:
 I fear you scarcely realise
 The blessings that are all your own!
 'You're safe from being overfed:
 You're sweetly picturesque in rags:
 You never know the aching head
 That comes along with money-bags:
 And you have time to cultivate
 That best of qualities, Content—
 For which you'll find your present state
 Remarkably convenient!'

Said Peter 'Though I cannot sound
 The depths of such a man as you,
 Yet in your character I've found
 An inconsistency or two.
 You seem to have long years to spare
 When there's a promise to fulfil:
 And yet how punctual you were
 In calling with that little bill!'

'One can't be too deliberate,'
 Said Paul, 'in parting with one's pelf.
 With bills, as you correctly state,
 I'm punctuality itself.
 A man may surely claim his dues:
 But, when there's money to be *lent*,
 A man must be allowed to choose
 Such times as are convenient!'

It chanced one day, as Peter sat
 Gnawing a crust—his usual meal—
 Paul bustled in to have a chat,
 And grasped his hand with friendly zeal.
 'I knew,' said he, 'your frugal ways:
 So, that I might not wound your pride
 By bringing strangers in to gaze,
 I've left my legal friend outside!

'You well remember, I am sure,
 When first your wealth began to go,
 And people sneered at one so poor,
 I never used my Peter so!
 And when you'd lost your little all,
 And found yourself a thing despised,

I need not ask you to recall
How tenderly I sympathised!
'Then the advice I've poured on you,
So full of wisdom and of wit:
All given gratis, though 'tis true
I might have fairly charged for it!
But I refrain from mentioning
Full many a deed I might relate—
For boasting is a kind of thing
That I particularly hate.



'I will lend you fifty more!'

'How vast the total sum appears
Of all the kindnesses I've done,
From Childhood's half-forgotten years
Down to that Loan of April One!
That Fifty Pounds! You little guessed
How deep it drained my slender store:
But there's a heart within this breast,
And *I will lend you fifty more!*'

'Not so,' was Peter's mild reply,
His cheeks all wet with grateful tears:
'No man recalls, so well as I,

Your services in bygone years:
And this new offer, I admit,
Is very very kindly meant—
Still, to avail myself of it
Would not be quite convenient!

You'll see in a moment what the difference is between 'convenient' and 'inconvenient.' You quite understand it now, don't you?" he added, looking kindly at Bruno, who was sitting, at Sylvie's side, on the floor.

"Yes," said Bruno, very quietly. Such a short speech was very unusual, for him: but just then he seemed, I fancied, a little exhausted. In fact, he climbed up into Sylvie's lap as he spoke, and rested his head against her shoulder. "What a many verses it was!" he whispered.

Chapter XII. A Musical Gardener

The Other Professor regarded him with some anxiety. "The smaller animal ought to go to bed *at once*," he said with an air of authority.

"Why *at once*?" said the Professor.

"Because he can't go at twice," said the Other Professor.

The Professor gently clapped his hands. "Isn't he *wonderful*!" he said to Sylvie. "Nobody else could have thought of the reason, so quick. Why, *of course* he ca'n't go at twice! It would hurt him to be divided."

This remark woke up Bruno, suddenly and completely. "I don't want to be *divided*," he said decisively.

"It does very well on a *diagram*," said the Other Professor. "I could show it you in a minute, only the chalk's a little blunt."

"Take care!" Sylvie anxiously exclaimed, as he began, rather clumsily, to point it. "You'll cut your finger off, if you hold the knife so!"

"If oo cuts it off, will oo give it to *me*, please?" Bruno thoughtfully added.

"It's like this," said the Other Professor, hastily drawing a long line upon the black board, and marking the letters 'A,' 'B,' at the two ends, and 'C' in the middle: "let me explain it to you. If *AB* were to be divided into two parts at *C*——"

"It would be drowned," Bruno pronounced confidently.

The Other Professor gasped. "*What* would be drowned?"

"Why the bumble-bee, of course!" said Bruno. "And the two bits would sink down in the sea!"

Here the Professor interfered, as the Other Professor was evidently too much puzzled to go on with his diagram.

"When I said it would *hurt* him, I was merely referring to the action of the nerves——"

The Other Professor brightened up in a moment. "The action of the nerves," he began eagerly, "is curiously slow in some people. I had a friend, once, that, if you burnt him with a red-hot poker, it would take years and years before he felt it!"

"And if you only *pinched* him?" queried Sylvie.

"Then it would take ever so much longer, of course. In fact, I doubt if the man *himself* would ever feel it, at all. His grandchildren might."

"I wouldn't like to be the grandchild of a pinched grandfather, would *you*, Mister Sir?" Bruno whispered. "It might come just when you wanted to be happy!"

That would be awkward, I admitted, taking it quite as a matter of course that he had so suddenly caught sight of me. "But don't you *always* want to be happy, Bruno?"

"Not *always*," Bruno said thoughtfully. "Sometimes, when I's *too* happy, I wants to be a little miserable. Then I just tell Sylvie about it, oo know, and Sylvie sets me some lessons. Then it's all right."

"I'm sorry you don't like lessons," I said. "You should copy Sylvie. *She's* always as busy as the day is long!"

"Well, so am *I*!" said Bruno.

"No, no!" Sylvie corrected him. "*You're* as busy as the day is *short*!"

"Well, what's the difference?" Bruno asked. "Mister Sir, isn't the day as short as it's long? I mean, isn't it the *same* length?"

Never having considered the question in this light, I suggested that they had better ask the Professor; and they ran off in a moment to appeal to their old friend. The Professor left off polishing his spectacles to consider. "My dears," he said after a minute, "the day is the same length as anything that is the same length as *it*." And he resumed his neverending task of polishing.

The children returned, slowly and thoughtfully, to report his answer. "*Isn't* he wise?" Sylvie asked in an awestruck whisper. "If *I* was as wise as *that*, I should have a head-ache all day long. I *know* I should!"

"You appear to be talking to somebody—that isn't here," the Professor said, turning round to the children. "Who is it?"

Bruno looked puzzled. "I never talks to nobody when he isn't here!" he replied. "It isn't good manners. Oo should always wait till he comes, before oo talks to him!"

The Professor looked anxiously in my direction, and seemed to look through and through me without seeing me. "Then who are you talking to?" he said. "There isn't anybody here, you know, except the Other Professor—and *he* isn't here!" he added wildly, turning round and round like a teetotum. "Children! Help to look for him! Quick! He's got lost again!"

The children were on their feet in a moment.

"Where shall we look?" said Sylvie.

"Anywhere!" shouted the excited Professor. "Only be quick about it!" And he began trotting round and round the room, lifting up the chairs, and shaking them.

Bruno took a very small book out of the bookcase, opened it, and shook it in imitation of the Professor. "He isn't *here*," he said.

"He *ca'n't* be there, Bruno!" Sylvie said indignantly.

"Course he ca'n't!" said Bruno. "I should have shooked him out, if he'd been in there!"

"Has he ever been lost before?" Sylvie enquired, turning up a corner of the hearth-rug, and peeping under it.

"Once before," said the Professor: "he once lost himself in a wood——"

"And couldn't he find his-self again?" said Bruno. "Why didn't he shout? He'd be sure to hear his-self, 'cause he couldn't be far off, oo know."

"Let's try shouting," said the Professor.

"What shall we shout?" said Sylvie.

"On second thoughts, *don't* shout," the Professor replied. "The Vice-Warden might hear you. He's getting awfully strict!"

This reminded the poor children of all the troubles, about which they had come to their old friend. Bruno sat down on the floor and began crying. "He *is* so cruel!" he sobbed. "And he lets Uggug take away *all* my toys! And such horrid meals!"

"What did you have for dinner to-day?" said the Professor.

"A little piece of a dead crow," was Bruno's mournful reply.

"He means rook-pie," Sylvie explained.

"It *were* a dead crow," Bruno persisted. "And there were a apple-pudding—and Uggug ate it all—and I got nuffin but a crust! And I asked for a orange—and—didn't get it!" And the poor little fellow buried his face in Sylvie's lap, who kept gently stroking his hair, as she went on. "It's all true, Professor dear! They *do* treat my darling Bruno very badly! And they're not kind to *me* either," she added in a lower tone, as if *that* were a thing of much less importance.

The Professor got out a large red silk handkerchief, and wiped his eyes. "I wish I could help you, dear children!" he said. "But what *can* I do?"

"We know the way to Fairyland—where Father's gone—quite well," said Sylvie: "if only the Gardener would let us out."

"Won't he open the door for you?" said the Professor.

"Not for *us*," said Sylvie: "but I'm sure he would for *you*. Do come and ask him, Professor dear!"

"I'll come this minute!" said the Professor.

Bruno sat up and dried his eyes. "*Isn't* he kind, Mister Sir?"

"He is *indeed*," said I. But the Professor took no notice of my remark. He had put on a beautiful cap with a long tassel, and was selecting one of the Other Professor's walking-sticks, from a stand in the corner of the room. "A thick stick in one's hand makes people respectful," he was saying to himself. "Come along, dear children!" And we all went out into the garden together.

"I shall address him, first of all," the Professor explained as we went along, "with a few playful remarks on the weather. I shall then question him about the Other Professor. This will have a double advantage. First, it will open the conversation (you can't even drink a bottle of wine without opening it first): and secondly, if he's seen the Other Professor, we shall find him that way: and, if he hasn't, we sha'n't."

On our way, we passed the target, at which Uggug had been made to shoot during the Ambassador's visit.

"See!" said the Professor, pointing out a hole in the middle of the bull's-eye. "His Imperial Fatness had only *one* shot at it; and he went in just *here*!"

Bruno carefully examined the hole. "Couldn't go in *there*," he whispered to me. "He are too *fat*!"

We had no sort of difficulty in *finding* the Gardener. Though he was hidden from us by some trees, that harsh voice of his served to direct us; and, as we drew nearer, the words of his song became more and more plainly audible:—

"He thought he saw an Albatross
That fluttered round the lamp:
He looked again, and found it was
A Penny-Postage-Stamp.
'You'd best be getting home,' he said:

‘The nights are very damp!’”



‘He thought he saw an Albatross’

“Would it be afraid of catching cold?” said Bruno.

“If it got *very* damp,” Sylvie suggested, “it might stick to something, you know.”

“And *that* somefin would have to go by the post, whatever it was!” Bruno eagerly exclaimed. “Suppose it was a cow! Wouldn’t it be *dreadful* for the other things!”

“And all these things happened to *him*,” said the Professor. “That’s what makes the song so interesting.”

“He must have had a very curious life,” said Sylvie.

“You may say that!” the Professor heartily rejoined.

“Of course she may!” cried Bruno.

By this time we had come up to the Gardener, who was standing on one leg, as usual, and busily employed in watering a bed of flowers with an empty watering-can.

“It hasn’t got no water in it!” Bruno explained to him, pulling his sleeve to attract his attention.

“It’s lighter to hold,” said the Gardener. “A lot of water in it makes one’s arms ache.” And he went on with his work, singing softly to himself

“The nights are very damp!”

“In digging things out of the ground—which you probably do now and then,” the Professor began in a loud voice; “in making things into heaps—which no doubt you often do; and in kicking things about with one heel—which you seem never to leave off doing; have you ever happened to notice another Professor, something like me, but different?”

“Never!” shouted the Gardener, so loudly and violently that we all drew back in alarm.

“There ain’t such a thing!”

“We will try a less exciting topic,” the Professor mildly remarked to the children. “You were asking——”

“We asked him to let us through the garden-door,” said Sylvie: “but he wouldn’t: but perhaps he would for *you*!”

The Professor put the request, very humbly and courteously.

“I wouldn’t mind letting *you* out,” said the Gardener. “But I mustn’t open the door for *children*. D’you think I’d disobey the *Rules*? Not for one-and-sixpence!”

The Professor cautiously produced a couple of shillings.

“That’ll do it!” the Gardener shouted, as he hurled the watering-can across the flower-bed, and produced a handful of keys—one large one, and a number of small ones.

“But look here, Professor dear!” whispered Sylvie. “He needn’t open the door for *us*, at all. We can go out with *you*.”

“True, dear child!” the Professor thankfully replied, as he replaced the coins in his pocket. “That saves two shillings!” And he took the children’s hands, that they might all go out together when the door was opened. This, however, did not seem a very likely event, though the Gardener patiently tried all the small keys, over and over again.

At last the Professor ventured on a gentle suggestion. “Why not try the *large* one? I have often observed that a door unlocks *much* more nicely with its *own* key.”

The very first trial of the large key proved a success: the Gardener opened the door, and held out his hand for the money.

The Professor shook his head. “You are acting by *Rule*,” he explained, “in opening the door for *me*. And now it’s open, we are going out by *Rule*—the Rule of *Three*.”

The Gardener looked puzzled, and let us go out; but, as he locked the door behind us, we heard him singing thoughtfully to himself

“He thought he saw a Garden-Door
That opened with a key:
He looked again, and found it was
A Double Rule of Three:
‘And all its mystery,’ he said,
‘Is clear as day to me!’”

“I shall now return,” said the Professor, when we had walked a few yards: “you see, it’s impossible to read *here*, for all my books are in the house.”

But the children still kept fast hold of his hands. “*Do* come with us!” Sylvie entreated with tears in her eyes.

“Well, well!” said the good-natured old man. “Perhaps I’ll come after you, some day soon. But I *must* go back *now*. You see I left off at a comma, and it’s so awkward not knowing how the sentence finishes! Besides, you’ve got to go through Dogland first, and I’m always a little nervous about dogs. But it’ll be quite easy to come, as soon as I’ve completed my new invention—for carrying one’s-*self*, you know. It wants just a *little* more working-out.”

“Won’t that be very tiring, to carry *yourself*?” Sylvie enquired.

“Well, no, my child. You see, whatever fatigue one incurs by *carrying*, one saves by *being carried*! Good-bye, dears! Good-bye, Sir!” he added to my intense surprise, giving my hand an affectionate squeeze.

“Good-bye, Professor!” I replied: but my voice sounded strange and far away, and the children took not the slightest notice of our farewell. Evidently they neither saw me nor heard me, as, with their arms lovingly twined round each other, they marched boldly on.

Chapter XIII. A Visit to Dogland

“There’s a house, away there to the left,” said Sylvie, after we had walked what seemed to me about fifty miles. “Let’s go and ask for a night’s lodging.”

“It looks a very comfable house,” Bruno said, as we turned into the road leading up to it. “I doos hope the Dogs will be kind to us, I *is* so tired and hungry!”

A Mastiff, dressed in a scarlet collar, and carrying a musket, was pacing up and down, like a sentinel, in front of the entrance. He started, on catching sight of the children, and came forwards to meet them, keeping his musket pointed straight at Bruno, who stood quite still, though he turned pale and kept tight hold of Sylvie’s hand, while the Sentinel walked solemnly round and round them, and looked at them from all points of view.



The Mastiff-Sentinel

“Oooh, hoooh boohooyah!” He growled at last. “Woobah yahwah oooh! Bow wahbah woobooyah? Bow wow?” he asked Bruno, severely.

Of course *Bruno* understood all this, easily enough. All Fairies understand Doggee—that is, Dog-language. But, as *you* may find it a little difficult, just at first, I had better put it into English for you. “Humans, I verily believe! A couple of stray Humans! What Dog do you belong to? What do you want?”

“We don’t belong to a *Dog*!” Bruno began, in Doggee. (“Peoples *never* belongs to Dogs!” he whispered to Sylvie.)

But Sylvie hastily checked him, for fear of hurting the Mastiff’s feelings. “Please, we want a little food, and a night’s lodging—if there’s room in the house,” she added timidly. Sylvie spoke Doggee very prettily: but I think it’s almost better, for *you*, to give the conversation in English.

"The *house*, indeed!" growled the Sentinel. "Have you never seen a *Palace* in your life? Come along with me! His Majesty must settle what's to be done with you."

They followed him through the entrance-hall, down a long passage, and into a magnificent Saloon, around which were grouped dogs of all sorts and sizes. Two splendid Blood-hounds were solemnly sitting up, one on each side of the crown-bearer. Two or three Bull-dogs—whom I guessed to be the Body-Guard of the King—were waiting in grim silence: in fact the only voices at all plainly audible were those of two little dogs, who had mounted a settee, and were holding a lively discussion that looked very like a quarrel.

"Lords and Ladies in Waiting, and various Court Officials," our guide gruffly remarked, as he led us in. Of *me* the Courtiers took no notice whatever: but Sylvie and Bruno were the subject of many inquisitive looks, and many whispered remarks, of which I only distinctly caught *one*—made by a sly-looking Dachshund to his friend—"Bah wooh wahyah hoobah Oobooh, *hah bah?*" ("She's not such a bad-looking Human, *is she?*")

Leaving the new arrivals in the centre of the Saloon, the Sentinel advanced to a door, at the further end of it, which bore an inscription, painted on it in Doggee, "Royal Kennel—Scratch and Yell."

Before doing this, the Sentinel turned to the children, and said "Give me your names."

"We'd rather not!" Bruno exclaimed, pulling Sylvie away from the door. "We want them ourselves. Come back, Sylvie! Come quick!"

"Nonsense!" said Sylvie very decidedly: and gave their names in Doggee.

Then the Sentinel scratched violently at the door, and gave a yell that made Bruno shiver from head to foot.

"Hooyah wah!" said a deep voice inside. (That's Doggee for "Come in!")

"It's the King himself!" the Mastiff whispered in an awestruck tone. "Take off your wigs, and lay them humbly at his paws." (What *we* should call "at his *feet*.")

Sylvie was just going to explain, very politely, that really they *couldn't* perform *that* ceremony, because their wigs wouldn't come off, when the door of the Royal Kennel opened, and an enormous Newfoundland Dog put his head out. "Bow wow?" was his first question.

"When His Majesty speaks to you," the Sentinel hastily whispered to Bruno, "you should prick up your ears!"

Bruno looked doubtfully at Sylvie. "I'd rather not, please," he said. "It would hurt."

"It doesn't hurt a bit!" the Sentinel said with some indignation. "Look! It's like this!" And he pricked up his ears like two railway signals.

Sylvie gently explained matters. "I'm afraid we ca'n't manage it," she said in a low voice. "I'm very sorry: but our ears haven't got the right—" she wanted to say "machinery" in Doggee: but she had forgotten the word, and could only think of "steam-engine."

The Sentinel repeated Sylvie's explanation to the King.

"Can't prick up their ears without a steam-engine!" His Majesty exclaimed. "They *must* be curious creatures! I must have a look at them!" And he came out of his Kennel, and walked solemnly up to the children.

What was the amazement—not to say the horror—of the whole assembly, when Sylvie actually *patted His Majesty on the head*, while Bruno seized his



The Dog-King

long ears and pretended to tie them together under his chin!

The Sentinel groaned aloud: a beautiful Greyhound—who appeared to be one of the Ladies in Waiting—fainted away: and all the other Courtiers hastily drew back, and left plenty of room for the huge Newfoundland to spring upon the audacious strangers, and tear them limb from limb.

Only—he didn't. On the contrary his Majesty actually *smiled*—so far as a Dog *can* smile—and (the other Dogs couldn't believe their eyes, but it was true, all the same) his Majesty *wagged his tail!*

“Yah! Hooh hahwooh!” (that is “Well! I never!”) was the universal cry.

His Majesty looked round him severely, and gave a slight growl, which produced instant silence. “Conduct *my friends* to the banqueting-hall!” he said, laying such an emphasis on “*my friends*” that several of the dogs rolled over helplessly on their backs and began to lick Bruno's feet.

A procession was formed, but I only ventured to follow as far as the *door* of the banqueting-hall, so furious was the uproar of barking dogs within. So I sat down by the King, who seemed to have gone to sleep, and waited till the children returned to say good-night, when His Majesty got up and shook himself.

“Time for bed!” he said with a sleepy yawn. “The attendants will show you your room,” he added, aside, to Sylvie and Bruno. “Bring lights!” And, with a dignified air, he held out his paw for them to kiss.

But the children were evidently not well practised in Court-manners. Sylvie simply stroked the great paw: Bruno hugged it: the Master of the Ceremonies looked shocked.

All this time Dog-waiters, in splendid livery, were running up with lighted candles: but, as fast as they put them upon the table, other waiters ran away with them, so that there never seemed to be one for *me*, though the Master kept nudging me with his elbow, and repeating “I ca'n't let you sleep *here!* You're not in *bed*, you know!”

I made a great effort, and just succeeded in getting out the words “I know I'm not. I'm in an arm-chair.”

“Well, forty winks will do you no harm,” the Master said, and left me. I could scarcely hear his words: and no wonder: he was leaning over the side of a ship, that was miles away from the pier on which I stood. The ship passed over

the horizon, and I sank back into the arm-chair.

The next thing I remember is that it was morning: breakfast was just over: Sylvie was lifting Bruno down from a high chair, and saying to a Spaniel, who was regarding them with a most benevolent smile, "Yes, thank you, we've had a *very* nice breakfast. Haven't we, Bruno?"

"There was too many bones in the——" Bruno began, but Sylvie frowned at him, and laid her finger on her lips, for, at this moment, the travelers were waited on by a very dignified officer, the Head-Growler, whose duty it was, first to conduct them to the King to bid him farewell, and then to escort them to the boundary of Dogland. The great Newfoundland received them most affably, but, instead of saying "good-bye," he startled the Head-Growler into giving three savage growls, by announcing that he would escort them himself.

"It is a most unusual proceeding, your Majesty!" the Head-Growler exclaimed, almost choking with vexation at being set aside, for he had put on his best Court-suit, made entirely of cat-skins, for the occasion.

"I shall escort them myself," his Majesty repeated, gently but firmly, laying aside the Royal robes, and changing his crown for a small coronet, "and you may stay at home."

"I *are* glad!" Bruno whispered to Sylvie, when they had got well out of hearing. "He were so *welley* cross!" And he not only patted their Royal escort, but even hugged him round the neck in the exuberance of his delight.

His Majesty calmly wagged the Royal tail. "It's quite a relief," he said, "getting away from that Palace now and then! Royal Dogs have a dull life of it, I can tell you! Would you mind" (this to Sylvie, in a low voice, and looking a little shy and embarrassed) "would you mind the trouble of just throwing that stick for me to fetch?"

Sylvie was too much astonished to do anything for a moment: it sounded such a monstrous impossibility that a *King* should wish to run after a stick. But *Bruno* was equal to the occasion, and with a glad shout of "Hi then! Fetch it, good Doggie!" he hurled it over a clump of bushes. The next moment the Monarch of Dogland had bounded over the bushes, and picked up the stick, and came galloping back to the children with it in his mouth. Bruno took it from him with great decision. "Beg for it!" he insisted; and His Majesty begged. "Paw!" commanded Sylvie; and His Majesty gave his paw. In short, the solemn ceremony of escorting the travelers to the boundaries of Dogland became one long uproarious game of play!

"But business is business!" the Dog-King said at last. "And I must go back to mine. I couldn't come any further," he added, consulting a dog-watch, which hung on a chain round his neck, "not even if there were a *Cat* in sight!"

They took an affectionate farewell of His Majesty, and trudged on.

"That *were* a dear dog!" Bruno exclaimed. "Has we to go far, Sylvie? I's tired!"

"Not much further, darling!" Sylvie gently replied. "Do you see that shining, just beyond those trees? I'm almost *sure* it's the gate of Fairyland! I know it's all golden—Father told me so—and so bright, so bright!" she went on dreamily.

"It dazzles!" said Bruno, shading his eyes with one little hand, while the other clung tightly to Sylvie's hand, as if he were half-alarmed at her strange manner.

For the child moved on as if walking in her sleep, her large eyes gazing into the far distance, and her breath coming and going in quick pantings of eager

delight. I knew, by some mysterious mental light, that a great change was taking place in my sweet little friend (for such I loved to think her) and that she was passing from the condition of a mere Outland Sprite into the true Fairy-nature.

Upon Bruno the change came later: but it was completed in both before they reached the golden gate, through which I knew it would be impossible for *me* to follow. I could but stand outside, and take a last look at the two sweet children, ere they disappeared within, and the golden gate closed with a bang.

And with *such* a bang! "It never *will* shut like any other cupboard-door," Arthur explained. "There's something wrong with the hinge. However, here's the cake and wine. And you've had your forty winks. So you really *must* get off to bed, old man! You're fit for nothing else. Witness my hand, Arthur Forester, M.D."

By this time I was wide-awake again. "Not *quite* yet!" I pleaded. "Really I'm not sleepy now. And it isn't midnight yet."

"Well, I did want to say another word to you," Arthur replied in a relenting tone, as he supplied me with the supper he had prescribed. "Only I thought you were too sleepy for it to-night."

We took our midnight meal almost in silence; for an unusual nervousness seemed to have seized on my old friend.

"What kind of a night is it?" he asked, rising and undrawing the window-curtains, apparently to change the subject for a minute. I followed him to the window, and we stood together, looking out, in silence.

"When I first spoke to you about——" Arthur began, after a long and embarrassing silence, "that is, when we first talked about her—for I think it was *you* that introduced the subject—my own position in life forbade me to do more than worship her from a distance: and I was turning over plans for leaving this place finally, and settling somewhere out of all chance of meeting her again. That seemed to be my only chance of usefulness in life."

"Would that have been wise?" I said. "To leave yourself no hope at all?"

"There *was* no hope to leave," Arthur firmly replied, though his eyes glittered with tears as he gazed upwards into the midnight sky, from which one solitary star, the glorious 'Vega,' blazed out in fitful splendour through the driving clouds. "She was like that star to me—bright, beautiful, and pure, but out of reach, out of reach!"

He drew the curtains again, and we returned to our places by the fireside.

"What I wanted to tell you was this," he resumed. "I heard this evening from my solicitor. I can't go into the details of the business, but the upshot is that my worldly wealth is much more than I thought, and I am (or shall soon be) in a position to offer marriage, without imprudence, to any lady, even if she brought nothing. I doubt if there would be anything on *her* side: the Earl is poor, I believe. But I should have enough for both, even if health failed."

"I wish you all happiness in your married life!" I cried. "Shall you speak to the Earl to-morrow?"

"Not yet awhile," said Arthur. "He is very friendly, but I dare not think he means more than that, as yet. And as for—as for Lady Muriel, try as I may, I *cannot* read her feelings towards me. If there *is* love, she is hiding it! No, I must wait, I must wait!"

I did not like to press any further advice on my friend, whose judgment, I felt, was so much more sober and thoughtful than my own; and we parted

without more words on the subject that had now absorbed his thoughts, nay, his very life.

The next morning a letter from *my* solicitor arrived, summoning me to town on important business.

Chapter XIV. Fairy-Sylvie

For a full month the business, for which I had returned to London, detained me there: and even then it was only the urgent advice of my physician that induced me to leave it unfinished and pay another visit to Elveston.

Arthur had written once or twice during the month; but in none of his letters was there any mention of Lady Muriel. Still, I did not augur ill from his silence: to me it looked like the natural action of a lover, who, even while his heart was singing "She is mine!", would fear to paint his happiness in the cold phrases of a written letter, but would wait to tell it by word of mouth. "Yes," I thought, "I am to hear his song of triumph from his own lips!"

The night I arrived we had much to say on other matters: and, tired with the journey, I went to bed early, leaving the happy secret still untold. Next day, however, as we chatted on over the remains of luncheon, I ventured to put the momentous question. "Well, old friend, you have told me nothing of Lady Muriel—nor when the happy day is to be?"

"The happy day," Arthur said, looking unexpectedly grave, "is yet in the dim future. We need to know—or, rather, *she* needs to know *me* better. I know *her* sweet nature, thoroughly, by this time. But I dare not speak till I am sure that my love is returned."

"Don't wait too long!" I said gaily. "Faint heart never won fair lady!"

"It *is* 'faint heart,' perhaps. But really I *dare* not speak just yet."

"But meanwhile," I pleaded, "you are running a risk that perhaps you have not thought of. Some other man——"

"No," said Arthur firmly. "She is heart-whole: I am sure of that. Yet, if she loves another better than me, so be it! I will not spoil her happiness. The secret shall die with me. But she is my first—and my *only* love!"

"That is all very beautiful *sentiment*," I said, "but it is not *practical*. It is not like *you*."

He either fears his fate too much,
Or his desert is small,
Who dares not put it to the touch,
To win or lose it all."

Quoted from *My
Dear and Only Love*
by James Graham

"I *dare* not ask the question whether there is another!" he said passionately. "It would break my heart to know it!"

"Yet is it wise to leave it unasked? You must not waste your life upon an 'if'!"

"I tell you I *dare* not!"

"May *I* find it out for you?" I asked, with the freedom of an old friend.

"No, no!" he replied with a pained look. "I entreat you to say nothing. Let it wait."

"As you please," I said: and judged it best to say no more just then. "But this evening," I thought, "I will call on the Earl. I may be able to *see* how the land lies, without so much as saying a word!"

It was a very hot afternoon—too hot to go for a walk or do anything—or else it wouldn't have happened, I believe.

Other version:
→ 3.11, p. 667

In the first place, I want to know—dear Child who reads this!—why Fairies should always be teaching *us* to do our duty, and lecturing *us* when we go wrong, and we should never teach *them* anything? You can't mean to say that Fairies are never greedy, or selfish, or cross, or deceitful, because that would be nonsense, you know. Well then, don't you think they might be all the better for a little lecturing and punishing now and then?

I really don't see why it shouldn't be tried, and I'm almost sure that, if you could only catch a Fairy, and put it in the corner, and give it nothing but bread and water for a day or two, you'd find it quite an improved character—it would take down its conceit a little, at all events.

The next question is, what is the best time for seeing Fairies? I believe I can tell you all about that.

The first rule is, that it must be a *very* hot day—that we may consider as settled: and you must be just a *little* sleepy—but not too sleepy to keep your eyes open, mind. Well, and you ought to feel a little—what one may call “fairyish”—the Scotch call it “eerie,” and perhaps that's a prettier word; if you don't know what it means, I'm afraid I can hardly explain it; you must wait till you meet a Fairy, and then you'll know.

And the last rule is, that the crickets should not be chirping. I can't stop to explain that: you must take it on trust for the present.

So, if all these things happen together, you have a good chance of seeing a Fairy—or at least a much better chance than if they didn't.

The first thing I noticed, as I went lazily along through an open place in the wood, was a large Beetle lying struggling on its back, and I went down upon one knee to help the poor thing to its feet again. In some things, you know, you can't be quite sure what an insect would like: for instance, I never could quite settle, supposing I were a moth, whether I would rather be kept out of the candle, or be allowed to fly straight in and get burnt—or again, supposing I were a spider, I'm not sure if I should be *quite* pleased to have my web torn down, and the fly let loose—but I feel quite certain that, if I were a beetle and had rolled over on my back, I should always be glad to be helped up again.

So, as I was saying, I had gone down upon one knee, and was just reaching out a little stick to turn the Beetle over, when I saw a sight that made me draw back hastily and hold my breath, for fear of making any noise and frightening the little creature away.

Not that she looked as if she would be easily frightened: she seemed so good and gentle that I'm sure she would never expect that any one could wish to hurt her. She was only a few inches high, and was dressed in green, so that you really would hardly have noticed her among the long grass; and she was so delicate and graceful that she quite seemed to belong to the place, almost as if she were one of the flowers. I may tell you, besides, that she had no wings (I don't believe in Fairies with wings), and that she had quantities of long brown hair and large earnest brown eyes, and then I shall have done all I can to give you an idea of her.

Sylvie (I found out her name afterwards) had knelt down, just as I was doing, to help the Beetle; but it needed more than a little stick for *her* to get it on its legs again; it was as much as she could do, with both arms, to roll the heavy thing over; and all the while she was talking to it, half scolding and half



Fairy-Sylvie

comforting, as a nurse might do with a child that had fallen down.

“There, there! You needn’t cry so much about it. You’re not killed yet—though if you were, you couldn’t cry, you know, and so it’s a general rule against crying, my dear! And how did you come to tumble over? But I can see well enough how it was—I needn’t ask you that—walking over sand-pits with your chin in the air, as usual. Of course if you go among sand-pits like that, you must expect to tumble. You should look.”

The Beetle murmured something that sounded like “I *did* look,” and Sylvie went on again.

“But I know you didn’t! You never do! You always walk with your chin up—you’re so dreadfully conceited. Well, let’s see how many legs are broken this time. Why, none of them, I declare! And what’s the good of having six legs, my dear, if you can only kick them all about in the air when you tumble? Legs are meant to walk with, you know. Now don’t begin putting out your wings yet; I’ve more to say. Go to the frog that lives behind that buttercup—give him my compliments—Sylvie’s compliments—can you say ‘compliments’?”

The Beetle tried and, I suppose, succeeded.

“Yes, that’s right. And tell him he’s to give you some of that salve I left with him yesterday. And you’d better get him to rub it in for you. He’s got rather cold hands, but you mustn’t mind that.”

I think the Beetle must have shuddered at this idea, for Sylvie went on in a graver tone. “Now you needn’t pretend to be so particular as all that, as if you were too grand to be rubbed by a frog. The fact is, you ought to be very much obliged to him. Suppose you could get nobody but a toad to do it, how would you like *that*?”

There was a little pause, and then Sylvie added “Now you may go. Be a good beetle, and don’t keep your chin in the air.” And then began one of those performances of humming, and whizzing, and restless banging about, such as a beetle indulges in when it has decided on flying, but hasn’t quite made up its mind which way to go. At last, in one of its awkward zig-zags, it managed to fly right into my face, and, by the time I had recovered from the shock, the little

Fairy was gone.

I looked about in all directions for the little creature, but there was no trace of her—and my ‘eerie’ feeling was quite gone off, and the crickets were chirping again merrily—so I knew she was really gone.

And now I’ve got time to tell you the rule about the crickets. They always leave off chirping when a Fairy goes by—because a Fairy’s a kind of queen over them, I suppose—at all events it’s a much grander thing than a cricket—so whenever you’re walking out, and the crickets suddenly leave off chirping, you may be sure that they see a Fairy.

I walked on sadly enough, you may be sure. However, I comforted myself with thinking “It’s been a very wonderful afternoon, so far. I’ll just go quietly on and look about me, and I shouldn’t wonder if I were to come across another Fairy somewhere.”

Peering about in this way, I happened to notice a plant with rounded leaves, and with queer little holes cut in the middle of several of them. “Ah, the leafcutter bee!” I carelessly remarked—you know I am very learned in Natural History (for instance, I can always tell kittens from chickens at one glance)—and I was passing on, when a sudden thought made me stoop down and examine the leaves.

Then a little thrill of delight ran through me—for I noticed that the holes were all arranged so as to form letters; there were three leaves side by side, with “B,” “R,” and “U” marked on them, and after some search I found two more, which contained an “N” and an “O.”

And then, all in a moment, a flash of inner light seemed to illumine a part of my life that had all but faded into oblivion—the strange visions I had experienced during my journey to Elveston: and with a thrill of delight I thought “Those visions are destined to be linked with my waking life!”

By this time the ‘eerie’ feeling had come back again, and I suddenly observed that no crickets were chirping; so I felt quite sure that “Bruno” was somewhere very near.

And so indeed he was—so near that I had very nearly walked over him without seeing him; which would have been dreadful, always supposing that Fairies *can* be walked over—my own belief is that they are something of the nature of Will-o’-the-Wisps: and there’s no walking over *them*.

Think of any pretty little boy you know, with rosy cheeks, large dark eyes, and tangled brown hair, and then fancy him made small enough to go comfortably into a coffee-cup, and you’ll have a very fair idea of him.

“What’s your name, little one?” I began, in as soft a voice as I could manage. And, by the way, why is it we always begin by asking little children their names? Is it because we fancy a name will help to make them a little bigger? You never thought of asking a real large man his name, now, did you? But, however that may be, I felt it quite necessary to know *his* name; so, as he didn’t answer my question, I asked it again a little louder. “What’s your name, my little man?”

“What’s oors?” he said, without looking up.

I told him my name quite gently, for he was much too small to be angry with.

“Duke of Anything?” he asked, just looking at me for a moment, and then going on with his work.

“Not Duke at all,” I said, a little ashamed of having to confess it.

"Oo're big enough to be two Dukes," said the little creature. "I suppose oo're Sir Something, then?"

"No," I said, feeling more and more ashamed. "I haven't got any title."

The Fairy seemed to think that in that case I really wasn't worth the trouble of talking to, for he quietly went on digging, and tearing the flowers to pieces.

After a few minutes I tried again. "*Please* tell me what your name is."

"Bruno," the little fellow answered, very readily. "Why didn't oo say 'please' before?"

"That's something like what we used to be taught in the nursery," I thought to myself, looking back through the long years (about a hundred of them, since you ask the question), to the time when I was a little child. And here an idea came into my head, and I asked him "Aren't you one of the Fairies that teach children to be good?"

"Well, we have to do that sometimes," said Bruno, "and a dreadful bother it is." As he said this, he savagely tore a heartsease in two, and trampled on the pieces.

"What *are* you doing there, Bruno?" I said.

"Spoiling Sylvie's garden," was all the answer Bruno would give at first. But, as he went on tearing up the flowers, he muttered to himself "The nasty cross thing—wouldn't let me go and play this morning,—said I must finish my lessons first—lessons, indeed! I'll vex her finely, though!"

"Oh, Bruno, you shouldn't do that!" I cried. "Don't you know that's revenge? And revenge is a wicked, cruel, dangerous thing!"

"River-edge?" said Bruno. "What a funny word! I suppose oo call it cruel and dangerous 'cause, if oo wented too far and tumbleded in, oo'd get drowned."

"No, not river-edge," I explained: "re-venge" (saying the word very slowly). But I couldn't help thinking that Bruno's explanation did very well for either word.

"Oh!" said Bruno, opening his eyes very wide, but without trying to repeat the word.

"Come! Try and pronounce it, Bruno!" I said, cheerfully. "Re-venge, re-venge."

But Bruno only tossed his little head, and said he couldn't; that his mouth wasn't the right shape for words of that kind. And the more I laughed, the more sulky the little fellow got about it.

"Well, never mind, my little man!" I said. "Shall I help you with that job?"

"Yes, please," Bruno said, quite pacified. "Only I wiss I could think of somefin to vex her more than this. Oo don't know how hard it is to make her angry!"

"Now listen to me, Bruno, and I'll teach you quite a splendid kind of revenge!"

"Somefin that'll vex her finely?" he asked with gleaming eyes.

"Something that will vex her finely. First, we'll get up all the weeds in her garden. See, there are a good many at this end—quite hiding the flowers."

"But *that* won't vex her!" said Bruno.

"After that," I said, without noticing the remark, "we'll water this highest bed—up here. You see it's getting quite dry and dusty."

Bruno looked at me inquisitively, but he said nothing this time.

"Then after that," I went on, "the walks want sweeping a bit; and I think you might cut down that tall nettle—it's so close to the garden that it's quite in the way——"

“What *is* oo talking about?” Bruno impatiently interrupted me. “All that won’t vex her a bit!”

“Won’t it?” I said, innocently. “Then, after that, suppose we put in some of these coloured pebbles—just to mark the divisions between the different kinds of flowers, you know. That’ll have a very pretty effect.”

Bruno turned round and had another good stare at me. At last there came an odd little twinkle into his eyes, and he said, with quite a new meaning in his voice, “That’ll do nicely. Let’s put ’em in rows—all the red together, and all the blue together.”

“That’ll do capitally,” I said; “and then—what kind of flowers does Sylvie like best?”

Bruno had to put his thumb in his mouth and consider a little before he could answer. “Violets,” he said, at last.

“There’s a beautiful bed of violets down by the brook——”

“Oh, let’s fetch ’em!” cried Bruno, giving a little skip into the air. “Here! Catch hold of my hand, and I’ll help oo along. The grass is rather thick down that way.”

I couldn’t help laughing at his having so entirely forgotten what a big creature he was talking to. “No, not yet, Bruno,” I said: “we must consider what’s the right thing to do first. You see we’ve got quite a business before us.”

“Yes, let’s consider,” said Bruno, putting his thumb into his mouth again, and sitting down upon a dead mouse.

“What do you keep that mouse for?” I said. “You should either bury it, or else throw it into the brook.”

“Why, it’s to measure with!” cried Bruno. “How ever would oo do a garden without one? We make each bed three mouses and a half long, and two mouses wide.”

I stopped him, as he was dragging it off by the tail to show me how it was used, for I was half afraid the ‘eerie’ feeling might go off before we had finished the garden, and in that case I should see no more of him or Sylvie. “I think the best way will be for *you* to weed the beds, while *I* sort out these pebbles, ready to mark the walks with.”

“That’s it!” cried Bruno. “And I’ll tell oo about the caterpillars while we work.”

“Ah, let’s hear about the caterpillars,” I said, as I drew the pebbles together into a heap and began dividing them into colours.

And Bruno went on in a low, rapid tone, more as if he were talking to himself. “Yesterday I saw two little caterpillars, when I was sitting by the brook, just where oo go into the wood. They were quite green, and they had yellow eyes, and they didn’t see *me*. And one of them had got a moth’s wing to carry—a great brown moth’s wing, oo know, all dry, with feathers. So he couldn’t want it to eat, I should think—perhaps he meant to make a cloak for the winter?”

“Perhaps,” I said, for Bruno had twisted up the last word into a sort of question, and was looking at me for an answer.

One word was quite enough for the little fellow, and he went on merrily. “Well, and so he didn’t want the other caterpillar to see the moth’s wing, oo know—so what must he do but try to carry it with all his left legs, and he tried to walk on the other set. Of course he toppled over after that.”

“After what?” I said, catching at the last word, for, to tell the truth, I hadn’t been attending much.

“He toppled over,” Bruno repeated, very gravely, “and if *oo* ever saw a caterpillar topple over, *oo*’d know it’s a welly serious thing, and not sit grinning like that—and I sha’n’t tell *oo* no more!”

“Indeed and indeed, Bruno, I didn’t mean to grin. See, I’m quite grave again now.”

But Bruno only folded his arms, and said “Don’t tell *me*. I see a little twinkle in one of *oor* eyes—just like the moon.”

“Why do you think I’m like the moon, Bruno?” I asked.

“*Oor* face is large and round like the moon,” Bruno answered, looking at me thoughtfully. “It doosn’t shine quite so bright—but it’s more cleaner.”

I couldn’t help smiling at this. “You know I sometimes wash *my* face, Bruno. The moon never does that.”

“Oh, doosn’t she though!” cried Bruno; and he leant forwards and added in a solemn whisper, “The moon’s face gets dirtier and dirtier every night, till it’s black all across. And then, when it’s dirty all over—*so*—” (he passed his hand across his own rosy cheeks as he spoke) “then she washes it.”

“Then it’s all clean again, isn’t it?”

“Not all in a moment,” said Bruno. “What a deal of teaching *oo* wants! She washes it little by little—only she begins at the other edge, *oo* know.”

By this time he was sitting quietly on the dead mouse with his arms folded, and the weeding wasn’t getting on a bit: so I had to say “Work first, pleasure afterwards: no more talking till that bed’s finished.”

Chapter XV. Bruno’s Revenge

After that we had a few minutes of silence, while I sorted out the pebbles, and amused myself with watching Bruno’s plan of gardening. It was quite a new plan to me: he always measured each bed before he weeded it, as if he was afraid the weeding would make it shrink; and once, when it came out longer than he wished, he set to work to thump the mouse with his little fist, crying out “There now! It’s all gone wrong again! Why don’t *oo* keep *oor* tail straight when I tell *oo*!”

“I’ll tell you what I’ll do,” Bruno said in a half-whisper, as we worked. “*Oo* like Fairies, don’t *oo*?”

“Yes,” I said: “of course I do, or I shouldn’t have come here. I should have gone to some place where there are no Fairies.”

Bruno laughed contemptuously. “Why, *oo* might as well say *oo*’d go to some place where there wasn’t any air—supposing *oo* didn’t like air!”

This was a rather difficult idea to grasp. I tried a change of subject. “You’re nearly the first Fairy I ever saw. Have *you* ever seen any people besides me?”

“Plenty!” said Bruno. “We see ’em when we walk in the road.”

“But they ca’n’t see *you*. How is it they never tread on you?”

“Ca’n’t *tread* on us,” said Bruno, looking amused at my ignorance. “Why, suppose *oo*’re walking, here—*so*—” (making little marks on the ground) “and suppose there’s a Fairy—that’s me—walking *here*. Very well then, *oo* put one foot here, and one foot here, so *oo* doosn’t tread on the Fairy.”

This was all very well as an explanation, but it didn’t convince me. “Why shouldn’t I put one foot *on* the Fairy?” I asked.

“I don’t know *why*,” the little fellow said in a thoughtful tone. “But I know *oo wouldn’t*. Nobody never walked on the top of a Fairy. Now I’ll tell *oo* what

I'll do, as oo're so fond of Fairies. I'll get oo an invitation to the Fairy-King's dinner-party. I know one of the head-waiters."

I couldn't help laughing at this idea. "Do the waiters invite the guests?" I asked.

"Oh, not *to sit down!*" Bruno said. "But to wait at table. Oo'd like that, wouldn't oo? To hand about plates, and so on."

"Well, but that's not so nice as sitting at the table, is it?"

"Of course it isn't," Bruno said, in a tone as if he rather pitied my ignorance; "but if oo're not even Sir Anything, oo ca'n't expect to be allowed to sit at the table, oo know."

I said, as meekly as I could, that I didn't expect it, but it was the only way of going to a dinner-party that I really enjoyed. And Bruno tossed his head, and said, in a rather offended tone, that I might do as I pleased—there were many he knew that would give their ears to go.

"Have you ever been yourself, Bruno?"

"They invited me once, last week," Bruno said, very gravely. "It was to wash up the soup-plates—no, the cheese-plates I mean—that was grand enough. And I waited at table. And I didn't hardly make only *one* mistake."

"What was it?" I said. "You needn't mind telling *me*."

"Only bringing scissors to cut the beef with," Bruno said carelessly. "But the grandest thing of all was, *I* fetched the King a glass of cider!"

"That *was* grand!" I said, biting my lip to keep myself from laughing.

"Wasn't it?" said Bruno, very earnestly. "Oo know it isn't every one that's had such an honour as *that!*"

This set me thinking of the various queer things we call "an honour" in this world, but which, after all, haven't a bit more honour in them than what Bruno enjoyed, when he took the King a glass of cider.

I don't know how long I might not have dreamed on in this way, if Bruno hadn't suddenly roused me. "Oh, come here quick!" he cried, in a state of the wildest excitement. "Catch hold of his other horn! I ca'n't hold him more than a minute!"

He was struggling desperately with a great snail, clinging to one of its horns, and nearly breaking his poor little back in his efforts to drag it over a blade of grass.

I saw we should have no more gardening if I let this sort of thing go on, so I quietly took the snail away, and put it on a bank where he couldn't reach it. "We'll hunt it afterwards, Bruno," I said, "if you really want to catch it. But what's the use of it when you've got it?"

"What's the use of a fox when oo've got it?" said Bruno. "I know oo big things hunt foxes."

I tried to think of some good reason why "big things" should hunt foxes, and he should not hunt snails, but none came into my head: so I said at last, "Well, I suppose one's as good as the other. I'll go snail-hunting myself some day."

"I should think oo wouldn't be so silly," said Bruno, "as to go snail-hunting by oorself. Why, oo'd never get the snail along, if oo hadn't somebody to hold on to his other horn!"

"Of course I sha'n't go *alone*," I said, quite gravely. "By the way, is that the best kind to hunt, or do you recommend the ones without shells?"

"Oh, no, we never hunt the ones without shells," Bruno said, with a little shudder at the thought of it. "They're always so cross about it; and then, if oo

tumbles over them, they're ever so sticky!"

By this time we had nearly finished the garden. I had fetched some violets, and Bruno was just helping me to put in the last, when he suddenly stopped and said "I'm tired."

"Rest then," I said: "I can go on without you, quite well."

Bruno needed no second invitation: he at once began arranging the dead mouse as a kind of sofa. "And I'll sing oo a little song," he said, as he rolled it about.

"Do," said I: "I like songs very much."

"Which song will oo choose?" Bruno said, as he dragged the mouse into a place where he could get a good view of me. "'Ting, ting, ting' is the nicest."

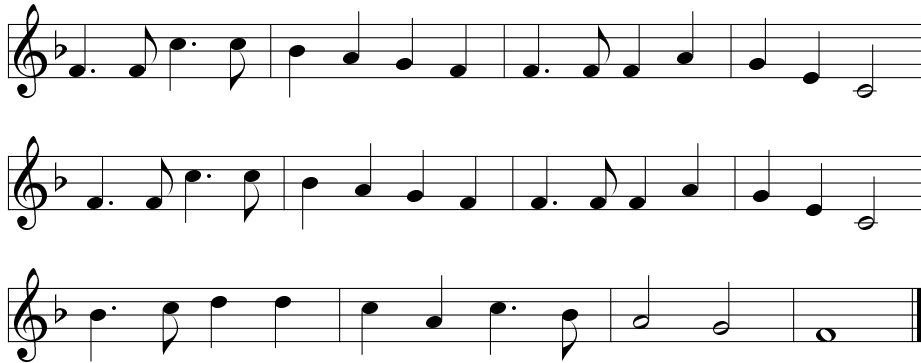
There was no resisting such a strong hint as this: however, I pretended to think about it for a moment, and then said "Well, I like 'Ting, ting, ting,' best of all."



Bruno's revenge

"That shows oo're a good judge of music," Bruno said, with a pleased look. "How many hare-bells would oo like?" And he put his thumb into his mouth to help me to consider.

As there was only one cluster of hare-bells within easy reach, I said very gravely that I thought one would do *this* time, and I picked it and gave it to him. Bruno ran his hand once or twice up and down the flowers, like a musician trying an instrument, producing a most delicious delicate tinkling as he did so. I had never heard flower-music before—I don't think one can, unless one's in the 'eerie' state—and I don't know quite how to give you an idea of what it was like, except by saying that it sounded like a peal of bells a thousand miles off. When he had satisfied himself that the flowers were in tune, he seated himself on the dead mouse (he never seemed really comfortable anywhere else), and, looking up at me with a merry twinkle in his eyes, he began. By the way, the tune was rather a curious one, and you might like to try it for yourself, so here are the notes.



"Rise, oh, rise! The daylight dies:
 The owls are hooting, ting, ting, ting!
 Wake, oh, wake! Beside the lake
 The elves are fluting, ting, ting, ting!
 Welcoming our Fairy King,
 We sing, sing, sing."

He sang the first four lines briskly and merrily, making the hare-bells chime in time with the music; but the last two he sang quite slowly and gently, and merely waved the flowers backwards and forwards. Then he left off to explain. "The Fairy-King is Oberon, and he lives across the lake—and sometimes he comes in a little boat—and we go and meet him—and then we sing this song, you know."

"And then you go and dine with him?" I said, mischievously.

"Oo shouldn't talk," Bruno hastily said: "it interrupts the song so."

I said I wouldn't do it again.

"I never talk myself when I'm singing," he went on very gravely: "so oo shouldn't either." Then he tuned the hare-bells once more, and sang:—

"Hear, oh, hear! From far and near
 The music stealing, ting, ting, ting!
 Fairy bells adown the dells
 Are merrily pealing, ting, ting, ting!
 Welcoming our Fairy King,
 We ring, ring, ring.

"See, oh, see! On every tree
 What lamps are shining, ting, ting, ting!
 They are eyes of fiery flies
 To light our dining, ting, ting, ting!
 Welcoming our Fairy King
 They swing, swing, swing.

"Haste, oh haste, to take and taste
 The dainties waiting, ting, ting, ting!
 Honey-dew is stored——"

"Hush, Bruno!" I interrupted in a warning whisper. "She's coming!"

Bruno checked his song, and, as she slowly made her way through the long grass, he suddenly rushed out headlong at her like a little bull, shouting "Look the other way! Look the other way!"

"Which way?" Sylvie asked, in rather a frightened tone, as she looked round in all directions to see where the danger could be.

"*That way!*" said Bruno, carefully turning her round with her face to the wood. "Now, walk backwards—walk gently—don't be frightened: oo sha'n't trip!"

But Sylvie *did* trip notwithstanding: in fact he led her, in his hurry, across so many little sticks and stones, that it was really a wonder the poor child could keep on her feet at all. But he was far too much excited to think of what he was doing.

I silently pointed out to Bruno the best place to lead her to, so as to get a view of the whole garden at once: it was a little rising ground, about the height of a potato; and, when they had mounted it, I drew back into the shade, that Sylvie mightn't see me.

I heard Bruno cry out triumphantly "*Now oo may look!*" and then followed a clapping of hands, but it was all done by Bruno himself. Sylvie was silent—she only stood and gazed with her hands clasped together, and I was half afraid she didn't like it after all.

Bruno too was watching her anxiously, and when she jumped down off the mound, and began wandering up and down the little walks, he cautiously followed her about, evidently anxious that she should form her own opinion of it all, without any hint from him. And when at last she drew a long breath, and gave her verdict—in a hurried whisper, and without the slightest regard to grammar—"It's the loveliest thing as I never saw in all my life before!" the little fellow looked as well pleased as if it had been given by all the judges and juries in England put together.

"And did you really do it all by yourself, Bruno?" said Sylvie. "And all for me?"

"I was helped a bit," Bruno began, with a merry little laugh at her surprise. "We've been at it all the afternoon—I thought oo'd like—" and here the poor little fellow's lip began to quiver, and all in a moment he burst out crying, and running up to Sylvie he flung his arms passionately round her neck, and hid his face on her shoulder.

There was a little quiver in Sylvie's voice too, as she whispered "Why, what's the matter, darling?" and tried to lift up his head and kiss him.

But Bruno only clung to her, sobbing, and wouldn't be comforted till he had confessed. "I tried—to spoil oor garden—first—but I'll never—never—" and then came another burst of tears, which drowned the rest of the sentence. At last he got out the words "I liked—putting in the flowers—for oo, Sylvie—and I never was so happy before." And the rosy little face came up at last to be kissed, all wet with tears as it was.

Sylvie was crying too by this time, and she said nothing but "Bruno, dear!" and "*I never was so happy before,*" though why these two children who had never been so happy before should both be crying was a mystery to *me*.

I felt very happy too, but of course I didn't cry: "big things" never do, you know—we leave all that to the Fairies. Only I think it must have been raining a little just then, for I found a drop or two on my cheeks.

After that they went through the whole garden again, flower by flower, as if it were a long sentence they were spelling out, with kisses for commas, and a great hug by way of a full-stop when they got to the end.

"Doos oo know, that was my river-edge, Sylvie?" Bruno solemnly began.

Sylvie laughed merrily. "What *do* you mean?" she said. And she pushed back her heavy brown hair with both hands, and looked at him with dancing eyes in which the big tear-drops were still glittering.

Bruno drew in a long breath, and made up his mouth for a great effort. "I mean re-venge," he said: "now oo under'tand." And he looked so happy and proud at having said the word right at last, that I quite envied him. I rather think Sylvie didn't "under'tand" at all; but she gave him a little kiss on each cheek, which seemed to do just as well.

So they wandered off lovingly together, in among the buttercups, each with an arm twined round the other, whispering and laughing as they went, and never so much as once looked back at poor me. Yes, once, just before I quite lost sight of them, Bruno half turned his head, and nodded me a saucy little good-bye over one shoulder. And that was all the thanks I got for *my* trouble. The very last thing I saw of them was this—Sylvie was stooping down with her arms round Bruno's neck, and saying coaxingly in his ear, "Do you know, Bruno, I've quite forgotten that hard word. Do say it once more. Come! Only this once, dear!"

But Bruno wouldn't try it again.

Chapter XVI. A Changed Crocodile

The Marvellous—the Mysterious—had quite passed out of my life for the moment: and the Common-place reigned supreme. I turned in the direction of the Earl's house, as it was now 'the witching hour' of five, and I knew I should find them ready for a cup of tea and a quiet chat.

Lady Muriel and her father gave me a delightfully warm welcome. They were not of the folk we meet in fashionable drawing-rooms—who conceal all such feelings as they may chance to possess beneath the impenetrable mask of a conventional placidity. 'The Man with the Iron Mask' was, no doubt, a rarity and a marvel in his own age: in modern London no one would turn his head to give him a second look! No, these were *real* people. When they *looked* pleased, it meant that they *were* pleased: and when Lady Muriel said, with a bright smile, "I'm *very* glad to see you again!", I knew that it was *true*.

Still I did not venture to disobey the injunctions—crazy as I felt them to be—of the love-sick young Doctor, by so much as alluding to his existence: and it was only after they had given me full details of a projected picnic, to which they invited me, that Lady Muriel exclaimed, almost as an after-thought, "and *do*, if you can, bring Doctor Forester with you! I'm sure a day in the country would do him good. I'm afraid he studies too much——"

It was 'on the tip of my tongue' to quote the words "His only books are woman's looks!" but I checked myself just in time—with something of the feeling of one who has crossed a street, and has been all but run over by a passing 'Hansom.'

"—and I think he has too lonely a life," she went on, with a gentle earnestness that left no room whatever to suspect a double meaning. "*Do* get him to come! And don't forget the day, Tuesday week. We can drive you over. It would be a

pity to go by rail—there is so much pretty scenery on the road. And our open carriage just holds four.”

“Oh, *I’ll* persuade him to come!” I said with confidence—thinking “it would take all *my* powers of persuasion to keep him away!”

The picnic was to take place in ten days: and though Arthur readily accepted the invitation I brought him, nothing that I could say would induce him to call—either with me or without me—on the Earl and his daughter in the meanwhile. No: he feared to “wear out his welcome;” he said: they had “seen enough of him for one while”: and, when at last the day for the expedition arrived, he was so childishly nervous and uneasy that I thought it best so to arrange our plans that we should go separately to the house—my intention being to arrive some time after him, so as to give him time to get over a meeting.

With this object I purposely made a considerable circuit on my way to the Hall (as we called the Earl’s house): “and if I could only manage to lose my way a bit,” I thought to myself, “that would suit me capitally!”

In this I succeeded better, and sooner, than I had ventured to hope for. The path through the wood had been made familiar to me, by many a solitary stroll, in my former visit to Elveston; and how I could have so suddenly and so entirely lost it—even though I *was* so engrossed in thinking of Arthur and his lady-love that I heeded little else—was a mystery to me. “And this open place,” I said to myself, “seems to have some memory about it I cannot distinctly recall—surely it is the very spot where I saw those Fairy-Children! But I hope there are no snakes about!” I mused aloud, taking my seat on a fallen tree. “I certainly do *not* like snakes—and I don’t suppose *Bruno* likes them, either!”

“No, he *doesn’t* like them!” said a demure little voice at my side. “He’s not *afraid* of them, you know. But he doesn’t *like* them. He says they’re too waggly!”

Words fail me to describe the beauty of the little group—couched on a patch of moss, on the trunk of the fallen tree, that met my eager gaze: Sylvie reclining with her elbow buried in the moss, and her rosy cheek resting in the palm of her hand, and Bruno stretched at her feet with his head in her lap.



Fairies resting

"Too waggly?" was all I could say in so sudden an emergency.

"I'm not particular," Bruno said, carelessly: "but I *do* like straight animals best——"

"But you like a dog when it wags its tail," Sylvie interrupted. "You *know* you do, Bruno!"

"But there's more of a dog, isn't there, Mister Sir?" Bruno appealed to me. "You wouldn't like to have a dog if it hadn't got nuffin but a head and a tail?"

I admitted that a dog of that kind would be uninteresting.

"There *isn't* such a dog as that," Sylvie thoughtfully remarked.

"But there *would* be," cried Bruno, "if the Professor shortened it up for us!"

"Shortened it up?" I said. "That's something new. How does he do it?"

"He's got a curious machine——" Sylvie was beginning to explain.

"A *welley* curious machine," Bruno broke in, not at all willing to have the story thus taken out of his mouth, "and if oo puts in—somefinoruvver—at *one* end, oo know—and he turns the handle—and it comes out at the uvver end, oh, ever so short!"

"As short as short!" Sylvie echoed.

"And one day—when we was in Outland, oo know—before we came to Fairyland—me and Sylvie took him a big Crocodile. And he shortened it up for us. And it *did* look so funny! And it kept looking round, and saying 'wherever *is* the rest of me got to?' And then its eyes looked unhappy——"

"Not *both* its eyes," Sylvie interrupted.

"Course not!" said the little fellow. "Only the eye that *couldn't* see wherever the rest of it had got to. But the eye that *could* see wherever——"

"How short *was* the crocodile?" I asked, as the story was getting a little complicated.

"Half as short again as when we caught it—*so* long," said Bruno, spreading out his arms to their full stretch.

I tried to calculate what this would come to, but it was too hard for me. Please make it out for me, dear Child who reads this!

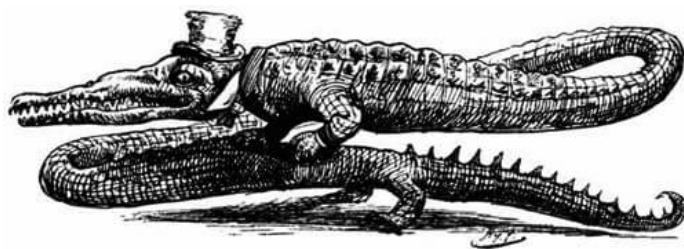
"But you didn't leave the poor thing so short as that, did you?"

"Well, no. Sylvie and me took it back again and we got it stretched to—to—how much was it, Sylvie?"

"Two times and a half, and a little bit more," said Sylvie.

"It wouldn't like that better than the other way, I'm afraid?"

"Oh, but it did though!" Bruno put in eagerly. "It *were* proud of its new tail! Oo never saw a Crocodile so proud! Why, it could go round and walk on the top of its tail, and along its back, all the way to its head!"



A changed Crocodile

"Not *quite* all the way," said Sylvie. "It couldn't, you know."

“Ah, but it *did*, once!” Bruno cried triumphantly. “Oo weren’t looking—but I watched it. And it walked on tippetly-toe, so as it wouldn’t wake itself, ’cause it thought it were asleep. And it got both its paws on its tail. And it walked and it walked all the way along its back. And it walked and it walked on its forehead. And it walked a tiny little way down its nose! There now!”

This was a good deal worse than the last puzzle. Please, dear Child, help again!

“I don’t believe no Crocodile never walked along its own forehead!” Sylvie cried, too much excited by the controversy to limit the number of her negatives.

“Oo don’t know the *reason* why it did it!” Bruno scornfully retorted. “It had a welly good reason. I *heard* it say ‘Why *shouldn’t* I walk on my own forehead?’ So a course it *did*, oo know!”

“If *that’s* a good reason, Bruno,” I said, “why shouldn’t *you* get up that tree?”

“*Shall*, in a minute,” said Bruno: “soon as we’ve done talking. Only two peoples *ca’n’t* talk comfably togever, when one’s getting up a tree, and the other isn’t!”

It appeared to me that a conversation would scarcely be ‘comfable’ while trees were being climbed, even if *both* the ‘peoples’ were doing it: but it was evidently dangerous to oppose any theory of Bruno’s; so I thought it best to let the question drop, and to ask for an account of the machine that made things *longer*.

This time Bruno was at a loss, and left it to Sylvie. “It’s like a mangle,” she said: “if things are put in, they get squeeze——”

“Squeezeled!” Bruno interrupted.

“Yes.” Sylvie accepted the correction, but did not attempt to pronounce the word, which was evidently new to her. “They get—like that—and they come out, oh, ever so long!”

“Once,” Bruno began again, “Sylvie and me writed——”

“Wrote!” Sylvie whispered.

“Well, we *wroted* a Nursery-Song, and the Professor mangled it longer for us. It were ‘*There was a little Man, And he had a little gun, And the bullets——*’”

“I know the rest,” I interrupted. “But would you say it *long*—I mean the way that it came *out* of the mangle?”

“We’ll get the Professor to *sing* it for you,” said Sylvie. “It would spoil it to *say* it.”

“I would like to meet the Professor,” I said. “And I would like to take you all with me, to see some friends of mine, that live near here. Would you like to come?”

“I don’t think the *Professor* would like to come,” said Sylvie. “He’s *very* shy. But *we’d* like it very much. Only we’d better not come *this* size, you know.”

The difficulty had occurred to me already: and I had felt that perhaps there *would* be a slight awkwardness in introducing two such tiny friends into Society. “What size will you be?” I enquired.

“We’d better come as—common *children*,” Sylvie thoughtfully replied. “That’s the easiest size to manage.”

“Could you come to-day?” I said, thinking “then we could have you at the picnic!”

Sylvie considered a little. “Not *to-day*,” she replied. “We haven’t got the things ready. We’ll come on—Tuesday next, if you like. And now, *really*, Bruno,

Quoted from nursery rhyme

you must come and do your lessons.”

“I *wiss* oo wouldn’t say ‘*really* Bruno!” the little fellow pleaded, with pouting lips that made him look prettier than ever. “It *always* shows there’s something horrid coming! And I won’t kiss you, if you’re so unkind.”

“Ah, but you *have* kissed me!” Sylvie exclaimed in merry triumph.

“Well then, I’ll *unkiss* you!” And he threw his arms round her neck for this novel, but apparently not *very* painful, operation.

“It’s *very* like *kissing*!” Sylvie remarked, as soon as her lips were again free for speech.

“Oo don’t know *nuffin* about it! It were just the *conkery*!” Bruno replied with much severity, as he marched away.

Sylvie turned her laughing face to me. “Shall we come on Tuesday?” she said.

“Very well,” I said: “let it be Tuesday next. But where *is* the Professor? Did he come with you to Fairyland?”

“No,” said Sylvie. “But he promised he’d come and see us, *some* day. He’s getting his Lecture ready. So he has to stay at home.”

“At home?” I said dreamily, not feeling quite sure what she had said.

“Yes, Sir. His Lordship and Lady Muriel *are* at home. Please to walk this way.”

Chapter XVII. The Three Badgers

Still more dreamily I found myself following this imperious voice into a room where the Earl, his daughter, and Arthur, were seated. “So you’re come *at last*!” said Lady Muriel, in a tone of playful reproach.

“I was delayed,” I stammered. Though *what* it was that had delayed me I should have been puzzled to explain! Luckily no questions were asked.

The carriage was ordered round, the hamper, containing our contribution to the Picnic, was duly stowed away, and we set forth.

There was no need for *me* to maintain the conversation. Lady Muriel and Arthur were evidently on those most delightful of terms, where one has no need to check thought after thought, as it rises to the lips, with the fear ‘*this* will not be appreciated—*this* will give offence—*this* will sound too serious—this will sound flippant’: like very old friends, in fullest sympathy, their talk rippled on.

“Why shouldn’t we desert the Picnic and go in some other direction?” she suddenly suggested. “A party of four is surely self-sufficing? And as for *food*, our hamper——”

“Why *shouldn’t* we? What a genuine *lady’s* argument!” laughed Arthur. “A lady never knows on which side the *onus probandi*—the burden of proving—lies!”

“Do *men* always know?” she asked with a pretty assumption of meek docility.

“With *one* exception—the only one I can think of—Dr. Watts, who has asked the senseless question

‘Why should I deprive my neighbour
Of his goods against his will?’

Fancy *that* as an argument for Honesty! His position seems to be ‘I’m only honest because I see no reason to steal.’ And the *thief’s* answer is of course

Quoted from *Why should I deprive my neighbour* by Isaac Watts

complete and crushing. 'I deprive my neighbour of his goods because I want them myself. And I do it against his will because there's no chance of getting him to consent to it!'"

"I can give you one other exception," I said: "an argument I heard only to-day—and *not* by a lady. 'Why shouldn't I walk on my own forehead?'"

"What a curious subject for speculation!" said Lady Muriel, turning to me, with eyes brimming over with laughter. "May we know who propounded the question? And *did* he walk on his own forehead?"

"I ca'n't remember *who* it was that said it!" I faltered. "Nor *where* I heard it!"

"Whoever it was, I hope we shall meet him at the Picnic!" said Lady Muriel. "It's a *far* more interesting question than '*Isn't* this a picturesque ruin?' '*Aren't* those autumn-tints lovely?' I shall have to answer those two questions *ten* times, at least, this afternoon!"

"That's one of the miseries of Society!" said Arthur. "Why ca'n't people let one enjoy the beauties of Nature without having to *say* so every minute? Why should Life be one long Catechism?"

"It's just as bad at a picture-gallery," the Earl remarked. "I went to the R.A. last May, with a conceited young artist: and he *did* torment me! I wouldn't have minded his criticizing the pictures *himself*: but *I* had to agree with him—or else to argue the point, which would have been worse!"

"It was *depreciatory* criticism, of course?" said Arthur.

"I don't see the 'of course' at all."

"Why, did you ever know a conceited man dare to *praise* a picture? The one thing he dreads (next to not being noticed) is *to be proved fallible*! If you once *praise* a picture, your character for *infallibility* hangs by a thread. Suppose it's a figure-picture, and you venture to say 'draws well.' Somebody measures it, and finds one of the proportions an eighth of an inch wrong. *You* are disposed of as a critic! 'Did you say he draws *well*?' your friends enquire sarcastically, while you hang your head and blush. No. The only *safe* course, if any one says 'draws well,' is to shrug your shoulders. '*Draws well*?' you repeat thoughtfully. '*Draws well*? Humph!' That's the way to become a great critic!"

Thus airily chatting, after a pleasant drive through a few miles of beautiful scenery, we reached the *rendezvous*—a ruined castle—where the rest of the picnic-party were already assembled. We spent an hour or two in sauntering about the ruins: gathering at last, by common consent, into a few random groups, seated on the side of a mound, which commanded a good view of the old castle and its surroundings.

The momentary silence, that ensued, was promptly taken possession of—or, more correctly, taken into custody—by a Voice; a voice so smooth, so monotonous, so sonorous, that one felt, with a shudder, that any other conversation was precluded, and that, unless some desperate remedy were adopted, we were fated to listen to a Lecture, of which no man could foresee the end!

The speaker was a broadly-built man, whose large, flat, pale face was bounded on the North by a fringe of hair, on the East and West by a fringe of whisker, and on the South by a fringe of beard—the whole constituting a uniform halo of stubbly whitey-brown bristles. His features were so entirely destitute of expression that I could not help saying to myself—helplessly, as if in the clutches of a night-mare—"they are only penciled in: no final touches as yet!" And he had a way of ending every sentence with a sudden smile, which spread like a

ripple over that vast blank surface, and was gone in a moment, leaving behind it such absolute solemnity that I felt impelled to murmur "it was not *he*: it was somebody else that smiled!"

"Do you observe?" (such was the phrase with which the wretch began each sentence) "Do you observe the way in which that broken arch, at the very top of the ruin, stands out against the clear sky? It is placed *exactly* right: and there is *exactly* enough of it. A little more, or a little less, and all would be utterly spoiled!"



A lecture on Art

"Oh gifted architect!" murmured Arthur, inaudibly to all but Lady Muriel and myself. "Foreseeing the exact effect his work would have, when in ruins, centuries after his death!"

"And do you observe, where those trees slope down the hill," (indicating them with a sweep of the hand, and with all the patronising air of the man who has himself arranged the landscape), "how the mists rising from the river fill up *exactly* those intervals where we *need* indistinctness, for artistic effect? Here, in the foreground, a few clear touches are not amiss: but a *back-ground* without mist, you know! It is simply barbarous! Yes, we *need* indistinctness!"

The orator looked so pointedly at *me* as he uttered these words, that I felt bound to reply, by murmuring something to the effect that I hardly felt the need *myself*—and that I enjoyed looking at a thing, better, when I could *see* it.

"Quite so!" the great man sharply took me up. "From *your* point of view, that is correctly put. But for any one who has a soul for *Art*, such a view is preposterous. *Nature* is one thing. *Art* is another. *Nature* shows us the world as it *is*. But *Art*—as a Latin author tells us—*Art*, you know—the words have escaped my memory——"

“*Ars est celare Naturam*,”¹ Arthur interposed with a delightful promptitude.

“Quite so!” the orator replied with an air of relief. “I thank you! *Ars est celare Naturam*—but that isn’t it.” And, for a few peaceful moments, the orator brooded, frowningly, over the quotation. The welcome opportunity was seized, and *another* voice struck into the silence.

“What a *lovely* old ruin it is!” cried a young lady in spectacles, the very embodiment of the March of Mind, looking at Lady Muriel, as the proper recipient of all really *original* remarks. “And *don’t* you admire those autumn-tints on the trees? *I* do, *intensely!*”

Lady Muriel shot a meaning glance at me; but replied with admirable gravity. “Oh yes indeed, indeed! *So* true!”

“And isn’t it strange,” said the young lady, passing with startling suddenness from Sentiment to Science, “that the mere impact of certain coloured rays upon the Retina should give us such exquisite pleasure?”

“You have studied Physiology, then?” a certain young Doctor courteously enquired.

“Oh, *yes!* Isn’t it a *sweet* Science?”

Arthur slightly smiled. “It seems a paradox, does it not,” he went on, “that the image formed on the Retina should be inverted?”

“It *is* puzzling,” she candidly admitted. “Why is it we do not *see* things upside-down?”

“You have never heard the Theory, then, that the *Brain* also is inverted?”

“No *indeed!* What a *beautiful* fact! But how is it *proved?*”

“*Thus,*” replied Arthur, with all the gravity of ten Professors rolled into one. “What we call the *vertex* of the Brain is really its *base*: and what we call its *base* is really its *vertex*: it is simply a question of *nomenclature.*”

This last polysyllable settled the matter. “How truly delightful!” the fair Scientist exclaimed with enthusiasm. “I shall ask our Physiological Lecturer why he never gave us that *exquisite* Theory!”

“I’d give something to be present when the question is asked!” Arthur whispered to me, as, at a signal from Lady Muriel, we moved on to where the hampers had been collected, and devoted ourselves to the more *substantial* business of the day.

We ‘waited’ on ourselves, as the modern barbarism (combining two good things in such a way as to secure the discomforts of both and the advantages of neither) of having a picnic with servants to wait upon you, had not yet reached this out-of-the-way region—and of course the gentlemen did not even take their places until the ladies had been duly provided with all imaginable creature-comforts. Then I supplied myself with a plate of something solid and a glass of something fluid, and found a place next to Lady Muriel.

It had been left vacant—apparently for Arthur, as a distinguished stranger: but he had turned shy, and had placed himself next to the young lady in spectacles, whose high rasping voice had already cast loose upon Society such ominous phrases as “Man is a bundle of Qualities!”, “the Objective is only attainable through the Subjective!”. Arthur was bearing it bravely: but several faces wore a look of alarm, and I thought it high time to start some less metaphysical topic.

¹Remark: “*Ars est celare Naturam*,”

“In my nursery days,” I began, “when the weather didn’t suit for an out-of-doors picnic, we were allowed to have a peculiar kind, that we enjoyed hugely. The table cloth was laid *under* the table, instead of upon it: we sat round it on the floor: and I believe we really enjoyed that extremely uncomfortable kind of dinner more than we ever did the orthodox arrangement!”

“I’ve no doubt of it,” Lady Muriel replied. “There’s nothing a well-regulated child hates so much as regularity. I believe a really healthy boy would thoroughly enjoy Greek Grammar—if only he might stand on his head to learn it! And your carpet-dinner certainly spared you *one* feature of a picnic, which is to me its chief drawback.”

“The chance of a shower?” I suggested.

“No, the chance—or rather the certainty—of *live* things occurring in combination with one’s food! *Spiders* are *my* bugbear. Now my father has *no* sympathy with that sentiment—*have* you, dear?” For the Earl had caught the word and turned to listen.

“To each his sufferings, all are men,” he replied in the sweet sad tones that seemed natural to him: “each has his pet aversion.”

“But you’ll never guess *his*!” Lady Muriel said, with that delicate silvery laugh that was music to my ears.

I declined to attempt the impossible.

“He doesn’t like *snakes*!” she said, in a stage whisper. “Now, isn’t *that* an unreasonable aversion? Fancy not liking such a dear, coaxingly, *clingingly* affectionate creature as a snake!”

“Not like *snakes*!” I exclaimed. “Is such a thing possible?”

“No, he *doesn’t* like them,” she repeated with a pretty mock-gravity. “He’s not *afraid* of them, you know. But he doesn’t *like* them. He says they’re too waggly!”

I was more startled than I liked to show. There was something so *uncanny* in this echo of the very words I had so lately heard from that little forest-sprite, that it was only by a great effort I succeeded in saying, carelessly, “Let us banish so unpleasant a topic. Won’t you sing us something, Lady Muriel? I know you *do* sing without music.”

“The only songs I know—without music—are *desperately* sentimental, I’m afraid! Are your tears all ready?”

“Quite ready! Quite ready!” came from all sides, and Lady Muriel—not being one of those lady-singers who think it *de rigueur* to decline to sing till they have been petitioned three or four times, and have pleaded failure of memory, loss of voice, and other conclusive reasons for silence—began at once:—

“There be three Badgers on a mossy stone,
Beside a dark and covered way:
Each dreams himself a monarch on his throne,
And so they stay and stay—
Though their old Father languishes alone,
They stay, and stay, and stay.

“There be three Herrings loitering around,
Longing to share that mossy seat:
Each Herring tries to sing what she has found
That makes Life seem so sweet.
Thus, with a grating and uncertain sound,

Quoted from *Ode on a Distant Prospect of Eton College* by Thomas Gray



'Three Badgers on a mossy stone'

They bleat, and bleat, and bleat.
 "The Mother-Herring, on the salt sea-wave,
 Sought vainly for her absent ones:
 The Father-Badger, writhing in a cave,
 Shrieked out 'Return, my sons!
 You shall have buns,' he shrieked, 'if you'll behave!
 Yea, buns, and buns, and buns!'"
 "'I fear,' said she, 'your sons have gone astray?
 My daughters left me while I slept.'
 'Yes 'm,' the Badger said: 'it's as you say.'
 'They should be better kept.'
 Thus the poor parents talked the time away,
 And wept, and wept, and wept."

Here Bruno broke off suddenly. "The Herrings' Song wants anuvver tune, Sylvie," he said. "And I ca'n't sing it—not wizout oo plays it for me!"

Instantly Sylvie seated herself upon a tiny mushroom, that happened to grow in front of a daisy, as if it were the most ordinary musical instrument in the world, and played on the petals as if they were the notes of an organ. And such delicious *tiny* music it was! Such teeny-tiny music!

Bruno held his head on one side, and listened very gravely for a few moments until he had caught the melody. Then the sweet childish voice rang out once more:—

"Oh, dear beyond our dearest dreams,
 Fairer than all that fairest seems!
 To feast the rosy hours away,
 To revel in a roundelay!
 How blest would be
 A life so free—
 Ipwergis-Pudding to consume,



'The Father-Badger, writhing in a cave'

And drink the subtle Azzigoom!
 "And if, in other days and hours,
 Mid other fluffs and other flowers,
 The choice were given me how to dine—
 'Name what thou wilt: it shall be thine!
 Oh, then I see
 The life for me—
 Ipwergis-Pudding to consume,
 And drink the subtle Azzigoom!"

"Oo may leave off playing *now*, Sylvie. I can do the uvver tune much better wizout a compliment."

"He means 'without *accompaniment*,'" Sylvie whispered, smiling at my puzzled look: and she pretended to shut up the stops of the organ.

"The Badgers did not care to talk to Fish:
 They did not dote on Herrings' songs:
 They never had experienced the dish
 To which that name belongs:
 'And oh, to pinch their tails,' (this was their wish,
 'With tongs, yea, tongs, and tongs!'"

I ought to mention that he marked the parenthesis, in the air, with his finger. It seemed to me a very good plan. You know there's no *sound* to represent it—any more than there is for a question.

Suppose you have said to your friend, "You are better to-day," and that you want him to understand that you are asking him a *question*, what can be simpler than just to make a '?' in the air with your finger? He would understand you in a moment!

"And are not these the Fish,' the Eldest sighed,

‘Whose Mother dwells beneath the foam?’
 ‘They *are* the Fish!’ the Second one replied.
 ‘And they have left their home!’
 ‘Oh wicked Fish,’ the Youngest Badger cried,
 ‘To roam, yea, roam, and roam!’



‘Those aged ones waxed gay’

“Gently the Badgers trotted to the shore—
 The sandy shore that fringed the bay:
 Each in his mouth a living Herring bore—
 Those aged ones waxed gay:
 Clear rang their voices through the ocean’s roar,
 ‘Hooray, hooray, hooray!’”

“So they all got safe home again,” Bruno said, after waiting a minute to see if *I* had anything to say: he evidently felt that *some* remark ought to be made. And I couldn’t help wishing there were some such rule in Society, at the conclusion of a song—that the singer *herself* should say the right thing, and not leave it to the audience. Suppose a young lady has just been warbling (‘with a grating and uncertain sound’) Shelley’s exquisite lyric ‘*I arise from dreams of thee*’: how much nicer it would be, instead of *your* having to say “Oh, *thank you, thank you!*” for the young lady herself to remark, as she draws on her gloves, while the impassioned words ‘*Oh, press it to thine own, or it will break at last!*’ are still ringing in your ears, “—but she wouldn’t do it, you know. So it *did* break at last.”

Quoted from *The Indian Serenade* by Percy Bysshe Shelley

“And I *knew* it would!” she added quietly, as I started at the sudden crash of broken glass. “You’ve been holding it sideways for the last minute, and letting all the champagne run out! Were you asleep, I wonder? I’m *so* sorry my singing has such a narcotic effect!”

Chapter XVIII. Queer Street, Number Forty

Lady Muriel was the speaker. And, for the moment, that was the only fact I could clearly realise. But how she came to be there—and how *I* came to be there—and how the glass of champagne came to be there—all these were

questions which I felt it better to think out in silence, and not commit myself to any statement till I understood things a little more clearly.

‘First accumulate a mass of Facts: and *then* construct a Theory.’ *That*, I believe, is the true Scientific Method. I sat up, rubbed my eyes, and began to accumulate Facts.

A smooth grassy slope, bounded, at the upper end, by venerable ruins half buried in ivy, at the lower, by a stream seen through arching trees—a dozen gaily-dressed people, seated in little groups, here and there—some open hampers—the *débris* of a picnic—such were the *Facts* accumulated by the Scientific Researcher. And now, what deep, far-reaching *Theory* was he to construct from them? The Researcher found himself at fault. Yet stay! One Fact had escaped his notice. While all the rest were grouped in twos and in threes, *Arthur* was alone: while all tongues were talking, *his* was silent: while all faces were gay, *his* was gloomy and despondent. Here was a *Fact* indeed! The Researcher felt that a *Theory* must be constructed without delay.

Lady Muriel had just risen and left the party. Could *that* be the cause of his despondency? The Theory hardly rose to the dignity of a Working Hypothesis. Clearly more Facts were needed.

The Researcher looked round him once more: and now the Facts accumulated in such bewildering profusion, that the Theory was lost among them. For Lady Muriel had gone to meet a strange gentleman, just visible in the distance: and now she was returning with him, both of them talking eagerly and joyfully, like old friends who have been long parted: and now she was moving from group to group, introducing the new hero of the hour: and he, young, tall, and handsome, moved gracefully at her side, with the erect bearing and firm tread of a soldier. Verily, the Theory looked gloomy for Arthur! His eye caught mine, and he crossed to me.

“He is very handsome,” I said.

“Abominably handsome!” muttered Arthur: then smiled at his own bitter words. “Lucky no one heard me but you!”

“Doctor Forester,” said Lady Muriel, who had just joined us, “let me introduce to you my cousin Eric Lindon—*Captain* Lindon, I should say.”

Arthur shook off his ill-temper instantly and completely, as he rose and gave the young soldier his hand. “I have heard of you,” he said. “I’m very glad to make the acquaintance of Lady Muriel’s cousin.”

“Yes, that’s all I’m distinguished for, *as yet!*” said Eric (so we soon got to call him) with a winning smile. “And I doubt,” glancing at Lady Muriel, “if it even amounts to a good-conduct-badge! But it’s something to begin with.”

“You must come to my father, Eric,” said Lady Muriel. “I think he’s wandering among the ruins.” And the pair moved on.

The gloomy look returned to Arthur’s face: and I could see it was only to distract his thoughts that he took his place at the side of the metaphysical young lady, and resumed their interrupted discussion.

“Talking of Herbert Spencer,” he began, “do you really find no *logical* difficulty in regarding Nature as a process of involution, passing from definite coherent homogeneity to indefinite incoherent heterogeneity?”

Amused as I was at the ingenious jumble he had made of Spencer’s words, I kept as grave a face as I could.

“No *physical* difficulty,” she confidently replied: “but I haven’t studied *Logic* much. Would you *state* the difficulty?”

“Well,” said Arthur, “do you accept it as self-evident? Is it as obvious, for instance, as that ‘things that are greater than the same are greater than one another’?”

“To *my* mind,” she modestly replied, “it seems *quite* as obvious. I grasp *both* truths by intuition. But *other* minds may need some logical—I forget the technical terms.”

“For a *complete* logical argument,” Arthur began with admirable solemnity, “we need two prim Misses——”

“Of course!” she interrupted. “I remember that word now. And they produce——?”

“A Delusion,” said Arthur.

“Ye—es?” she said dubiously. “I don’t seem to remember that so well. But what is the *whole* argument called?”

“A Sillygism.”

“Ah, yes! I remember now. But I don’t need a Sillygism, you know, to prove that mathematical axiom you mentioned.”

“Nor to prove that ‘all angles are equal’, I suppose?”

“Why, of course not! One takes such a simple truth as that for granted!”

Here I ventured to interpose, and to offer her a plate of strawberries and cream. I felt really uneasy at the thought that she *might* detect the trick: and I contrived, unperceived by her, to shake my head reprovingly at the pseudo-philosopher. Equally unperceived by her, Arthur slightly raised his shoulders, and spread his hands abroad, as who should say “What else can I say to her?” and moved away, leaving her to discuss her strawberries by ‘involution,’ or any other way she preferred.

By this time the carriages, that were to convey the revelers to their respective homes, had begun to assemble outside the Castle-grounds: and it became evident—now that Lady Muriel’s cousin had joined our party—that the problem, how to convey five people to Elveston, with a carriage that would only hold four, must somehow be solved.

The Honorable Eric Lindon, who was at this moment walking up and down with Lady Muriel, might have solved it at once, no doubt, by announcing his intention of returning on foot. Of *this* solution there did not seem to be the very smallest probability.

The next best solution, it seemed to me, was that *I* should walk home: and this I at once proposed.

“You’re sure you don’t mind?” said the Earl. “I’m afraid the carriage won’t take us all, and I don’t like to suggest to Eric to desert his cousin so soon.”

“So far from minding it,” I said, “I should prefer it. It will give me time to sketch this beautiful old ruin.”

“I’ll keep you company,” Arthur suddenly said. And, in answer to what I suppose was a look of surprise on my face, he said in a low voice, “I *really* would rather. I shall be quite *de trop* in the carriage!”

“I think I’ll walk too,” said the Earl. “You’ll have to be content with *Eric* as your escort,” he added, to Lady Muriel, who had joined us while he was speaking.

“You must be as entertaining as Cerberus—‘three gentlemen rolled into one’——” Lady Muriel said to her companion. “It will be a grand military exploit!”

“A sort of Forlorn Hope?” the Captain modestly suggested.

Quoted from *The Rivals* by Richard Brinsley Sheridan

"You *do* pay pretty compliments!" laughed his fair cousin. "Good day to you, gentlemen three—or rather deserters three!" And the two young folk entered the carriage and were driven away.

"How long will your sketch take?" said Arthur.

"Well," I said, "I should like an hour for it. Don't you think you had better go without me? I'll return by train. I know there's one in about an hour's time."

"Perhaps that *would* be best," said the Earl. "The Station is quite close."

So I was left to my own devices, and soon found a comfortable seat, at the foot of a tree, from which I had a good view of the ruins.

"It is a very drowsy day," I said to myself, idly turning over the leaves of the sketch-book to find a blank page. "Why, I thought you were a mile off by this time!" For, to my surprise, the two walkers were back again.

"I came back to remind you," Arthur said, "that the trains go every ten minutes——"

"Nonsense!" I said. "It isn't the Metropolitan Railway!"

"It *is* the Metropolitan Railway," the Earl insisted. "This is a part of Kensington."

"Why do you talk with your eyes shut?" said Arthur. "Wake up!"

"I think it's the heat makes me so drowsy," I said, hoping, but not feeling quite sure, that I was talking sense. "Am I awake now?"

"I think *not*," the Earl judicially pronounced. "What do *you* think, Doctor? He's only got one eye open!"

"And he's snoring like anything!" cried Bruno. "Do wake up, you dear old thing!" And he and Sylvie set to work, rolling the heavy head from side to side, as if its connection with the shoulders was a matter of no sort of importance.

And at last the Professor opened his eyes, and sat up, blinking at us with eyes of utter bewilderment. "Would you have the kindness to mention," he said, addressing me with his usual old-fashioned courtesy, "whereabouts we are just now—and *who* we are, beginning with me?"

I thought it best to begin with the children. "This is Sylvie, Sir; and *this* is Bruno."

"Ah, yes! I know *them* well enough!" the old man murmured. "It's *myself* I'm most anxious about. And perhaps you'll be good enough to mention, at the same time, how I got here?"

"A harder problem occurs to *me*," I ventured to say: "and that is, how you're to get back again."

"True, true!" the Professor replied. "That's *the* Problem, no doubt. Viewed as a Problem, outside of oneself, it is a *most* interesting one. Viewed as a portion of one's own biography, it is, I must admit, very distressing!" He groaned, but instantly added, with a chuckle, "As to *myself*, I think you mentioned that I am——"

"Oo're the *Professor*!" Bruno shouted in his ear. "Didn't oo know *that*? Oo've come from *Outland*! And it's *ever* so far away from here!"

The Professor leapt to his feet with the agility of a boy. "Then there's no time to lose!" he exclaimed anxiously. "I'll just ask this guileless peasant, with his brace of buckets that contain (apparently) water, if he'll be so kind as to direct us. Guileless peasant!" he proceeded in a louder voice. "Would you tell us the way to Outland?"

The guileless peasant turned with a sheepish grin. "Hey?" was all he said.

"The—way—to—Outland!" the Professor repeated.

The guileless peasant set down his buckets and considered. “Ah dunnot——”
“I ought to mention,” the Professor hastily put in, “that whatever you say will be used in evidence against you.”

The guileless peasant instantly resumed his buckets. “Then ah says nowt!” he answered briskly, and walked away at a great pace.

The children gazed sadly at the rapidly vanishing figure. “He goes very quick!” the Professor said with a sigh. “But I *know* that was the right thing to say. I’ve studied your English Laws. However, let’s ask this next man that’s coming. He is *not* guileless, and he is *not* a peasant—but I don’t know that either point is of vital importance.”

It was, in fact, the Honourable Eric Lindon, who had apparently fulfilled his task of escorting Lady Muriel home, and was now strolling leisurely up and down the road outside the house, enjoying a solitary cigar.

“Might I trouble you, Sir, to tell us the nearest way to Outland!” Oddity as he was, in outward appearance, the Professor was, in that essential nature which no outward disguise could conceal, a thorough gentleman.

And, as such, Eric Lindon accepted him instantly. He took the cigar from his mouth, and delicately shook off the ash, while he considered. “The name sounds strange to me,” he said. “I doubt if I can help you.”

“It is not *very* far from *Fairyland*,” the Professor suggested.

Eric Lindon’s eye-brows were slightly raised at these words, and an amused smile, which he courteously tried to repress, flitted across his handsome face. “A trifle *cracked!*” he muttered to himself. “But what a jolly old patriarch it is!” Then he turned to the children. “And ca’n’t *you* help him, little folk?” he said, with a gentleness of tone that seemed to win their hearts at once. “Surely *you* know all about it?”

‘How many miles to Babylon?
Three-score miles and ten.
Can I get there by candlelight?
Yes, and back again!’”

Quoted from nursery rhyme

To my surprise, Bruno ran forwards to him, as if he were some old friend of theirs, seized the disengaged hand and hung on to it with both of his own: and there stood this tall dignified officer in the middle of the road, gravely swinging a little boy to and fro, while Sylvie stood ready to push him, exactly as if a real swing had suddenly been provided for their pastime.

“We don’t want to get to *Babylon*, oo know!” Bruno explained as he swung.

“And it isn’t *candlelight*: it’s *daylight!*” Sylvie added, giving the swing a push of extra vigour, which nearly took the whole machine off its balance.

By this time it was clear to me that Eric Lindon was quite unconscious of my presence. Even the Professor and the children seemed to have lost sight of me: and I stood in the midst of the group, as unconcerned as a ghost, seeing but unseen.

“How perfectly isochronous!” the Professor exclaimed with enthusiasm. He had his watch in his hand, and was carefully counting Bruno’s oscillations. “He measures time quite as accurately as a pendulum!”

“Yet even pendulums,” the good-natured young soldier observed, as he carefully released his hand from Bruno’s grasp, “are not a joy *for ever!* Come, that’s



‘How perfectly isochronous!’

enough for one bout, little man! Next time we meet, you shall have another. Meanwhile you’d better take this old gentleman to Queer Street, Number——”

“We’ll find it!” cried Bruno eagerly, as they dragged the Professor away.

“We are much indebted to you!” the Professor said, looking over his shoulder.

“Don’t mention it!” replied the officer, raising his hat as a parting salute.

“What number did you say!” the Professor called from the distance.

The officer made a trumpet of his two hands. “Forty!” he shouted in stentorian tones. “And not *piano*, by any means!” he added to himself. “It’s a mad world, my masters, a mad world!” He lit another cigar, and strolled on towards his hotel.

“What a lovely evening!” I said, joining him as he passed me.

“Lovely indeed,” he said. “Where did *you* come from? Dropped from the clouds?”

“I’m strolling your way,” I said; and no further explanation seemed necessary.

“Have a cigar?”

“Thanks: I’m not a smoker.”

“Is there a Lunatic Asylum near here?”

“Not that I know of.”

“Thought there might be. Met a lunatic just now. Queer old fish as ever I saw!”

And so, in friendly chat, we took our homeward ways, and wished each other ‘good-night’ at the door of his hotel.

Left to myself, I felt the ‘eerie’ feeling rush over me again, and saw, standing at the door of Number Forty, the three figures I knew so well.

“Then it’s the wrong house?” Bruno was saying.

“No, no! It’s the right *house*,” the Professor cheerfully replied: “but it’s the wrong *street*. *That’s* where we’ve made our mistake! Our best plan, now, will be to——”

It was over. The street was empty. Commonplace life was around me, and the 'eerie' feeling had fled.

Chapter XIX. How to Make a Phlizz.

The week passed without any further communication with the 'Hall,' as Arthur was evidently fearful that we might 'wear out our welcome'; but when, on Sunday morning, we were setting out for church, I gladly agreed to his proposal to go round and enquire after the Earl, who was said to be unwell.

Eric, who was strolling in the garden, gave us a good report of the invalid, who was still in bed, with Lady Muriel in attendance.

"Are you coming with us to church?" I enquired.

"Thanks, no," he courteously replied. "It's not—exactly—in my line, you know. It's an excellent institution—for the *poor*. When I'm with my own folk, I go, just to set them an example. But I'm not known *here*: so I think I'll excuse myself sitting out a sermon. Country-preachers are always so dull!"

Arthur was silent till we were out of hearing. Then he said to himself, almost inaudibly, "*Where two or three are gathered together in my name, there am I in the midst of them.*"

"Yes," I assented: "no doubt that *is* the principle on which church-going rests."

"And when he *does* go," he continued (our thoughts ran so much together, that our conversation was often slightly elliptical), "I suppose he repeats the words '*I believe in the Communion of Saints*'?"

But by this time we had reached the little church, into which a goodly stream of worshippers, consisting mainly of fishermen and their families, was flowing.

The service would have been pronounced by any modern æsthetic religionist—or religious æsthete, which is it?—to be crude and cold: to me, coming fresh from the ever-advancing developments of a London church under a *soi-disant* 'Catholic' Rector, it was unspeakably refreshing.

There was no theatrical procession of demure little choristers, trying their best not to simper under the admiring gaze of the congregation: the people's share in the service was taken by the people themselves, unaided, except that a few good voices, judiciously posted here and there among them, kept the singing from going too far astray.

There was no murdering of the noble music, contained in the Bible and the Liturgy, by its recital in a dead monotone, with no more expression than a mechanical talking-doll.

No, the prayers were *prayed*, the lessons were *read*, and—best of all—the sermon was *talked*; and I found myself repeating, as we left the church, the words of Jacob, when he '*awaked out of his sleep.*' "*Surely the Lord is in this place! This is none other but the house of God, and this is the gate of heaven.*"

"Yes," said Arthur, apparently in answer to my thoughts, "those 'high' services are fast becoming pure Formalism. More and more the people are beginning to regard them as 'performances,' in which they only 'assist' in the French sense. And it is *especially* bad for the little boys. They'd be much less self-conscious as pantomime-fairies. With all that dressing-up, and stage-entrances² and exits, and being always *en evidence*, no wonder if they're eaten

Quoted from
Matthew 18:20

Quoted from
Apostles' Creed

Quoted from Genesis
28:16-17

²misprinted "stagy-entrances" in the original

up with vanity, the blatant little coxcombs!”

When we passed the Hall on our return, we found the Earl and Lady Muriel sitting out in the garden. Eric had gone for a stroll.

We joined them, and the conversation soon turned on the sermon we had just heard, the subject of which was ‘selfishness.’

“What a change has come over our pulpits,” Arthur remarked, “since the time when Paley gave that utterly selfish definition of virtue, ‘*the doing good to mankind, in obedience to the will of God, and for the sake of everlasting happiness*’!”

Quoted from
Principles of Moral
and Political
Philosophy by
William Paley

Lady Muriel looked at him enquiringly, but she seemed to have learned by intuition, what years of experience had taught *me*, that the way to elicit Arthur’s deepest thoughts was neither to assent nor dissent, but simply to *listen*.

“At that time,” he went on, “a great tidal wave of selfishness was sweeping over human thought. Right and Wrong had somehow been transformed into Gain and Loss, and Religion had become a sort of commercial transaction. We may be thankful that our preachers are beginning to take a nobler view of life.”

“But is it not taught again and again in the *Bible*?” I ventured to ask.

“Not in the Bible as a *whole*,” said Arthur. “In the Old Testament, no doubt, rewards and punishments are constantly appealed to as motives for action. That teaching is best for *children*, and the Israelites seem to have been, mentally, *utter* children. We guide our children thus, at first: but we appeal, as soon as possible, to their innate sense of Right and Wrong: and, when *that* stage is safely past, we appeal to the highest motive of all, the desire for likeness to, and union with, the Supreme Good. I think you will find that to be the teaching of the Bible, *as a whole*, beginning with ‘*that thy days may be long in the land,*’ and ending with ‘*be ye perfect, even as your Father which is in heaven is perfect.*’”

Quoted from Exodus
20:12

Quoted from
Matthew 5:48

We were silent for awhile, and then Arthur went off on another tack. “Look at the literature of Hymns, now. How cankered it is, through and through, with selfishness! There are few human compositions more utterly degraded than some modern Hymns!”

I quoted the stanza

“Whatever, Lord, we lend to Thee,
Repaid a thousandfold shall be,
Then gladly will we give to Thee,
Giver of all!”

Quoted from *O Lord*
of Heaven and Earth
and Sea by Bishop
Christopher
Wordsworth

“Yes,” he said grimly: “that is the typical stanza. And the very last charity-sermon I heard was infected with it. After giving many good reasons for charity, the preacher wound up with ‘and, for all you give, you will be repaid a thousandfold!’ Oh the utter meanness of such a motive, to be put before men who *do* know what self-sacrifice is, who *can* appreciate generosity and heroism! Talk of Original *Sin*!” he went on with increasing bitterness. “Can you have a stronger proof of the Original Goodness there must be in this nation, than the fact that Religion has been preached to us, as a commercial speculation, for a century, and that we still believe in a God?”

“It couldn’t have gone on so long,” Lady Muriel musingly remarked, “if the Opposition hadn’t been practically silenced—put under what the French call *la clôture*. Surely in any lecture-hall, or in private society, such teaching would soon have been hooted down?”

“I trust so,” said Arthur: “and, though I don’t want to see ‘brawling in church’ legalised, I must say that our preachers enjoy an *enormous* privilege—which they ill deserve, and which they misuse terribly. We put our man into a pulpit, and we virtually tell him ‘Now, you may stand there and talk to us for half-an-hour. We won’t interrupt you by so much as a *word!* You shall have it all your own way!’ And what does he give us in return? Shallow twaddle, that, if it were addressed to you over a dinner-table, you would think ‘Does the man take me for a *fool?*’”

The return of Eric from his walk checked the tide of Arthur’s eloquence, and, after a few minutes’ talk on more conventional topics, we took our leave. Lady Muriel walked with us to the gate. “You have given me much to think about,” she said earnestly, as she gave Arthur her hand. “I’m so glad you came in!” And her words brought a real glow of pleasure into that pale worn face of his.

On the Tuesday, as Arthur did not seem equal to more walking, I took a long stroll by myself, having stipulated that he was not to give the *whole* day to his books, but was to meet me at the Hall at about tea-time. On my way back, I passed the Station just as the afternoon-train came in sight, and sauntered down the stairs to see it come in. But there was little to gratify my idle curiosity: and, when the train was empty, and the platform clear, I found it was about time to be moving on, if I meant to reach the Hall by five.

As I approached the end of the platform, from which a steep irregular wooden staircase conducted to the upper world, I noticed two passengers, who had evidently arrived by the train, but who, oddly enough, had entirely escaped my notice, though the arrivals had been so few. They were a young woman and a little girl: the former, so far as one could judge by appearances, was a nursemaid, or possibly a nursery-governess, in attendance on the child, whose refined face, even more than her dress, distinguished her as of a higher class than her companion.

The child’s face was refined, but it was also a worn and sad one, and told a tale (or so I seemed to read it) of much illness and suffering, sweetly and patiently borne. She had a little crutch to help herself along with: and she was now standing, looking wistfully up the long staircase, and apparently waiting till she could muster courage to begin the toilsome ascent.

There are some things one *says* in life—as well as things one *does*—which come automatically, by *reflex action*, as the physiologists say (meaning, no doubt, action *without* reflection, just as *lucus* is said to be derived ‘*a non lucendo*’). Closing one’s eyelids, when something seems to be flying into the eye, is one of those actions, and saying “May I carry the little girl up the stairs?” was another. It wasn’t that any thought of offering help occurred to me, and that *then* I spoke: the first intimation I had, of being likely to make that offer, was the sound of my own voice, and the discovery that the offer had been made. The servant paused, doubtfully glancing from her charge to me, and then back again to the child. “Would you like it, dear?” she asked her. But no such doubt appeared to cross the child’s mind: she lifted her arms eagerly to be taken up. “Please!” was all she said, while a faint smile flickered on the weary little face. I took her up with scrupulous care, and her little arm was at once clasped trustfully round my neck.

She was a *very* light weight—so light, in fact, that the ridiculous idea crossed my mind that it was rather easier going up, with her in my arms, than it would have been without her: and, when we reached the road above, with its cart-

Quoted from *De institutione oratoria* by Quintilian



The lame child

ruts and loose stones—all formidable obstacles for a lame child—I found that I had said “I’d better carry her over this rough place,” before I had formed any *mental* connection between its roughness and my gentle little burden. “Indeed it’s troubling you too much, Sir!” the maid exclaimed. “She can walk very well on the flat.” But the arm, that was twined about my neck, clung just an atom more closely at the suggestion, and decided me to say “She’s no weight, really. I’ll carry her a little further. I’m going your way.”

The nurse raised no further objection: and the next speaker was a ragged little boy, with bare feet, and a broom over his shoulder, who ran across the road, and pretended to sweep the perfectly dry road in front of us. “Give us a ‘ap’ny!” the little urchin pleaded, with a broad grin on his dirty face.

“*Don’t* give him a ‘ap’ny!” said the little lady in my arms. The *words* sounded harsh: but the *tone* was gentleness itself. “He’s an *idle* little boy!” And she laughed a laugh of such silvery sweetness as I had never yet heard from any lips but Sylvie’s. To my astonishment, the boy actually *joined* in the laugh, as if there were some subtle sympathy between them, as he ran away down the road and vanished through a gap in the hedge.

But he was back in a few moments, having discarded his broom and provided himself, from some mysterious source, with an exquisite bouquet of flowers. “Buy a posy, buy a posy! Only a ‘ap’ny!” he chanted, with the melancholy drawl of a professional beggar.

“*Don’t* buy it!” was Her Majesty’s edict, as she looked down, with a lofty scorn that seemed curiously mixed with tender interest, on the ragged creature at her feet.

But this time I turned rebel, and ignored the royal commands. Such lovely flowers, and of forms so entirely new to me, were not to be abandoned at the bidding of any little maid, however imperious. I bought the bouquet: and the little boy, after popping the halfpenny into his mouth, turned head-over-heels, as if to ascertain whether the human mouth is really adapted to serve as a money-box.

With wonder, that increased every moment, I turned over the flowers, and examined them one by one: there was not a single one among them that I could remember having ever seen before. At last I turned to the nursemaid. “Do these flowers grow wild about here? I never saw——” but the speech died away on my lips. The nursemaid had vanished!

“You can put me down, *now*, if you like,” Sylvie quietly remarked.

I obeyed in silence, and could only ask myself “Is this a *dream*?”, on finding Sylvie and Bruno walking one on either side of me, and clinging to my hands with the ready confidence of childhood.

“You’re larger than when I saw you last!” I began. “Really I think we ought to be introduced again! There’s so much of you that I never met before, you know.”

“Very well!” Sylvie merrily replied. “This is *Bruno*. It doesn’t take long. He’s only got one name!”

“There’s *another* name to me!” Bruno protested, with a reproachful look at the Mistress of the Ceremonies. “And it’s—‘*Esquire*’!”

“Oh, of course. I forgot,” said Sylvie. “Bruno—*Esquire*!”

“And did you come here to meet *me*, my children?” I enquired.

“You know I *said* we’d come on Tuesday,” Sylvie explained. “Are we the proper size for common children?”

"Quite the right size for *children*," I replied, (adding mentally "though not *common* children, by any means!") "But what became of the nursemaid?"

"It are *gone*!" Bruno solemnly replied.

"Then it wasn't solid, like Sylvie and you?"

"No. Oo couldn't *touch* it, oo know. If oo walked *at* it, oo'd go right froo!"

"I quite expected you'd find it out, once," said Sylvie. "Bruno ran it against a telegraph post, by accident. And it went in two halves. But you were looking the other way."

I felt that I had indeed missed an opportunity: to witness such an event as a nursemaid going 'in two halves' does not occur twice in a life-time!

"When did oo guess it were Sylvie?" Bruno enquired.



'It went in two halves'

"I didn't guess it, till it *was* Sylvie," I said. "But how did you manage the nursemaid?"

"*Bruno* managed it," said Sylvie. "It's called a Phlizz."

"And how do you make a Phlizz, Bruno?"

"The Professor teached me how," said Bruno. "First oo takes a lot of air——"

"Oh, *Bruno*!" Sylvie interposed. "The Professor said you weren't to tell!"

"But who did her *voice*?" I asked.

"Indeed it's troubling you too much, Sir! She can walk very well on the flat."

Bruno laughed merrily as I turned hastily from side to side, looking in all

directions for the speaker. "That were *me!*" he gleefully proclaimed, in his own voice.

"She can indeed walk very well on the flat," I said. "And I think *I* was the Flat."

By this time we were near the Hall. "This is where my friends live," I said. "Will you come in and have some tea with them?"

Bruno gave a little jump of joy: and Sylvie said "Yes, please. You'd like some tea, Bruno, wouldn't you? He hasn't tasted *tea*," she explained to me, "since we left Outland."

"And *that* weren't *good* tea!" said Bruno. "It were so *welly* weak!"

Chapter XX. Light Come, Light Go

Lady Muriel's smile of welcome could not *quite* conceal the look of surprise with which she regarded my new companions.

I presented them in due form. "This is *Sylvie*, Lady Muriel. And this is *Bruno*."

"Any surname?" she enquired, her eyes twinkling with fun.

"No," I said gravely. "No surname."

She laughed, evidently thinking I said it in fun; and stooped to kiss the children—a salute to which *Bruno* submitted with reluctance: *Sylvie* returned it with interest.

While she and Arthur (who had arrived before me) supplied the children with tea and cake, I tried to engage the Earl in conversation: but he was restless and *distract*, and we made little progress. At last, by a sudden question, he betrayed the cause of his disquiet.

"*Would* you let me look at those flowers you have in your hand?"

"Willingly!" I said, handing him the bouquet. Botany was, I knew, a favourite study of his: and these flowers were to me so entirely new and mysterious, that I was really curious to see what a botanist would say of them.

They did *not* diminish his disquiet. On the contrary, he became every moment more excited as he turned them over. "*These* are all from Central India!" he said, laying aside part of the bouquet. "They are rare, even there: and I have never seen them in any other part of the world. *These* two are Mexican—*This* one—" (He rose hastily, and carried it to the window, to examine it in a better light, the flush of excitement mounting to his very forehead) "—is, I am nearly sure—but I have a book of Indian Botany here—" He took a volume from the book-shelves, and turned the leaves with trembling fingers. "Yes! Compare it with this picture! It is the exact duplicate! This is the flower of the Upas-tree, which usually grows only in the depths of forests; and the flower fades so quickly after being plucked, that it is scarcely possible to keep its form or colour even so far as the outskirts of the forest! Yet this is in full bloom! *Where* did you get these flowers?" he added with breathless eagerness.

I glanced at Sylvie, who, gravely and silently, laid her finger on her lips, then beckoned to Bruno to follow her, and ran out into the garden; and I found myself in the position of a defendant whose two most important witnesses have been suddenly taken away. "Let me give you the flowers!" I stammered out at last, quite 'at my wit's end' as to how to get out of the difficulty. "You know much more about them than I do!"

“I accept them most gratefully! But you have not yet told me—” the Earl was beginning, when we were interrupted, to my great relief, by the arrival of Eric Lindon.

To *Arthur*, however, the new-comer was, I saw clearly, anything but welcome. His face clouded over: he drew a little back from the circle, and took no further part in the conversation, which was wholly maintained, for some minutes, by Lady Muriel and her lively cousin, who were discussing some new music that had just arrived from London.

“Do just try this one!” he pleaded. “The music looks easy to sing at sight, and the song’s quite appropriate to the occasion.”

“Then I suppose it’s

‘Five o’clock tea!
Ever to thee
Faithful I’ll be,
Five o’clock tea!’”

laughed Lady Muriel, as she sat down to the piano, and lightly struck a few random chords.

“Not quite: and yet it *is* a kind of ‘ever to thee faithful I’ll be!’ It’s a pair of hapless lovers: *he* crosses the briny deep: and *she* is left lamenting.”

“That is *indeed* appropriate!” she replied mockingly, as he placed the song before her.

“And am *I* to do the lamenting? And who for, if you please?”

She played the air once or twice through, first in quick, and finally in slow, time; and then gave us the whole song with as much graceful ease as if she had been familiar with it all her life:—

“He stept so lightly to the land,
All in his manly pride:
He kissed her cheek, he pressed her hand,
Yet still she glanced aside.
‘Too gay he seems,’ she darkly dreams,
‘Too gallant and too gay
To think of me—poor simple me—
When he is far away!’

‘I bring my Love this goodly pearl
Across the seas,’ he said:
‘A gem to deck the dearest girl
That ever sailor wed!’
She clasps it tight: her eyes are bright:
Her throbbing heart would say
‘He thought of me—he thought of me—
When he was far away!’

The ship has sailed into the West:
Her ocean-bird is flown:
A dull dead pain is in her breast,
And she is weak and lone;
Yet there’s a smile upon her face,
A smile that seems to say

‘He’ll think of me—he’ll think of me—
When he is far away!

‘Though waters wide between us glide,
Our lives are warm and near:
No distance parts two faithful hearts—
Two hearts that love so dear:
And I will trust my sailor-lad,
For ever and a day,
To think of me—to think of me—
When he is far away!’”

The look of displeasure, which had begun to come over Arthur’s face when the young Captain spoke of Love so lightly, faded away as the song proceeded, and he listened with evident delight. But his face darkened again when Eric demurely remarked “Don’t you think ‘my *soldier*-lad’ would have fitted the tune just as well!”

“Why, so it would!” Lady Muriel gaily retorted. “Soldiers, sailors, tinkers, tailors, what a lot of words would fit in! I think ‘my *tinker*-lad’ sounds best. Don’t *you*?”

To spare my friend further pain, I rose to go, just as the Earl was beginning to repeat his particularly embarrassing question about the flowers.

“You have not yet——”

“Yes, I’ve *had* some tea, thank you!” I hastily interrupted him. “And now we really *must* be going. Good evening, Lady Muriel!” And we made our adieux, and escaped, while the Earl was still absorbed in examining the mysterious bouquet.

Lady Muriel accompanied us to the door. “You *couldn’t* have given my father a more acceptable present!” she said, warmly. “He is so passionately fond of Botany. I’m afraid *I* know nothing of the *theory* of it, but I keep his *Hortus Siccus* in order. I must get some sheets of blotting-paper, and dry these new treasures for him before they fade.”

“*That* won’t be no good at all!” said Bruno, who was waiting for us in the garden.

“Why won’t it?” said I. “You know I *had* to give the flowers, to stop questions.”

“Yes, it ca’n’t be helped,” said Sylvie: “but they *will* be sorry when they find them gone!”

“But how will they go?”

“Well, I don’t know *how*. But they *will* go. The nosegay was only a *Phlizz*, you know. Bruno made it up.”

These last words were in a whisper, as she evidently did not wish Arthur to hear. But of this there seemed to be little risk: he hardly seemed to notice the children, but paced on, silent and abstracted; and when, at the entrance to the wood, they bid us a hasty farewell and ran off, he seemed to wake out of a day-dream.

The bouquet vanished, as Sylvie had predicted; and when, a day or two afterwards, Arthur and I once more visited the Hall, we found the Earl and his daughter, with the old housekeeper, out in the garden, examining the fastenings of the drawing-room window.

"We are holding an Inquest," Lady Muriel said, advancing to meet us: "and we admit you, as Accessories before the Fact, to tell us all you know about those flowers."

"The Accessories before the Fact decline to answer *any* questions," I gravely replied. "And they reserve their defence."

"Well then, turn Queen's Evidence, please! The flowers have disappeared in the night," she went on, turning to Arthur, "and we are *quite* sure no one in the house has meddled with them. Somebody must have entered by the window——"

"But the fastenings have not been tampered with," said the Earl.

"It must have been while you were dining, my Lady," said the housekeeper.

"That was it," said the Earl. "The thief must have seen you bring the flowers," turning to me, "and have noticed that you did *not* take them away. And he must have known their great value—they are simply *priceless!*" he exclaimed, in sudden excitement.

"And you never told us how you got them!" said Lady Muriel.

"Some day," I stammered, "I may be free to tell you. Just now, would you excuse me?"

The Earl looked disappointed, but kindly said "Very well, we will ask no questions."



Five o'clock tea

"But we consider you a *very* bad Queen's Evidence," Lady Muriel added playfully, as we entered the arbour. "We pronounce you to be an accomplice: and we sentence you to solitary confinement, and to be fed on bread and—butter. Do you take sugar?"

"It is disquieting, certainly," she resumed, when all 'creature-comforts' had been duly supplied, "to find that the house has been entered by a thief—in this out-of-the-way place. If only the flowers had been *eatables*, one might have suspected a thief of quite another shape——"

"You mean that universal explanation for all mysterious disappearances, 'the *cat* did it'?" said Arthur.

"Yes," she replied. "What a convenient thing it would be if all thieves had the same shape! It's so confusing to have some of them quadrupeds and others bipeds!"

"It has occurred to me," said Arthur, "as a curious problem in Teleology—the Science of Final Causes," he added, in answer to an enquiring look from Lady Muriel.

"And a Final Cause is——?"

"Well, suppose we say—the last of a series of connected events—each of the series being the cause of the next—for whose sake the first event takes place."

"But the last event is practically an *effect* of the first, isn't it? And yet you call it a *cause* of it!"

Arthur pondered a moment. "The words are rather confusing, I grant you," he said. "Will this do? The last event is an effect of the first: but the *necessity* for that event is a cause of the *necessity* for the first."

"That seems clear enough," said Lady Muriel. "Now let us have the problem."

"It's merely this. What object can we imagine in the arrangement by which each different size (roughly speaking) of living creatures has its special shape? For instance, the human race has one kind of shape—bipeds. Another set, ranging from the lion to the mouse, are quadrupeds. Go down a step or two further, and you come to insects with six legs—hexapods—a beautiful name, is it not? But beauty, in our sense of the word, seems to diminish as we go down: the creature becomes more—I won't say 'ugly' of any of God's creatures—more uncouth. And, when we take the microscope, and go a few steps lower still, we come upon animalculæ, terribly uncouth, and with a terrible number of legs!"

"The other alternative," said the Earl, "would be a *diminuendo* series of repetitions of the same type. Never mind the monotony of it: let's see how it would work in other ways. Begin with the race of men, and the creatures they require: let us say horses, cattle, sheep, and dogs—we don't exactly require frogs and spiders, do we, Muriel?"

Lady Muriel shuddered perceptibly: it was evidently a painful subject. "We can dispense with *them*," she said gravely.

"Well, then we'll have a second race of men, half-a-yard high——"

"—who would have *one* source of exquisite enjoyment, not possessed by ordinary men!" Arthur interrupted.

"*What* source?" said the Earl.

"Why, the grandeur of scenery! Surely the grandeur of a mountain, to *me*, depends on its *size*, relative to me? Double the height of the mountain, and of course it's twice as grand. Halve *my* height, and you produce the same effect."

"Happy, happy, happy Small!" Lady Muriel murmured rapturously. "None but the Short, none but the Short, none but the Short enjoy the Tall!"

"But let me go on," said the Earl. "We'll have a third race of men, five inches high; a fourth race, an inch high——"

"They couldn't eat common beef and mutton, I'm sure!" Lady Muriel interrupted.

"True, my child, I was forgetting. Each set must have its own cattle and sheep."

"And its own vegetation," I added. "What could a cow, an inch high, do with grass that waved far above its head?"

"That is true. We must have a pasture within a pasture, so to speak. The common grass would serve our inch-high cows as a green forest of palms, while round the root of each tall stem would stretch a tiny carpet of microscopic grass. Yes, I think our scheme will work fairly well. And it would be very interesting,

coming into contact with the races below us. What sweet little things the inch-high bull-dogs would be! I doubt if even *Muriel* would run away from one of them!”

“Don’t you think we ought to have a *crescendo* series, as well?” said Lady Muriel. “Only fancy being a hundred yards high! One could use an elephant as a paper-weight, and a crocodile as a pair of scissors!”

“And would you have races of different sizes communicate with one another?” I enquired. “Would they make war on one another, for instance, or enter into treaties?”

“*War* we must exclude, I think. When you could crush a whole nation with one blow of your fist, you couldn’t conduct war on equal terms. But anything, involving a collision of *minds* only, would be possible in our ideal world—for of course we must allow *mental* powers to all, irrespective of size. Perhaps the fairest rule would be that, the *smaller* the race, the *greater* should be its intellectual development!”

“Do you mean to say,” said Lady Muriel, “that these manikins of an inch high are to *argue* with me?”

“Surely, surely!” said the Earl. “An argument doesn’t depend for its logical force on the *size* of the creature that utters it!”

She tossed her head indignantly. “I would *not* argue with any man less than six inches high!” she cried. “I’d make him *work*!”

“What at?” said Arthur, listening to all this nonsense with an amused smile.

“*Embroidery!*” she readily replied. “What *lovely* embroidery they would do!”

“Yet, if they did it wrong,” I said, “you couldn’t *argue* the question. I don’t know *why*: but I agree that it couldn’t be done.”

“The reason is,” said Lady Muriel, “one couldn’t sacrifice one’s *dignity* so far.”

“Of course one couldn’t!” echoed Arthur. “Any more than one could argue with a potato. It would be altogether—excuse the ancient pun—*infra dig.*!”

“I doubt it,” said I. “Even a pun doesn’t *quite* convince me.”

“Well, if that is *not* the reason,” said Lady Muriel, “what reason would you give?”

I tried hard to understand the meaning of this question: but the persistent humming of the bees confused me, and there was a drowsiness in the air that made every thought stop and go to sleep before it had got well thought out: so all I could say was “That must depend on the *weight* of the potato.”

I felt the remark was not so sensible as I should have liked it to be. But Lady Muriel seemed to take it quite as a matter of course. “In that case——” she began, but suddenly started, and turned away to listen. “Don’t you hear him?” she said. “He’s crying. We must go to him, somehow.”

And I said to myself “That’s very strange! I quite thought it was *Lady Muriel* talking to me. Why, it’s *Sylvie* all the while!” And I made another great effort to say something that should have some meaning in it. “Is it about the potato?”

Chapter XXI. Through the Ivory Door

“I don’t know,” said Sylvie. “Hush! I must think. I could go to him, by myself, well enough. But I want *you* to come too.”

“Let me go with you,” I pleaded. “I can walk as fast as *you* can, I’m sure.”

Sylvie laughed merrily. "What nonsense!" she cried. "Why, you ca'n't walk a bit! You're lying quite flat on your back! You don't understand these things."

"I can walk as well as *you* can," I repeated. And I tried my best to walk a few steps: but the ground slipped away backwards, quite as fast as I could walk, so that I made no progress at all. Sylvie laughed again.

"There, I told you so! You've no idea how funny you look, moving your feet about in the air, as if you were walking! Wait a bit. I'll ask the Professor what we'd better do." And she knocked at his study-door.

The door opened, and the Professor looked out. "What's that crying I heard just now?" he asked. "Is it a human animal?"

"It's a boy," Sylvie said.

"I'm afraid you've been teasing him?"

"No, *indeed* I haven't!" Sylvie said, very earnestly. "I *never* tease him!"

"Well, I must ask the Other Professor about it." He went back into the study, and we heard him whispering "small human animal—says she hasn't been teasing him—the kind that's called Boy——"

"Ask her *which* Boy," said a new voice. The Professor came out again.

"*Which* Boy is it that you haven't been teasing?"

Sylvie looked at me with twinkling eyes. "You dear old thing!" she exclaimed, standing on tiptoe to kiss him, while he gravely stooped to receive the salute. "How you *do* puzzle me! Why, there are *several* boys I haven't been teasing!"

The Professor returned to his friend: and this time the voice said "Tell her to bring them here—*all* of them!"

"I ca'n't, and I won't!" Sylvie exclaimed, the moment he reappeared. "It's *Bruno* that's crying: and he's my brother: and, please, we *both* want to go: he ca'n't walk, you know: he's—he's *dreaming*, you know" (this in a whisper, for fear of hurting my feelings). "*Do* let's go through the Ivory Door!"

"I'll ask him," said the Professor, disappearing again. He returned directly. "He says you may. Follow me, and walk on tip-toe."

The difficulty with me would have been, just then, *not* to walk on tip-toe. It seemed very hard to reach down far enough to just touch the floor, as Sylvie led me through the study.

The Professor went before us to unlock the Ivory Door. I had just time to glance at the Other Professor, who was sitting reading, with his back to us, before the Professor showed us out through the door, and locked it behind us. Bruno was standing with his hands over his face, crying bitterly.

"What's the matter, darling?" said Sylvie, with her arms round his neck.

"Hurted mine self *welley* much!" sobbed the poor little fellow.

"I'm *so* sorry, darling! How ever *did* you manage to hurt yourself so?"

"Course I managed it!" said Bruno, laughing through his tears. "Doos oo think nobody else but oo ca'n't manage things?"

Matters were looking distinctly brighter, now Bruno had begun to argue. "Come, let's hear all about it!" I said.

"My foot took it into its head to slip——" Bruno began.

"A foot hasn't got a head!" Sylvie put in, but all in vain.

"I slipted down the bank. And I tripted over a stone. And the stone hurted my foot! And I trod on a Bee. And the Bee stinged my finger!" Poor Bruno sobbed again. The complete list of woes was too much for his feelings. "And it knewed I didn't *mean* to trod on it!" he added, as the climax.



'What's the matter, darling?'

"That Bee should be ashamed of itself!" I said severely, and Sylvie hugged and kissed the wounded hero till all tears were dried.

"My finger's quite unstung now!" said Bruno. "Why doos there be stones? Mister Sir, doos oo know?"

"They're good for *something*," I said: "even if we don't know *what*. What's the good of *dandelions*, now?"

"Dindledums?" said Bruno. "Oh, they're ever so pretty! And stones aren't pretty, one bit. Would oo like some dindledums, Mister Sir?"

"Bruno!" Sylvie murmured reproachfully. "You mustn't say 'Mister' and 'Sir,' both at once! Remember what I told you!"

"You telled me I were to say 'Mister' when I spoked *about* him, and I were to say 'Sir' when I spoked *to* him!"

"Well, you're not doing *both*, you know."

"Ah, but *I is* doing bofe, Miss Praticular!" Bruno exclaimed triumphantly. "I wishted to speak *about* the Gemplun—and I wishted to speak *to* the Gemplun. So a course I said 'Mister Sir'!"

"That's all right, Bruno," I said.

"*Course* it's all right!" said Bruno. "Sylvie just knows nuffin at all!"

"There never *was* an impertinenter boy!" said Sylvie, frowning till her bright eyes were nearly invisible.

"And there never was an ignoranter girl!" retorted Bruno. "Come along and pick some dindledums. *That's all she's fit for!*" he added in a very loud whisper to me.

"But why do you say 'Dindledums,' Bruno? *Dandelions* is the right word."

"It's because he jumps about so," Sylvie said, laughing.

"Yes, that's it," Bruno assented. "Sylvie tells me the words, and then, when I jump about, they get shoooken up in my head—till they're all froth!"

I expressed myself as perfectly satisfied with this explanation. "But aren't you going to pick me any dindledums, after all?"

"Course we will!" cried Bruno. "Come along, Sylvie!" And the happy children raced away, bounding over the turf with the fleetness and grace of young antelopes.

"Then you didn't find your way back to Outland?" I said to the Professor.

"Oh yes, I did!" he replied, "We never got to Queer Street; but I found another way. I've been backwards and forwards several times since then. I had to be present at the Election, you know, as the author of the new Money-Act. The Emperor was so kind as to wish that *I* should have the credit of it. 'Let come what come may,' (I remember the very words of the Imperial Speech) 'if it *should* turn out that the Warden *is* alive, *you* will bear witness that the change in the coinage is the *Professor's* doing, not *mine!*' I never was so glorified in my life, before!" Tears trickled down his cheeks at the recollection, which apparently was not *wholly* a pleasant one.

"Is the Warden supposed to be *dead*?"

"Well, it's *supposed* so: but, mind you, *I* don't believe it! The evidence is *very* weak—mere hear-say. A wandering Jester, with a Dancing-Bear (they found their way into the Palace, one day) has been telling people he comes from Fairyland, and that the Warden died there. *I* wanted the Vice-Warden to question him, but, most unluckily, he and my Lady were always out walking when the Jester came round. Yes, the Warden's supposed to be dead!" And more tears trickled down the old man's cheeks.

“But what is the new Money-Act?”

The Professor brightened up again. “The Emperor started the thing,” he said. “He wanted to make everybody in Outland twice as rich as he was before—just to make the new Government popular. Only there wasn’t nearly enough money in the Treasury to do it. So *I* suggested that he might do it by doubling the value of every coin and bank-note in Outland. It’s the simplest thing possible. I wonder nobody ever thought of it before! And you never saw such universal joy. The shops are full from morning to night. Everybody’s buying everything!”

“And how was the glorifying done?”

A sudden gloom overcast the Professor’s jolly face. “They did it as I went home after the Election,” he mournfully replied. “It was kindly meant—but I didn’t like it! They waved flags all round me till I was nearly blind: and they rang bells till I was nearly deaf: and they strewed the road so thick with flowers that I lost my way!” And the poor old man sighed deeply.

“How far is it to Outland?” I asked, to change the subject.

“About five days’ march. But one *must* go back—occasionally. You see, as Court-Professor, I have to be *always* in attendance on Prince Uggug. The Empress would be *very* angry if I left him, even for an hour.”

“But surely, every time you come here, you are absent ten days, at least?”

“Oh, more than that!” the Professor exclaimed. “A fortnight, sometimes. But of course I keep a memorandum of the exact time when I started, so that I can put the Court-time back to the very moment!”

“Excuse me,” I said. “I don’t understand.”

Silently the Professor drew from his pocket a square gold watch, with six or eight hands, and held it out for my inspection. “This,” he began, “is an Outlandish Watch——”

“So I should have thought.”

“—which has the peculiar property that, instead of *its* going with the *time*, the *time* goes with *it*. I trust you understand me now?”

“Hardly,” I said.

“Permit me to explain. So long as it is let alone, it takes its own course. Time has *no* effect upon it.”

“I have known such watches,” I remarked.

“It *goes*, of course, at the usual rate. Only the time has to go *with* it. Hence, if I move the hands, I change the time. To move them *forwards*, in *advance* of the true time, is impossible: but I can move them as much as a month *backwards*—that is the limit. And then you have the events all over again—with any alterations experience may suggest.”

“*What* a blessing such a watch would be,” I thought, “in real life! To be able to unsay some heedless word—to undo some reckless deed! Might I see the thing done?”

“With pleasure!” said the good natured Professor. “When I move *this* hand back to *here*,” pointing out the place, “History goes back fifteen minutes!”

Trembling with excitement, I watched him push the hand round as he described.

“Hurted mine self *welly* much!”

Shrilly and suddenly the words rang in my ears, and, more startled than I cared to show, I turned to look for the speaker.

Yes! There was Bruno, standing with the tears running down his cheeks, just as I had seen him a quarter of an hour ago; and there was Sylvie with her arms round his neck!

I had not the heart to make the dear little fellow go through his troubles a second time, so hastily begged the Professor to push the hands round into their former position. In a moment Sylvie and Bruno were gone again, and I could just see them in the far distance, picking ‘dindledums.’

“Wonderful, indeed!” I exclaimed.

“It has another property, yet more wonderful,” said the Professor. “You see this little peg? That is called the ‘Reversal Peg.’ If you push it in, the events of the next hour happen in the reverse order. Do not try it now. I will lend you the Watch for a few days, and you can amuse yourself with experiments.”

“Thank you very much!” I said as he gave me the Watch. “I’ll take the greatest care of it—why, here are the children again!”

“We could only but find *six* dindledums,” said Bruno, putting them into my hands, “‘cause Sylvie said it were time to go back. And here’s a big blackberry for *ooself*! We couldn’t only find but *two*!”

“Thank you: it’s *very* nice,” I said. “And I suppose *you* ate the other, Bruno?”

“No, I didn’t,” Bruno said, carelessly. “*Aren’t* they pretty dindledums, Mister Sir?”

“Yes, very: but what makes you limp so, my child?”

“Mine foot’s come *hurt*ed again!” Bruno mournfully replied. And he sat down on the ground, and began nursing it.

The Professor held his head between his hands—an attitude that I knew indicated distraction of mind. “Better rest a minute,” he said. “It may be better then—or it may be worse. If only I had some of my medicines here! I’m Court-Physician, you know,” he added, aside to me.

“Shall I go and get you some blackberries, darling?” Sylvie whispered, with her arms round his neck; and she kissed away a tear that was trickling down his cheek.

Bruno brightened up in a moment. “That *are* a good plan!” he exclaimed. “I thinks my foot would come *quite* unharmed, if I eated a blackberry—two or three blackberries—six or seven blackberries—”

Sylvie got up hastily. “I’d better go,” she said, aside to me, “before he gets into the double figures!”

“Let me come and help you,” I said. “I can reach higher up than you can.”

“Yes, please,” said Sylvie, putting her hand into mine: and we walked off together.

“Bruno *loves* blackberries,” she said, as we paced slowly along by a tall hedge, that looked a promising place for them, “and it was so *sweet* of him to make me eat the only one!”

“Oh, it was *you* that ate it, then? Bruno didn’t seem to like to tell me about it.”

“No; I saw that,” said Sylvie. “He’s always afraid of being praised. But he *made* me eat it, really! I would much rather he—oh, what’s that?” And she clung to my hand, half-frightened, as we came in sight of a hare, lying on its side with legs stretched out, just in the entrance to the wood.

“It’s a *hare*, my child. Perhaps it’s asleep.”

"No, it isn't asleep," Sylvie said, timidly going nearer to look at it: "it's eyes are open. Is it—is it—" her voice dropped to an awestruck whisper, "is it *dead*, do you think?"

"Yes, it's quite dead," I said, after stooping to examine it. "Poor thing! I think it's been hunted to death. I know the harriers were out yesterday. But they haven't touched it. Perhaps they caught sight of another, and left it to die of fright and exhaustion."

"Hunted to *death*?" Sylvie repeated to herself, very slowly and sadly. "I thought hunting was a thing they *played* at—like a game. Bruno and I hunt snails: but we never hurt them when we catch them!"

"Sweet angel!" I thought. "How am I to get the idea of *Sport* into your innocent mind?" And as we stood, hand-in-hand, looking down at the dead hare, I tried to put the thing into such words as she could understand. "You know what fierce wild-beasts lions and tigers are?" Sylvie nodded. "Well, in some countries men *have* to kill them, to save their own lives, you know."

"Yes," said Sylvie: "if one tried to kill *me*, Bruno would kill *it*—if he could."

"Well, and so the men—the hunters—get to enjoy it, you know: the running, and the fighting, and the shouting, and the danger."

"Yes," said Sylvie. "Bruno likes danger."

"Well, but, in *this* country, there aren't any lions and tigers, loose: so they hunt other creatures, you see." I hoped, but in vain, that this would satisfy her, and that she would ask no more questions.

"They hunt *foxes*," Sylvie said, thoughtfully. "And I think they *kill* them, too. Foxes are very fierce. I daresay men don't love them. Are hares fierce?"

"No," I said. "A hare is a sweet, gentle, timid animal—almost as gentle as a lamb."

"But, if men *love* hares, why—why—" her voice quivered, and her sweet eyes were brimming over with tears.

"I'm afraid they *don't* love them, dear child."

"All *children* love them," Sylvie said. "All ladies love them."

"I'm afraid even *ladies* go to hunt them, sometimes."

Sylvie shuddered. "Oh, no, not *ladies*!" she earnestly pleaded. "Not Lady Muriel!"

"No, *she* never does, I'm sure—but this is too sad a sight for *you*, dear. Let's try and find some—"

But Sylvie was not satisfied yet. In a hushed, solemn tone, with bowed head and clasped hands, she put her final question. "Does GOD love hares?"

"Yes!" I said. "I'm *sure* He does! He loves every living thing. Even sinful *men*. How much more the animals, that cannot sin!"

"I don't know what 'sin' means," said Sylvie. And I didn't try to explain it.

"Come, my child," I said, trying to lead her away. "Wish good-bye to the poor hare, and come and look for blackberries."

"Good-bye, poor hare!" Sylvie obediently repeated, looking over her shoulder at it as we turned away. And then, all in a moment, her self-command gave way. Pulling her hand out of mine, she ran back to where the dead hare was lying, and flung herself down at its side in such an agony of grief as I could hardly have believed possible in so young a child.

"Oh, my darling, my darling!" she moaned, over and over again. "And GOD meant your life to be so beautiful!"

Sometimes, but always keeping her face hidden on the ground, she would reach out one little hand, to stroke the poor dead thing, and then once more bury her face in her hands, and sob as if her heart would break.



The dead hare

I was afraid she would really make herself ill: still I thought it best to let her weep away the first sharp agony of grief: and, after a few minutes, the sobbing gradually ceased, and Sylvie rose to her feet, and looked calmly at me, though tears were still streaming down her cheeks.

I did not dare to speak again, just yet; but simply held out my hand to her, that we might quit the melancholy spot.

“Yes, I’ll come now,” she said. Very reverently she kneeled down, and kissed the dead hare; then rose and gave me her hand, and we moved on in silence.

A child’s sorrow is violent, but short; and it was almost in her usual voice that she said, after a minute, “Oh stop, stop! Here are some *lovely* blackberries!”

We filled our hands with fruit, and returned in all haste to where the Professor and Bruno were seated on a bank, awaiting our return.

Just before we came within hearing-distance, Sylvie checked me. “Please don’t tell *Bruno* about the hare!” she said.

“Very well, my child. But why not?”

Tears again glittered in those sweet eyes, and she turned her head away, so that I could scarcely hear her reply. “He’s—he’s very *fond* of gentle creatures, you know. And he’d—he’d be so sorry! I don’t want him to be made sorry.”

“And *your* agony of sorrow is to count for nothing, then, sweet unselfish child!” I thought to myself. But no more was said till we had reached our friends; and Bruno was far too much engrossed, in the feast we had brought him, to take any notice of Sylvie’s unusually grave manner.

“I’m afraid it’s getting rather late, Professor?” I said.

“Yes, indeed,” said the Professor. “I must take you all through the Ivory Door again. You’ve stayed your full time.”

“Mightn’t we stay a *little* longer!” pleaded Sylvie.

“Just *one* minute!” added Bruno.

But the Professor was unyielding. “It’s a great privilege, coming through at

all," he said. "We must go now." And we followed him obediently to the Ivory Door, which he threw open, and signed to me to go through first.

"You're coming too, aren't you?" I said to Sylvie.

"Yes," she said: "but you won't see us after you've gone through."

"But suppose I wait for you outside?" I asked, as I stepped through the doorway.

"In that case," said Sylvie, "I think the potato would be *quite* justified in asking *your* weight. I can quite imagine a really *superior* kidney-potato declining to argue with any one under *fifteen stone!*"

With a great effort I recovered the thread of my thoughts. "We lapse very quickly into nonsense!" I said.

Chapter XXII. Crossing The Line.

"Let us lapse back again," said Lady Muriel. "Take another cup of tea? I hope *that's* sound common sense?"

"And all that strange adventure," I thought, "has occupied the space of a single comma in Lady Muriel's speech! A single comma, for which grammarians tell us to 'count *one*'!" (I felt no doubt that the Professor had kindly put back the time for me, to the exact point at which I had gone to sleep.)

When, a few minutes afterwards, we left the house, Arthur's first remark was certainly a strange one. "We've been there just *twenty minutes*," he said, "and I've done nothing but listen to you and Lady Muriel talking: and yet, somehow, I feel exactly as if *I* had been talking with her for an *hour* at least!"

And so *he had* been, I felt no doubt: only, as the time had been put back to the beginning of the tête-à-tête he referred to, the whole of it had passed into oblivion, if not into nothingness! But I valued my own reputation for sanity too highly to venture on explaining to *him* what had happened.

For some cause, which I could not at the moment divine, Arthur was unusually grave and silent during our walk home. It could not be connected with Eric Lindon, I thought, as he had for some days been away in London: so that, having Lady Muriel almost 'all to himself'—for *I* was only too glad to hear those two conversing, to have any wish to intrude any remarks of my own—he *ought*, theoretically, to have been specially radiant and contented with life. "Can he have heard any bad news?" I said to myself. And, almost as if he had read my thoughts, he spoke.

"He will be here by the last train," he said, in the tone of one who is continuing a conversation rather than beginning one.

"Captain Lindon, do you mean?"

"Yes—Captain Lindon," said Arthur: "I said 'he,' because I fancied we were talking about him. The Earl told me he comes to-night, though *to-morrow* is the day when he will know about the Commission that he's hoping for. I wonder he doesn't stay another day to hear the result, if he's really so anxious about it as the Earl believes he is."

"He can have a telegram sent after him," I said: "but it's not very soldier-like, running away from possible bad news!"

"He's a very good fellow," said Arthur: "but I confess it would be good news for *me*, if he got his Commission, and his Marching Orders, all at once! I wish him all happiness—with *one* exception. Good night!" (We had reached home by this time.) "I'm not good company to-night—better be alone."

It was much the same, next day. Arthur declared he wasn't fit for Society, and I had to set forth alone for an afternoon-stroll. I took the road to the Station, and, at the point where the road from the 'Hall' joined it, I paused, seeing my friends in the distance, seemingly bound for the same goal.

"Will you join us?" the Earl said, after I had exchanged greetings with him, and Lady Muriel, and Captain Lindon. "This restless young man is expecting a telegram, and we are going to the Station to meet it."

"There is also a restless young woman in the case," Lady Muriel added.

"That goes without saying, my child," said her father. "Women are *always* restless!"

"For generous appreciation of all one's *best* qualities," his daughter impressively remarked, "there's nothing to compare with a father, is there, Eric?"

"Cousins are not 'in it,'" said Eric: and then somehow the conversation lapsed into two duologues, the younger folk taking the lead, and the two old men following with less eager steps.

"And when are we to see your little friends again?" said the Earl. "They are singularly attractive children."

"I shall be delighted to bring them, when I can," I said. "But I don't know, myself, when I am likely to see them again."

"I'm not going to question you," said the Earl: "but there's no harm in mentioning that Muriel is simply tormented with curiosity! We know most of the people about here, and she has been vainly trying to guess what house they can possibly be staying at."

"Some day I may be able to enlighten her: but just at present——"

"Thanks. She must bear it as best she can. *I* tell her it's a grand opportunity for practising *patience*. But she hardly sees it from that point of view. Why, there *are* the children!"

So indeed they were: waiting (for *us*, apparently) at a stile, which they could not have climbed over more than a few moments, as Lady Muriel and her cousin had passed it without seeing them. On catching sight of us, Bruno ran to meet us, and to exhibit to us, with much pride, the handle of a clasp-knife—the blade having been broken off—which he had picked up in the road.

"And what shall you use it for, Bruno?" I said.

"Don't know," Bruno carelessly replied: "must think."

"A child's first view of life," the Earl remarked, with that sweet sad smile of his, "is that it is a period to be spent in accumulating portable property. That view gets modified as the years glide away." And he held out his hand to Sylvie, who had placed herself by me, looking a little shy of him.

But the gentle old man was not one with whom any child, human or fairy, could be shy for long; and she had very soon deserted my hand for his—Bruno alone remaining faithful to his first friend. We overtook the other couple just as they reached the Station, and both Lady Muriel and Eric greeted the children as old friends—the latter with the words "So you got to Babylon by candlelight, after all?"

"Yes, and back again!" cried Bruno.

Lady Muriel looked from one to the other in blank astonishment. "What, *you* know them, Eric?" she exclaimed. "This mystery grows deeper every day!"

"Then we must be somewhere in the Third Act," said Eric. "You don't expect the mystery to be cleared up till the Fifth Act, do you?"

"But it's such a *long* drama!" was the plaintive reply. "We *must* have got to the Fifth Act by this time!"

"*Third* Act, I assure you," said the young soldier mercilessly. "Scene, a railway-platform. Lights down. Enter Prince (in disguise, of course) and faithful Attendant. *This* is the Prince—" (taking Bruno's hand) "and here stands his humble Servant! What is your Royal Highness's next command?" And he made a most courtier-like low bow to his puzzled little friend.

"Oo're *not* a Servant!" Bruno scornfully exclaimed. "Oo're a *Gemplun*!"

"*Servant*, I assure your Royal Highness!" Eric respectfully insisted. "Allow me to mention to your Royal Highness my various situations—past, present, and future."

"What did oo begin wiz?" Bruno asked, beginning to enter into the jest. "Was oo a shoe-black?"

"Lower than that, your Royal Highness! Years ago, I offered myself as a *Slave*—as a '*Confidential Slave*,' I think it's called?" he asked, turning to Lady Muriel.

But Lady Muriel heard him not: something had gone wrong with her glove, which entirely engrossed her attention.

"Did oo get the place?" said Bruno.

"Sad to say, Your Royal Highness, I did *not*! So I had to take a situation as—as *Waiter*, which I have now held for some years—haven't I?" He again glanced at Lady Muriel.

"Sylvie dear, *do* help me to button this glove!" Lady Muriel whispered, hastily stooping down, and failing to hear the question.

"And what will oo be *next*?" said Bruno.

"My next place will, I hope, be that of *Groom*. And after that——"

"Don't puzzle the child so!" Lady Muriel interrupted. "What nonsense you talk!"

"—after that," Eric persisted, "I hope to obtain the situation of *Housekeeper*, which—*Fourth Act*!" he proclaimed, with a sudden change of tone. "Lights turned up. Red lights. Green lights. Distant rumble heard. Enter a passenger-train!"

And in another minute the train drew up alongside of the platform, and a stream of passengers began to flow out from the booking office and waiting-rooms.

"Did you ever make *real* life into a drama?" said the Earl. "Now just try. I've often amused myself that way. Consider this platform as our stage. Good entrances and exits on *both* sides, you see. Capital background scene: real engine moving up and down. All this bustle, and people passing to and fro, must have been most carefully rehearsed! How naturally they do it! With never a glance at the audience! And every grouping is quite fresh, you see. No repetition!"

It really was admirable, as soon as I began to enter into it from this point of view. Even a porter passing, with a barrow piled with luggage, seemed so realistic that one was tempted to applaud. He was followed by an angry mother, with hot red face, dragging along two screaming children, and calling, to some one behind, "John! Come on!" Enter John, very meek, very silent, and loaded with parcels. And he was followed, in his turn, by a frightened little nursemaid, carrying a fat baby, also screaming. All the children screamed.

"Capital byplay!" said the old man aside. "Did you notice the nursemaid's look of terror? It was simply *perfect*!"

“You have struck quite a new vein,” I said. “To most of us Life and its pleasures seem like a mine that is nearly worked out.”

“Worked out!” exclaimed the Earl. “For any one with true dramatic instincts, it is only the Overture that is ended! The real treat has yet to begin. You go to a theatre, and pay your ten shillings for a stall, and what do you get for your money? Perhaps it’s a dialogue between a couple of farmers—unnatural in their overdone caricature of farmers’ dress—more unnatural in their constrained attitudes and gestures—most unnatural in their attempts at ease and geniality in their talk. Go instead and take a seat in a third-class railway-carriage, and you’ll get the same dialogue done *to the life!* Front-seats—no orchestra to block the view—and nothing to pay!”

“Which reminds me,” said Eric. “There is nothing to pay on receiving a telegram! Shall we enquire for one?” And he and Lady Muriel strolled off in the direction of the Telegraph-Office.

“I wonder if Shakespeare had that thought in his mind,” I said, “when he wrote ‘All the world’s a stage’?”

The old man sighed. “And so it is,” he said, “look at it as you will. Life is indeed a drama; a drama with but few *encores*—and no *bouquets!*” he added dreamily. “We spend one half of it in regretting the things we did in the other half!”

“And the secret of *enjoying* it,” he continued, resuming his cheerful tone, “is *intensity!*”

“But not in the modern æsthetic sense, I presume? Like the young lady, in Punch, who begins a conversation with ‘Are you *intense?*’”

“By no means!” replied the Earl. “What I mean is intensity of *thought*—a concentrated *attention*. We lose half the pleasure we might have in Life, by not really *attending*. Take any instance you like: it doesn’t matter *how* trivial the pleasure may be—the principle is the same. Suppose *A* and *B* are reading the same second-rate circulating-library novel. *A* never troubles himself to master the relationships of the characters, on which perhaps all the interest of the story depends: he ‘skips’ over all the descriptions of scenery, and every passage that looks rather dull: he doesn’t half attend to the passages he does read: he goes on reading—merely from want of resolution to find another occupation—for hours after he ought to have put the book aside: and reaches the ‘FINIS’ in a state of utter weariness and depression! *B* puts his whole soul *into* the thing—on the principle that ‘whatever is worth doing is worth doing *well*’: he masters the genealogies: he calls up pictures before his ‘mind’s eye’ as he reads about the scenery: best of all, he resolutely shuts the book at the end of some chapter, while his interest is yet at its keenest, and turns to other subjects; so that, when next he allows himself an hour at it, it is like a hungry man sitting down to dinner: and, when the book is finished, he returns to the work of his daily life like ‘a giant refreshed’!”

“But suppose the book were really *rubbish*—nothing to repay attention?”

“Well, suppose it,” said the Earl. “My theory meets *that* case, I assure you! *A* never finds out that it *is* rubbish, but maunders on to the end, trying to believe he’s enjoying himself. *B* quietly shuts the book, when he’s read a dozen pages, walks off to the Library, and changes it for a better! I have yet *another* theory for adding to the enjoyment of Life—that is, if I have not exhausted your patience? I’m afraid you find me a very garrulous old man.”

Quoted from *As You Like It* by William Shakespeare

Quoted from *Refinements of Modern Speech* in *Punch*, June 14, 1879

Quoted from Psalm 19:5

"No indeed!" I exclaimed earnestly. And indeed I felt as if one *could* not easily tire of the sweet sadness of that gentle voice.

"It is, that we should learn to take our pleasures *quickly*, and our pains *slowly*."

"But why? I should have put it the other way, myself."

"By taking *artificial* pain—which can be as trivial as you please—*slowly*, the result is that, when *real* pain comes, however severe, all you need do is to let it go at its *ordinary* pace, and it's over in a moment!"

"Very true," I said, "but how about the *pleasure*?"

"Why, by taking it quick, you can get so much more into life. It takes *you* three hours and a half to hear and enjoy an opera. Suppose *I* can take it in, and enjoy it, in half-an-hour. Why, I can enjoy *seven* operas, while you are listening to *one*!"

"Always supposing you have an orchestra capable of *playing* them," I said. "And that orchestra has yet to be found!"

The old man smiled. "I have heard an air played," he said, "and by no means a short one—played right through, variations and all, in three seconds!"

"When? And how?" I asked eagerly, with a half-notion that I was dreaming again.

"It was done by a little musical-box," he quietly replied. "After it had been wound up, the regulator, or something, broke, and it ran down, as I said, in about three seconds. But it *must* have played all the notes, you know!"

"Did you *enjoy* it?" I asked, with all the severity of a cross-examining barrister.

"No, I didn't!" he candidly confessed. "But then, you know, I hadn't been trained to that kind of music!"

"I should much like to *try* your plan," I said, and, as Sylvie and Bruno happened to run up to us at the moment, I left them to keep the Earl company, and strolled along the platform, making each person and event play its part in an *extempore* drama for my especial benefit. "What, is the Earl tired of you already?" I said, as the children ran past me.

"No!" Sylvie replied with great emphasis. "He wants the evening-paper. So Bruno's going to be a little news-boy!"

"Mind you charge a good price for it!" I called after them.

Returning up the platform, I came upon Sylvie alone. "Well, child," I said, "where's your little news-boy? Couldn't he get you an evening-paper?"

"He went to get one at the book-stall at the other side," said Sylvie; "and he's coming across the line with it—oh, Bruno, you ought to cross by the bridge!" for the distant thud, thud, of the Express was already audible. Suddenly a look of horror came over her face. "Oh, he's fallen down on the rails!" she cried, and darted past me at a speed that quite defied the hasty effort I made to stop her.

But the wheezy old Station-Master happened to be close behind me: he wasn't good for much, poor old man, but he was good for this; and, before I could turn round, he had the child clasped in his arms, saved from the certain death she was rushing to. So intent was I in watching this scene, that I hardly saw a flying figure in a light grey suit, who shot across from the back of the platform, and was on the line in another second. So far as one could take note of time in such a moment of horror he had about ten clear seconds, before the Express would be upon him, in which to cross the rails and to pick up Bruno. Whether he did so or not it was quite impossible to guess: the next thing one

knew was that the Express had passed, and that, whether for life or death, all was over. When the cloud of dust had cleared away, and the line was once more visible, we saw with thankful hearts that the child and his deliverer were safe.

“All right!” Eric called to us cheerfully, as he recrossed the line. “He’s more frightened than hurt!”



Crossing the line

He lifted the little fellow up into Lady Muriel’s arms, and mounted the platform as gaily as if nothing had happened: but he was as pale as death, and leaned heavily on the arm I hastily offered him, fearing he was about to faint. “I’ll just—sit down a moment—” he said dreamily: “—where’s Sylvie?”

Sylvie ran to him, and flung her arms round his neck, sobbing as if her heart would break. “Don’t do that, my darling!” Eric murmured, with a strange look in his eyes. “Nothing to cry about now, you know. But you very nearly got yourself killed for nothing!”

“For Bruno!” the little maiden sobbed. “And he would have done it for me. Wouldn’t you, Bruno?”

“Course I would!” Bruno said, looking round with a bewildered air.

Lady Muriel kissed him in silence as she put him down out of her arms. Then she beckoned Sylvie to come and take his hand, and signed to the children to go back to where the Earl was seated. “Tell him,” she whispered with quivering lips, “tell him—all is well!” Then she turned to the hero of the day. “I thought it was *death*,” she said. “Thank God, you are safe! Did you see how near it was?”

“I saw there was just time,” Eric said lightly. “A soldier must learn to carry his life in his hand, you know. I’m all right now. Shall we go to the telegraph-office again? I daresay it’s come by this time.”

I went to join the Earl and the children, and we waited—almost in silence, for no one seemed inclined to talk, and Bruno was half-asleep on Sylvie’s lap—till the others joined us. No telegram had come.

"I'll take a stroll with the children," I said, feeling that we were a little *de trop*, "and I'll look in, in the course of the evening."

"We must go back into the wood, now," Sylvie said, as soon as we were out of hearing. "We ca'n't stay this size any longer."

"Then you will be quite tiny Fairies again, next time we meet?"

"Yes," said Sylvie: "but we'll be children again some day—if you'll let us. Bruno's very anxious to see Lady Muriel again."

"She are *welky* nice," said Bruno.

"I shall be very glad to take you to see her again," I said. "Hadn't I better give you back the Professor's Watch? It'll be too large for you to carry when you're Fairies, you know."

Bruno laughed merrily. I was glad to see he had quite recovered from the terrible scene he had gone through. "Oh no, it won't!" he said. "When *we* go small, *it'll* go small!"

"And then it'll go straight to the Professor," Sylvie added, "and you won't be able to use it any more: so you'd better use it all you can, *now*. We *must* go small when the sun sets. Good-bye!"

"Good-bye!" cried Bruno. But their voices sounded very far away, and, when I looked round, both children had disappeared.

"And it wants only two hours to sunset!" I said as I strolled on. "I must make the best of my time!"

Chapter XXIII. An Outlandish Watch.

As I entered the little town, I came upon two of the fishermen's wives interchanging that last word "which never was the last": and it occurred to me, as an experiment with the Magic Watch, to wait till the little scene was over, and then to 'encore' it.

"Well, good night t'ye! And ye winna forget to send us word when your Martha writes?"

"Nay, ah winna forget. An' if she isn't suited, she can but coom back. Good night t'ye!"

A casual observer might have thought "and there ends the dialogue!" That casual observer would have been mistaken.

"Ah, she'll like 'em, I war'n' ye! *They'll* not treat her bad, yer may depend. They're varry canny fowk. Good night!"

"Ay, they *are* that! Good night!"

"Good night! And ye'll send us word if she writes?"

"Aye, ah will, yer may depend! Good night t'ye!"

And at last they parted. I waited till they were some twenty yards apart, and then put the Watch a minute back. The instantaneous change was startling: the two figures seemed to flash back into their former places.

"—isn't suited, she can but coom back. Good night t'ye!" one of them was saying: and so the whole dialogue was repeated, and, when they had parted for the second time, I let them go their several ways, and strolled on through the town.

"But the real usefulness of this magic power," I thought, "would be to undo some harm, some painful event, some accident——" I had not long to wait for an opportunity of testing *this* property also of the Magic Watch, for, even as the thought passed through my mind, the accident I was imagining occurred. A light

cart was standing at the door of the 'Great Millinery Dépôt' of Elveston, laden with card-board packing-cases, which the driver was carrying into the shop, one by one. One of the cases had fallen into the street, but it scarcely seemed worth while to step forward and pick it up, as the man would be back again in a moment. Yet, in that moment, a young man riding a bicycle came sharp round the corner of the street and, in trying to avoid running over the box, upset his machine, and was thrown headlong against the wheel of the spring-cart. The driver ran out to his assistance, and he and I together raised the unfortunate cyclist and carried him into the shop. His head was cut and bleeding; and one knee seemed to be badly injured; and it was speedily settled that he had better be conveyed at once to the only Surgery in the place. I helped them in emptying the cart, and placing in it some pillows for the wounded man to rest on; and it was only when the driver had mounted to his place, and was starting for the Surgery, that I bethought me of the strange power I possessed of undoing all this harm.

"Now is my time!" I said to myself, as I moved back the hand of the Watch, and saw, almost without surprise this time, all things restored to the places they had occupied at the critical moment when I had first noticed the fallen packing-case.

Instantly I stepped out into the street, picked up the box, and replaced it in the cart: in the next moment the bicycle had spun round the corner, passed the cart without let or hindrance, and soon vanished in the distance, in a cloud of dust.

"Delightful power of magic!" I thought. "How much of human suffering I have—not only relieved, but actually annihilated!" And, in a glow of conscious virtue, I stood watching the unloading of the cart, still holding the Magic Watch open in my hand, as I was curious to see what would happen when we again reached the exact time at which I had put back the hand.

The result was one that, if only I had considered the thing carefully, I might have foreseen: as the hand of the Watch touched the mark, the spring-cart—which had driven off, and was by this time half-way down the street, was back again at the door, and in the act of starting, while—oh woe for the golden dream of world-wide benevolence that had dazzled my dreaming fancy!—the wounded youth was once more reclining on the heap of pillows, his pale face set rigidly in the hard lines that told of pain resolutely endured.

"Oh mocking Magic Watch!" I said to myself, as I passed out of the little town, and took the seaward road that led to my lodgings. "The good I fancied I could do is vanished like a dream: the evil of this troublesome world is the only abiding reality!"

And now I must record an experience so strange, that I think it only fair, before beginning to relate it, to release my much-enduring reader from any obligation he may feel to believe this part of my story. *I* would not have believed it, I freely confess, if I had not seen it with my own eyes: then why should I expect it of my reader, who, quite possibly, has never seen anything of the sort?

I was passing a pretty little villa, which stood rather back from the road, in its own grounds, with bright flower-beds in front—creepers wandering over the walls and hanging in festoons about the bow-windows—an easy-chair forgotten on the lawn, with a newspaper lying near it—a small pug-dog "couchant" before it, resolved to guard the treasure even at the sacrifice of life—and a front-door standing invitingly half-open. "Here is my chance," I thought, "for testing the

reverse action of the Magic Watch!" I pressed the 'reversal-peg' and walked in. In *another* house, the entrance of a stranger might cause surprise—perhaps anger, even going so far as to expel the said stranger with violence: but *here*, I knew, nothing of the sort could happen. The *ordinary* course of events—first, to think nothing about me; then, hearing my footsteps to look up and see me; and then to wonder what business I had there—would be reversed by the action of my Watch. They would *first* wonder who I was, *then* see me, then look down, and think no more about me. And as to being expelled with violence, *that* event would necessarily come *first* in this case. "So, if I can once get *in*," I said to myself, "all risk of *expulsion* will be over!"



'The pug-dog sat up'

The pug-dog sat up, as a precautionary measure, as I passed; but, as I took no notice of the treasure he was guarding, he let me go by without even one remonstrant bark. "He that takes my life," he seemed to be saying, wheezily, to himself, "takes trash: But he that takes the *Daily Telegraph*——!" But this awful contingency I did not face.

The party in the drawing-room—I had walked straight in, you understand, without ringing the bell, or giving any notice of my approach—consisted of four laughing rosy children, of ages from about fourteen down to ten, who were, apparently, all coming towards the door (I found they were really walking *backwards*), while their mother, seated by the fire with some needlework on her lap, was saying, just as I entered the room, "Now, girls, you may get your things on for a walk."

To my utter astonishment—for I was not yet accustomed to the action of the Watch—"all smiles ceased" (as Browning says) on the four pretty faces, and they all got out pieces of needle-work, and sat down. No one noticed *me* in the least, as I quietly took a chair and sat down to watch them.

When the needle-work had been unfolded, and they were all ready to begin, their mother said "Come, *that's* done, at last! You may fold up your work, girls."

But the children took no notice whatever of the remark; on the contrary, they set to work at once sewing—if that is the proper word to describe an operation such as *I* had never before witnessed. Each of them threaded her needle with a short end of thread attached to the work, which was instantly pulled by an invisible force through the stuff, dragging the needle after it: the nimble fingers of the little sempstress caught it at the other side, but only to lose it again the next moment. And so the work went on, steadily undoing itself, and the neatly-stitched little dresses, or whatever they were, steadily falling to pieces. Now and then one of the children would pause, as the recovered thread became inconveniently long, wind it on a bobbin, and start again with another short end.

At last all the work was picked to pieces and put away, and the lady led the way into the next room, walking backwards, and making the insane remark “Not yet, dear: we *must* get the sewing done first.” After which, I was not surprised to see the children skipping backwards after her, exclaiming “Oh, mother, it *is* such a lovely day for a walk!”

In the dining-room, the table had only dirty plates and empty dishes on it. However the party—with the addition of a gentleman, as good-natured, and as rosy, as the children—seated themselves at it very contentedly.

You have seen people eating cherry-tart, and every now and then cautiously conveying a cherry-stone from their lips to their plates? Well, something like that went on all through this ghastly—or shall we say ‘ghostly’?—banquet. An empty fork is raised to the lips: there it receives a neatly-cut piece of mutton, and swiftly conveys it to the plate, where it instantly attaches itself to the mutton already there. Soon one of the plates, furnished with a complete slice of mutton and two potatoes, was handed up to the presiding gentleman, who quietly replaced the slice on the joint, and the potatoes in the dish.

Their conversation was, if possible, more bewildering than their mode of dining. It began by the youngest girl suddenly, and without provocation, addressing her eldest sister. “Oh, you *wicked* story-teller!” she said.

I expected a sharp reply from the sister; but, instead of this, she turned laughingly to her father, and said, in a very loud stage-whisper, “To be a bride!”

The father, in order to do *his* part in a conversation that seemed only fit for lunatics, replied “Whisper it to me, dear.”

But she *didn't* whisper (these children never did anything they were told): she said, quite loud, “Of course not! Everybody knows what *Dolly* wants!”

And little Dolly shrugged her shoulders, and said, with a pretty pettishness, “Now, Father, you're not to tease! You know I don't want to be bride's-maid to *anybody*!”

“And Dolly's to be the fourth,” was her father's idiotic reply.

Here Number Three put in her oar. “Oh, it *is* settled, Mother dear, really and truly! Mary told us all about it. It's to be next Tuesday four weeks—and three of her cousins are coming to be bride's-maids—and——”

“*She* doesn't forget it, Minnie!” the Mother laughingly replied. “I do wish they'd get it settled! I don't like long engagements.”

And Minnie wound up the conversation—if so chaotic a series of remarks deserves the name—with “Only think! We passed the Cedars this morning, just exactly as Mary Davenant was standing at the gate, wishing good-bye to Mister—I forget his name. Of course we looked the other way.”

By this time I was so hopelessly confused that I gave up listening, and followed the dinner down into the kitchen.

But to you, O hypercritical reader, resolute to believe no item of this weird adventure, what need to tell how the mutton was placed on the spit, and slowly unroasted—how the potatoes were wrapped in their skins, and handed over to the gardener to be buried—how, when the mutton had at length attained to rawness, the fire, which had gradually changed from red-heat to a mere blaze, died down so suddenly that the cook had only just time to catch its last flicker on the end of a match—or how the maid, having taken the mutton off the spit, carried it (backwards, of course) out of the house, to meet the butcher, who was coming (also backwards) down the road?

The longer I thought over this strange adventure, the more hopelessly tangled the mystery became: and it was a real relief to meet Arthur in the road, and get him to go with me up to the Hall, to learn what news the telegraph had brought. I told him, as we went, what had happened at the Station, but as to my further adventures I thought it best, for the present, to say nothing.

The Earl was sitting alone when we entered. "I am glad you are come in to keep me company," he said. "Muriel is gone to bed—the excitement of that terrible scene was too much for her—and Eric has gone to the hotel to pack his things, to start for London by the early train."

"Then the telegram has come?" I said.

"Did you not hear? Oh, I had forgotten: it came in after you left the Station. Yes, it's all right: Eric has got his commission; and, now that he has arranged matters with Muriel, he has business in town that must be seen to at once."

"What arrangement do you mean?" I asked with a sinking heart, as the thought of Arthur's crushed hopes came to my mind. "Do you mean that they are *engaged*?"

"They have been engaged—in a sense—for two years," the old man gently replied: "that is, he has had my promise to consent to it, so soon as he could secure a permanent and settled line in life. I could never be happy with my child married to a man without an object to live for—without even an object to die for!"

"I hope they will be happy," a strange voice said. The speaker was evidently in the room, but I had not heard the door open, and I looked round in some astonishment. The Earl seemed to share my surprise. "Who spoke?" he exclaimed.

"It was I," said Arthur, looking at us with a worn, haggard face, and eyes from which the light of life seemed suddenly to have faded. "And let me wish *you* joy also, dear friend," he added, looking sadly at the Earl, and speaking in the same hollow tones that had startled us so much.

"Thank you," the old man said, simply and heartily.

A silence followed: then I rose, feeling sure that Arthur would wish to be alone, and bade our gentle host 'Good night': Arthur took his hand, but said nothing: nor did he speak again, as we went home, till we were in the house and had lit our bed-room candles. Then he said, more to himself than to me, "*The heart knoweth its own bitterness*. I never understood those words till now."

Quoted from
Proverbs 14:10

The next few days passed wearily enough. I felt no inclination to call again, by myself, at the Hall; still less to propose that Arthur should go with me: it seemed better to wait till Time—that gentle healer of our bitterest sorrows—should have helped him to recover from the first shock of the disappointment

that had blighted his life.

Business, however, soon demanded my presence in town; and I had to announce to Arthur that I must leave him for a while. "But I hope to run down again in a month," I added. "I would stay now, if I could. I don't think it's good for you to be alone."

"No, I ca'n't face solitude, *here*, for long," said Arthur. "But don't think about *me*. I have made up my mind to accept a post in India, that has been offered me. Out there, I suppose I shall find something to live for; I can't see *anything* at present. '*This life of mine I guard, as God's high gift, from scathe and wrong, Not greatly care to lose!*'"

"Yes," I said: "your name-sake bore as heavy a blow, and lived through it."

"A far heavier one than *mine*," said Arthur. "The woman *he* loved proved false. There is no such cloud as *that* on my memory of—of—" He left the name unuttered, and went on hurriedly. "But *you* will return, will you not?"

"Yes, I shall come back for a short time."

"Do," said Arthur: "and you shall write and tell me of our friends. I'll send you my address when I'm settled down."

Quoted from *Idylls of the King* by Alfred Lord Tennyson

Chapter XXIV. The Frogs' Birthday-Treat.

And so it came to pass that, just a week after the day when my Fairy-friends first appeared as Children, I found myself taking a farewell-stroll through the wood, in the hope of meeting them once more. I had but to stretch myself on the smooth turf, and the 'eerie' feeling was on me in a moment.

"Put oor ear *welly* low down," said Bruno, "and I'll tell oo a secret! It's the Frogs' Birthday-Treat—and we've lost the Baby!"

"*What* Baby?" I said, quite bewildered by this complicated piece of news.

"The *Queen's* Baby, a course!" said Bruno. "Titania's Baby. And we's *welly* sorry. Sylvie, she's—oh so sorry!"

"*How* sorry is she?" I asked, mischievously.

"Three-quarters of a yard," Bruno replied with perfect solemnity. "And *I'm* a little sorry too," he added, shutting his eyes so as not to see that he was smiling.

"And what are you doing about the Baby?"

"Well, the *soldiers* are all looking for it—up and down—everywhere."

"The *soldiers*?" I exclaimed.

"Yes, a course!" said Bruno. "When there's no fighting to be done, the soldiers doos any little odd jobs, oo know."

I was amused at the idea of its being a 'little odd job' to find the Royal Baby. "But how did you come to lose it?" I asked.

"We put it in a flower," Sylvie, who had just joined us, explained with her eyes full of tears. "Only we ca'n't remember *which*!"

"She says *us* put it in a flower," Bruno interrupted, "'cause she doosn't want *I* to get punished. But it were really *me* what put it there. *Sylvie* were picking Dindledums."

"You shouldn't say '*us* put it in a flower'," Sylvie very gravely remarked.

"Well, *hus*, then," said Bruno. "I never *can* remember those horrid H's!"

"Let me help you to look for it," I said. So Sylvie and I made a 'voyage of discovery' among all the flowers; but there was no Baby to be seen.

"What's become of Bruno?" I said, when we had completed our tour.

"He's down in the ditch there," said Sylvie, "amusing a young Frog."



The Queen's Baby

I went down on my hands and knees to look for him, for I felt very curious to know how young Frogs *ought* to be amused. After a minute's search, I found him sitting at the edge of the ditch, by the side of the little Frog, and looking rather disconsolate.

"How are you getting on, Bruno?" I said, nodding to him as he looked up.

"Ca'n't amuse it no more," Bruno answered, very dolefully, "'cause it won't say what it would like to do next! I've showed it all the duck-weeds—and a live caddis-worm—but it won't say nuffin! What—would oo—like?" he shouted into the ear of the Frog; but the little creature sat quite still, and took no notice of him. "It's deaf, I think!" Bruno said, turning away with a sigh. "And it's time to get the Theatre ready."

"Who are the audience to be?"

"Only but Frogs," said Bruno. "But they haven't comed yet. They wants to be drove up, like sheep."

"Would it save time," I suggested, "if *I* were to walk round with Sylvie, to drive up the Frogs, while *you* get the Theatre ready?"

"That *are* a good plan!" cried Bruno. "But where *are* Sylvie?"

"I'm here!" said Sylvie, peeping over the edge of the bank. "I was just watching two Frogs that were having a race."

"Which won it?" Bruno eagerly inquired.

Sylvie was puzzled. "He *does* ask such hard questions!" she confided to me.

"And what's to happen in the Theatre?" I asked.

"First they have their Birthday-Feast," Sylvie said: "then Bruno does some Bits of Shakespeare; then he tells them a Story."

"I should think the Frogs like the Feast best. Don't they?"

"Well, there's generally very few of them that get any. They *will* keep their mouths shut so tight! And it's just as well they *do*," she added, "because Bruno likes to cook it himself: and he cooks *very* queerly. Now they're all in. Would you just help me to put them with their heads the right way?"

We soon managed this part of the business, though the Frogs kept up a most discontented croaking all the time.

"What *are* they saying?" I asked Sylvie.

"They're saying 'Fork! Fork!' It's very silly of them! You're not going to *have* forks!" she announced with some severity. "Those that want any Feast have just got to open their mouths, and Bruno'll put some of it in!"

At this moment Bruno appeared, wearing a little white apron to show that he was a Cook, and carrying a tureen full of very queer-looking soup. I watched very carefully as he moved about among the Frogs; but I could not see that *any* of them opened their mouths to be fed—except one very young one, and I'm nearly sure it did it accidentally, in yawning. However Bruno instantly put a large spoonful of soup into its mouth, and the poor little thing coughed violently for some time.

So Sylvie and I had to share the soup between us, and to *pretend* to enjoy it, for it certainly was *very* queerly cooked.

I only ventured to take *one* spoonful of it ("Sylvie's Summer-Soup," Bruno said it was), and must candidly confess that it was not *at all* nice; and I could not feel surprised that so many of the guests had kept their mouths shut up tight.

"What's the soup *made* of, Bruno?" said Sylvie, who had put a spoonful of it to her lips, and was making a wry face over it.

And Bruno's answer was anything but encouraging. "Bits of things!"

The entertainment was to conclude with "Bits of Shakespeare," as Sylvie expressed it, which were all to be done by Bruno, Sylvie being fully engaged in making the Frogs keep their heads towards the stage: after which Bruno was to appear in his real character, and tell them a Story of his own invention.

"Will the Story have a Moral to it?" I asked Sylvie, while Bruno was away behind the hedge, dressing for the first 'Bit.'

"I *think* so," Sylvie replied doubtfully. "There generally *is* a Moral, only he puts it in too soon."

"And will he *say* all the Bits of Shakespeare?"

"No, he'll only *act* them," said Sylvie. "He knows hardly any of the words. When I see what he's dressed like, I've to tell the Frogs what character it is. They're always in such a hurry to guess! Don't you hear them all saying 'What? What?'" And so indeed they were: it had only sounded like croaking, till Sylvie explained it, but I could now make out the "Wawt? Wawt?" quite distinctly.

"But why do they try to guess it before they see it?"

"I don't know," Sylvie said: "but they always *do*. Sometimes they begin guessing weeks and weeks before the day!"

(So now, when you hear the Frogs croaking in a particularly melancholy way, you may be sure they're trying to guess Bruno's next Shakespeare 'Bit'. Isn't *that* interesting?)

However, the chorus of guessing was cut short by Bruno, who suddenly rushed on from behind the scenes, and took a flying leap down among the Frogs, to re-arrange them.

For the oldest and fattest Frog—who had never been properly arranged so that he could see the stage, and so had no idea what was going on—was getting restless, and had upset several of the Frogs, and turned others round with their heads the wrong way. And it was no good at all, Bruno said, to do a 'Bit' of Shakespeare when there was nobody to look at it (you see he didn't count *me* as anybody). So he set to work with a stick, stirring them up, very much as you would stir up tea in a cup, till most of them had at least *one* great stupid eye gazing at the stage.

"*Oo* must come and sit among them, Sylvie," he said in despair, "I've put these two side-by-side, with their noses the same way, ever so many times, but they *do* squarrel so!"

So Sylvie took her place as 'Mistress of the Ceremonies,' and Bruno vanished again behind the scenes, to dress for the first 'Bit.'

"Hamlet!" was suddenly proclaimed, in the clear sweet tones I knew so well. The croaking all ceased in a moment, and I turned to the stage, in some curiosity to see what Bruno's ideas were as to the behaviour of Shakespeare's greatest Character.

According to this eminent interpreter of the Drama, Hamlet wore a short black cloak (which he chiefly used for muffling up his face, as if he suffered a good deal from toothache), and turned out his toes very much as he walked. "To be or not to be!" Hamlet remarked in a cheerful tone, and then turned head-over-heels several times, his cloak dropping off in the performance.

I felt a little disappointed: Bruno's conception of the part seemed so wanting in dignity. "Won't he say any more of the speech?" I whispered to Sylvie.

"I *think* not," Sylvie whispered in reply. "He generally turns head-over-heels when he doesn't know any more words."

Quoted from *Hamlet*
by William
Shakespeare

Bruno had meanwhile settled the question by disappearing from the stage; and the Frogs instantly began inquiring the name of the next Character.

“You’ll know directly!” cried Sylvie, as she adjusted two or three young Frogs that had struggled round with their backs to the stage. “Macbeth!” she added, as Bruno re-appeared.

Macbeth had something twisted round him, that went over one shoulder and under the other arm, and was meant, I believe, for a Scotch plaid. He had a thorn in his hand, which he held out at arm’s length, as if he were a little afraid of it. “Is this a *dagger*?” Macbeth inquired, in a puzzled sort of tone: and instantly a chorus of “Thorn! Thorn!” arose from the Frogs (I had quite learned to understand their croaking by this time).

Quoted from *Macbeth*
by William
Shakespeare

“It’s a *dagger*!” Sylvie proclaimed in a peremptory tone. “Hold your tongues!” And the croaking ceased at once.

Shakespeare has not told us, so far as I know, that Macbeth had any such eccentric habit as turning head-over-heels in private life: but Bruno evidently considered it quite an essential part of the character, and left the stage in a series of somersaults. However, he was back again in a few moments, having tucked under his chin the end of a tuft of wool (probably left on the thorn by a wandering sheep), which made a magnificent beard, that reached nearly down to his feet.

“Shylock!” Sylvie proclaimed. “No, I beg your pardon!” she hastily corrected herself, “King Lear! I hadn’t noticed the crown.” (Bruno had very cleverly provided one, which fitted him exactly, by cutting out the centre of a dandelion to make room for his head.)

King Lear folded his arms (to the imminent peril of his beard) and said, in a mild explanatory tone, “Ay, every *inch* a king!” and then paused, as if to consider how this could best be proved. And here, with all possible deference to Bruno as a Shakespearian critic, I *must* express my opinion that the poet did *not* mean his three great tragic heroes to be so strangely alike in their personal habits; nor do I believe that he would have accepted the faculty of turning head-over-heels as any proof at all of royal descent. Yet it appeared that King Lear, after deep meditation, could think of no other argument by which to prove his kingship: and, as this was the last of the ‘Bits’ of Shakespeare (“We never do more than *three*,” Sylvie explained in a whisper), Bruno gave the audience quite a long series of somersaults before he finally retired, leaving the enraptured Frogs all crying out “More! More!” which I suppose was their way of encoring a performance. But Bruno wouldn’t appear again, till the proper time came for telling the Story.

Quoted from *King
Lear* by William
Shakespeare

When he appeared at last in his *real* character, I noticed a remarkable change in his behaviour. He tried no more somersaults. It was clearly his opinion that, however suitable the habit of turning head-over-heels might be to such petty individuals as Hamlet and King Lear, it would never do for *Bruno* to sacrifice his dignity to such an extent. But it was equally clear that he did not feel entirely at his ease, standing all alone on the stage, with no costume to disguise him: and though he began, several times, “There were a Mouse—,” he kept glancing up and down, and on all sides, as if in search of more comfortable quarters from which to tell the Story. Standing on one side of the stage, and partly overshadowing it, was a tall fox-glove, which seemed, as the evening breeze gently swayed it hither and thither, to offer exactly the sort of accommodation that the orator desired. Having once decided on his quarters, it needed only a



The Frogs's birthday-treat

second or two for him to run up the stem like a tiny squirrel, and to seat himself astride on the topmost bend, where the fairy-bells clustered most closely, and from whence he could look down on his audience from such a height that all shyness vanished, and he began his Story merrily.

“Once there were a Mouse and a Crocodile and a Man and a Goat and a Lion.” I had never heard the ‘dramatis personæ’ tumbled into a story with such profusion and in such reckless haste; and it fairly took my breath away. Even Sylvie gave a little gasp, and allowed three of the Frogs, who seemed to be getting tired of the entertainment, to hop away into the ditch, without attempting to stop them.

“And the Mouse found a Shoe, and it thought it were a Mouse-trap. So it got right in, and it stayed in ever so long.”

“Why did it *stay* in?” said Sylvie. Her function seemed to be much the same as that of the Chorus in a Greek Play: she had to encourage the orator, and draw him out, by a series of intelligent questions.

“Cause it thought it couldn’t get out again,” Bruno explained. “It were a clever mouse. It knew it couldn’t get out of traps!”

“But why did it go in at all?” said Sylvie.

“—and it jump, and it jump,” Bruno proceeded, ignoring this question, “and at last it got right out again. And it looked at the mark in the Shoe. And the Man’s name were in it. So it knew it wasn’t its own Shoe.”

“Had it thought it *was*?” said Sylvie.

“Why, didn’t I tell oo it thought it were a *Mouse-trap*?” the indignant orator replied. “Please, Mister Sir, will oo make Sylvie attend?” Sylvie was silenced, and was all attention: in fact, she and I were most of the audience now, as the Frogs kept hopping away, and there were very few of them left.

“So the Mouse gave the Man his Shoe. And the Man were welly glad, ’cause he hadn’t got but one Shoe, and he were hopping to get the other.”

Here I ventured on a question. “Do you mean ‘hopping,’ or ‘hoping’?”

“Bofe,” said Bruno. “And the Man took the Goat out of the Sack.” (“We haven’t heard of the *sack* before,” I said. “Nor you won’t hear of it again,” said Bruno). “And he said to the Goat, ‘Oo will walk about here till I comes back.’ And he went and he tumbled into a deep hole. And the Goat walked round and round. And it walked under the Tree. And it wug its tail. And it looked up in the Tree. And it sang a sad little Song. Oo never heard such a sad little Song!”

“Can you sing it, Bruno?” I asked.

“Iss, I can,” Bruno readily replied. “And I sa’n’t. It would make Sylvie cry——”

“It wouldn’t!” Sylvie interrupted in great indignation. “And I don’t believe the Goat sang it at all!”

“It did, though!” said Bruno. “It singed it right froo. I *sawed* it singing with its long beard——”

“It couldn’t sing with its *beard*,” I said, hoping to puzzle the little fellow: “a beard isn’t a *voice*.”

“Well then, oo couldn’t walk with Sylvie!” Bruno cried triumphantly. “Sylvie isn’t a *foot*!”

I thought I had better follow Sylvie’s example, and be silent for a while. Bruno was too sharp for us.

“And when it had singed all the Song, it ran away—for to get along to look for the Man, oo know. And the Crocodile got along after it—for to bite it, oo

know. And the Mouse got along after the Crocodile.”

“Wasn’t the Crocodile *running*?” Sylvie enquired. She appealed to me. “Crocodiles do run, don’t they?”

I suggested “crawling” as the proper word.

“He wasn’t running,” said Bruno, “and he wasn’t crawling. He went struggling along like a portmanteau. And he held his chin ever so high in the air——”

“What did he do *that* for?” said Sylvie.

“Cause he hadn’t got a toofache!” said Bruno. “Ca’n’t oo make out *nuffin* wizout I ’splain it? Why, if he’d had a toofache, a course he’d have held his head down—like this—and he’d have put a lot of warm blankets round it!”

“If he’d *had* any blankets,” Sylvie argued.

“Course he *had* blankets!” retorted her brother. “Doos oo think Crocodiles goes walks wizout blankets? And he frowned with his eyebrows. And the Goat was welly flightened at his eyebrows!”

“I’d never be afraid of *eyebrows*!” exclaimed Sylvie.

“I should think oo *would*, though, if they’d got a Crocodile fastened to them, like these had! And so the Man jump, and he jump, and at last he got right out of the hole.”

Sylvie gave another little gasp: this rapid dodging about among the characters of the Story had taken away her breath.

“And he runned away—for to look for the Goat, oo know. And he heard the Lion grunting——”

“Lions don’t grunt,” said Sylvie.

“This one did,” said Bruno. “And its mouth were like a large cupboard. And it had plenty of room in its mouth. And the Lion runned after the Man—for to eat him, oo know. And the Mouse runned after the Lion.”

“But the Mouse was running after the *Crocodile*,” I said: “he couldn’t run after *both*!”

Bruno sighed over the density of his audience, but explained very patiently. “He *did* runned after *bofe*: ’cause they went the same way! And first he caught the Crocodile, and then he didn’t catch the Lion. And when he’d caught the Crocodile, what doos oo think he did—’cause he’d got pincers in his pocket?”

“I ca’n’t guess,” said Sylvie.

“Nobody couldn’t guess it!” Bruno cried in high glee. “Why, he wrenched out that Crocodile’s toof!”

“*Which* tooth?” I ventured to ask.

But Bruno was not to be puzzled. “The toof he were going to bite the Goat with, a course!”

“He couldn’t be sure about that,” I argued, “unless he wrenched out *all* its teeth.”

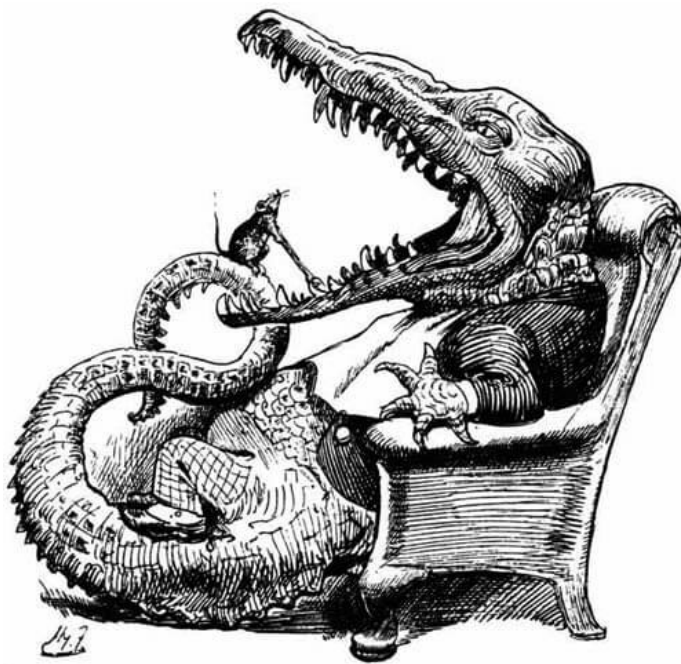
Bruno laughed merrily, and half sang, as he swung himself backwards and forwards, “He did—wrenched—out—*all* its teef!”

“Why did the Crocodile wait to have them wrenched out?” said Sylvie.

“It had to wait,” said Bruno.

I ventured on another question. “But what became of the Man who said ‘You may wait here till I come back’?”

“He didn’t say ‘Oo *may*,’” Bruno explained. “He said, ‘Oo *will*.’ Just like Sylvie says to me ‘Oo will do oor lessons till twelve o’clock.’ Oh, I *wiss*,” he added with a little sigh, “I *wiss* Sylvie would say ‘Oo *may* do oor lessons’!”



'He wrenched out that Crocodile's toof!'

This was a dangerous subject for discussion, Sylvie seemed to think. She returned to the Story. "But what became of the Man?"

"Well, the Lion springed at him. But it came so slow, it were three weeks in the air——"

"Did the Man wait for it all that time?" I said.

"Course he didn't!" Bruno replied, gliding head-first down the stem of the fox-glove, for the Story was evidently close to its end. "He sold his house, and he packed up his things, while the Lion were coming. And he went and he lived in another town. So the Lion ate the wrong man."

This was evidently the Moral: so Sylvie made her final proclamation to the Frogs. "The Story's finished! And whatever is to be *learned* from it," she added, aside to me, "I'm sure *I* don't know!"

I did not feel *quite* clear about it myself, so made no suggestion: but the Frogs seemed quite content, Moral or no Moral, and merely raised a husky chorus of "Off! Off!" as they hopped away.

Chapter XXV. Looking Eastward.

"It's just a week," I said, three days later, to Arthur, "since we heard of Lady Muriel's engagement. I think *I* ought to call, at any rate, and offer my congratulations. Won't you come with me?"

A pained expression passed over his face. "When must you leave us?" he asked.

"By the first train on Monday."

"Well—yes, I *will* come with you. It would seem strange and unfriendly if I didn't. But this is only Friday. Give me till Sunday afternoon. I shall be

stronger then.”

Shading his eyes with one hand, as if half-ashamed of the tears that were coursing down his cheeks, he held the other out to me. It trembled as I clasped it.

I tried to frame some words of sympathy; but they seemed poor and cold, and I left them unspoken. “Good night!” was all I said.

“Good night, dear friend!” he replied. There was a manly vigour in his tone that convinced me he was wrestling with, and triumphing over, the great sorrow that had so nearly wrecked his life—and that, on the stepping-stone of his dead self, he would surely rise to higher things!

There was no chance, I was glad to think, as we set out on Sunday afternoon, of meeting *Eric* at the Hall, as he had returned to town the day after his engagement was announced. *His* presence might have disturbed the calm—the almost unnatural calm—with which Arthur met the woman who had won his heart, and murmured the few graceful words of sympathy that the occasion demanded.

Lady Muriel was perfectly radiant with happiness: sadness could not live in the light of such a smile: and even Arthur brightened under it, and, when she remarked “You see I’m watering my flowers, though it *is* the Sabbath-Day,” his voice had almost its old ring of cheerfulness as he replied “Even on the Sabbath-Day works of mercy are allowed. But this *isn’t* the Sabbath-Day. The Sabbath-Day has ceased to exist.”

“I know it’s not *Saturday*,” Lady Muriel replied: “but isn’t Sunday often called ‘the Christian Sabbath’?”

“It is so called, I think, in recognition of the *spirit* of the Jewish institution, that one day in seven should be a day of *rest*. But I hold that Christians are freed from the *literal* observance of the Fourth Commandment.”

“Then where is our *authority* for Sunday observance?”

“We have, first, the fact that the seventh day was ‘sanctified’, when God rested from the work of Creation. That is binding on us as *Theists*. Secondly, we have the fact that ‘the Lord’s Day’ is a *Christian* institution. That is binding on us as *Christians*.”

“And your practical rules would be——?”

“First, as Theists, to keep it *holy* in some special way, and to make it, so far as is reasonably possible, a day of *rest*. Secondly, as *Christians*, to attend public worship.”

“And what of *amusements*?”

“I would say of them, as of all kinds of *work*, whatever is innocent on a week-day, is innocent on Sunday, provided it does not interfere with the duties of the day.”

“Then you would allow children to *play* on Sunday?”

“Certainly I should. Why make the day irksome to their restless natures?”

“I have a letter somewhere,” said Lady Muriel, “from an old friend, describing the way in which Sunday was kept in her younger days. I will fetch it for you.”

“I had a similar description, *vivâ voce*, years ago,” Arthur said when she had left us, “from a little girl. It was really touching to hear the melancholy tone in which she said ‘On Sunday I mustn’t play with my doll! On Sunday I mustn’t run on the sands! On Sunday I mustn’t dig in the garden!’ Poor child! She had indeed abundant cause for hating Sunday!”

“Here is the letter,” said Lady Muriel, returning. “Let me read you a piece of it.”

“*When, as a child, I first opened my eyes on a Sunday-morning, a feeling of dismal anticipation, which began at least on the Friday, culminated. I knew what was before me, and my wish, if not my word, was ‘Would God it were evening!’ It was no day of rest, but a day of texts, of catechisms (Watts’), of tracts about converted swearers, godly char-women, and edifying deaths of sinners saved.*

“*Up with the lark, hymns and portions of Scripture had to be learned by heart till 8 o’clock, when there were family-prayers, then breakfast, which I was never able to enjoy, partly from the fast already undergone, and partly from the outlook I dreaded.*

“*At 9 came Sunday-School; and it made me indignant to be put into the class with the village-children, as well as alarmed lest, by some mistake of mine, I should be put below them.*

“*The Church-Service was a veritable Wilderness of Zin. I wandered in it, pitching the tabernacle of my thoughts on the lining of the square family-pew, the fidgets of my small brothers, and the horror of knowing that, on the Monday, I should have to write out, from memory, jottings of the rambling disconnected extempore sermon, which might have had any text but its own, and to stand or fall by the result.*

“*This was followed by a cold dinner at 1 (servants to have no work), Sunday-School again from 2 to 4, and Evening-Service at 6. The intervals were perhaps the greatest trial of all, from the efforts I had to make, to be less than usually sinful, by reading books and sermons as barren as the Dead Sea. There was but one rosy spot, in the distance, all that day: that was ‘bed-time,’ which never could come too early!*”

“Such teaching was well meant, no doubt,” said Arthur; “but it must have driven many of its victims into deserting the Church-Services altogether.”

“I’m afraid *I* was a deserter this morning,” she gravely said. “I had to write to Eric. Would you—would you mind my telling you something he said about *prayer*? It had never struck me in that light before.”

“In what light?” said Arthur.

“Why, that all Nature goes by fixed, regular laws—Science has proved *that*. So that asking God to *do* anything (except of course praying for *spiritual* blessings) is to expect a miracle: and we’ve no right to do *that*. I’ve not put it as well as *he* did: but that was the outcome of it, and it has confused me. Please tell me what you can say in answer to it.”

“I don’t propose to discuss *Captain Lindon’s* difficulties,” Arthur gravely replied; “specially as he is not present. But, if it is *your* difficulty,” (his voice unconsciously took a tenderer tone) “then I will speak.”

“It *is* my difficulty,” she said anxiously.

“Then I will begin by asking ‘Why did you except *spiritual* blessings?’ Is not your mind a part of Nature?”

“Yes, but Free-Will comes in there—I can *choose* this or that; and God can influence my choice.”

“Then you are not a Fatalist?”

“Oh, no!” she earnestly exclaimed.

“Thank God!” Arthur said to himself, but in so low a whisper that only *I* heard it. “You grant then that I can, by an act of free choice, move this cup,” suiting the action to the word, “*this* way or *that* way?”

“Yes, I grant it.”

“Well, let us see how far the result is produced by fixed laws. The *cup* moves because certain mechanical forces are impressed on it by my *hand*. My *hand* moves because certain forces—electric, magnetic, or whatever ‘nerve-force’ may prove to be—are impressed on it by my *brain*. This nerve-force, stored in the brain, would probably be traceable, if Science were complete, to chemical forces supplied to the brain by the blood, and ultimately derived from the food I eat and the air I breathe.”

“But would not that be Fatalism? Where would Free-Will come in?”

“In *choice* of nerves,” replied Arthur. “The nerve-force in the brain may flow just as naturally down one nerve as down another. We need something more than a fixed Law of Nature to settle *which* nerve shall carry it. That ‘something’ is Free-Will.”

Her eyes sparkled. “I see what you mean!” she exclaimed. “Human Free-Will is an exception to the system of fixed Law. Eric said something like that. And then I think he pointed out that God can only influence Nature by influencing Human Wills. So that we *might* reasonably pray ‘*give us this day our daily bread,*’ because many of the causes that produce bread are under Man’s control. But to pray for rain, or fine weather, would be as unreasonable as—” she checked herself, as if fearful of saying something irreverent.

Quoted from
Matthew 6:11

In a hushed, low tone, that trembled with emotion, and with the solemnity of one in the presence of death, Arthur slowly replied “*Shall he that contendeth with the Almighty instruct him?* Shall we, ‘the swarm that in the noontide beam were born,’ feeling in ourselves the power to direct, this way or that, the forces of Nature—of *Nature*, of which we form so trivial a part—shall we, in our boundless arrogance, in our pitiful conceit, *deny* that power to the Ancient of Days? Saying, to our Creator, ‘Thus far and no further. Thou madest, but thou canst not rule!’?”

Quoted from Job 40:2
Quoted from *The Bard* by Thomas Gray

Quoted from Job
38:11

Lady Muriel had covered her face in her hands, and did not look up. She only murmured “Thanks, thanks!” again and again.

We rose to go. Arthur said, with evident effort, “One word more. If you would *know* the power of Prayer—in anything and everything that Man can need—*try* it. *Ask, and it shall be given you. I—have* tried it. I *know* that God answers prayer!”

Quoted from
Matthew 7:7

Our walk home was a silent one, till we had nearly reached the lodgings: then Arthur murmured—and it was almost an echo of my own thoughts—“*What knowest thou, O wife, whether thou shalt save thy husband?*”

Quoted from 1
Corinthians 7:16

The subject was not touched on again. We sat on, talking, while hour after hour, of this our last night together, glided away unnoticed. He had much to tell me about India, and the new life he was going to, and the *work* he hoped to do. And his great generous soul seemed so filled with noble ambition as to have no space left for any vain regret or selfish repining.

“Come, it is nearly morning!” Arthur said at last, rising and leading the way upstairs. “The sun will be rising in a few minutes: and, though I *have* basely defrauded you of your last chance of a night’s rest here, I’m sure you’ll forgive me: for I really *couldn’t* bring myself to say ‘Good night’ sooner. And God knows whether you’ll ever see me again, or hear of me!”

“*Hear* of you I am certain I shall!” I warmly responded, and quoted the concluding lines of that strange poem ‘Waring’:—

“Oh, never star
Was lost here, but it rose afar!
Look East, where whole new thousands are!
In Vishnu-land what Avatar?”

Quoted from *Waring*
by Robert Browning

“Aye, look Eastward!” Arthur eagerly replied, pausing at the stair-case window, which commanded a fine view of the sea and the eastward horizon. “The West is the fitting tomb for all the sorrow and the sighing, all the errors and the follies of the Past: for all its withered Hopes and all its buried Loves! From the East comes new strength, new ambition, new Hope, new Life, new Love! Look Eastward! Aye, look Eastward!”

His last words were still ringing in my ears as I entered my room, and undrew the window-curtains, just in time to see the sun burst in glory from his ocean-prison, and clothe the world in the light of a new day.

“So may it be for him, and me, and all of us!” I mused. “All that is evil, and dead, and hopeless, fading with the Night that is past! All that is good, and living, and hopeful, rising with the dawn of Day!

“Fading, with the Night, the chilly mists, and the noxious vapours, and the heavy shadows, and the wailing gusts, and the owl’s melancholy hootings: rising, with the Day, the darting shafts of light, and the wholesome morning breeze, and the warmth of a dawning life, and the mad music of the lark! Look Eastward!

“Fading, with the Night, the clouds of ignorance, and the deadly blight of sin, and the silent tears of sorrow: and ever rising, higher, higher, with the Day, the radiant dawn of knowledge, and the sweet breath of purity, and the throb of a world’s ecstasy! Look Eastward!



‘Look Eastward!’

“Fading, with the Night, the memory of a dead love, and the withered leaves of a blighted hope, and the sickly repinings and moody regrets that numb the best energies of the soul: and rising, broadening, rolling upward like a living flood, the manly resolve, and the dauntless will, and the heavenward gaze of faith—the *substance of things hoped for, the evidence of things not seen!*”

Quoted from Hebrews
11:1

“Look Eastward! Aye, look Eastward!”

2.6 Sylvie and Bruno Concluded

Source: Sylvie and Bruno Concluded

Chapter I. Bruno's Lessons.

During the next month or two my solitary town-life seemed, by contrast, unusually dull and tedious. I missed the pleasant friends I had left behind at Elveston—the genial interchange of thought—the sympathy which gave to one's ideas a new and vivid reality: but, perhaps more than all, I missed the companionship of the two Fairies—or Dream-Children, for I had not yet solved the problem as to who or what they were—whose sweet playfulness had shed a magic radiance over my life.

In office-hours—which I suppose reduce most men to the mental condition of a coffee-mill or a mangle—time sped along much as usual: it was in the pauses of life, the desolate hours when books and newspapers palled on the sated appetite, and when, thrown back upon one's own dreary musings, one strove—all in vain—to people the vacant air with the dear faces of absent friends, that the real bitterness of solitude made itself felt.

One evening, feeling my life a little more wearisome than usual, I strolled down to my Club, not so much with the hope of meeting any friend there, for London was now 'out of town,' as with the feeling that here, at least, I should hear 'sweet words of human speech,' and come into contact with human thought.

However, almost the first face I saw there *was* that of a friend. Eric Lindon was lounging, with rather a 'bored' expression of face, over a newspaper; and we fell into conversation with a mutual satisfaction which neither of us tried to conceal.

After a while I ventured to introduce what was just then the main subject of my thoughts. "And so the Doctor" (a name we had adopted by a tacit agreement, as a convenient compromise between the formality of 'Doctor Forester' and the intimacy—to which Eric Lindon hardly seemed entitled—of 'Arthur') "has gone abroad by this time, I suppose? Can you give me his present address?"

"He is still at Elveston—I believe," was the reply. "But I have not been there since I last met you."

I did not know which part of this intelligence to wonder at most. "And might I ask—if it isn't taking too much of a liberty—when your wedding-bells are to—or perhaps they *have* rung, already?"

"No," said Eric, in a steady voice, which betrayed scarcely a trace of emotion: "*that* engagement is at an end. I am still 'Benedick the *unmarried* man.'"

After this, the thick-coming fancies—all radiant with new possibilities of happiness for Arthur—were far too bewildering to admit of any further conversation, and I was only too glad to avail myself of the first decent excuse, that offered itself, for retiring into silence.

The next day I wrote to Arthur, with as much of a reprimand for his long silence as I could bring myself to put into words, begging him to tell me how the world went with him.

Needs must that three or four days—possibly more—should elapse before I could receive his reply; and never had I known days drag their slow length along with a more tedious indolence.

Quoted from *Much Ado About Nothing* by William Shakespeare

To while away the time, I strolled, one afternoon, into Kensington Gardens, and, wandering aimlessly along any path that presented itself, I soon became aware that I had somehow strayed into one that was wholly new to me. Still, my elfish experiences seemed to have so completely faded out of my life that nothing was further from my thoughts than the idea of again meeting my fairy-friends, when I chanced to notice a small creature, moving among the grass that fringed the path, that did not seem to be an insect, or a frog, or any other living thing that I could think of. Cautiously kneeling down, and making an *ex tempore* cage of my two hands, I imprisoned the little wanderer, and felt a sudden thrill of surprise and delight on discovering that my prisoner was no other than *Bruno* himself!

Bruno took the matter *very* coolly, and, when I had replaced him on the ground, where he would be within easy conversational distance, he began talking, just as if it were only a few minutes since last we had met.

"Doos oo know what the *Rule* is," he enquired, "when oo catches a Fairy, withouten its having tolded oo where it was?" (Bruno's notions of English Grammar had certainly *not* improved since our last meeting.)

"No," I said. "I didn't know there was any Rule about it."

"I *think* oo've got a right to *eat* me," said the little fellow, looking up into my face with a winning smile. "But I'm not pruffickly sure. Oo'd better not do it wizout asking."

It did indeed seem reasonable not to take so irrevocable a step as *that*, without due enquiry. "I'll certainly *ask* about it, first," I said. "Besides, I don't know yet whether you would be *worth* eating!"

"I guess I'm *deliciously* good to eat," Bruno remarked in a satisfied tone, as if it were something to be rather proud of.

"And what are you doing here, Bruno?"

"*That's* not my name!" said my cunning little friend. "Don't oo know my name's 'Oh Bruno!'? That's what Sylvie always calls me, when I says mine lessons."

"Well then, what are you doing here, oh Bruno?"

"Doing mine lessons, a-course!" With that roguish twinkle in his eye, that always came when he knew he was talking nonsense.

"Oh, *that's* the way you do your lessons, is it? And do you remember them well?"

"Always can 'member *mine* lessons," said Bruno. "It's *Sylvie's* lessons that's so *drefffully* hard to 'member!" He frowned, as if in agonies of thought, and tapped his forehead with his knuckles. "I *ca'n't* think enough to understand them!" he said despairingly. "It wants *double* thinking, I believe!"

"But where's Sylvie gone?"

"That's just what *I* want to know!" said Bruno disconsolately. "What ever's the good of setting me lessons, when she isn't here to 'splain the hard bits?"

"*I'll* find her for you!" I volunteered; and, getting up, I wandered round the tree under whose shade I had been reclining, looking on all sides for Sylvie. In another minute I *again* noticed some strange thing moving among the grass, and, kneeling down, was immediately confronted with Sylvie's innocent face, lighted up with a joyful surprise at seeing me, and was accosted, in the sweet voice I knew so well, with what seemed to be the *end* of a sentence whose beginning I had failed to catch.

“—and I think he ought to have *finished* them by this time. So I’m going back to him. Will you come too? It’s only just round at the other side of this tree.”

It was but a few steps for *me*; but it was a great many for Sylvie; and I had to be very careful to walk slowly, in order not to leave the little creature so far behind as to lose sight of her.

To find Bruno’s *lessons* was easy enough: they appeared to be neatly written out on large smooth ivy-leaves, which were scattered in some confusion over a little patch of ground where the grass had been worn away; but the pale student, who ought by rights to have been bending over them, was nowhere to be seen: we looked in all directions, for some time, in vain; but at last Sylvie’s sharp eyes detected him, swinging on a tendril of ivy, and Sylvie’s stern voice commanded his instant return to *terra firma* and to the business of Life.



Sylvie’s truant-pupil

“Pleasure first and business afterwards” seemed to be the motto of these tiny folk, so many hugs and kisses had to be interchanged before anything else could be done.

“Now, Bruno,” Sylvie said reproachfully, “didn’t I tell you you were to go on with your lessons, unless you heard to the contrary?”

“But I *did* heard to the contrary!” Bruno insisted, with a mischievous twinkle in his eye.

“*What* did you hear, you wicked boy?”

“It were a sort of noise in the air,” said Bruno: “a sort of a scrambling noise. Didn’t *oo* hear it, Mister Sir?”

“Well, anyhow, you needn’t go to *sleep* over them, you lazy-lazy!” For Bruno had curled himself up, on the largest ‘lesson,’ and was arranging another as a pillow.

“I *wasn’t* asleep!” said Bruno, in a deeply-injured tone. “When I shuts mine eyes, it’s to show that I’m *awake!*”

“Well, how much have you learned, then?”

“I’ve learned a little tiny bit,” said Bruno, modestly, being evidently afraid of overstating his achievement. “*Ca’n’t* learn no more!”

“Oh Bruno! You know you *can*, if you like.”

“Course I can, if I *like*,” the pale student replied; “but I *ca’n’t* if I *don’t* like!”

Sylvie had a way—which I could not too highly admire—of evading Bruno’s logical perplexities by suddenly striking into a new line of thought; and this masterly stratagem she now adopted.

“Well, I must say *one* thing——”

“Did *oo* know, Mister Sir,” Bruno thoughtfully remarked, “that Sylvie *ca’n’t* count? Whenever she says ‘I must say *one* thing,’ I *know* quite well she’ll say *two* things! And she always *doos*.”

“Two heads are better than one, Bruno,” I said, but with no very distinct idea as to what I meant by it.

“I shouldn’t mind having two *heads*,” Bruno said softly to himself: “one head to eat mine dinner, and one head to argue wiz Sylvie—*doos* *oo* think *oo’d* look prettier if *oo’d* got *two* heads, Mister Sir?”

The case did not, I assured him, admit of a doubt.

“The reason why Sylvie’s so cross——” Bruno went on very seriously, almost sadly.

Sylvie’s eyes grew large and round with surprise at this new line of enquiry—her rosy face being perfectly radiant with good humour. But she said nothing.

“Wouldn’t it be better to tell me after the lessons are over?” I suggested.

“Very well,” Bruno said with a resigned air: “only she wo’n’t be cross then.”

“There’s only three lessons to do,” said Sylvie. “Spelling, and Geography, and Singing.”

“Not *Arithmetic*?” I said.

“No, he hasn’t a head for *Arithmetic*——”

“Course I haven’t!” said Bruno. “Mine head’s for *hair*. I haven’t got a *lot* of heads!”

“——and he *ca’n’t* learn his Multiplication-table——”

“I like *History* ever so much better,” Bruno remarked. “*Oo* has to *repeat* that Muddlecome table——”

“Well, and you have to repeat——”

“No, *oo* hasn’t!” Bruno interrupted. “*History* repeats itself. The Professor said so!”

Sylvie was arranging some letters on a board——E—V—I—L. “Now, Bruno,” she said, “what does *that* spell?”

Bruno looked at it, in solemn silence, for a minute. “I *knows* what it *doosn’t* spell!” he said at last.

“That’s no good,” said Sylvie. “What *does* it spell?”

Quoted from *Rob Roy* by Walter Scott

Bruno took another look at the mysterious letters. "Why, it's 'LIVE,' backwards!" he exclaimed. (I thought it was, indeed.)

"How *did* you manage to see that?" said Sylvie.

"I just twiddled my eyes," said Bruno, "and then I saw it directly. Now may I sing the King-fisher Song?"

"Geography next," said Sylvie. "Don't you know the Rules?"

"I think there oughtn't to be such a lot of Rules, Sylvie! I think——"

"Yes, there *ought* to be such a lot of Rules, you wicked, wicked boy! And how dare you *think* at all about it? And shut up that mouth directly!"

So, as 'that mouth' didn't seem inclined to shut up of itself, Sylvie shut it for him—with both hands—and sealed it with a kiss, just as you would fasten up a letter.

"Now that Bruno is fastened up from talking," she went on, turning to me, "I'll show you the Map he does his lessons on."

And there it was, a large Map of the World, spread out on the ground. It was so large that Bruno had to crawl about on it, to point out the places named in the 'King-fisher Lesson.'

"When a King-fisher sees a Lady-bird flying away, he says '*Ceylon*, if you *Candia*!' And when he catches it, he says 'Come to *Media*! And if you're *Hungary* or thirsty, I'll give you some *Nubia*!' When he takes it in his claws, he says '*Europe*!' When he puts it into his beak, he says '*India*!' When he's swallowed it, he says '*Eton*!' That's all."

"That's *quite* perfect," said Sylvie. "Now you may sing the King-fisher Song."

"Will *oo* sing the chorus?" Bruno said to me.

I was just beginning to say "I'm afraid I don't know the *words*," when Sylvie silently turned the map over, and I found the words were all written on the back. In one respect it was a *very* peculiar song: the chorus to each verse came in the *middle*, instead of at the *end* of it. However, the tune was so easy that I soon picked it up, and managed the chorus as well, perhaps, as it is possible for *one* person to manage such a thing. It was in vain that I signed to Sylvie to help me: she only smiled sweetly and shook her head.

"King Fisher courted Lady Bird—

Sing Beans, sing Bones, sing Butterflies!

'Find me my match,' he said,

'With such a noble head—

With such a beard, as white as curd—

With such expressive eyes!

"Yet pins have heads,' said Lady Bird—

Sing Prunes, sing Prawns, sing Primrose-Hill!

'And, where you stick them in,

They stay, and thus a pin

Is very much to be preferred

To one that's never still!

"Oysters have beards,' said Lady Bird—

Sing Flies, sing Frogs, sing Fiddle-strings!

'I love them, for I know

They never chatter so:

They would not say one single word—

Not if you crowned them Kings!
 “‘Needles have eyes,’ said Lady Bird—
Sing Cats, sing Corks, sing Cowslip-tea!
 ‘And they are sharp—just what
 Your Majesty is *not*:
 So get you gone—’tis too absurd
 To come a-courting *me!*’”



King fisher's wooing

“So he went away,” Bruno added as a kind of postscript, when the last note of the song had died away. “Just like he always did.”

“Oh, my *dear* Bruno!” Sylvie exclaimed, with her hands over her ears. “You shouldn’t say ‘like’: you should say ‘*what*.’”

To which Bruno replied, doggedly, “I only says ‘what!’ when oo doesn’t speak loud, so as I can hear oo.”

“Where did he go to?” I asked, hoping to prevent an argument.

“He went more far than he’d never been before,” said Bruno.

“You should never say ‘more far,’” Sylvie corrected him: “you should say ‘*farther*.’”

“Then *oo* shouldn’t say ‘more broth,’ when we’re at dinner,” Bruno retorted: “oo should say ‘*brother*’!”

This time Sylvie evaded an argument by turning away, and beginning to roll up the Map. “Lessons are over!” she proclaimed in her sweetest tones.

“And has there been no *crying* over them?” I enquired. “Little boys *always* cry over their lessons, don’t they?”

“I never cries after twelve o’clock,” said Bruno: “’cause then it’s getting so near to dinner-time.”

“Sometimes, in the morning,” Sylvie said in a low voice; “when it’s Geography-day, and when he’s been disobe——”

“*What* a fellow you are to talk, Sylvie!” Bruno hastily interposed. “Doos oo think the world was *made* for oo to talk in?”

“Why, where would you *have* me talk, then?” Sylvie said, evidently quite ready for an argument.

But Bruno answered resolutely. “I’m not going to argue about it, ’cause it’s getting late, and there wo’n’t be time—but oo’s as ’ong as ever oo can be!” And he rubbed the back of his hand across his eyes, in which tears were beginning to glitter.

Sylvie’s eyes filled with tears in a moment. “I didn’t mean it, Bruno, *darling!*” she whispered; and the rest of the argument was lost ‘amid the tangles of Neæra’s hair,’ while the two disputants hugged and kissed each other.

Quoted from *Lycidas*
by John Milton

But this new form of argument was brought to a sudden end by a flash of lightning, which was closely followed by a peal of thunder, and by a torrent of rain-drops, which came hissing and spitting, almost like live creatures, through the leaves of the tree that sheltered us.

“Why, it’s raining cats and dogs!” I said.

“And all the *dogs* has come down *first*,” said Bruno: “there’s nothing but *cats* coming down now!”

In another minute the pattering ceased, as suddenly as it had begun. I stepped out from under the tree, and found that the storm was over; but I looked in vain, on my return, for my tiny companions. They had vanished with the storm, and there was nothing for it but to make the best of my way home.

On the table lay, awaiting my return, an envelope of that peculiar yellow tint which always announces a telegram, and which must be, in the memories of so many of us, inseparably linked with some great and sudden sorrow—something that has cast a shadow, never in this world to be wholly lifted off, on the brightness of Life. No doubt it has *also* heralded—for many of us—some sudden news of joy; but this, I think, is less common: human life seems, on the whole, to contain more of sorrow than of joy. And yet the world goes on. Who knows why?

This time, however, there was no shock of sorrow to be faced: in fact, the few words it contained (“Could not bring myself to write. Come soon. Always welcome. A letter follows this. Arthur.”) seemed so like Arthur himself speaking, that it gave me quite a thrill of pleasure, and I at once began the preparations needed for the journey.

Chapter II. Love’s Curfew.

“Fayfield Junction! Change for Elveston!”

What subtle memory could there be, linked to these commonplace words, that caused such a flood of happy thoughts to fill my brain? I dismounted from the carriage in a state of joyful excitement for which I could not at first account. True, I had taken this very journey, and at the same hour of the day, six months ago; but many things had happened since then, and an old man’s

memory has but a slender hold on recent events: I sought 'the missing link' in vain. Suddenly I caught sight of a bench—the only one provided on the cheerless platform—with a lady seated on it, and the whole forgotten scene flashed upon me as vividly as if it were happening over again.

"Yes," I thought. "This bare platform is, for me, rich with the memory of a dear friend! She was sitting on that very bench, and invited me to share it, with some quotation from Shakespeare—I forget what. I'll try the Earl's plan for the Dramatisation of Life, and fancy that figure to be Lady Muriel; and I won't undeceive myself too soon!"

So I strolled along the platform, resolutely 'making-believe' (as children say) that the casual passenger, seated on that bench, was the Lady Muriel I remembered so well. She was facing away from me, which aided the elaborate cheaterly I was practising on myself: but, though I was careful, in passing the spot, to look the other way, in order to prolong the pleasant illusion, it was inevitable that, when I turned to walk back again, I should see who it was. It was Lady Muriel herself!



'Spend it all for Minnie'

The whole scene now returned vividly to my memory; and, to make this repetition of it stranger still, there was the same old man, whom I remembered seeing so roughly ordered off, by the Station-Master, to make room for his titled passenger. The same, but 'with a difference': no longer tottering feebly along the platform, but actually seated at Lady Muriel's side, and in conversation with her! "Yes, put it in your purse," she was saying, "and remember you're to spend it all for *Minnie*. And mind you bring her something nice, that'll do her real good! And give her my love!" So intent was she on saying these words, that, although the sound of my footstep had made her lift her head and look at me, she did not at first recognise me.

I raised my hat as I approached, and then there flashed across her face a genuine look of joy, which so exactly recalled the sweet face of Sylvie, when last we met in Kensington Gardens, that I felt quite bewildered.

Rather than disturb the poor old man at her side, she rose from her seat, and joined me in my walk up and down the platform, and for a minute or two our conversation was as utterly trivial and commonplace as if we were merely two casual guests in a London drawing-room. Each of us seemed to shrink, just at first, from touching on the deeper interests which linked our lives together.

The Elveston train had drawn up at the platform, while we talked; and, in obedience to the Station-Master's obsequious hint of "This way, my Lady! Time's up!", we were making the best of our way towards the end which contained the sole first-class carriage, and were just passing the now-empty bench, when Lady Muriel noticed, lying on it, the purse in which her gift had just been so carefully bestowed, the owner of which, all unconscious of his loss, was being helped into a carriage at the other end of the train. She pounced on it instantly. "Poor old man!" she cried. "He mustn't go off, and think he's lost it!"

"Let *me* run with it! I can go quicker than you!" I said. But she was already half-way down the platform, flying ('running' is much too mundane a word for such fairy-like motion) at a pace that left all possible efforts of *mine* hopelessly in the rear.

She was back again before I had well completed my audacious boast of speed in running, and was saying, quite demurely, as we entered our carriage, "and you really think *you* could have done it quicker?"

"No indeed!" I replied. "I plead 'Guilty' of gross exaggeration, and throw myself on the mercy of the Court!"

"The Court will overlook it—for this once!" Then her manner suddenly changed from playfulness to an anxious gravity.

"You are not looking your best!" she said with an anxious glance. "In fact, I think you look *more* of an invalid than when you left us. I very much doubt if London agrees with you?"

"It *may* be the London air," I said, "or it may be the hard work—or my rather lonely life: anyhow, I've *not* been feeling very well, lately. But Elveston will soon set me up again. Arthur's prescription—he's my doctor, you know, and I heard from him this morning—is 'plenty of ozone, and new milk, and *pleasant society*'!"

"Pleasant society?" said Lady Muriel, with a pretty make-believe of considering the question. "Well, really I don't know where we can find *that* for you! We have so few neighbours. But new milk we *can* manage. Do get it of my old friend Mrs. Hunter, up there, on the hill-side. You may rely upon the *quality*. And her little Bessie comes to school every day, and passes your lodgings. So it would be very easy to send it."

"I'll follow your advice, with pleasure," I said; "and I'll go and arrange about it tomorrow. I know Arthur will want a walk."

"You'll find it quite an easy walk—under three miles, I think."

"Well, now that we've settled that point, let me retort your own remark upon yourself. I don't think *you're* looking quite your best!"

"I daresay not," she replied in a low voice; and a sudden shadow seemed to overspread her face. "I've had some troubles lately. It's a matter about which I've been long wishing to consult you, but I couldn't easily write about it. I'm *so* glad to have this opportunity!"

"Do you think," she began again, after a minute's silence, and with a visible embarrassment of manner most unusual in her, "that a promise, deliberately

and solemnly given, is *always* binding—except, of course, where its fulfilment would involve some actual *sin*?”

“I ca’n’t think of any other exception at this moment,” I said. “That branch of casuistry is usually, I believe, treated as a question of truth and untruth——”

“Surely that *is* the principle?” she eagerly interrupted. “I always thought the Bible-teaching about it consisted of such texts as ‘*lie not one to another*’?”

“I have thought about that point,” I replied; “and it seems to me that the essence of *lying* is the intention of *deceiving*. If you give a promise, fully *intending* to fulfil it, you are certainly acting truthfully *then*; and, if you afterwards break it, that does not involve any *deception*. I cannot call it *untruthful*.”

Another pause of silence ensued. Lady Muriel’s face was hard to read: she looked pleased, I thought, but also puzzled; and I felt curious to know whether her question had, as I began to suspect, some bearing on the breaking off of her engagement with Captain (now Major) Lindon.

“You have relieved me from a great fear,” she said; “but the thing is of course *wrong*, somehow. What texts would *you* quote, to prove it wrong?”

“Any that enforce the payment of *debts*. If *A* promises something to *B*, *B* has a claim upon *A*. And *A*’s sin, if he breaks his promise, seems to me more analogous to *stealing* than to *lying*.”

“It’s a new way of looking at it—to me,” she said; “but it seems a *true* way, also. However, I won’t deal in generalities, with an old friend like you! For we *are* old friends, somehow. Do you know, I think we *began* as old friends?” she said with a playfulness of tone that ill accorded with the tears that glistened in her eyes.

“Thank you very much for saying so,” I replied. “I like to think of you as an *old* friend,” (“—though you don’t look it!” would have been the almost necessary sequence, with any other lady; but she and I seemed to have long passed out of the time when compliments, or any such trivialities, were possible.)

Here the train paused at a station, where two or three passengers entered the carriage; so no more was said till we had reached our journey’s end.

On our arrival at Elveston, she readily adopted my suggestion that we should walk up together; so, as soon as our luggage had been duly taken charge of—hers by the servant who met her at the station, and mine by one of the porters—we set out together along the familiar lanes, now linked in my memory with so many delightful associations. Lady Muriel at once recommenced the conversation at the point where it had been interrupted.

“You knew of my engagement to my cousin Eric. Did you also hear——”

“Yes,” I interrupted, anxious to spare her the pain of giving any details. “I heard it had all come to an end.”

“I would like to tell you how it happened,” she said; “as that is the very point I want your advice about. I had long realised that we were not in sympathy in religious belief. His ideas of Christianity are very shadowy; and even as to the existence of a God he lives in a sort of dreamland. But it has not affected his life! I feel sure, now, that the most absolute Atheist *may* be leading, though walking blindfold, a pure and noble life. And if you knew half the good deeds——” she broke off suddenly, and turned away her head.

“I entirely agree with you,” I said. “And have we not our Saviour’s own promise that such a life shall surely lead to the light?”

“Yes, I know it,” she said in a broken voice, still keeping her head turned away. “And so I told him. He said he would believe, for *my* sake, if he could.

Quoted from
Colossians 3:9

And he wished, for *my* sake, he could see things as I did. But that is all wrong!" she went on passionately. "God *cannot* approve such low motives as that! Still it was not *I* that broke it off. I knew he loved me; and I had *promised*; and——"

"Then it was *he* that broke it off?"

"He released me unconditionally." She faced me again now, having quite recovered her usual calmness of manner.

"Then what difficulty remains?"

"It is *this*, that I don't believe he did it of his own free will. Now, supposing he did it *against* his will, merely to satisfy my scruples, would not his claim on me remain just as strong as ever? And would not my promise be as binding as ever? My father says 'no'; but I ca'n't help fearing he is biased by his love for me. And I've asked no one else. I have many friends—friends for the bright sunny weather; not friends for the clouds and storms of life; not *old* friends like you!"

"Let me think a little," I said: and for some minutes we walked on in silence, while, pained to the heart at seeing the bitter trial that had come upon this pure and gentle soul, I strove in vain to see my way through the tangled skein of conflicting motives.

"If she loves him truly," (I seemed at last to grasp the clue to the problem) "is not *that*, for her, the voice of God? May she not hope that she is sent to him, even as Ananias was sent to Saul in his blindness, that he may receive his sight?" Once more I seemed to hear Arthur whispering "*What knowest thou, O wife, whether thou shalt save thy husband?*" and I broke the silence with the words "If you still love him truly——"

"I do *not*!" she hastily interrupted. "At least—not in *that* way. I *believe* I loved him when I promised; but I was very young; it is hard to know. But, whatever the feeling was, it is dead *now*. The motive on *his* side is Love: on *mine* it is—Duty!"

Again there was a long silence. The whole skein of thought was tangled worse than ever. This time *she* broke the silence. "Don't misunderstand me!" she said. "When I said my heart was not *his*, I did not mean it was any one else's! At present I feel bound to *him*; and, till I know I am absolutely free, in the sight of God, to love any other than him, I'll never even *think* of any one else—in *that* way, I mean. I would die sooner!" I had never imagined my gentle friend capable of such passionate utterances.

I ventured on no further remark until we had nearly arrived at the Hall-gate; but, the longer I reflected, the clearer it became to me that no call of Duty demanded the sacrifice—possibly of the happiness of a life—which she seemed ready to make. I tried to make this clear to *her* also, adding some warnings on the dangers that surely awaited a union in which mutual love was wanting. "The only argument for it, worth considering," I said in conclusion, "seems to be his supposed *reluctance* in releasing you from your promise. I have tried to give to that argument its *full* weight, and my conclusion is that it does *not* affect the rights of the case, or invalidate the release he has given you. My belief is that you are *entirely* free to act as *now* seems right."

"I am *very* grateful to you," she said earnestly. "Believe it, please! I ca'n't put it into proper words!" and the subject was dropped by mutual consent: and I only learned, long afterwards, that our discussion had really served to dispel the doubts that had harassed her so long.

We parted at the Hall-gate, and I found Arthur eagerly awaiting my arrival;

Quoted from 1
Corinthians 7:16

and, before we parted for the night, I had heard the whole story—how he had put off his journey from day to day, feeling that he *could* not go away from the place till his fate had been irrevocably settled by the wedding taking place: how the preparations for the wedding, and the excitement in the neighbourhood, had suddenly come to an end, and he had learned (from Major Lindon, who called to wish him good-bye) that the engagement had been broken off by mutual consent: how he had instantly abandoned all his plans for going abroad, and had decided to stay on at Elveston, for a year or two at any rate, till his newly-awakened hopes should prove true or false; and how, since that memorable day, he had avoided all meetings with Lady Muriel, fearing to betray his feelings before he had had any sufficient evidence as to how she regarded him. “But it is nearly six weeks since all that happened,” he said in conclusion, “and we can meet in the ordinary way, now, with no need for any painful allusions. I would have written to tell you all this: only I kept hoping from day to day, that—that there would be *more* to tell!”

“And how should there be *more*, you foolish fellow,” I fondly urged, “if you never even go near her? Do you expect the offer to come from *her*?”

Arthur was betrayed into a smile. “No,” he said, “I hardly expect *that*. But I’m a desperate coward. There’s no doubt about it!”

“And what *reasons* have you heard of for breaking off the engagement?”

“A good many,” Arthur replied, and proceeded to count them on his fingers. “First, it was found that she was dying of—something; so *he* broke it off. Then it was found that *he* was dying of—some other thing; so *she* broke it off. Then the Major turned out to be a confirmed gamester; so the *Earl* broke it off. Then the Earl insulted him; so the *Major* broke it off. It got a good deal broken off, all things considered!”

“You have all this on the very best authority, of course?”

“Oh, certainly! And communicated in the strictest confidence! Whatever defects Elveston society suffers from, *want of information* isn’t one of them!”

“Nor *reticence*, either, it seems. But, seriously, do you know the real reason?”

“No, I’m quite in the dark.”

I did not feel that I had any right to enlighten him; so I changed the subject, to the less engrossing one of “new milk,” and we agreed that I should walk over, next day, to Hunter’s farm, Arthur undertaking to set me part of the way, after which he had to return to keep a business-engagement.

Chapter III. Streaks of Dawn.

Next day proved warm and sunny, and we started early, to enjoy the luxury of a good long chat before he would be obliged to leave me.

“This neighbourhood has more than its due proportion of the *very* poor,” I remarked, as we passed a group of hovels, too dilapidated to deserve the name of “cottages.”

“But the few rich,” Arthur replied, “give more than their due proportion of help in charity. So the balance is kept.”

“I suppose the *Earl* does a good deal?”

“He *gives* liberally; but he has not the health or strength to do more. Lady Muriel does more in the way of school-teaching and cottage-visiting than she would like me to reveal.”

“Then *she*, at least, is not one of the ‘idle mouths’ one so often meets with among the upper classes. I have sometimes thought they would have a hard time of it, if suddenly called on to give their *raison d’être*, and to show cause why they should be allowed to live any longer!”

“The whole subject,” said Arthur, “of what we may call ‘idle mouths’ (I mean persons who absorb some of the material *wealth* of a community—in the form of food, clothes, and so on—without contributing its equivalent in the form of productive *labour*) is a complicated one, no doubt. I’ve tried to think it out. And it seemed to me that the simplest form of the problem, to start with, is a community without *money*, who buy and sell by *barter* only; and it makes it yet simpler to suppose the food and other things to be capable of *keeping* for many years without spoiling.”

“Yours is an excellent plan,” I said. “What is your solution of the problem?”

“The commonest type of ‘idle mouths,’” said Arthur, “is no doubt due to money being left by parents to their own children. So I imagined a man—either exceptionally clever, or exceptionally strong and industrious—who had contributed so much valuable labour to the needs of the community that its equivalent, in clothes, &c., was (say) five times as much as he needed for himself. We cannot deny his *absolute* right to give the superfluous wealth as he chooses. So, if he leaves *four* children behind him (say two sons and two daughters), with enough of all the necessaries of life to last them a life-time, I cannot see that the *community* is in any way wronged if they choose to do nothing in life but to ‘eat, drink, and be merry.’ Most certainly, the community could not fairly say, in reference to *them*, ‘if a man will not work, neither let him eat.’ Their reply would be crushing. ‘The labour has already been *done*, which is a fair equivalent for the food we are eating; and you have had the benefit of it. On what principle of justice can you demand *two* quotas of work for *one* quota of food?’”

Quoted from
Ecclesiastes 8:15
Quoted from 2
Thessalonians 3:10

“Yet surely,” I said, “there is something wrong *somewhere*, if these four people are well able to do useful work, and if that work is actually *needed* by the community, and they elect to sit idle?”

“I think there *is*,” said Arthur: “but it seems to me to arise from a Law of God—that every one shall do as much as he can to help others—and not from any *rights*, on the part of the community, to exact labour as an equivalent for food that has already been fairly earned.”

“I suppose the *second* form of the problem is where the ‘idle mouths’ possess *money* instead of *material* wealth?”

“Yes,” replied Arthur: “and I think the simplest case is that of *paper-money*. *Gold* is itself a form of material wealth; but a bank-note is merely a *promise* to hand over so much *material* wealth when called upon to do so. The father of these four ‘idle mouths,’ had done (let us say) five thousand pounds’ worth of useful work for the community. In return for this, the community had given him what amounted to a written promise to hand over, whenever called upon to do so, five thousand pounds’ worth of food, &c. Then, if he only uses *one* thousand pounds’ worth himself, and leaves the rest of the notes to his children, surely they have a full right to *present* these written promises, and to say ‘hand over the food, for which the equivalent labour has been already done.’ Now I think *this* case well worth stating, publicly and clearly. I should like to drive it into the heads of those Socialists who are priming our ignorant paupers with such sentiments as ‘Look at them bloated haristocrats! Doing not a stroke o’ work for

themselves, and living on the sweat of *our* brows!' I should like to *force* them to see that the *money*, which those 'haristocrats' are spending, represents so much labour *already done* for the community, and whose equivalent, in *material* wealth, is *due from the community*."

"Might not the Socialists reply 'Much of this money does not represent *honest* labour *at all*. If you could trace it back, from owner to owner, though you might begin with several legitimate steps, such as gift, or bequeathing by will, or 'value received,' you would soon reach an owner who had no moral right to it, but had got it by fraud or other crimes; and of course his successors in the line would have no better right to it than *he* had.'"

"No doubt, no doubt," Arthur replied. "But surely that involves the logical fallacy of *proving too much*? It is *quite* as applicable to *material* wealth, as it is to *money*. If we once begin to go back beyond the fact that the *present* owner of certain property came by it honestly, and to ask whether any previous owner, in past ages, got it by fraud, would *any* property be secure?"

After a minute's thought, I felt obliged to admit the truth of this.

"My general conclusion," Arthur continued, "from the mere standpoint of human *rights*, man against man, was this—that if some wealthy 'idle mouth,' who has come by his money in a lawful way, even though not one atom of the labour it represents has been his own doing, chooses to spend it on his own needs, without contributing any labour to the community from whom he buys his food and clothes, that community has no *right* to interfere with him. But it's quite another thing, when we come to consider the *divine* law. Measured by *that* standard, such a man is undoubtedly doing wrong, if he fails to use, for the good of those in need, the strength or the skill, that God has given him. That strength and skill do *not* belong to the community, to be paid to *them* as a *debt*: they do *not* belong to the man *himself*, to be used for his *own* enjoyment: they *do* belong to God, to be used according to *His* will; and we are not left in doubt as to what that will is. '*Do good, and lend, hoping for nothing again.*'"

"Anyhow," I said, "an 'idle mouth' very often gives away a great deal in charity."

"In *so-called* 'charity,'" he corrected me. "Excuse me if I seem to speak *uncharitably*. I would not dream of *applying* the term to any *individual*. But I would say, *generally*, that a man who gratifies every fancy that occurs to him—denying himself in *nothing*—and merely gives to the poor some part, or even *all*, of his *superfluous* wealth, is only deceiving himself if he calls it *charity*."

"But, even in giving away *superfluous* wealth, he *may* be denying himself the miser's pleasure in hoarding?"

"I grant you that, gladly," said Arthur. "Given that he *has* that morbid craving, he is doing a good deed in restraining it."

"But, even in spending on *himself*," I persisted, "our typical rich man often does good, by employing people who would otherwise be out of work: and that is often better than pauperising them by *giving* the money."

"I'm glad you've said that!" said Arthur. "I would not like to quit the subject without exposing the *two* fallacies of that statement—which have gone so long uncontradicted that Society now accepts it as an axiom!"

"What are they?" I said. "I don't even see *one*, myself."

"One is merely the fallacy of *ambiguity*—the assumption that '*doing good*' (that is, benefiting somebody) is necessarily *a good thing to do* (that is, a *right* thing). The other is the assumption that, if one of two specified acts is *better*

Quoted from Luke
6:35

than another, it is necessarily a *good* act in itself. I should like to call this the fallacy of *comparison*—meaning that it assumes that what is *comparatively* good is therefore *positively* good.”

“Then what is *your* test of a good act?”

“That it shall be *our best*,” Arthur confidently replied. “And even *then* ‘*we are unprofitable servants.*’ But let me illustrate the two fallacies. Nothing illustrates a fallacy so well as an extreme case, which fairly comes under it. Suppose I find two children drowning in a pond. I rush in, and save one of the children, and then walk away, leaving the other to drown. Clearly I have ‘*done good*,’ in saving a child’s life? But——. Again, supposing I meet an inoffensive stranger, and knock him down, and walk on. Clearly that is ‘*better*’ than if I had proceeded to jump upon him and break his ribs? But——”

“Those ‘buts’ are quite unanswerable,” I said. “But I should like an instance from *real* life.”

“Well, let us take one of those abominations of modern Society, a Charity-Bazaar. It’s an interesting question to think out—how much of the money, that reaches the object in view, is *genuine* charity; and whether even *that* is spent in the *best* way. But the subject needs regular classification, and analysis, to understand it properly.”

“I should be glad to *have* it analysed,” I said: “it has often puzzled me.”

“Well, if I am really not boring you. Let us suppose our Charity-Bazaar to have been organised to aid the funds of some Hospital: and that A, B, C *give* their services in making articles to sell, and in acting as salesmen, while X, Y, Z buy the articles, and the money so paid goes to the Hospital.

“There are two distinct species of such Bazaars: one, where the payment exacted is merely the *market-value* of the goods supplied, that is, exactly what you would have to pay at a shop: the other, where *fancy-prices* are asked. We must take these separately.

“First, the ‘market-value’ case. Here A, B, C are exactly in the same position as ordinary shopkeepers; the only difference being that they give the proceeds to the Hospital. Practically, they are *giving their skilled labour* for the benefit of the Hospital. This seems to me to be genuine charity. And I don’t see how they could use it better. But X, Y, Z, are exactly in the same position as any ordinary purchasers of goods. To talk of ‘charity’ in connection with *their* share of the business, is sheer nonsense. Yet they are very likely to do so.

“Secondly, the case of ‘fancy-prices.’ Here I think the simplest plan is to divide the payment into two parts, the ‘market-value’ and the excess over that. The ‘market-value’ part is on the same footing as in the first case: the *excess* is all we have to consider. Well, A, B, C do not *earn* it; so we may put *them* out of the question: it is a *gift*, from X, Y, Z, to the Hospital. And my opinion is that it is not given in the best way: far better buy what they choose to *buy*, and give what they choose to *give*, as two *separate* transactions: then there is *some* chance that their motive in giving may be real charity, instead of a mixed motive—half charity, half self-pleasing. ‘The trail of the serpent is over it all.’ And *therefore* it is that I hold all such spurious ‘Charities’ in *utter* abomination!” He ended with unusual energy, and savagely beheaded, with his stick, a tall thistle at the road-side, behind which I was startled to see Sylvie and Bruno standing. I caught at his arm, but too late to stop him. Whether the stick reached them, or not, I could not feel sure: at any rate they took not the smallest notice of it, but smiled gaily, and nodded to me; and I saw at once that

Quoted from Luke
17:10

Quoted from *Lalla
Rookh* by Thomas
Moore

they were only visible to *me*: the ‘erie’ influence had not reached to *Arthur*.

“Why did you try to save it?” he said. “*That’s* not the wheedling Secretary of a Charity-Bazaar! I only wish it were!” he added grimly.

“Doos oo know, that stick went right froo my head!” said Bruno. (They had run round to me by this time, and each had secured a hand.) “Just under my chin! I *are* glad I aren’t a thistle!”

“Well, we’ve threshed *that* subject out, anyhow!” Arthur resumed. “I’m afraid I’ve been talking too much, for *your* patience and for my strength. I must be turning soon. This is about the end of my tether.”

“Take, O boatman, thrice thy fee;
Take, I give it willingly;
For, invisible to thee,
Spirits twain have crossed with me!”

Quoted from *The Passage (Auf der Überfahrt)* by Ludwig Uhland

I quoted, involuntarily.

“For utterly inappropriate and irrelevant quotations,” laughed Arthur, “you are ‘ekalled by few, and excelled by none’!” And we strolled on.

As we passed the head of the lane that led down to the beach, I noticed a single figure, moving slowly along it, seawards. She was a good way off, and had her back to us: but it was Lady Muriel, unmistakably. Knowing that Arthur had not seen her, as he had been looking, in the other direction, at a gathering rain-cloud, I made no remark, but tried to think of some plausible pretext for sending him back by the sea.

The opportunity instantly presented itself. “I’m getting tired,” he said. “I don’t think it would be prudent to go further. I had better turn here.”

I turned with him, for a few steps, and as we again approached the head of the lane, I said, as carelessly as I could, “Don’t go back by the road. It’s too hot and dusty. Down this lane, and along the beach, is nearly as short; and you’ll get a breeze off the sea.”

“Yes, I think I will,” Arthur began; but at that moment we came into sight of Lady Muriel, and he checked himself. “No, it’s too far round. Yet it certainly *would* be cooler——” He stood, hesitating, looking first one way and then the other—a melancholy picture of utter infirmity of purpose!

How long this humiliating scene would have continued, if *I* had been the only external influence, it is impossible to say; for at this moment Sylvie, with a swift decision worthy of Napoleon himself, took the matter into her own hands. “You go and drive *her*, up this way,” she said to Bruno. “I’ll get *him* along!” And she took hold of the stick that Arthur was carrying, and gently pulled him down the lane.

He was totally unconscious that any will but his own was acting on the stick, and appeared to think it had taken a horizontal position simply because he was pointing with it. “Are not those *orchises* under the hedge there?” he said. “I think that decides me. I’ll gather some as I go along.”

Meanwhile Bruno had run on beyond Lady Muriel, and, with much jumping about and shouting (shouts audible to no one but Sylvie and myself), much as if he were driving sheep, he managed to turn her round and make her walk, with eyes demurely cast upon the ground, in our direction.

The victory was ours! And, since it was evident that the lovers, thus urged together, *must* meet in another minute, I turned and walked on, hoping that

Quoted from *Dombey and Son* by Charles Dickens



'Are not those orchises?'

Sylvie and Bruno would follow my example, as I felt sure that the fewer the spectators the better it would be for Arthur and his good angel.

“And what sort of meeting was it?” I wondered, as I paced dreamily on.

Chapter IV. The Dog-King.

“They shook hands,” said Bruno, who was trotting at my side, in answer to the unspoken question.

“And they looked *ever* so pleased!” Sylvie added from the other side.

“Well, we must get on, now, as quick as we can,” I said. “If only I knew the best way to Hunter’s farm!”

“They’ll be sure to know in this cottage,” said Sylvie.

“Yes, I suppose they will. Bruno, would you run in and ask?”

Sylvie stopped him, laughingly, as he ran off. “Wait a minute,” she said. “I must make you *visible* first, you know.”

“And *audible* too, I suppose?” I said, as she took the jewel, that hung round her neck, and waved it over his head, and touched his eyes and lips with it.

“Yes,” said Sylvie: “and *once*, do you know, I made him *audible*, and forgot to make him *visible*! And he went to buy some sweeties in a shop. And the man *was* so frightened! A voice seemed to come out of the air, ‘Please, I want two ounces of barley-sugar drops!’ And a shilling came *bang* down upon the counter! And the man said ‘I ca’n’t *see* you!’ And Bruno said ‘It doosn’t sinnify seeing *me*, so long as oo can see the *shilling*!’ But the man said he never sold barley-sugar drops to people he couldn’t *see*. So we had to—*Now*, Bruno, you’re ready!’ And away he trotted.

Sylvie spent the time, while we were waiting for him, in making *herself* visible also. “It’s rather awkward, you know,” she explained to me, “when we meet people, and they can see *one* of us, and ca’n’t see the *other*!”

In a minute or two Bruno returned, looking rather disconsolate. “He’d got friends with him, and he were *cross*!” he said. “He asked me who I were. And I said ‘I’m Bruno: who is *these* peoples?’ And he said ‘One’s my half-brother, and t’other’s my half-sister: and I don’t want no more company! Go along with yer!’ And I said ‘I ca’n’t go along *wizout* mine self!’ And I said ‘Oo shouldn’t have *bits* of peoples lying about like that! It’s welly untidy!’ And he said ‘Oh, don’t talk to *me*!’ And he pushted me outside! And he shutted the door!”

“And you never asked where Hunter’s farm was?” queried Sylvie.

“Hadn’t room for any questions,” said Bruno. “The room were so crowded.”

“Three people *couldn’t* crowd a room,” said Sylvie.

“They *did*, though,” Bruno persisted. “*He* crowded it most. He’s such a welly *thick* man—so as oo couldn’t knock him down.”

I failed to see the drift of Bruno’s argument. “Surely *anybody* could be knocked down,” I said: “thick or thin wouldn’t matter.”

“Oo couldn’t knock *him* down,” said Bruno. “He’s more wider than he’s high: so, when he’s lying down, he’s more higher than when he’s standing: so a-course oo couldn’t knock him *down*!”

“Here’s another cottage,” I said: “*I’ll* ask the way, *this* time.”

There was no need to go in, this time, as the woman was standing in the doorway, with a baby in her arms, talking to a respectably dressed man—a farmer, as I guessed—who seemed to be on his way to the town.

“—and when there’s *drink* to be had,” he was saying, “he’s just the worst o’ the lot, is your Willie. So they tell me. He gets fairly mad wi’ it!”

“I’d have given ’em the lie to their faces, a twelvemonth back!” the woman said in a broken voice. “But a’ canna noo! A’ canna noo!” She checked herself, on catching sight of us, and hastily retreated into the house, shutting the door after her.

“Perhaps you can tell me where Hunter’s farm is?” I said to the man, as he turned away from the house.

“I can *that*, Sir!” he replied with a smile. “I’m John Hunter hissel, at your sarvice. It’s nobbut half a mile further—the only house in sight, when you get round bend o’ the road yonder. You’ll find my good woman within, if so be you’ve business wi’ *her*. Or mebbe I’ll do as well?”

“Thanks,” I said. “I want to order some milk. Perhaps I had better arrange it with your wife?”

“Aye,” said the man. “*She* minds all *that*. Good day t’ye, Master—and to your bonnie childer, as well!” And he trudged on.

“He should have said ‘*child*,’ not ‘*childer*,’” said Bruno. “Sylvie’s not a *childer*!”

“He meant *both* of us,” said Sylvie.

“No, he didn’t!” Bruno persisted. “’cause he said ‘bonnie’, oo know!”

“Well, at any rate he *looked* at us both,” Sylvie maintained.

“Well, then he *must* have seen we’re not *both* bonnie!” Bruno retorted. “*A-course* I’m much uglier than *oo*! Didn’t he mean *Sylvie*, Mister Sir?” he shouted over his shoulder, as he ran off.

But there was no use in replying, as he had already vanished round the bend of the road. When we overtook him he was climbing a gate, and was gazing earnestly into the field, where a horse, a cow, and a kid were browsing amicably together. “For its father, a *Horse*,” he murmured to himself. “For its mother, a *Cow*. For their dear little child, a *little* Goat, is the most curiousest thing I ever seen in my world!”

“Bruno’s World!” I pondered. “Yes, I suppose every child has a world of his own—and every man, too, for the matter of that. I wonder if *that’s* the cause for all the misunderstanding there is in Life?”

“That *must* be Hunter’s farm!” said Sylvie, pointing to a house on the brow of the hill, led up to by a cart-road. “There’s no other farm in sight, *this* way; and you *said* we must be nearly there by this time.”

I had *thought* it, while Bruno was climbing the gate, but I couldn’t remember having *said* it. However, Sylvie was evidently in the right. “Get down, Bruno,” I said, “and open the gate for us.”

“It’s a good thing we’s with oo, *isn’t* it, Mister Sir?” said Bruno, as we entered the field. “That big dog might have bited oo, if oo’d been alone! Oo needn’t be *frightened* of it!” he whispered, clinging tight to my hand to encourage me. “It aren’t fierce!”

“Fierce!” Sylvie scornfully echoed, as the dog—a magnificent Newfoundland—that had come galloping down the field to meet us, began curveting round us, in gambols full of graceful beauty, and welcoming us with short joyful barks. “Fierce! Why, it’s as gentle as a lamb! It’s—why, Bruno, don’t you know it? It’s——”

“So it *are*!” cried Bruno, rushing forwards and throwing his arms round its neck. “Oh, you *dear* dog!” And it seemed as if the two children would never

have done hugging and stroking it.

“And how *ever* did he get *here*?” said Bruno. “Ask him, Sylvie. I doosn’t know how.”

And then began an eager talk in Doggee, which of course was lost upon *me*; and I could only *guess*, when the beautiful creature, with a sly glance at me, whispered something in Sylvie’s ear, that *I* was now the subject of conversation. Sylvie looked round laughingly.

“He asked me who you are,” she explained. “And I said ‘He’s our *friend*.’ And he said ‘What’s his name?’ And I said ‘It’s *Mister Sir*.’ And he said ‘Bosh!’”

“What is ‘Bosh!’ in Doggee?” I enquired.

“It’s the same as in English,” said Sylvie. “Only, when a *dog* says it, it’s a sort of a whisper, that’s half a *cough* and half a *bark*. Nero, say ‘*Bosh!*’”

And Nero, who had now begun gamboling round us again, said “*Bosh!*” several times; and I found that Sylvie’s description of the sound was perfectly accurate.

“I wonder what’s behind this long wall?” I said, as we walked on.

“It’s the *Orchard*,” Sylvie replied, after a consultation with Nero. “See, there’s a boy getting down off the wall, at that far corner. And now he’s running away across the field. I do believe he’s been stealing the apples!”

Bruno set off after him, but returned to us in a few moments, as he had evidently no chance of overtaking the young rascal.

“I couldn’t catch him!” he said. “I wiss I’d started a little sooner. His pockets *was* full of apples!”

The Dog-King looked up at Sylvie, and said something in Doggee.

“Why, of *course* you can!” Sylvie exclaimed. “How stupid not to think of it! *Nero*’ll hold him for us, Bruno! But I’d better make him invisible, first.” And she hastily got out the Magic Jewel, and began waving it over Nero’s head, and down along his back.

“That’ll do!” cried Bruno, impatiently. “After him, good Doggie!”

“Oh, Bruno!” Sylvie exclaimed reproachfully. “You shouldn’t have sent him off so quick! I hadn’t done the tail!”

Meanwhile Nero was coursing like a greyhound down the field: so at least I concluded from all *I* could see of him—the long feathery tail, which floated like a meteor through the air—and in a very few seconds he had come up with the little thief.

“He’s got him safe, by one foot!” cried Sylvie, who was eagerly watching the chase. “Now there’s no hurry, Bruno!”

So we walked, quite leisurely, down the field, to where the frightened lad stood. A more curious sight I had seldom seen, in all my ‘eerie’ experiences. Every bit of him was in violent action, except the left foot, which was apparently glued to the ground—there being nothing visibly holding it: while, at some little distance, the long feathery tail was waving gracefully from side to side, showing that Nero, at least, regarded the whole affair as nothing but a magnificent game of play.

“What’s the matter with you?” I said, as gravely as I could.

“Got the crahmp in me ahnkle!” the thief groaned in reply. “An’ me fut’s gone to sleep!” And he began to blubber aloud.

“Now, look here!” Bruno said in a commanding tone, getting in front of him. “Oo’ve got to give up those apples!”

The lad glanced at me, but didn't seem to reckon *my* interference as worth anything. Then he glanced at Sylvie: *she* clearly didn't count for very much, either. Then he took courage. "It'll take a better man than any of *yer* to get 'em!" he retorted defiantly.



A royal thief-taker

Sylvie stooped and patted the invisible Nero. "A *little* tighter!" she whispered. And a sharp yell from the ragged boy showed how promptly the Dog-King had taken the hint.

"What's the matter *now*?" I said. "Is your ankle worse?"

"And it'll get worse, and worse, and worse," Bruno solemnly assured him, "till oo gives up those apples!"

Apparently the thief was convinced of this at last, and he sulkily began emptying his pockets of the apples. The children watched from a little distance, Bruno dancing with delight at every fresh yell extracted from Nero's terrified prisoner.

"That's all," the boy said at last.

"It *isn't* all!" cried Bruno. "There's three more in that pocket!"

Another hint from Sylvie to the Dog-King—another sharp yell from the thief, now convicted of lying also—and the remaining three apples were surrendered.

"Let him go, please," Sylvie said in Doggee, and the lad limped away at a great pace, stooping now and then to rub the ailing ankle, in fear, seemingly, that the 'crahmp' might attack it again.

Bruno ran back, with his booty, to the orchard wall, and pitched the apples over it one by one. "I's welly afraid *some* of them's gone under the wrong trees!" he panted, on overtaking us again.

"The *wrong* trees!" laughed Sylvie. "Trees *ca'n't* do wrong! There's no such things as *wrong* trees!"

"Then there's no such things as *right* trees, neither!" cried Bruno. And Sylvie gave up the point.

"Wait a minute, please!" she said to me. "I must make Nero *visible*, you know!"

"No, *please* don't!" cried Bruno, who had by this time mounted on the Royal back, and was twisting the Royal hair into a bridle. "It'll be *such* fun to have him like this!"



'Summat wrong wi' my spectacles!

"Well, it *does* look funny," Sylvie admitted, and led the way to the farmhouse, where the farmer's wife stood, evidently much perplexed at the weird procession now approaching her. "It's summat gone wrong wi' my spectacles, I doubt!" she murmured, as she took them off, and began diligently rubbing them with a corner of her apron.

Meanwhile Sylvie had hastily pulled Bruno down from his steed, and had just time to make His Majesty wholly visible before the spectacles were resumed.

All was natural, now; but the good woman still looked a little uneasy about it. "My eyesight's getting bad," she said, "but I see you *now*, my darlings! You'll give me a kiss, wo'n't you?"

Bruno got behind me, in a moment: however Sylvie put up *her* face, to be kissed, as representative of *both*, and we all went in together.

Chapter V. Matilda Jane.

"Come to me, my little gentleman," said our hostess, lifting Bruno into her lap, "and tell me everything."

"I ca'n't," said Bruno. "There wouldn't be time. Besides, I don't *know* everything."

The good woman looked a little puzzled, and turned to Sylvie for help. "Does he like *riding*?" she asked.

"Yes, I *think* so," Sylvie gently replied. "He's just had a ride on *Nero*."

"Ah, Nero's a grand dog, isn't he? Were you ever outside a *horse*, my little man?"

"*Always!*" Bruno said with great decision. "Never was *inside* one. Was *oo*?"

Here I thought it well to interpose, and to mention the business on which we had come, and so relieved her, for a few minutes, from Bruno's perplexing questions.

"And those dear children will like a bit of cake, *I'll* warrant!" said the farmer's hospitable wife, when the business was concluded, as she opened her cupboard, and brought out a cake. "And don't you waste the crust, little gentleman!" she added, as she handed a good slice of it to Bruno. "You know what the poetry-book says about wilful waste?"

"No, I don't," said Bruno. "What does he say about it?"

"Tell him, Bessie!" And the mother looked down, proudly and lovingly, on a rosy little maiden, who had just crept shyly into the room, and was leaning against her knee. "What's that your poetry-book says about wilful waste?"

"*For wilful waste makes woeful want,*" Bessie recited, in an almost inaudible whisper: "*and you may live to say 'How much I wish I had the crust that then I threw away!'*"

"Now try if *you* can say it, my dear! *For wilful—*"

"*For wifful—sumfinoruvver—*" Bruno began, readily enough; and then there came a dead pause. "Ca'n't remember no more!"

"Well, what do you *learn* from it, then? You can tell us *that*, at any rate?"

Bruno ate a little more cake, and considered: but the moral did not seem to him to be a very obvious one.

"Always to——" Sylvie prompted him in a whisper.

"Always to——" Bruno softly repeated: and then, with sudden inspiration, "always to look where it goes to!"

"Where *what* goes to, darling?"

"Why the *crust*, a course!" said Bruno. "Then, if I lived to say '*How much I wiss I had the crust—*' (and all that), I'd know where I frew it to!"

This new interpretation quite puzzled the good woman. She returned to the subject of 'Bessie.' "Wouldn't you like to see Bessie's doll, my dears! Bessie, take the little lady and gentleman to see Matilda Jane!"

Bessie's shyness thawed away in a moment. "Matilda Jane has just woke up," she stated, confidentially, to Sylvie. "Wo'n't you help me on with her frock? Them strings *is* such a bother to tie!"

"I can tie *strings*," we heard, in Sylvie's gentle voice, as the two little girls left the room together. Bruno ignored the whole proceeding, and strolled to the window, quite with the air of a fashionable gentleman. Little girls, and dolls, were not at all in his line.

And forthwith the fond mother proceeded to tell me (as what mother is not ready to do?) of all Bessie's virtues (and vices too, for the matter of that) and of the many fearful maladies which, notwithstanding those ruddy cheeks and that plump little figure, had nearly, time and again, swept her from the face of the earth.

When the full stream of loving memories had nearly run itself out, I began to question her about the working men of that neighbourhood, and specially the 'Willie,' whom we had heard of at his cottage. "He was a good fellow once," said my kind hostess: "but it's the drink has ruined him! Not that I'd rob them of the drink—it's good for the most of them—but there's some as is too weak to stand agin' temptations: it's a thousand pities, for *them*, as they ever built the Golden Lion at the corner there!"

"The Golden Lion?" I repeated.

"It's the new Public," my hostess explained. "And it stands right in the way, and handy for the workmen, as they come back from the brickfields, as it might be to-day, with their week's wages. A deal of money gets wasted that way. And some of 'em gets drunk."

"If only they could have it in their own houses——" I mused, hardly knowing I had said the words out loud.

"That's it!" she eagerly exclaimed. It was evidently a solution, of the problem, that she had already thought out. "If only you could manage, so's each

Quoted from *The Crust of Bread* by James Currie

man to have his own little barrel in his own house—there'd hardly be a drunken man in the length and breadth of the land!"

And then I told her the old story—about a certain cottager who bought himself a little barrel of beer, and installed his wife as bar-keeper: and how, every time he wanted his mug of beer, he regularly paid her over the counter for it: and how she never would let him go on 'tick,' and was a perfectly inflexible bar-keeper in never letting him have more than his proper allowance: and how, every time the barrel needed refilling, she had plenty to do it with, and something over for her money-box: and how, at the end of the year, he not only found himself in first-rate health and spirits, with that undefinable but quite unmistakeable air which always distinguishes the sober man from the one who takes 'a drop too much,' but had quite a box full of money, all saved out of his own pence!

"If only they'd all do like that!" said the good woman, wiping her eyes, which were overflowing with kindly sympathy. "Drink hadn't need to be the curse it is to some——"

"Only a *curse*," I said, "when it is used wrongly. Any of God's gifts may be turned into a curse, unless we use it wisely. But we must be getting home. Would you call the little girls? Matilda Jane has seen enough of company, for *one* day, I'm sure!"

"I'll find 'em in a minute," said my hostess, as she rose to leave the room. "Maybe that young gentleman saw which way they went?"

"Where are they, Bruno?" I said.

"They ain't in the field," was Bruno's rather evasive reply, "'cause there's nothing but *pigs* there, and Sylvie isn't a pig. Now don't imperrupt me any more, 'cause I'm telling a story to this fly; and it won't attend!"

"They're among the apples, I'll warrant 'em!" said the Farmer's wife. So we left Bruno to finish his story, and went out into the orchard, where we soon came upon the children, walking sedately side by side, Sylvie carrying the doll, while little Bess carefully shaded its face, with a large cabbage-leaf for a parasol.

As soon as they caught sight of us, little Bess dropped her cabbage-leaf and came running to meet us, Sylvie following more slowly, as her precious charge evidently needed great care and attention.

"I'm its Mamma, and Sylvie's the Head-Nurse," Bessie explained: "and Sylvie's taught me ever such a pretty song, for me to sing to Matilda Jane!"

"Let's hear it once more, Sylvie," I said, delighted at getting the chance I had long wished for, of hearing her sing. But Sylvie turned shy and frightened in a moment. "No, *please* not!" she said, in an earnest 'aside' to me. "Bessie knows it quite perfect now. Bessie can sing it!"

"Aye, aye! Let Bessie sing it!" said the proud mother. "Bessie has a bonny voice of her own," (this again was an 'aside' to me) "though I say it as shouldn't!"

Bessie was only too happy to accept the 'encore.' So the plump little Mamma sat down at our feet, with her hideous daughter reclining stiffly across her lap (it was one of a kind that wo'n't sit down, under *any* amount of persuasion), and, with a face simply beaming with delight, began the lullaby, in a shout that *ought* to have frightened the poor baby into fits. The Head-Nurse crouched down behind her, keeping herself respectfully in the back-ground, with her hands on the shoulders of her little mistress, so as to be ready to act as Prompter, if required, and to supply '*each gap in faithless memory void.*'

The shout, with which she began, proved to be only a momentary effort. After a very few notes, Bessie toned down, and sang on in a small but very

Quoted from *The Lay of the Last Minstrel*
by Walter Scott



Bessie's song

sweet voice. At first her great black eyes were fixed on her mother, but soon her gaze wandered upwards, among the apples, and she seemed to have quite forgotten that she had any other audience than her Baby, and her Head-Nurse, who once or twice supplied, almost inaudibly, the right note, when the singer was getting a little 'flat.'

"Matilda Jane, you never look
At any toy or picture-book:
I show you pretty things in vain—
You must be blind, Matilda Jane!

"I ask you riddles, tell you tales,
But *all* our conversation fails:
You *never* answer me again—
I fear you're dumb, Matilda Jane!

"Matilda, darling, when I call,
You never seem to hear at all:
I shout with all my might and main—
But you're *so* deaf, Matilda Jane!

"Matilda Jane, you needn't mind;
For, though you're deaf, and dumb, and blind,
There's *some one* loves you, it is plain—
And that is *me*, Matilda Jane!"

She sang three of the verses in a rather perfunctory style, but the last stanza evidently excited the little maiden. Her voice rose, ever clearer and louder: she had a rapt look on her face, as if suddenly inspired, and, as she sang the last few words, she clasped to her heart the inattentive Matilda Jane.

"Kiss it now!" prompted the Head-Nurse. And in a moment the simpering meaningless face of the Baby was covered with a shower of passionate kisses.

"What a bonny song!" cried the Farmer's wife. "Who made the words, dearie?"

"I—I think I'll look for Bruno," Sylvie said demurely, and left us hastily. The curious child seemed always afraid of being praised, or even noticed.

"Sylvie planned the words," Bessie informed us, proud of her superior information: "and Bruno planned the music—and *I* sang it!" (this last circumstance, by the way, we did not need to be told).

So we followed Sylvie, and all entered the parlour together. Bruno was still standing at the window, with his elbows on the sill. He had, apparently, finished the story that he was telling to the fly, and had found a new occupation. "Don't interrupt!" he said as we came in. "I'm counting the Pigs in the field!"

"How many are there?" I enquired.

"About a thousand and four," said Bruno.

"You mean 'about a thousand,'" Sylvie corrected him. "There's no good saying '*and four*': you *ca'n't* be sure about the four!"

"And you're as wrong as ever!" Bruno exclaimed triumphantly. "It's just the *four* I *can* be sure about; 'cause they're here, grubbling under the window! It's the *thousand* I isn't pruffickly sure about!"

"But some of them have gone into the sty," Sylvie said, leaning over him to look out of the window.

"Yes," said Bruno; "but they went so slowly and so fewly, I didn't care to count *them*."

"We must be going, children," I said. "Wish Bessie good-bye." Sylvie flung her arms round the little maiden's neck, and kissed her: but Bruno stood aloof, looking unusually shy. ("I never kiss *nobody* but Sylvie!" he explained to me afterwards.) The farmer's wife showed us out: and we were soon on our way back to Elveston.

"And that's the new public-house that we were talking about, I suppose?" I said, as we came in sight of a long low building, with the words 'THE GOLDEN LION' over the door.

"Yes, that's it," said Sylvie. "I wonder if *her* Willie's inside? Run in, Bruno, and see if he's there."

I interposed, feeling that Bruno was, in a sort of way, in *my* care. "That's not a place to send a child into." For already the revelers were getting noisy: and a wild discord of singing, shouting, and meaningless laughter came to us through the open windows.

"They wo'n't *see* him, you know," Sylvie explained. "Wait a minute, Bruno!" She clasped the jewel, that always hung round her neck, between the palms of her hands, and muttered a few words to herself. What they were I could not at all make out, but some mysterious change seemed instantly to pass over us. My feet seemed to me no longer to press the ground, and the dream-like feeling came upon me, that I was suddenly endowed with the power of floating in the air. I could still just *see* the children: but their forms were shadowy and unsubstantial, and their voices sounded as if they came from some distant

place and time, they were so unreal. However, I offered no further opposition to Bruno's going into the house. He was back again in a few moments. "No, he isn't come yet," he said. "They're talking about him inside, and saying how drunk he was last week."

While he was speaking, one of the men lounged out through the door, a pipe in one hand and a mug of beer in the other, and crossed to where we were standing, so as to get a better view along the road. Two or three others leaned out through the open window, each holding his mug of beer, with red faces and sleepy eyes. "Canst see him, lad?" one of them asked.

"I dunnot know," the man said, taking a step forwards, which brought us nearly face to face. Sylvie hastily pulled me out of his way. "Thanks, child," I said. "I had forgotten he couldn't see us. What would have happened if I had staid in his way?"

"I don't know," Sylvie said gravely. "It wouldn't matter to *us*; but *you* may be different." She said this in her usual voice, but the man took no sort of notice, though she was standing close in front of him, and looking up into his face as she spoke.

"He's coming now!" cried Bruno, pointing down the road.

"He be a-coomin noo!" echoed the man, stretching out his arm exactly over Bruno's head, and pointing with his pipe.

"Then *chorus* agin!" was shouted out by one of the red-faced men in the window: and forthwith a dozen voices yelled, to a harsh discordant melody, the refrain:—

"There's him, an' yo' an' me,
Roarin' laddies!
We loves a bit o' spree,
Roarin' laddies we,
Roarin' laddies
Roarin' laddies!"

The man lounged back again to the house, joining lustily in the chorus as he went: so that only the children and I were in the road when 'Willie' came up.

Chapter VI. Willie's Wife.

He made for the door of the public-house, but the children intercepted him. Sylvie clung to one arm; while Bruno, on the opposite side, was pushing him with all his strength, with many inarticulate cries of "Gee-up! Gee-back! Woah then!" which he had picked up from the waggoners.

'Willie' took not the least notice of them: he was simply conscious that *something* had checked him: and, for want of any other way of accounting for it, he seemed to regard it as his own act.

"I wunnut coom in," he said: "not to-day."

"A mug o' beer wunnut hurt 'ee!" his friends shouted in chorus. "*Two* mugs wunnut hurt 'ee! Nor a dozen mugs!"

"Nay," said Willie. "I'm agoan whoam."

"What, withouten thy drink, Willie man?" shouted the others. But 'Willie man' would have no more discussion, and turned doggedly away, the children keeping one on each side of him, to guard him against any change in his sudden resolution.



The rescue of Willie

For a while he walked on stoutly enough, keeping his hands in his pockets, and softly whistling a tune, in time to his heavy tread: his success, in appearing entirely at his ease, was *almost* complete; but a careful observer would have noted that he had forgotten the second part of the air, and that, when it broke down, he instantly began it again, being too nervous to think of another, and too restless to endure silence.

It was not the old fear that possessed him now—the old fear, that had been his dreary companion every Saturday night he could remember, as he had reeled along, steadying himself against gates and garden-palings, and when the shrill reproaches of his wife had seemed to his dazed brain only the echo of a yet more piercing voice within, the intolerable wail of a hopeless remorse: it was a wholly new fear that had come to him now: life had taken on itself a new set of colours, and was lighted up with a new and dazzling radiance, and he did not see, as yet, how his home-life, and his wife and child, would fit into the new order of things: the very novelty of it all was, to his simple mind, a perplexity and an overwhelming terror.

And now the tune died into sudden silence on the trembling lips, as he turned a sharp corner, and came in sight of his own cottage, where his wife stood, leaning with folded arms on the wicket-gate, and looking up the road with a pale face, that had in it no glimmer of the light of hope—only the heavy shadow of a deep stony despair.

“Fine an’ early, lad! Fine an’ early!” The words might have been words of welcoming, but oh, the bitterness of the tone in which she said it! “What brings thee from thy merry mates, and all the fiddling and the jigging? Pockets empty, I doubt? Or thou’st come, mebbe, for to see thy little one die? The bairnie’s clemmed, and I’ve nor bite nor sup to gie her. But what does *thou* care?” She flung the gate open, and met him with blazing eyes of fury.

The man said no word. Slowly, and with downcast eyes, he passed into the house, while she, half terrified at his strange silence, followed him in without another word; and it was not till he had sunk into a chair, with his arms crossed on the table and with drooping head, that she found her voice again.

It seemed entirely natural for us to go in with them: at another time one would have asked leave for this, but I felt, I knew not why, that we were in some mysterious way invisible, and as free to come and to go as disembodied spirits.

The child in the cradle woke up, and raised a piteous cry, which in a moment brought the children to its side: Bruno rocked the cradle, while Sylvie tenderly replaced the little head on the pillow from which it had slipped. But the mother took no heed of the cry, nor yet of the satisfied ‘*coo*’ that it set up when Sylvie had made it happy again: she only stood gazing at her husband, and vainly trying, with white quivering lips (I believe she thought he was mad), to speak in the old tones of shrill upbraiding that he knew so well.

“And thou’st spent all thy wages—I’ll swear thou hast—on the devil’s own drink—and thou’st been and made thysen a beast again—as thou allus dost—
—”

“Hasna!” the man muttered, his voice hardly rising above a whisper, as he slowly emptied his pockets on the table. “There’s th’ wage, Missus, every penny on’t.”

The woman gasped, and put one hand to her heart, as if under some great shock of surprise. “Then *how*’s thee gotten th’ drink?”

“*Hasna* gotten it,” he answered her, in a tone more sad than sullen. “I hanna

touched a drop this blessed day. No!" he cried aloud, bringing his clenched fist heavily down upon the table, and looking up at her with gleaming eyes, "nor I'll never touch another drop o' the cursed drink—till I die—so help me God my Maker!" His voice, which had suddenly risen to a hoarse shout, dropped again as suddenly: and once more he bowed his head, and buried his face in his folded arms.



Willie's wife

The woman had dropped upon her knees by the cradle, while he was speaking. She neither looked at him nor seemed to hear him. With hands clasped above her head, she rocked herself wildly to and fro. "Oh my God! Oh my God!" was all she said, over and over again.

Sylvie and Bruno gently unclasped her hands and drew them down—till she had an arm round each of them, though she took no notice of them, but knelt on with eyes gazing upwards, and lips that moved as if in silent thanksgiving. The man kept his face hidden, and uttered no sound: but one could *see* the sobs that shook him from head to foot.

After a while he raised his head—his face all wet with tears. "Polly!" he said softly; and then, louder, "Old Poll!"

Then she rose from her knees and came to him, with a dazed look, as if she were walking in her sleep. "Who was it called me old Poll?" she asked: her voice took on it a tender playfulness: her eyes sparkled; and the rosy light of Youth flushed her pale cheeks, till she looked more like a happy girl of seventeen than a worn woman of forty. "Was that my own lad, my Willie, a-waiting for me at the stile?"

His face too was transformed, in the same magic light, to the likeness of a bashful boy: and boy and girl they seemed, as he wound an arm about her, and drew her to his side, while with the other hand he thrust from him the heap of money, as though it were something hateful to the touch. "Tak it, lass," he said, "tak it all! An' fetch us summat to eat: but get a sup o' milk, first, for t' bairn."

"My *little* bairn!" she murmured as she gathered up the coins. "My own little lassie!" Then she moved to the door, and was passing out, but a sudden thought seemed to arrest her: she hastily returned—first to kneel down and kiss the sleeping child, and then to throw herself into her husband's arms and be

strained to his heart. The next moment she was on her way, taking with her a jug that hung on a peg near the door: we followed close behind.

We had not gone far before we came in sight of a swinging sign-board bearing the word 'DAIRY' on it, and here she went in, welcomed by a little curly white dog, who, not being under the 'erie' influence, saw the children, and received them with the most effusive affection. When I got inside, the dairyman was in the act of taking the money. "Is't for thysen, Missus, or for t' bairn?" he asked, when he had filled the jug, pausing with it in his hand.

"For t' *bairn*!" she said, almost reproachfully. "Think'st tha I'd touch a drop *mysen*, while as *she* hadna got her fill?"

"All right, Missus," the man replied, turning away with the jug in his hand. "Let's just mak sure it's good measure." He went back among his shelves of milk-bowls, carefully keeping his back towards her while he emptied a little measure of cream into the jug, muttering to himself "mebbe it'll hearten her up a bit, the little lassie!"

The woman never noticed the kind deed, but took back the jug with a simple "Good evening, Master," and went her way: but the children had been more observant, and, as we followed her out, Bruno remarked "That were *welly* kind: and I loves that man: and if I was welly rich I'd give him a hundred pounds—and a bun. That little grummeling dog doosn't know its business!" He referred to the dairyman's little dog, who had apparently quite forgotten the affectionate welcome he had given us on our arrival, and was now following at a respectful distance, doing his best to '*speed the parting guest*' with a shower of little shrill barks, that seemed to tread on one another's heels.

"What *is* a dog's business?" laughed Sylvie. "Dogs ca'n't keep shops and give change!"

"Sisters' businesses *isn't* to laugh at their brothers," Bruno replied with perfect gravity. "And dogs' businesses is to *bark*—not like that: it should finish one bark before it begins another: and it should—Oh Sylvie, there's some dindledums!"

And in another moment the happy children were flying across the common, racing for the patch of dandelions.

While I stood watching them, a strange dreamy feeling came upon me: a railway-platform seemed to take the place of the green sward, and, instead of the light figure of Sylvie bounding along, I seemed to see the flying form of Lady Muriel; but whether Bruno had also undergone a transformation, and had become the old man whom she was running to overtake, I was unable to judge, so instantaneously did the feeling come and go.

When I re-entered the little sitting-room which I shared with Arthur, he was standing with his back to me, looking out of the open window, and evidently had not heard me enter. A cup of tea, apparently just tasted and pushed aside, stood on the table, on the opposite side of which was a letter, just begun, with the pen lying across it: an open book lay on the sofa: the London paper occupied the easy chair; and on the little table, which stood by it, I noticed an unlighted cigar and an open box of cigar-lights: all things betokened that the Doctor, usually so methodical and so self-contained, had been trying every form of occupation, and could settle to none!

"This is very unlike *you*, Doctor!" I was beginning, but checked myself, as he turned at the sound of my voice, in sheer amazement at the wonderful change that had taken place in his appearance. Never had I seen a face so radiant

Quoted from *The Odyssey* by Homer, translated by Alexander Pope

with happiness, or eyes that sparkled with such unearthly light! “Even thus,” I thought, “must the herald-angel have looked, who brought to the shepherds, watching over their flocks by night, that sweet message of ‘*peace on earth, goodwill to men*’!”

Quoted from Luke 2:14

“Yes, dear friend!” he said, as if in answer to the question that I suppose he read in my face. “It is true! It is true!”

No need to ask *what* was true. “God bless you both!” I said, as I felt the happy tears brimming to my eyes. “You were made for each other!”

“Yes,” he said, simply, “I believe we were. And *what* a change it makes in one’s life! This isn’t the same world! That isn’t the sky I saw yesterday! Those clouds—I never saw such clouds in all my life before! They look like troops of hovering angels!”

To *me* they looked very ordinary clouds indeed: but then *I* had not fed ‘*on honey-dew, And drunk the milk of Paradise*’!

Quoted from *Kubla Khan* by Samuel Taylor Coleridge

“She wants to see you—at once,” he continued, descending suddenly to the things of earth. “She says *that* is the *one* drop yet wanting in her cup of happiness!”

“I’ll go at once,” I said, as I turned to leave the room. “Wo’n’t you come with me?”

“No, Sir!” said the Doctor, with a sudden effort—which proved an utter failure—to resume his professional manner. “Do I *look* like coming with you? Have you never heard that two is company, and——”

“Yes,” I said, “I *have* heard it: and I’m painfully aware that *I* am *Number Three*! But, *when* shall we three meet again?”

Quoted from *Macbeth* by William Shakespeare

“*When the hurly-burly’s done!*” he answered with a happy laugh, such as I had not heard from him for many a year.

Quoted from *Macbeth* by William Shakespeare

Chapter VII. Mein Herr.

So I went on my lonely way, and, on reaching the Hall, I found Lady Muriel standing at the garden-gate waiting for me.

“No need to *give* you joy, or to *wish* you joy?” I began.

“None *whatever!*” she replied, with the joyous laugh of a child. “We *give* people what they haven’t got: we *wish* for something that is yet to come. For *me*, it’s all *here!* It’s all *mine!* Dear friend,” she suddenly broke off, “do you think Heaven ever begins on *Earth*, for any of us?”

“For *some*,” I said. “For some, perhaps, who are simple and childlike. You know He said ‘of such is the Kingdom of Heaven.’”

Quoted from Matthew 19:14

Lady Muriel clasped her hands, and gazed up into the cloudless sky, with a look I had often seen in Sylvie’s eyes. “I feel as if it had begun for *me*,” she almost whispered. “I feel as if *I* were one of the happy children, whom He bid them bring near to Him, though the people would have kept them back. Yes, He has seen me in the throng. He has read the wistful longing in my eyes. He has beckoned me to Him. They have *had* to make way for me. He has taken me up in His arms. He has put His hands upon me and blessed me!” She paused, breathless in her perfect happiness.

“Yes,” I said. “I think He has!”

“You must come and speak to my father,” she went on, as we stood side by side at the gate, looking down the shady lane. But, even as she said the words, the ‘eerie’ sensation came over me like a flood: I saw the dear old Professor

approaching us, and also saw, what was stranger still, that he was visible to *Lady Muriel!*

What was to be done? Had the fairy-life been merged in the real life? Or was Lady Muriel 'eerie' also, and thus able to enter into the fairy-world along with me? The words were on my lips ("I see an old friend of mine in the lane: if you don't know him, may I introduce him to you?") when the strangest thing of all happened: Lady Muriel spoke.

"I see an old friend of mine in the lane," she said: "if you don't know him, may I introduce him to you?"

I seemed to wake out of a dream: for the 'eerie' feeling was still strong upon me, and the figure outside seemed to be changing at every moment, like one of the shapes in a kaleidoscope: now he was the *Professor*, and now he was somebody else! By the time he had reached the gate, he certainly was somebody else: and I felt that the proper course was for *Lady Muriel*, not for *me*, to introduce him. She greeted him kindly, and, opening the gate, admitted the venerable old man—a German, obviously—who looked about him with dazed eyes, as if *he*, too, had but just awaked from a dream!

No, it was certainly *not* the Professor! My old friend *could* not have grown that magnificent beard since last we met: moreover, he would have recognised *me*, for I was certain that *I* had not changed much in the time.

As it was, he simply looked at me vaguely, and took off his hat in response to Lady Muriel's words "Let me introduce Mein Herr to you"; while in the words, spoken in a strong German accent, "proud to make your acquaintance, Sir!" I could detect no trace of an idea that we had ever met before.

Lady Muriel led us to the well-known shady nook, where preparations for afternoon tea had already been made, and, while she went in to look for the Earl, we seated ourselves in two easy-chairs, and 'Mein Herr' took up Lady Muriel's work, and examined it through his large spectacles (one of the adjuncts that made him so provokingly like the Professor). "Hemming pocket-handkerchiefs?" he said, musingly. "So *that* is what the English miladies occupy themselves with, is it?"

"It is the one accomplishment," I said, "in which Man has never yet rivaled Woman!"

Here Lady Muriel returned with her father; and, after he had exchanged some friendly words with 'Mein Herr,' and we had all been supplied with the needful 'creature-comforts,' the newcomer returned to the suggestive subject of Pocket-handkerchiefs.

"You have heard of Fortunatus's Purse, Miladi? Ah, so! Would you be surprised to hear that, with three of these leetle handkerchiefs, you shall make the Purse of Fortunatus, quite soon, quite easily?"

"Shall I indeed?" Lady Muriel eagerly replied, as she took a heap of them into her lap, and threaded her needle. "*Please* tell me how, Mein Herr! I'll make one before I touch another drop of tea!"

"You shall first," said Mein Herr, possessing himself of two of the handkerchiefs, spreading one upon the other, and holding them up by two corners, "you shall first join together these upper corners, the right to the right, the left to the left; and the opening between them shall be the *mouth* of the Purse."

A very few stitches sufficed to carry out *this* direction. "Now, if I sew the other three edges together," she suggested, "the bag is complete?"

“Not so, Miladi: the *lower* edges shall *first* be joined—ah, not so!” (as she was beginning to sew them together). “Turn one of them over, and join the *right* lower corner of the one to the *left* lower corner of the other, and sew the lower edges together in what you would call *the wrong way*.”

“*I see!*” said Lady Muriel, as she deftly executed the order. “And a very twisted, uncomfortable, uncanny-looking bag it makes! But the *moral* is a lovely one. Unlimited wealth can only be attained by doing things *in the wrong way!* And how are we to join up these mysterious—no, I mean *this* mysterious opening?” (twisting the thing round and round with a puzzled air.) “Yes, it *is* one opening. I thought it was *two*, at first.”

“You have seen the puzzle of the Paper Ring?” Mein Herr said, addressing the Earl. “Where you take a slip of paper, and join its ends together, first twisting one, so as to join the *upper* corner of *one* end to the *lower* corner of the *other*?”

“I saw one made, only yesterday,” the Earl replied. “Muriel, my child, were you not making one, to amuse those children you had to tea?”

“Yes, I know that Puzzle,” said Lady Muriel. “The Ring has only *one* surface, and only *one* edge. It’s very mysterious!”

“The *bag* is just like that, isn’t it?” I suggested. “Is not the *outer* surface of one side of it continuous with the *inner* surface of the other side?”

“So it is!” she exclaimed. “Only it *isn’t* a bag, just yet. How shall we fill up this opening, Mein Herr?”

“Thus!” said the old man impressively, taking the bag from her, and rising to his feet in the excitement of the explanation. “The edge of the opening consists of *four* handkerchief-edges, and you can trace it continuously, round and round the opening: down the right edge of *one* handkerchief, up the left edge of the *other*, and then down the left edge of the *one*, and up the right edge of the *other*!”

“So you can!” Lady Muriel murmured thoughtfully, leaning her head on her hand, and earnestly watching the old man. “And that *proves* it to be only *one* opening!”



Fortunatus' Purse

She looked so strangely like a child, puzzling over a difficult lesson, and Mein Herr had become, for the moment, so strangely like the old Professor, that I felt utterly bewildered: the 'eerie' feeling was on me in its full force, and I felt almost *impelled* to say "Do you understand it, Sylvie?" However I checked myself by a great effort, and let the dream (if indeed it *was* a dream) go on to its end.

"Now, this *third* handkerchief," Mein Herr proceeded, "has *also* four edges, which you can trace continuously round and round: all you need do is to join its four edges to the four edges of the opening. The Purse is then complete, and its outer surface——"

"*I see!*" Lady Muriel eagerly interrupted. "Its *outer* surface will be continuous with its *inner* surface! But it will take time. I'll sew it up after tea." She laid aside the bag and resumed her cup of tea. "But why do you call it Fortunatus's Purse, Mein Herr?"

The dear old man beamed upon her, with a jolly smile, looking more exactly like the Professor than ever. "Don't you see, my child—I should say *Miladi*? Whatever is *inside* that Purse, is *outside* it; and whatever is *outside* it, is *inside* it. So you have all the wealth of the world in that leetle Purse!"

His pupil clapped her hands, in unrestrained delight. "I'll certainly sew the third handkerchief in—*some* time," she said: "but I wo'n't take up your time by trying it now. Tell us some more wonderful things, please!" And her face and her voice so *exactly* recalled Sylvie, that I could not help glancing round, half-expecting to see *Bruno* also!

Mein Herr began thoughtfully balancing his spoon on the edge of his teacup, while he pondered over this request. "Something wonderful—like Fortunatus's Purse? *That* will give you—when it is made—wealth beyond your wildest dreams: but it will not give you *Time!*"

A pause of silence ensued—utilised by Lady Muriel for the very practical purpose of refilling the teacups.

"In *your* country," Mein Herr began with a startling abruptness, "what becomes of all the wasted Time?"

Lady Muriel looked grave. "Who can tell?" she half-whispered to herself. "All one knows is that it is gone—past recall!"

"Well, in *my*—I mean in a country *I* have visited," said the old man, "they store it up: and it comes in *very* useful, years afterwards! For example, suppose you have a long tedious evening before you: nobody to talk to: nothing you care to do: and yet hours too soon to go to bed. How do *you* behave then?"

"I get *very* cross," she frankly admitted: "and I want to throw things about the room!"

"When that happens to—to the people I have visited, they never act *so*. By a short and simple process—which I cannot explain to you—they store up the useless hours: and, on some *other* occasion, when they happen to *need* extra time, they get them out again!"

The Earl was listening with a slightly incredulous smile. "Why cannot you *explain* the process?" he enquired.

Mein Herr was ready with a quite unanswerable reason. "Because you have no *words*, in *your* language, to convey the ideas which are needed. I could explain it in—in—but you would not understand it!"

"No indeed!" said Lady Muriel, graciously dispensing with the *name* of the unknown language. "I never learnt it—at least, not to speak it *fluently*, you know. *Please* tell us some more wonderful things!"

"They run their railway-trains without any engines—nothing is needed but machinery to *stop* them with. Is *that* wonderful enough, Miladi?"

"But where does the *force* come from?" I ventured to ask.

Mein Herr turned quickly round, to look at the new speaker. Then he took off his spectacles, and polished them, and looked at me again, in evident bewilderment. I could see he was thinking—as indeed *I* was also—that we *must* have met before.

"They use the force of *gravity*," he said. "It is a force known also in *your* country, I believe?"

"But that would need a railway going *down-hill*," the Earl remarked. "You ca'n't have *all* your railways going down-hill?"

"They *all* do," said Mein Herr.

"Not from *both* ends?"

"From *both* ends."

"Then I give it up!" said the Earl.

"Can you explain the process?" said Lady Muriel. "Without using that language, that I ca'n't speak fluently?"

"Easily," said Mein Herr. "Each railway is in a long tunnel, perfectly straight: so of course the *middle* of it is nearer the centre of the globe than the two ends: so every train runs half-way *down-hill*, and that gives it force enough to run the *other* half *up-hill*."

"Thank you. I understand that perfectly," said Lady Muriel. "But the velocity, in the *middle* of the tunnel, must be something *fearful*!"

'Mein Herr' was evidently much gratified at the intelligent interest Lady Muriel took in his remarks. At every moment the old man seemed to grow more chatty and more fluent. "You would like to know our methods of *driving*?" he smilingly enquired. "To us, a run-away horse is of no import at all!"

Lady Muriel slightly shuddered. "To *us* it is a very real danger," she said.

"That is because your carriage is wholly *behind* your horse. Your horse runs. Your carriage follows. Perhaps your horse has the bit in his teeth. Who shall stop him? You fly, ever faster and faster! Finally comes the inevitable upset!"

"But suppose *your* horse manages to get the bit in his teeth?"

"No matter! We would not concern ourselves. Our horse is harnessed in the very centre of our carriage. Two wheels are in front of him, and two behind. To the roof is attached one end of a broad belt. This goes under the horse's body, and the other end is attached to a leetle—what you call a 'windlass,' I think. The horse takes the bit in his teeth. He runs away. We are flying at ten miles an hour! We turn our little windlass, five turns, six turns, seven turns, and—poof! Our horse is off the ground! *Now* let him gallop in the air, as much as he pleases: our *carriage* stands still. We sit round him, and watch him till he is tired. Then we let him down. Our horse is glad, very much glad, when his feet once more touch the ground!"

"Capital!" said the Earl, who had been listening attentively. "Are there any other peculiarities in your carriages?"

"In the *wheels*, sometimes, my Lord. For your health, *you* go to sea: to be pitched, to be rolled, occasionally to be drowned. *We* do all that on land: we are pitched, as you; we are rolled, as you; but *drowned*, no! There is no water!"

"What are the wheels like, then?"

"They are *oval*, my Lord. Therefore the carriages rise and fall."

“Yes, and pitch the carriage backwards and forwards: but how do they make it *roll*?”

“They do not match, my Lord. The *end* of one wheel answers to the *side* of the opposite wheel. So first one side of the carriage rises, then the other. And it pitches all the while. Ah, you must be a good sailor, to drive in our boat-carriages!”

“I can easily believe it,” said the Earl.

Mein Herr rose to his feet. “I must leave you now, Miladi,” he said, consulting his watch. “I have another engagement.”

“I only wish we had stored up some extra time!” Lady Muriel said, as she shook hands with him. “Then we could have kept you a little longer!”

“In *that* case I would gladly stay,” replied Mein Herr. “As it is—I fear I must say good-bye!”

“Where did you first meet him?” I asked Lady Muriel, when Mein Herr had left us. “And where does he live? And what is his real name?”

“We first—met—him——” she musingly replied, “really, I ca’n’t remember *where*! And I’ve no idea where he lives! And I never heard any other name! It’s very curious. It never occurred to me before to consider what a mystery he is!”

“I hope we shall meet again,” I said: “he interests me very much.”

“He will be at our farewell-party, this day fortnight,” said the Earl. “Of course you will come? Muriel is anxious to gather all our friends around us once more, before we leave the place.”

And then he explained to me—as Lady Muriel had left us together—that he was so anxious to get his daughter away from a place full of so many painful memories connected with the now-canceled engagement with Major Lindon, that they had arranged to have the wedding in a months time, after which Arthur and his wife were to go on a foreign tour.

“Don’t forget Tuesday week!” he said as we shook hands at parting. “I only wish you could bring with you those charming children, that you introduced to us in the summer. Talk of the mystery of Mein Herr! That’s *nothing* to the mystery that seems to attend *them*! I shall never forget those marvellous flowers!”

“I will bring them if I possibly can,” I said. But how to *fulfil* such a promise, I mused to myself on my way back to our lodgings, was a problem entirely beyond my skill!

Chapter VIII. In a Shady Place.

The ten days glided swiftly away: and, the day before the great party was to take place, Arthur proposed that we should stroll down to the Hall, in time for afternoon-tea.

“Hadn’t you better go *alone*?” I suggested. “Surely *I* shall be very much *de trop*?”

“Well, it’ll be a kind of *experiment*,” he said. “*Fiat experimentum in corpore vili!*” he added, with a graceful bow of mock politeness towards the unfortunate victim. “You see I shall have to bear the sight, to-morrow night, of my lady-love making herself agreeable to everybody *except* the right person, and I shall bear the agony all the better if we have a dress-rehearsal beforehand!”

“*My* part in the play being, apparently, that of the sample *wrong* person?”

"Well, no," Arthur said musingly, as we set forth: "there's no such part in a regular company. 'Heavy Father'? *That* won't do: that's filled already. 'Singing Chambermaid'? Well, the 'First Lady' doubles *that* part. 'Comic Old Man'? You're not comic enough. After all, I'm afraid there's no part for you but the 'Well-dressed Villain': only," with a critical side-glance, "I'm a *leetle* uncertain about the dress!"

We found Lady Muriel alone, the Earl having gone out to make a call, and at once resumed old terms of intimacy, in the shady arbour where the tea-things seemed to be always waiting. The only novelty in the arrangements (one which Lady Muriel seemed to regard as *entirely* a matter of course), was that two of the chairs were placed *quite* close together, side by side. Strange to say, *I* was not invited to occupy *either* of them!

"We have been arranging, as we came along, about letter-writing," Arthur began. "He will want to know how we're enjoying our Swiss tour: and of course we must pretend we *are*?"

"Of course," she meekly assented.

"And the skeleton-in-the-cupboard——" I suggested.

"—is always a difficulty," she quickly put in, "when you're traveling about, and when there are no cupboards in the hotels. However, *ours* is a *very* portable one; and will be neatly packed, in a nice leather case——"

"But please don't think about *writing*," I said, "when you've anything more attractive on hand. I delight in *reading* letters, but I know well how tiring it is to *write* them."

"It *is*, sometimes," Arthur assented. "For instance, when you're very shy of the person you have to write to."

"Does that show itself in the *letter*?" Lady Muriel enquired. "Of course, when I hear any one *talking—you*, for instance—I can see how *desperately* shy he is! But can you see that in a *letter*?"

"Well, of course, when you hear any one talk *fluently—you*, for instance—you can see how desperately *un-shy* she is—not to say saucy! But the shyest and most intermittent talker must *seem* fluent in letter-writing. He may have taken half-an-hour to *compose* his second sentence; but there it is, close after the first!"

"Then letters don't express all that they *might* express?"

"That's merely because our system of letter-writing is incomplete. A shy writer *ought* to be able to show that he is so. Why shouldn't he make *pauses* in writing, just as he would do in speaking? He might leave blank spaces—say half a page at a time. And a *very* shy girl—if there *is* such a thing—might write a sentence on the *first* sheet of her letter—then put in a couple of *blank* sheets—then a sentence on the *fourth* sheet: and so on."

"I quite foresee that *we*—I mean this clever little boy and myself——" Lady Muriel said to me, evidently with the kind wish to bring me into the conversation, "—are going to become famous—of course all our inventions are common property now—for a new Code of Rules for Letter-writing! Please invent some more, little boy!"

"Well, another thing *greatly* needed, little girl, is some way of expressing that we *don't* mean anything."

"Explain yourself, little boy! Surely *you* can find no difficulty in expressing a *total* absence of meaning?"

"I mean that you should be able, when you *don't* mean a thing to be taken seriously, to express that wish. For human nature is so constituted that whatever you write seriously is taken as a joke, and whatever you mean as a joke is taken seriously! At any rate, it is so in writing to a *lady!*"

"Ah! you're not used to writing to ladies!" Lady Muriel remarked, leaning back in her chair, and gazing thoughtfully into the sky. "You should try."

"Very good," said Arthur. "How many ladies may I begin writing to? As many as I can count on the fingers of both hands?"

"As many as you can count on the *thumbs* of *one* hand!" his lady-love replied with much severity. "What a *very* naughty little boy he is! *Isn't* he?" (with an appealing glance at me).

"He's a little fractious," I said. "Perhaps he's cutting a tooth." While to myself I said "How *exactly* like Sylvie talking to Bruno!"

"He wants his tea." (The naughty little boy volunteered the information.) "He's getting very tired, at the mere *prospect* of the great party to-morrow!"

"Then he shall have a good rest beforehand!" she soothingly replied. "The tea isn't made yet. Come, little boy, lean well back in your chair, and think about nothing—or about *me*, whichever you prefer!"

"All the same, all the same!" Arthur sleepily murmured, watching her with loving eyes, as she moved her chair away to the tea table, and began to make the tea. "Then he'll wait for his tea, like a good, patient little boy!"

"Shall I bring you the London Papers?" said Lady Muriel. "I saw them lying on the table as I came out, but my father said there was nothing in them, except that horrid murder-trial." (Society was just then enjoying its daily thrill of excitement in studying the details of a specially sensational murder in a thieves' den in the East of London.)

"I have no appetite for horrors," Arthur replied. "But I hope we have learned the lesson they should teach us—though we are very apt to read it backwards!"



'I am sitting at your feet'

"You speak in riddles," said Lady Muriel. "Please explain yourself. See now," suiting the action to the word, "I am sitting at your feet, just as if you were a second Gamaliel! Thanks, no." (This was to me, who had risen to bring her

chair back to its former place.) “Pray don’t disturb yourself. This tree and the grass make a very nice easy-chair. *What* is the lesson that one always reads wrong?”

Arthur was silent for a minute. “I would like to be clear what it *is* I mean,” he said, slowly and thoughtfully, “before I say anything to *you*—because you *think* about it.”

Anything approaching to a compliment was so unusual an utterance for Arthur, that it brought a flush of pleasure to her cheek, as she replied “It is *you*, that give me the ideas to think about.”

“One’s first thought,” Arthur proceeded, “in reading of anything specially vile or barbarous, as done by a fellow-creature, is apt to be that we see a new depth of Sin revealed *beneath* us: and we seem to gaze down into that abyss from some higher ground, far apart from it.”

“I think I understand you now. You mean that one ought to think—not ‘God, I thank Thee that I am not as other men are’—but ‘God, be merciful to me also, who might be, but for Thy grace, a sinner as vile as he!’”

“No,” said Arthur. “I meant a great deal more than that.”

She looked up quickly, but checked herself, and waited in silence.

“One must begin further back, I think. Think of some other man, the same age as this poor wretch. Look back to the time when they both began life—before they had sense enough to know Right from Wrong. *Then*, at any rate, they were equal in God’s sight?”

She nodded assent.

“We have, then, two distinct epochs at which we may contemplate the two men whose lives we are comparing. At the first epoch they are, so far as moral responsibility is concerned, on precisely the same footing: they are alike incapable of doing right or wrong. At the second epoch the one man—I am taking an extreme case, for contrast—has won the esteem and love of all around him: his character is stainless, and his name will be held in honour hereafter: the other man’s history is one unvaried record of crime, and his life is at last forfeited to the outraged laws of his country. Now what have been the causes, in each case, of each man’s condition being what it is at the second epoch? They are of two kinds—one acting from within, the other from without. These two kinds need to be discussed separately—that is, if I have not already tired you with my prosing?”

“On the contrary,” said Lady Muriel, “it is a special delight to me to have a question discussed in this way—analysed and arranged, so that one can understand it. Some books, that profess to argue out a question, are to me intolerably wearisome, simply because the ideas are all arranged hap-hazard—a sort of ‘first come, first served.’”

“You are very encouraging,” Arthur replied, with a pleased look. “The causes, acting from *within*, which make a man’s character what it is at any given moment, are his successive acts of volition—that is, his acts of choosing whether he will do this or that.”

“We are to assume the existence of Free-Will?” I said, in order to have that point made quite clear.

“If not,” was the quiet reply, “*cadit quaestio*: and I have no more to say.”

“We *will* assume it!” the rest of the audience—the majority, I may say, looking at it from Arthur’s point of view—imperiously proclaimed. The orator proceeded.

Quoted from Luke
18:11

Quoted from Luke
18:13

“The causes, acting from *without*, are his surroundings—what Mr. Herbert Spencer calls his ‘environment.’ Now the point I want to make clear is this, that a man is responsible for his acts of choosing, but *not* responsible for his environment. Hence, if these two men make, on some given occasion, when they are exposed to equal temptation, equal efforts to resist and to choose the right, their condition, in the sight of God, must be the same. If He is pleased in the one case, so will He be in the other; if displeased in the one case, so also in the other.”

“That is so, no doubt: I see it quite clearly,” Lady Muriel put in.

“And yet, owing to their different environments, the one may win a great victory over the temptation, while the other falls into some black abyss of crime.”

“But surely you would not say those men were equally guilty in the sight of God?”

“Either that,” said Arthur, “or else I must give up my belief in God’s perfect justice. But let me put one more case, which will show my meaning even more forcibly. Let the one man be in a high social position—the other, say, a common thief. Let the one be tempted to some trivial act of unfair dealing—something which he can do with the absolute certainty that it will never be discovered—something which he can with perfect ease forbear from doing—and which he distinctly knows to be a sin. Let the other be tempted to some terrible crime—as men would consider it—but under an almost overwhelming pressure of motives—of course not *quite* overwhelming, as that would destroy all responsibility. Now, in this case, let the second man make a *greater* effort at resistance than the first. Also suppose *both* to fall under the temptation—I say that the second man is, in God’s sight, *less* guilty than the other.”

Lady Muriel drew a long breath. “It upsets all one’s ideas of Right and Wrong—just at first! Why, in that dreadful murder-trial, you would say, I suppose, that it was possible that the least guilty man in the Court was the murderer, and that possibly the judge who tried him, by yielding to the temptation of making one unfair remark, had committed a crime outweighing the criminal’s whole career!”

“Certainly I should,” Arthur firmly replied. “It sounds like a paradox, I admit. But just think what a grievous sin it must be, in God’s sight, to yield to some very slight temptation, which we could have resisted with perfect ease, and to do it deliberately, and in the full light of God’s Law. What penance can atone for a sin like *that*?”

“I ca’n’t reject your theory,” I said. “But how it seems to widen the possible area of Sin in the world!”

“Is that so?” Lady Muriel anxiously enquired.

“Oh, not so, not so!” was the eager reply. “To me it seems to clear away much of the cloud that hangs over the world’s history. When this view first made itself clear to me, I remember walking out into the fields, repeating to myself that line of Tennyson ‘*There seemed no room for sense of wrong!*’ The thought, that perhaps the real guilt of the human race was infinitely less than I fancied it—that the millions, whom I had thought of as sunk in hopeless depths of sin, were perhaps, in God’s sight, scarcely sinning at all—was more sweet than words can tell! Life seemed more bright and beautiful, when once that thought had come! ‘*A livelier emerald twinkles in the grass, A purer sapphire melts into the sea!*’” His voice trembled as he concluded, and the tears stood in his eyes.

Quoted from *The Two Voices* by Alfred Lord Tennyson

Quoted from *Maud* by Alfred Lord Tennyson

Lady Muriel shaded her face with her hand, and was silent for a minute. "It is a beautiful thought," she said, looking up at last. "Thank you—Arthur, for putting it into my head!"

The Earl returned in time to join us at tea, and to give us the very unwelcome tidings that a fever had broken out in the little harbour-town that lay below us—a fever of so malignant a type that, though it had only appeared a day or two ago, there were already more than a dozen down in it, two or three of whom were reported to be in imminent danger.

In answer to the eager questions of Arthur—who of course took a deep scientific interest in the matter—he could give very few *technical* details, though he had met the local doctor. It appeared, however, that it was an almost *new* disease—at least in *this* century, though it *might* prove to be identical with the 'Plague' recorded in History—*very* infectious, and frightfully rapid in its action. "It will not, however, prevent our party to-morrow," he said in conclusion. "None of the guests belong to the infected district, which is, as you know, exclusively peopled by fishermen: so you may come without any fear."

Arthur was very silent, all the way back, and, on reaching our lodgings, immediately plunged into medical studies, connected with the alarming malady of whose arrival we had just heard.

Chapter IX. The Farewell-Party.

On the following day, Arthur and I reached the Hall in good time, as only a few of the guests—it was to be a party of eighteen—had as yet arrived; and these were talking with the Earl, leaving us the opportunity of a few words apart with our hostess.

"Who is that *very* learned-looking man with the large spectacles?" Arthur enquired. "I haven't met him here before, have I?"

"No, he's a new friend of ours," said Lady Muriel: "a German, I believe. He *is* such a dear old thing! And quite the most learned man I ever met—with *one* exception, of course!" she added humbly, as Arthur drew himself up with an air of offended dignity.

"And the young lady in blue, just beyond him, talking to that foreign-looking man. Is *she* learned, too?"

"I don't know," said Lady Muriel. "But I'm told she's a wonderful piano-forte-player. I hope you'll hear her to-night. I asked that foreigner to take her in, because *he's* very musical, too. He's a French Count, I believe; and he sings *splendidly!*"

"Science—music—singing—you have indeed got a complete party!" said Arthur. "I feel quite a privileged person, meeting all these stars. I *do* love music!"

"But the party isn't *quite* complete!" said Lady Muriel. "You haven't brought us those two beautiful children," she went on, turning to me. "He brought them here to tea, you know, one day last summer," again addressing Arthur; "and they *are* such darlings!"

"They are, *indeed*," I assented.

"But why haven't you brought them with you? You promised my father you *would*."

"I'm very sorry," I said; "but really it was impossible to bring them with me." Here I most certainly *meant* to conclude the sentence: and it was with a feeling of utter amazement, which I cannot adequately describe, that I heard myself

going on speaking. “—but they are to join me here in the course of the evening” were the words, uttered in *my* voice, and seeming to come from *my* lips.

“I’m *so* glad!” Lady Muriel joyfully replied. “I *shall* enjoy introducing them to some of my friends here! When do you expect them?”

I took refuge in silence. The only *honest* reply would have been “That was not *my* remark. I didn’t say it, and *it isn’t true!*” But I had not the moral courage to make such a confession. The character of a ‘lunatic’ is not, I believe, very difficult to *acquire*: but it is amazingly difficult to *get rid of*: and it seemed quite certain that any such speech as *that* would *quite* justify the issue of a writ ‘*de lunatico inquirendo.*’

Lady Muriel evidently thought I had failed to hear her question, and turned to Arthur with a remark on some other subject; and I had time to recover from my shock of surprise—or to awake out of my momentary ‘eerie’ condition, whichever it was.

When things around me seemed once more to be real, Arthur was saying “I’m afraid there’s no help for it: they *must* be finite in number.”

“I should be sorry to have to believe it,” said Lady Muriel. “Yet, when one comes to think of it, there *are* no new melodies, now-a-days. What people talk of as ‘the last new song’ always recalls to *me* some tune I’ve known as a child!”

“The day must come—if the world lasts long enough——” said Arthur, “when every possible tune will have been composed—every possible pun perpetrated——” (Lady Muriel wrung her hands, like a tragedy-queen) “and, worse than that, every possible *book* written! For the number of *words* is finite.”

“It’ll make very little difference to the *authors*,” I suggested. “Instead of saying ‘*what* book shall I write?’ an author will ask himself ‘*which* book shall I write?’ A mere verbal distinction!”

Lady Muriel gave me an approving smile. “But *lunatics* would always write new books, surely?” she went on. “They *couldn’t* write the sane books over again!”

“True,” said Arthur. “But *their* books would come to an end, also. The number of lunatic *books* is as finite as the number of lunatics.”

“And *that* number is becoming greater every year,” said a pompous man, whom I recognised as the self-appointed showman on the day of the picnic.

“So they say,” replied Arthur. “And, when ninety per cent. of us are lunatics,” (he seemed to be in a wildly nonsensical mood) “the asylums will be put to their proper use.”

“And that is——?” the pompous man gravely enquired.

“*To shelter the sane!*” said Arthur. “*We* shall bar ourselves in. The lunatics will have it all their own way, *outside*. They’ll do it a little queerly, no doubt. Railway-collisions will be always happening: steamers always blowing up: most of the towns will be burnt down: most of the ships sunk——”

“And most of the men *killed!*” murmured the pompous man, who was evidently hopelessly bewildered.

“Certainly,” Arthur assented. “Till at last there will be *fewer* lunatics than sane men. Then *we* come out: *they* go in: and things return to their normal condition!”

The pompous man frowned darkly, and bit his lip, and folded his arms, vainly trying to think it out. “He is *jesting!*” he muttered to himself at last, in a tone of withering contempt, as he stalked away.

By this time the other guests had arrived; and dinner was announced. Arthur of course took down Lady Muriel: and *I* was pleased to find myself seated at her other side, with a severe-looking old lady (whom I had not met before, and whose name I had, as is usual in introductions, entirely failed to catch, merely gathering that it sounded like a compound-name) as my partner for the banquet.

She appeared, however, to be acquainted with Arthur, and confided to me in a low voice her opinion that he was “a very argumentative young man.” Arthur, for his part, seemed well inclined to show himself worthy of the character she had given him, and, hearing her say “I never take wine with my soup!” (this was *not* a confidence to me, but was launched upon Society, as a matter of general interest), he at once challenged a combat by asking her “*when* would you say that property *commence* in a plate of soup?”

“This is *my* soup,” she sternly replied: “and what is before you is *yours*.”

“No doubt,” said Arthur: “but *when* did I begin to own it? Up to the moment of its being put into the plate, it was the property of our host: while being offered round the table, it was, let us say, held in trust by the waiter: did it become mine when I accepted it? Or when it was placed before me? Or when I took the first spoonful?”

“He is a *very* argumentative young man!” was all the old lady would say: but she said it audibly, this time, feeling that Society had a right to know it.

Arthur smiled mischievously. “I shouldn’t mind betting you a shilling,” he said, “that the Eminent Barrister next you” (It certainly *is* possible to say words so as to make them begin with capitals!) “ca’n’t answer me!”

“I *never* bet,” she sternly replied.

“Not even sixpenny points at *whist*?”

“*Never!*” she repeated. “*Whist* is innocent enough: but whist played for *money!*” She shuddered.

Arthur became serious again. “I’m afraid I ca’n’t take that view,” he said. “I consider that the introduction of small stakes for card-playing was one of the most *moral* acts Society ever did, *as* Society.”

“How was it so?” said Lady Muriel.

“Because it took Cards, once for all, out of the category of games at which *cheating* is possible. Look at the way Croquet is demoralising Society. Ladies are beginning to cheat at it, terribly: and, if they’re found out, they only laugh, and call it fun. But when there’s *money* at stake, that is out of the question. The swindler is *not* accepted as a wit. When a man sits down to cards, and cheats his friends out of their money, he doesn’t get much *fun* out of it—unless he thinks it fun to be kicked down stairs!”

“If all gentlemen thought as badly of ladies as *you* do,” my neighbour remarked with some bitterness, “there would be very few—very few——.” She seemed doubtful how to end her sentence, but at last took “honeymoons” as a safe word.

“On the contrary,” said Arthur, the mischievous smile returning to his face, “if only people would adopt *my* theory, the number of honeymoons—quite of a new kind—would be greatly increased!”

“May we hear about this new kind of honeymoon?” said Lady Muriel.

“Let *X* be the gentleman,” Arthur began, in a slightly raised voice, as he now found himself with an audience of *six*, including ‘Mein Herr,’ who was seated at the other side of my polynomial partner. “Let *X* be the gentleman, and *Y* the lady to whom he thinks of proposing. He applies for an Experimental

Honeymoon. It is granted. Forthwith the young couple—accompanied by the great-aunt of Y, to act as chaperone—start for a month's tour, during which they have many a moonlight-walk, and many a *tête-à-tête* conversation, and each can form a more correct estimate of the other's character, in four *weeks*, than would have been possible in as many *years*, when meeting under the ordinary restrictions of Society. And it is only after their *return* that X finally decides whether he will, or will not, put the momentous question to Y!"

"In nine cases out of ten," the pompous man proclaimed, "he would decide to break it off!"

"Then, in nine cases out of ten," Arthur rejoined, "an unsuitable match would be prevented, and *both* parties saved from misery!"

"The only really *unsuitable* matches," the old lady remarked, "are those made without sufficient *Money*. Love may come *afterwards*. Money is needed *to begin with!*"

This remark was cast loose upon Society, as a sort of general challenge; and, as such, it was at once accepted by several of those within hearing: *Money* became the key-note of the conversation for some time; and a fitful echo of it was again heard, when the dessert had been placed upon the table, the servants had left the room, and the Earl had started the wine in its welcome progress round the table.

"I'm very glad to see you keep up the old customs," I said to Lady Muriel as I filled her glass. "It's really delightful to experience, once more, the peaceful feeling that comes over one when the waiters have left the room—when one can converse without the feeling of being overheard, and without having dishes constantly thrust over one's shoulder. How much more sociable it is to be able to pour out the wine for the ladies, and to hand the dishes to those who wish for them!"

"In that case, kindly send those peaches down here," said a fat red-faced man, who was seated beyond our pompous friend. "I've been wishing for them—diagonally—for some time!"

"Yes, it *is* a ghastly innovation," Lady Muriel replied, "letting the waiters carry round the wine at dessert. For one thing, they *always* take it the wrong way round—which of course brings bad luck to *everybody* present!"

"Better go the *wrong* way than not go *at all!*" said our host. "Would you kindly help yourself?" (This was to the fat red-faced man.) "You are not a teetotaler, I think?"

"Indeed but I *am!*" he replied, as he pushed on the bottles. "Nearly twice as much money is spent in England on *Drink*, as on any other article of food. Read this card." (What faddist ever goes about without a pocketful of the appropriate literature?) "The stripes of different colours represent the amounts spent on various articles of food. Look at the highest three. Money spent on butter and on cheese, thirty-five millions: on bread, seventy millions: on *intoxicating liquors*, one hundred and thirty-six millions! If I had my way, I would close every public-house in the land! Look at that card, and read the motto. *That's where all the money goes to!*"

"Have you seen the *Anti-Teetotal Card?*" Arthur innocently enquired.

"No, Sir, I have not!" the orator savagely replied. "What is it like?"

"Almost exactly like this one. The coloured stripes are the same. Only, instead of the words 'Money spent on,' it has 'Incomes derived from sale of';

and, instead of 'That's where all the money goes to,' its motto is '*That's where all the money comes from!*'"

The red-faced man scowled, but evidently considered Arthur beneath his notice. So Lady Muriel took up the cudgels. "Do you hold the theory," she enquired, "that people can preach teetotalism more effectually by being teetotalers themselves?"

"Certainly I do!" replied the red-faced man. "Now, here is a case in point," unfolding a newspaper-cutting: "let me read you this letter from a teetotaler. *To the Editor. Sir, I was once a moderate drinker, and knew a man who drank to excess. I went to him. 'Give up this drink,' I said. 'It will ruin your health!' 'You drink,' he said: 'why shouldn't I?' 'Yes,' I said, 'but I know when to leave off.' He turned away from me. 'You drink in your way,' he said: 'let me drink in mine. Be off!' Then I saw that, to do any good with him, I must forswear drink. From that hour I haven't touched a drop!*"

"There! What do you say to *that*?" He looked round triumphantly, while the cutting was handed round for inspection.

"How very curious!" exclaimed Arthur, when it had reached him. "Did you happen to see a letter, last week, about early rising? It was strangely like this one."

The red-faced man's curiosity was roused. "Where did it appear?" he asked.

"Let me read it to you," said Arthur. He took some papers from his pocket, opened one of them, and read as follows. "*To the Editor. Sir, I was once a moderate sleeper, and knew a man who slept to excess. I pleaded with him. 'Give up this lying in bed,' I said, 'It will ruin your health!' 'You go to bed,' he said: 'why shouldn't I?' 'Yes,' I said, 'but I know when to get up in the morning.' He turned away from me. 'You sleep in your way,' he said: 'let me sleep in mine. Be off!' Then I saw that to do any good with him, I must forswear sleep. From that hour I haven't been to bed!*"

Arthur folded and pocketed his paper, and passed on the newspaper-cutting. None of us dared to laugh, the red-faced man was evidently so angry. "Your parallel doesn't run on all fours!" he snarled.

"*Moderate* drinkers never do so!" Arthur quietly replied. Even the stern old lady laughed at this.

"But it needs many other things to make a *perfect* dinner!" said Lady Muriel, evidently anxious to change the subject. "Mein Herr! What is *your* idea of a perfect dinner-party?"

The old man looked round smilingly, and his gigantic spectacles seemed more gigantic than ever. "A *perfect* dinner-party?" he repeated. "First, it must be presided over by our present hostess!"

"That, of *course!*" she gaily interposed. "But what *else*, Mein Herr?"

"I can but tell you what I have seen," said Mein Herr, "in mine own—in the country I have traveled in."

He paused for a full minute, and gazed steadily at the ceiling—with so dreamy an expression on his face, that I feared he was going off into a reverie, which seemed to be his normal state. However, after a minute, he suddenly began again.

"That which chiefly causes the failure of a dinner-party, is the running-short—not of meat, nor yet of drink, but of *conversation.*"

"In an *English* dinner-party," I remarked, "I have never known *small-talk* run short!"

"Pardon me," Mein Herr respectfully replied, "I did not say 'small-talk.' I said 'conversation.' All such topics as the weather, or politics, or local gossip, are unknown among us. They are either vapid or controversial. What we need for *conversation* is a topic of *interest* and of *novelty*. To secure these things we have tried various plans—Moving-Pictures, Wild-Creatures, Moving-Guests, and a Revolving-Humorist. But this last is only adapted to *small* parties."

"Let us have it in four separate Chapters, please!" said Lady Muriel, who was evidently deeply interested—as, indeed, most of the party were, by this time: and, all down the table, talk had ceased, and heads were leaning forwards, eager to catch fragments of Mein Herr's oration.

"Chapter One! Moving-Pictures!" was proclaimed in the silvery voice of our hostess.

"The dining-table is shaped like a circular ring," Mein Herr began, in low dreamy tones, which, however, were perfectly audible in the silence. "The guests are seated at the inner side as well as the outer, having ascended to their places by a winding-staircase, from the room below. Along the middle of the table runs a little railway; and there is an endless train of trucks, worked round by machinery; and on each truck there are two pictures, leaning back to back. The train makes two circuits during dinner; and, when it has been *once* round, the waiters turn the pictures round in each truck, making them face the other way. Thus *every* guest sees *every* picture!"

He paused, and the silence seemed deader than ever. Lady Muriel looked aghast. "Really, if this goes on," she exclaimed, "I shall have to drop a pin! Oh, it's *my* fault, is it?" (In answer to an appealing look from Mein Herr.) "I was forgetting my duty. Chapter Two! Wild-Creatures!"

"We found the Moving-Pictures a *little* monotonous," said Mein Herr. "People didn't care to talk Art through a whole dinner; so we tried Wild-Creatures. Among the flowers, which we laid (just as *you* do) about the table, were to be seen, here a mouse, there a beetle; here a spider," (Lady Muriel shuddered) "there a wasp; here a toad, there a snake;" ("Father!" said Lady Muriel, plaintively. "Did you hear *that*?") "so we had plenty to talk about!"

"And when you got stung——" the old lady began.

"They were all chained-up, dear Madam!"

And the old lady gave a satisfied nod.

There was no silence to follow, *this* time. "Third Chapter!" Lady Muriel proclaimed at once, "Moving-Guests!"

"Even the Wild-Creatures proved monotonous," the orator proceeded. "So we left the guests to choose their own subjects; and, to avoid monotony, we changed *them*. We made the table of *two* rings; and the inner ring moved slowly round, all the time, along with the floor in the middle and the inner row of guests. Thus *every* inner guest was brought face-to-face with *every* outer guest. It was a little confusing, sometimes, to have to *begin* a story to one friend and *finish* it to another; but *every* plan has its faults, you know."

"Fourth Chapter!" Lady Muriel hastened to announce. "The Revolving-Humorist!"

"For a *small* party we found it an excellent plan to have a round table, with a hole cut in the middle large enough to hold *one* guest. Here we placed our *best* talker. He revolved slowly, facing every other guest in turn: and he told lively anecdotes the whole time!"

"I shouldn't like it!" murmured the pompous man. "It would make me giddy, revolving like that! I should decline to——" here it appeared to dawn upon him that perhaps the assumption he was making was not warranted by the circumstances: he took a hasty gulp of wine, and choked himself.

But Mein Herr had relapsed into reverie, and made no further remark. Lady Muriel gave the signal, and the ladies left the room.

Chapter X. Jabbering and Jam.

When the last lady had disappeared, and the Earl, taking his place at the head of the table, had issued the military order "Gentlemen! Close up the ranks, if you please!", and when, in obedience to his command, we had gathered ourselves compactly round him, the pompous man gave a deep sigh of relief, filled his glass to the brim, pushed on the wine, and began one of his favorite orations. "They are charming, no doubt! Charming, but very frivolous. They drag us down, so to speak, to a lower level. They——"

"Do not all pronouns require antecedent *nouns*?" the Earl gently enquired.

"Pardon me," said the pompous man, with lofty condescension. "I had overlooked the noun. The ladies. We regret their absence. Yet we console ourselves. *Thought is free*. With them, we are limited to *trivial* topics—Art, Literature, Politics, and so forth. One can bear to discuss *such* paltry matters with a lady. But no man, in his senses——" (he looked sternly round the table, as if defying contradiction) "——ever yet discussed *WINE* with a lady!" He sipped his glass of port, leaned back in his chair, and slowly raised it up to his eye, so as to look through it at the lamp. "The vintage, my Lord?" he enquired, glancing at his host.

The Earl named the date.

"So I had supposed. But one likes to be certain. The *tint* is, perhaps, slightly pale. But the *body* is unquestionable. And as for the *bouquet*——"

Ah, that magic Bouquet! How vividly that single word recalled the scene! The little beggar-boy turning his somersault in the road—the sweet little crippled maiden in my arms—the mysterious evanescent nurse-maid—all rushed tumultuously into my mind, like the creatures of a dream: and through this mental haze there still boomed on, like the tolling of a bell, the solemn voice of the great connoisseur of *WINE*!

Even *his* utterances had taken on themselves a strange and dream-like form. "No," he resumed—and *why* is it, I pause to ask, that, in taking up the broken thread of a dialogue, one *always* begins with this cheerless monosyllable? After much anxious thought, I have come to the conclusion that the object in view is the same as that of the schoolboy, when the sum he is working has got into a hopeless muddle, and when in despair he takes the sponge, washes it all out, and begins again. Just in the same way the bewildered orator, by the simple process of denying *everything* that has been hitherto asserted, makes a clean sweep of the whole discussion, and can 'start fair' with a fresh theory. "No," he resumed: "there's nothing like cherry-jam, after all. That's what *I* say!"

"Not for *all* qualities!" an eager little man shrilly interposed. "For *richness* of general tone I don't say that it *has* a rival. But for *delicacy* of modulation—for what one may call the '*harmonics*' of flavour—give *me* good old *raspberry-jam*!"

"Allow me one word!" The fat red-faced man, quite hoarse with excitement, broke into the dialogue. "It's too important a question to be settled by Ama-

Quoted from *The Tempest* by William Shakespeare

teurs! I can give you the views of a *Professional*—perhaps the most experienced jam-taster now living. Why, I’ve known him fix the age of strawberry-jam, to a *day*—and we all know what a difficult jam it is to give a date to—on a single tasting! Well, I put to him the *very* question you are discussing. His words were ‘*cherry-jam* is best, for mere *chiaroscuro* of flavour: *raspberry-jam* lends itself best to those resolved discords that linger so lovingly on the tongue: but, for rapturous *utterness* of saccharine perfection, it’s *apricot-jam first and the rest nowhere!*’ That was well put, *wasn’t* it?”

“Consummately put!” shrieked the eager little man.

“I know your friend well,” said the pompous man. “As a jam-taster, he has no rival! Yet I scarcely think——”

But here the discussion became general: and his words were lost in a confused medley of names, every guest sounding the praises of his own favorite jam. At length, through the din, our host’s voice made itself heard. “Let us join the ladies!” These words seemed to recall me to waking life; and I felt sure that, for the last few minutes, I had relapsed into the ‘eerie’ state.

“A strange dream!” I said to myself as we trooped upstairs. “Grown men discussing, as seriously as if they were matters of life and death, the hopelessly trivial details of mere *delicacies*, that appeal to no higher human function than the nerves of the tongue and palate! What a humiliating spectacle such a discussion would be in waking life!”

When, on our way to the drawing-room, I received from the housekeeper my little friends, clad in the daintiest of evening costumes, and looking, in the flush of expectant delight, more radiantly beautiful than I had ever seen them before, I felt no shock of surprise, but accepted the fact with the same unreasoning apathy with which one meets the events of a dream, and was merely conscious of a vague anxiety as to how they would acquit themselves in so novel a scene—forgetting that Court-life in Outland was as good training as they could need for Society in the more substantial world.

It would be best, I thought, to introduce them as soon as possible to some good-natured lady-guest, and I selected the young lady whose piano-forte-playing had been so much talked of. “I am sure you like children,” I said. “May I introduce two little friends of mine? This is Sylvie—and this is Bruno.”

The young lady kissed Sylvie very graciously. She would have done the same for *Bruno*, but he hastily drew back out of reach. “Their faces are new to me,” she said. “Where do you come from, my dear?”

I had not anticipated so inconvenient a question; and, fearing that it might embarrass Sylvie, I answered for her. “They come from some distance. They are only here just for this one evening.”

“How far have you come, dear?” the young lady persisted.

Sylvie looked puzzled. “A mile or two, I *think*,” she said doubtfully.

“A mile or *three*,” said Bruno.

“You shouldn’t say ‘a mile or *three*,’” Sylvie corrected him.

The young lady nodded approval. “Sylvie’s quite right. It isn’t usual to say ‘a mile or *three*.’”

“It would be usual—if we said it often enough,” said Bruno.

It was the young lady’s turn to look puzzled now. “He’s very quick, for his age!” she murmured. “You’re not more than seven, are you, dear?” she added aloud.

"I'm not so many as *that*," said Bruno. "I'm *one*. Sylvie's *one*. Sylvie and me is *two*. *Sylvie* taught me to count."

"Oh, I wasn't *counting* you, you know!" the young lady laughingly replied.

"Hasn't oo *learnt* to count?" said Bruno.

The young lady bit her lip. "Dear! What embarrassing questions he *does* ask!" she said in a half-audible 'aside.'

"Bruno, you shouldn't!" Sylvie said reprovingly.

"Shouldn't *what*?" said Bruno.

"You shouldn't ask—that sort of questions."

"*What* sort of questions?" Bruno mischievously persisted.

"What *she* told you not," Sylvie replied, with a shy glance at the young lady, and losing all sense of grammar in her confusion.

"Oo ca'n't pronounce it!" Bruno triumphantly cried. And he turned to the young lady, for sympathy in his victory. "I *knewed* she couldn't pronounce 'umbrella-sting'!"

The young lady thought it best to return to the arithmetical problem. "When I asked if you were *seven*, you know, I didn't mean 'how many *children*?' I meant 'how many *years*——'"

"Only got *two* ears," said Bruno. "Nobody's got *seven* ears."

"And you belong to this little girl?" the young lady continued, skilfully evading the anatomical problem.

"No, I doosn't belong to *her*!" said Bruno. "Sylvie belongs to *me*!" And he clasped his arms round her as he added "She are my very mine!"

"And, do you know," said the young lady, "I've a little sister at home, exactly like *your* sister? I'm sure they'd love each other."

"They'd be very extremely useful to each other," Bruno said, thoughtfully. "And they wouldn't want no looking-glasses to brush their hair wiz."

"Why not, my child?"

"Why, each one would do for the other one's looking-glass, a-course!" cried Bruno.

But here Lady Muriel, who had been standing by, listening to this bewildering dialogue, interrupted it to ask if the young lady would favour us with some music; and the children followed their new friend to the piano.

Arthur came and sat down by me. "If rumour speaks truly," he whispered, "we are to have a real treat!" And then, amid a breathless silence, the performance began.

She was one of those players whom Society talks of as 'brilliant,' and she dashed into the loveliest of Haydn's Symphonies in a style that was clearly the outcome of years of patient study under the best masters. At first it seemed to be the perfection of piano-forte-playing; but in a few minutes I began to ask myself, wearily, "*What* is it that is wanting? *Why* does one get no pleasure from it?"

Then I set myself to listen intently to every note; and the mystery explained itself. There *was* an almost-perfect mechanical *correctness*—and there was nothing else! False notes, of course, did not occur: she knew the piece too well for *that*; but there was just enough irregularity of *time* to betray that the player had no real 'ear' for music—just enough inarticulateness in the more elaborate passages to show that she did not think her audience worth taking real pains for—just enough mechanical monotony of accent to take all *soul* out of the heavenly modulations she was profaning—in short, it was simply irritating;

and, when she had rattled off the finale and had struck the final chord as if, the instrument being now done with, it didn't matter how many wires she broke, I could not even *affect* to join in the stereotyped "Oh, *thank* you!" which was chorused around me.

Lady Muriel joined us for a moment. "Isn't it *beautiful*?" she whispered, to Arthur, with a mischievous smile.

"No, it isn't!" said Arthur. But the gentle sweetness of his face quite neutralised the apparent rudeness of the reply.

"Such execution, you know!" she persisted.

"That's what she *deserves*," Arthur doggedly replied: "but people are so prejudiced against capital——"

"Now you're beginning to talk nonsense!" Lady Muriel cried. "But you *do* like Music, don't you? You said so just now."

"Do I like *Music*?" the Doctor repeated softly to himself. "My dear Lady Muriel, there is Music and Music. Your question is painfully vague. You might as well ask 'Do you like *People*?'"

Lady Muriel bit her lip, frowned, and stamped with one tiny foot. As a dramatic representation of ill-temper, it was distinctly *not* a success. However, it took in *one* of her audience, and Bruno hastened to interpose, as peacemaker in a rising quarrel, with the remark "*I* likes Peoples!"

Arthur laid a loving hand on the little curly head. "What? *All* Peoples?" he enquired.

"Not *all* Peoples," Bruno explained. "Only but Sylvie—and Lady Muriel—and him—" (pointing to the Earl) "and oo—and oo!"

"You shouldn't point at people," said Sylvie. "It's very rude."

"In Bruno's World," I said, "there are only *four* People—worth mentioning!"

"In Bruno's World!" Lady Muriel repeated thoughtfully. "A bright and flowery world. Where the grass is always green, where the breezes always blow softly, and the rain-clouds never gather; where there are no wild beasts, and no deserts——"

"There *must* be deserts," Arthur decisively remarked. "At least if it was *my* ideal world."

"But what possible use is there in a *desert*?" said Lady Muriel. "*Surely* you would have no wilderness in your ideal world?"

Arthur smiled. "But indeed I *would*!" he said. "A wilderness would be more necessary than a railway; and *far* more conducive to general happiness than church-bells!"

"But what would you use it for?"

"*To practise music in*," he replied. "All the young ladies, that have no ear for music, but insist on learning it, should be conveyed, every morning, two or three miles into the wilderness. There each would find a comfortable room provided for her, and also a cheap second-hand piano-forte, on which she might play for hours, without adding one needless pang to the sum of human misery!"

Lady Muriel glanced round in alarm, lest these barbarous sentiments should be overheard. But the fair musician was at a safe distance. "At any rate you must allow that she's a sweet girl?" she resumed.

"Oh, certainly. As sweet as *eau sucrée*, if you choose—and nearly as interesting!"

"You are incorrigible!" said Lady Muriel, and turned to me. "I hope you found Mrs. Mills an interesting companion?"

“Oh, *that’s* her name, is it?” I said. “I fancied there was *more* of it.”

“So there is: and it will be ‘at your proper peril’ (whatever that may mean) if you ever presume to address her as ‘Mrs. Mills.’ She is ‘Mrs. Ernest—Atkinson—Mills’!”

“She is one of those would-be grandees,” said Arthur, “who think that, by tacking on to their surname all their spare Christian-names, with hyphens between, they can give it an aristocratic flavour. As if it wasn’t trouble enough to remember *one* surname!”

By this time the room was getting crowded, as the guests, invited for the evening-party, were beginning to arrive, and Lady Muriel had to devote herself to the task of welcoming them, which she did with the sweetest grace imaginable. Sylvie and Bruno stood by her, deeply interested in the process.

“I hope you like my friends?” she said to them. “Specially my dear old friend, Mein Herr (What’s become of him, I wonder? Oh, there he is!), that old gentleman in spectacles, with a long beard?”

“He’s a grand old gentleman!” Sylvie said, gazing admiringly at ‘Mein Herr,’ who had settled down in a corner, from which his mild eyes beamed on us through a gigantic pair of spectacles. “And what a lovely beard!”

“What does he call his-self?” Bruno whispered.

“He calls himself ‘Mein Herr,’” Sylvie whispered in reply.

Bruno shook his head impatiently. “That’s what he calls his *hair*, not his *self*, oo silly!” He appealed to me. “What does he call his *self*, Mister Sir?”

“That’s the only name *I* know of,” I said. “But he looks very lonely. Don’t you pity his grey hairs?”

“I pities his *self*,” said Bruno, still harping on the misnomer; “but I doosn’t pity his *hair*, one bit. His *hair* ca’n’t feel!”

“We met him this afternoon,” said Sylvie. “We’d been to see Nero, and we’d had *such* fun with him, making him invisible again! And we saw that nice old gentleman as we came back.”

“Well, let’s go and talk to him, and cheer him up a little,” I said: “and perhaps we shall find out what he calls himself.”

Chapter XI. The Man in the Moon.

The children came willingly. With one of them on each side of me, I approached the corner occupied by ‘Mein Herr.’ “You don’t object to *children*, I hope?” I began.

“*Crabbed age and youth cannot live together!*” the old man cheerfully replied, with a most genial smile. “Now take a good look at me, my children! You would guess me to be an *old* man, wouldn’t you?”

At first sight, though his face had reminded me so mysteriously of “the Professor,” he had seemed to be decidedly a *younger* man: but, when I came to look into the wonderful depth of those large dreamy eyes, I felt, with a strange sense of awe, that he was incalculably *older*: he seemed to gaze at us out of some by-gone age, centuries away.

“I don’t know if oo’re an *old* man,” Bruno answered, as the children, won over by the gentle voice, crept a little closer to him. “I thinks oo’re *eighty-three*.”

“He is very exact!” said Mein Herr.

“Is he anything like right?” I said.

Quoted from *The Passionate Pilgrim* by William Shakespeare



Mein Herr's fairy-friends

"There are reasons," Mein Herr gently replied, "reasons which I am not at liberty to explain, for not mentioning *definitely* any Persons, Places, or Dates. One remark only I will permit myself to make—that the period of life, between the ages of a hundred-and-sixty-five and a hundred-and-seventy-five, is a specially *safe* one."

"How do you make that out?" I said.

"Thus. You would consider swimming to be a very safe amusement, if you scarcely ever heard of any one dying of it. Am I not right in thinking that you never heard of any one dying between those two ages?"

"I see what you mean," I said: "but I'm afraid you ca'n't prove *swimming* to be safe, on the same principle. It is no uncommon thing to hear of some one being *drowned*."

"In *my* country," said Mein Herr, "no one is *ever* drowned."

"Is there no water deep enough?"

"Plenty! But we ca'n't *sink*. We are all *lighter than water*. Let me explain," he added, seeing my look of surprise. "Suppose you desire a race of *pigeons* of a particular shape or colour, do you not select, from year to year, those that are nearest to the shape or colour you want, and keep those, and part with the others?"

"We do," I replied. "We call it 'Artificial Selection.'"

"Exactly so," said Mein Herr. "Well, *we* have practised that for some centuries—constantly selecting the *lightest* people: so that, now, *everybody* is lighter than water."

"Then you never can be drowned at *sea*?"

"Never! It is only on the *land*—for instance, when attending a play in a theatre—that we are in such a danger."

"How can that happen at a *theatre*?"

"Our theatres are all *underground*. Large tanks of water are placed above. If

a fire breaks out, the taps are turned, and in one minute the theatre is flooded, up to the very roof! Thus the fire is extinguished.”

“And the audience, I presume?”

“That is a minor matter,” Mein Herr carelessly replied. “But they have the comfort of knowing that, whether drowned or not, they are all *lighter than water*. We have not yet reached the standard of making people lighter than *air*: but we are *aiming* at it; and, in another thousand years or so——”

“What doos oo do wiz the peoples that’s too heavy?” Bruno solemnly enquired.

“We have applied the same process,” Mein Herr continued, not noticing Bruno’s question, “to many other purposes. We have gone on selecting *walking-sticks*—always keeping those that walked *best*—till we have obtained some, that can walk by themselves! We have gone on selecting *cotton-wool*, till we have got some lighter than air! You’ve no idea what a useful material it is! We call it ‘Imponderal.’”

“What do you use it for?”

“Well, chiefly for *packing* articles, to go by Parcel-Post. It makes them weigh *less than nothing*, you know.”

“And how do the Post-Office people know what you have to pay?”

“That’s the beauty of the new system!” Mein Herr cried exultingly. “They pay *us*: we don’t pay *them*! I’ve often got as much as five shillings for sending a parcel.”

“But doesn’t your Government object?”

“Well, they *do* object, a little. They say it comes so expensive, in the long run. But the thing’s as clear as daylight, by their own rules. If I send a parcel, that weighs a pound *more* than nothing, I *pay* three-pence: so, of course, if it weighs a pound *less* than nothing, I ought to *receive* three-pence.”

“It is *indeed* a useful article!” I said.

“Yet even ‘Imponderal’ has its disadvantages,” he resumed. “I bought some, a few days ago, and put it into my *hat*, to carry it home, and the hat simply floated away!”

“Had oo some of that funny stuff in oor hat *today*?” Bruno enquired. “Sylvie and me saw oo in the road, and oor hat were ever so high up! Weren’t it, Sylvie?”

“No, that was quite another thing.” said Mein Herr. “There was a drop or two of rain falling: so I put my hat on the top of my stick—as an umbrella, you know. As I came along the road,” he continued, turning to me, “I was overtaken by——”

“——a shower of rain?” said Bruno.

“Well, it *looked* more like the tail of a dog,” Mein Herr replied. “It was the most curious thing! Something rubbed affectionately against my knee. And I looked down. And I could see *nothing*! Only, about a yard off, there was a dog’s tail, wagging, all by itself!”

“Oh, *Sylvie*!” Bruno murmured reproachfully. “Oo didn’t finish making him visible!”

“I’m *so* sorry!” Sylvie said, looking very penitent. “I meant to rub it along his back, but we were in such a hurry. We’ll go and finish him tomorrow. Poor thing! Perhaps he’ll get no supper tonight!”

“*Course* he won’t!” said Bruno. “Nobody never gives bones to a dog’s tail!”

Mein Herr looked from one to the other in blank astonishment. "I do not understand you," he said. "I had lost my way, and I was consulting a pocket-map, and somehow I had dropped one of my gloves, and this invisible *Something*, that had rubbed against my knee, actually brought it back to me!"

"Course he did!" said Bruno. "He's *welley* fond of fetching things."

Mein Herr looked so thoroughly bewildered that I thought it best to change the subject. "What a useful thing a pocket-map is!" I remarked.

"That's another thing we've learned from *your* Nation," said Mein Herr, "map-making. But we've carried it much further than *you*. What do you consider the *largest* map that would be really useful?"

"About six inches to the mile."

"Only *six inches!*" exclaimed Mein Herr. "We very soon got to six *yards* to the mile. Then we tried a *hundred* yards to the mile. And then came the grandest idea of all! We actually made a map of the country, on the scale of a *mile to the mile!*"

"Have you used it much?" I enquired.

"It has never been spread out, yet," said Mein Herr: "the farmers objected: they said it would cover the whole country, and shut out the sunlight! So we now use the country itself, as its own map, and I assure you it does nearly as well. Now let me ask you *another* question. What is the smallest *world* you would care to inhabit?"

"*I know!*" cried Bruno, who was listening intently. "I'd like a little teeny-tiny world, just big enough for Sylvie and me!"

"Then you would have to stand on opposite sides of it," said Mein Herr. "And so you would never see your sister *at all!*"

"And I'd have no *lessons*," said Bruno.

"You don't mean to say you've been trying experiments in *that* direction!" I said.

"Well, not *experiments* exactly. We do not profess to *construct* planets. But a scientific friend of mine, who has made several balloon-voyages, assures me he has visited a planet so small that he could walk right round it in twenty minutes! There had been a great battle, just before his visit, which had ended rather oddly: the vanquished army ran away at full speed, and in a very few minutes found themselves face-to-face with the victorious army, who were marching home again, and who were so frightened at finding themselves between *two* armies, that they surrendered at once! Of course that lost them the battle, though, as a matter of fact, they had killed *all* the soldiers on the other side."

"Killed soldiers *ca'n't* run away," Bruno thoughtfully remarked.

"'Killed' is a technical word," replied Mein Herr. "In the little planet I speak of, the bullets were made of soft black stuff, which marked everything it touched. So, after a battle, all you had to do was to count how many soldiers on each side were 'killed'—that means 'marked on the *back*,' for marks in *front* didn't count."

"Then you couldn't 'kill' any, unless they ran away?" I said.

"My scientific friend found out a better plan than *that*. He pointed out that, if only the bullets were sent *the other way round the world*, they would hit the enemy in the *back*. After that, the *worst* marksmen were considered the *best* soldiers; and *the very worst of all* always got First Prize."

"And how did you decide which was *the very worst of all?*"

“Easily. The *best* possible shooting is, you know, to hit what is exactly in *front* of you: so of course the *worst* possible is to hit what is exactly *behind* you.”

“They were strange people in that little planet!” I said.

“They were indeed! Perhaps their method of *government* was the strangest of all. In *this* planet, I am told, a Nation consists of a number of Subjects, and one King: but, in the little planet I speak of, it consisted of a number of *Kings*, and one *Subject*!”

“You say you are ‘told’ what happens in *this* planet,” I said. “May I venture to guess that you yourself are a visitor from some *other* planet?”

Bruno clapped his hands in his excitement. “Is oo the Man-in-the-Moon?” he cried.

Mein Herr looked uneasy. “I am *not* in the Moon, my child,” he said evasively. “To return to what I was saying. I think *that* method of government ought to answer *well*. You see, the Kings would be sure to make Laws contradicting each other: so the Subject could never be punished, because, *whatever* he did, he’d be obeying *some* Law.”

“And, whatever he did, he’d be *disobeying some* Law!” cried Bruno. “So he’d *always* be punished!”

Lady Muriel was passing at the moment, and caught the last word. “Nobody’s going to be punished *here*!” she said, taking Bruno in her arms. “This is Liberty-Hall! Would you lend me the children for a minute?”

“The children desert us, you see,” I said to Mein Herr, as she carried them off: “so we old folk must keep each other company!”

The old man sighed. “Ah, well! We’re old folk *now*; and yet I was a child myself, once—at least I fancy so.”

It *did* seem a rather unlikely fancy, I could not help owning to myself—looking at the shaggy white hair, and the long beard—that he could *ever* have been a child. “You are fond of young people?” I said.

“Young *men*,” he replied. “Not of *children* exactly. I used to teach young men—many a year ago—in my dear old University!”

“I didn’t quite catch its *name*?” I hinted.

“I did not name it,” the old man replied mildly. “Nor would you know the name if I did. Strange tales I could tell you of all the changes I have witnessed there! But it would weary you, I fear.”

“No, *indeed*!” I said. “Pray go on. What kind of changes?”

But the old man seemed to be more in a humour for questions than for answers. “Tell me,” he said, laying his hand impressively on my arm, “tell me something. For I am a stranger in your land, and I know little of *your* modes of education: yet something tells me *we* are further on than *you* in the eternal cycle of change—and that many a theory *we* have tried and found to fail, *you* also will try, with a wilder enthusiasm: you also will find to fail, with a bitterer despair!”

It was strange to see how, as he talked, and his words flowed more and more freely, with a certain rhythmic eloquence, his features seemed to glow with an inner light, and the whole man seemed to be transformed, as if he had grown fifty years younger in a moment of time.

Chapter XII. Fairy-Music.

The silence that ensued was broken by the voice of the musical young lady, who had seated herself near us, and was conversing with one of the newly-arrived guests. "Well!" she said in a tone of scornful surprise. "We *are* to have something new in the way of music, it appears!"

I looked round for an explanation, and was nearly as much astonished as the speaker herself: it was *Sylvie* whom Lady Muriel was leading to the piano!

"Do try it, my darling!" she was saying. "I'm sure you can play very nicely!"

Sylvie looked round at me, with tears in her eyes. I tried to give her an encouraging smile, but it was evidently a great strain on the nerves of a child so wholly unused to be made an exhibition of, and she was frightened and unhappy. Yet here came out the perfect sweetness of her disposition: I could see that she was resolved to forget herself, and do her best to give pleasure to Lady Muriel and her friends. She seated herself at the instrument, and began instantly. Time and expression, so far as one could judge, were perfect: but her touch was one of such extraordinary lightness that it was at first scarcely possible, through the hum of conversation which still continued, to catch a note of what she was playing.

But in a minute the hum had died away into absolute silence, and we all sat, entranced and breathless, to listen to such heavenly music as none then present could ever forget.

Hardly touching the notes at first, she played a sort of introduction in a minor key—like an embodied twilight; one felt as though the lights were growing dim, and a mist were creeping through the room. Then there flashed through the gathering gloom the first few notes of a melody so lovely, so delicate, that one held one's breath, fearful to lose a single note of it. Ever and again the music dropped into the pathetic minor key with which it had begun, and, each time that the melody forced its way, so to speak, through the enshrouding gloom into the light of day, it was more entrancing, more magically sweet. Under the airy touch of the child, the instrument actually seemed to *warble*, like a bird. "*Rise up, my love, my fair one,*" it seemed to sing, "*and come away! For lo, the winter is past, the rain is over and gone; the flowers appear on the earth; the time of the singing of birds is come!*" One could fancy one heard the tinkle of the last few drops, shaken from the trees by a passing gust—that one saw the first glittering rays of the sun, breaking through the clouds.

The Count hurried across the room in great excitement. "I *cannot* remember myself," he exclaimed, "of the name of this so charming an air! It is of an opera, most surely. Yet not even will the *opera* remind his name to me! What you call him, dear child?"

Sylvie looked round at him with a rapt expression of face. She had ceased playing, but her fingers still wandered fitfully over the keys. All fear and shyness had quite passed away now, and nothing remained but the pure joy of the music that had thrilled our hearts.

"The title of it!" the Count repeated impatiently. "How call you the opera?"

"I don't know what an opera *is*," Sylvie half-whispered.

"How, then, call you the *air*?"

"I don't know any name for it," Sylvie replied, as she rose from the instrument.

Quoted from Song of Solomon 2:10-12



‘How call you the opera?’

“But this is marvellous!” exclaimed the Count, following the child, and addressing himself to me, as if I were the proprietor of this musical prodigy, and so *must* know the origin of her music. “You have heard her play this, sooner—I would say ‘before this occasion’? How call you the air?”

I shook my head; but was saved from more questions by Lady Muriel, who came up to petition the Count for a song.

The Count spread out his hands apologetically, and ducked his head. “But, Milady, I have already respected—I would say prospected—all your songs; and there shall be none fitted to my voice! They are not for basso voices!”

“Wo’n’t you look at them again?” Lady Muriel implored.

“Let’s help him!” Bruno whispered to Sylvie. “Let’s get him—*you* know!”

Sylvie nodded. “Shall *we* look for a song for you?” she said sweetly to the Count.

“Mais *oui*!” the little man exclaimed.

“Of course we may!” said Bruno, while, each taking a hand of the delighted Count, they led him to the music-stand.

“There is still hope!” said Lady Muriel over her shoulder, as she followed them.

I turned to ‘Mein Herr,’ hoping to resume our interrupted conversation. “You were remarking——” I began: but at this moment Sylvie came to call Bruno, who had returned to my side, looking unusually serious. “*Do* come, Bruno!” she entreated. “You know we’ve nearly found it!” Then, in a whisper, “The locket’s in my *hand*, now. I couldn’t get it out while they were looking!”

But Bruno drew back. “The man called me names,” he said with dignity.

“What names?” I enquired with some curiosity.

“I asked him,” said Bruno, “which sort of song he liked. And he said ‘A song of a man, not of a lady.’ And I said ‘Shall Sylvie and me find you the song of Mister Tottles?’ And he said ‘Wait, eel!’ And I’m *not* an eel, oo know!”

"I'm *sure* he didn't mean it!" Sylvie said earnestly. "It's something French—you know he ca'n't talk English so well as——"

Bruno relented visibly. "Course he knows no better, if he's Flench! Flenchmen *never* can speak English so goodly as *us*!" And Sylvie led him away, a willing captive.

"Nice children!" said the old man, taking off his spectacles and rubbing them carefully. Then he put them on again, and watched with an approving smile, while the children tossed over the heap of music, and we just caught Sylvie's reproving words, "We're *not* making hay, Bruno!"

"This has been a long interruption to our conversation," I said. "Pray let us go on!"

"Willingly!" replied the gentle old man.

"I was much interested in what you——" He paused a moment, and passed his hand uneasily across his brow. "One forgets," he murmured. "What was I saying? Oh! Something you were to tell me. Yes. Which of your teachers do you value the most highly, those whose words are easily understood, or those who puzzle you at every turn?"

I felt obliged to admit that we generally admired most the teachers we couldn't quite understand.

"Just so," said Mein Herr. "That's the way it begins. Well, *we* were at that stage some eighty years ago—or was it ninety? Our favourite teacher got more obscure every year; and every year we admired him more—just as *your* Art-fanciers call *mist* the fairest feature in a landscape, and admire a view with frantic delight when they can see nothing! Now I'll tell you how it ended. It was Moral Philosophy that our idol lectured on. Well, his pupils couldn't make head or tail of it, but they got it all by heart; and, when Examination-time came, they wrote it down; and the Examiners said 'Beautiful! What depth!'"

"But what good was it to the young men *afterwards*?"

"Why, don't you see?" replied Mein Herr. "*They* became teachers in their turn, and *they* said all these things over again; and *their* pupils wrote it all down; and the Examiners accepted it; and nobody had the ghost of an idea what it all meant!"

"And how did it end?"

"It ended this way. We woke up one fine day, and found there was no one in the place that knew *anything* about Moral Philosophy. So we abolished it, teachers, classes, examiners, and all. And if any one wanted to learn anything about it, he had to make it out for himself; and after another twenty years or so there were several men that really knew something about it! Now tell me another thing. How long do you teach a youth before you examine him, in your Universities?"

I told him, three or four years.

"Just so, just what *we* did!" he exclaimed. "We taught 'em a bit, and, just as they were beginning to take it in, we took it all out again! We pumped our wells dry before they were a quarter full—we stripped our orchards while the apples were still in blossom—we applied the severe logic of arithmetic to our chickens, while peacefully slumbering in their shells! Doubtless it's the early bird that picks up the worm—but if the bird gets up so outrageously early that the worm is still deep underground, what *then* is its chance of a breakfast?"

Not much, I admitted.

“Now see how that works!” he went on eagerly. “If you want to pump your wells so soon—and I suppose you tell me that is what you *must* do?”

“We must,” I said. “In an over-crowded country like this, nothing but Competitive Examinations——”

Mein Herr threw up his hands wildly. “What, *again?*” he cried. “I thought it was dead, fifty years ago! Oh this Upas tree of Competitive Examinations! Beneath whose deadly shade all the original genius, all the exhaustive research, all the untiring life-long diligence by which our fore-fathers have so advanced human knowledge, must slowly but surely wither away, and give place to a system of Cookery, in which the human mind is a sausage, and all we ask is, how much indigestible stuff can be crammed into it!”

Always, after these bursts of eloquence, he seemed to forget himself for a moment, and only to hold on to the thread of thought by some single word. “Yes, *crammed,*” he repeated. “We went through all that stage of the disease—had it bad, I warrant you! Of course, as the Examination was all in all, we tried to put in just what was wanted—and the *great* thing to aim at was, that the Candidate should know absolutely *nothing* beyond the needs of the Examination! I don’t say it was ever *quite* achieved: but one of my own pupils (pardon an old man’s egotism) came very near it. After the Examination, he mentioned to me the few facts which he knew but had *not* been able to bring in, and I can assure you they were trivial, Sir, absolutely trivial!”

I feebly expressed my surprise and delight.

The old man bowed, with a gratified smile, and proceeded. “At that time, no one had hit on the much more rational plan of watching for the individual scintillations of genius, and rewarding them as they occurred. As it was, we made our unfortunate pupil into a Leyden-jar, charged him up to the eyelids—then applied the knob of a Competitive Examination, and drew off one magnificent spark, which very often cracked the jar! What mattered *that?* We labeled it ‘First Class Spark,’ and put it away on the shelf.”

“But the more rational system——?” I suggested.

“Ah, yes! *that* came next. Instead of giving the whole reward of learning in one lump, we used to pay for every good answer as it occurred. How well I remember lecturing in those days, with a heap of small coins at my elbow! It was ‘A *very* good answer, Mr. Jones!’ (that meant a shilling, mostly). ‘Bravo, Mr. Robinson!’ (that meant half-a-crown). Now I’ll tell you how *that* worked. Not one single fact would any of them take in, without a fee! And when a clever boy came up from school, he got paid more for learning than we got paid for teaching him! Then came the wildest craze of all.”

“What, *another* craze?” I said.

“It’s the last one,” said the old man. “I must have tired you out with my long story. Each College wanted to get the clever boys: so we adopted a system which we had heard was very popular in England: the Colleges competed against each other, and the boys let themselves out to the highest bidder! What geese we were! Why, they were bound to come to the University *somehow*. We needn’t have paid ’em! And all our money went in getting clever boys to come to one College rather than another! The competition was so keen, that at last mere money-payments were not enough. Any College, that wished to secure some specially clever young man, had to waylay him at the Station, and hunt him through the streets. The first who touched him was allowed to have him.”

"That hunting-down of the scholars, as they arrived, must have been a curious business," I said. "Could you give me some idea of what it was like?"

"Willingly!" said the old man. "I will describe to you the very last Hunt that took place, before that form of Sport (for it was actually reckoned among the *Sports* of the day: we called it 'Cub-Hunting') was finally abandoned. I witnessed it myself, as I happened to be passing by at the moment, and was what we called 'in at the death.' I can see it now!" he went on in an excited tone, gazing into vacancy with those large dreamy eyes of his. "It seems like yesterday; and yet it happened——" He checked himself hastily, and the remaining words died away into a whisper.



Scholar-hunting: The persued

"How many years ago did you say?" I asked, much interested in the prospect of at last learning *some* definite fact in his history.

"Many years ago," he replied. "The scene at the Railway-Station had been (so they told me) one of wild excitement. Eight or nine Heads of Colleges had assembled at the gates (no one was allowed inside), and the Station-Master had drawn a line on the pavement, and insisted on their all standing behind it. The gates were flung open! The young man darted through them, and fled like lightning down the street, while the Heads of Colleges actually *yelled* with excitement on catching sight of him! The Proctor gave the word, in the old statutory form, '*Semel! Bis! Ter! Currite!*', and the Hunt began! Oh, it was a fine sight, believe me! At the first corner he dropped his Greek Lexicon: further on, his railway-rug: then various small articles: then his umbrella: lastly, what I suppose he prized most, his hand-bag: but the game was up: the spherical Principal of—of——"

"Of *which* College?" I said.

"—of *one* of the Colleges," he resumed, "had put into operation the Theory—his own discovery—of Accelerated Velocity, and captured him just opposite to where I stood. I shall never forget that wild breathless struggle! But it was soon over. Once in those great bony hands, escape was impossible!"

"May I ask why you speak of him as the '*spherical*' Principal?" I said.

"The epithet referred to his *shape*, which was a perfect *sphere*. You are aware that a bullet, another instance of a perfect sphere, when falling in a perfectly straight line, moves with Accelerated Velocity?"



Scholar-hunting: The persuers

I bowed assent.

“Well, my spherical friend (as I am proud to call him) set himself to investigate the *causes* of this. He found them to be *three*. One; that it is a perfect *sphere*. Two; that it moves in a *straight line*. Three; that its direction is *not upwards*. When these three conditions are fulfilled, you get Accelerated Velocity.”

“Hardly,” I said: “if you will excuse my differing from you. Suppose we apply the theory to *horizontal* motion. If a bullet is fired *horizontally*, it——”

“—it does *not* move in a *straight line*,” he quietly finished my sentence for me.

“I yield the point,” I said. “What did your friend do next?”

“The next thing was to apply the theory, as you rightly suggest, to *horizontal* motion. But the moving body, ever tending to *fall*, needs *constant support*, if it is to move in a true horizontal line. ‘What, then,’ he asked himself, ‘will *give constant support to a moving body?*’ And his answer was ‘*Human legs!*’ That was the discovery that immortalised his name!”

“His name being——?” I suggested.

“I had not mentioned it,” was the gentle reply of my most unsatisfactory informant. “His next step was an obvious one. He took to a diet of suet-dumplings, until his body had become a perfect sphere. *Then* he went out for his first experimental run—which nearly cost him his life!”

“How was *that?*”

“Well, you see, he had no idea of the *tremendous* new Force in Nature that he was calling into play. He began too fast. In a very few minutes he found himself moving at a hundred miles an hour! And, if he had not had the presence of mind to charge into the middle of a haystack (which he scattered to the four winds) there can be no doubt that he would have left the Planet he belonged to, and gone right away into Space!”

“And how came that to be the *last* of the Cub-Hunts?” I enquired.

“Well, you see, it led to a rather scandalous dispute between two of the Colleges. *Another* Principal had laid his hand on the young man, so nearly at the same moment as the *spherical* one, that there was no knowing which had touched him first. The dispute got into print, and did us no credit, and, in short, Cub-Hunts came to an end. Now I’ll tell you what cured us of that wild craze of ours, the bidding against each other, for the clever scholars, just as if they were articles to be sold by auction! Just when the craze had reached its highest point, and when one of the Colleges had actually advertised a Scholarship of one thousand pounds *per annum*, one of our tourists brought us the manuscript of an old African legend—I happen to have a copy of it in my pocket. Shall I translate it for you?”

“Pray go on,” I said, though I felt I was getting *very* sleepy.

Chapter XIII. What Tottles Meant.

Mein Herr unrolled the manuscript, but, to my great surprise, instead of *reading* it, he began to *sing* it, in a rich mellow voice that seemed to ring through the room.

“One thousand pounds per annum
Is not so bad a figure, come!”
Cried Tottles. “And I tell you, flat,
A man may marry well on that!
To say ‘the Husband needs the Wife’
Is not the way to represent it.
The crowning joy of Woman’s life
Is *Man!*” said Tottles (and he meant it).
The blissful Honey-moon is past:
The Pair have settled down at last:
Mamma-in-law their home will share,
And make their happiness her care.
“Your income is an ample one;
Go it, my children!” (And they went it).
“I rayther think this kind of fun
Won’t last!” said Tottles (and he meant it).
They took a little country-box—
A box at Covent Garden also:
They lived a life of double-knocks,
Acquaintances began to call so:
Their London house was much the same
(It took three hundred, clear, to rent it):
“Life is a very jolly game!”
Cried happy Tottles (and he meant it).
‘Contented with a frugal lot’
(He always used that phrase at Gunter’s),
He bought a handy little yacht—
A dozen serviceable hunters—
The fishing of a Highland Loch—

A sailing-boat to circumvent it—
“The sounding of that Gaelic ‘och’
Beats *me!*” said Tottles (and he meant it).

Here, with one of those convulsive starts that wake one up in the very act of dropping off to sleep, I became conscious that the deep musical tones that thrilled me did *not* belong to Mein Herr, but to the French Count. The old man was still conning the manuscript.

“I *beg* your pardon for keeping you waiting!” he said. “I was just making sure that I knew the English for all the words. I am quite ready now.” And he read me the following Legend:—

“In a city that stands in the very centre of Africa, and is rarely visited by the casual tourist, the people had always bought eggs—a daily necessary in a climate where egg-flip was the usual diet—from a Merchant who came to their gates once a week. And the people always bid wildly against each other: so there was quite a lively auction every time the Merchant came, and the last egg in his basket used to fetch the value of two or three camels, or thereabouts. And eggs got dearer every week. And still they drank their egg-flip, and wondered where all their money went to.



The egg-merchant

“And there came a day when they put their heads together. And they understood what donkeys they had been.

“And next day, when the Merchant came, only *one* Man went forth. And he said ‘Oh, thou of the hook-nose and the goggle-eyes, thou of the measureless beard, how much for that lot of eggs?’

“And the Merchant answered him ‘I *could* let thee have that lot at ten thousand piastres the dozen.’

“And the Man chuckled inwardly, and said ‘*Ten* piastres the dozen I offer thee, and no more, oh descendant of a distinguished grandfather!’

“And the Merchant stroked his beard, and said ‘Hum! I will await the coming of thy friends,’ So he waited. And the Man waited with him. And they waited both together.”

“The manuscript breaks off here,” said Mein Herr, as he rolled it up again; “but it was enough to open our eyes. We saw what simpletons we had been—buying our Scholars much as those ignorant savages bought their eggs—and the ruinous system was abandoned. If only we could have abandoned, along with it, all the *other* fashions we had borrowed from you, instead of carrying them to their logical results! But it was not to be. What ruined my country, and drove me from my home, was the introduction—into the *Army*, of all places—of your theory of Political Dichotomy!”

“Shall I trouble you too much,” I said, “if I ask you to explain what you mean by ‘the Theory of Political Dichotomy’?”

“No trouble at all!” was Mein Herr’s most courteous reply. “I quite enjoy talking, when I get so good a listener. What started the thing, with us, was the report brought to us, by one of our most eminent statesmen, who had stayed some time in England, of the way affairs were managed there. It was a political necessity (so he assured us, and we believed him, though we had never discovered it till that moment) that there should be *two* Parties, in every affair and on every subject. In *Politics*, the two Parties, which you had found it necessary to institute, were called, he told us, ‘Whigs’ and ‘Tories’.”

“That must have been some time ago?” I remarked.

“It *was* some time ago,” he admitted. “And this was the way the affairs of the British Nation were managed. (You will correct me if I misrepresent it. I do but repeat what our traveler told us.) These two Parties—which were in chronic hostility to each other—took turns in conducting the Government; and the Party, that happened *not* to be in power, was called the ‘Opposition’, I believe?”

“That is the right name,” I said. “There have always been, so long as we have had a Parliament at all, *two* Parties, one ‘in’, and one ‘out’.”

“Well, the function of the ‘Ins’ (if I may so call them) was to do the best they could for the national welfare—in such things as making war or peace, commercial treaties, and so forth?”

“Undoubtedly,” I said.

“And the function of the ‘Outs’ was (so our traveller assured us, though we were very incredulous at first) to *prevent* the ‘Ins’ from succeeding in any of these things?”

“To *criticize* and to *amend* their proceedings,” I corrected him. “It would be *unpatriotic* to *hinder* the Government in doing what was for the good of the Nation! We have always held a *Patriot* to be the greatest of heroes, and an *unpatriotic* spirit to be one of the worst of human ills!”

“Excuse me for a moment,” the old gentleman courteously replied, taking out his pocket-book. “I have a few memoranda here, of a correspondence I had with

our tourist, and, if you will allow me, I'll just refresh my memory—although I quite agree with you—it is, as you say, one of the worst of human ills—” And, here Mein Herr began singing again:—

But oh, the worst of human ills
(Poor Tottles found) are ‘little bills’!
And, with no balance in the Bank,
What wonder that his spirits sank?
Still, as the money flowed away,
He wondered how on earth she spent it.
“You cost me twenty pounds a day,
At least!” cried Tottles (and he meant it).
She sighed. “Those Drawing Rooms, you know!
I really never thought about it:
Mamma declared we ought to go—
We should be Nobodies without it.
That diamond-circlet for my brow—
I quite believed that *she* had sent it,
Until the Bill came in just now——”
“*Viper!*” cried Tottles (and he meant it).

Poor Mrs. T. could bear no more,
But fainted flat upon the floor.
Mamma-in-law, with anguish wild,
Seeks, all in vain, to rouse her child.
“Quick! Take this box of smelling-salts!
Don’t scold her, James, or you’ll repent it,
She’s a *dear* girl, with all her faults——”
“*She is!*” groaned Tottles (and he meant it).

“I was a donkey,” Tottles cried,
“To choose your daughter for my bride!
'Twas *you* that bid us cut a dash!
'Tis *you* have brought us to this smash!
You don’t suggest one single thing
That can in any way prevent it——
Then what’s the use of arguing?
Shut up!” cried Tottles (and he meant it).

Once more I started into wakefulness, and realised that Mein Herr was not the singer. He was still consulting his memoranda.

“It is exactly what my friend told me,” he resumed, after conning over various papers. “‘*Unpatriotic*’ is the very word I had used, in writing to him, and ‘*hinder*’ is the very word he used in his reply! Allow me to read you a portion of his letter:—

“‘*I can assure you,*’ he writes, ‘*that, unpatriotic as you may think it, the recognised function of the ‘Opposition’ is to hinder, in every manner not forbidden by the Law, the action of the Government. This process is called ‘Legitimate Obstruction’: and the greatest triumph the ‘Opposition’ can ever enjoy, is when they are able to point out that, owing to their ‘Obstruction’, the Government have failed in everything they have tried to do for the good of the Nation!*’”

"Your friend has not put it *quite* correctly," I said. "The Opposition would no doubt be glad to point out that the Government had failed *through their own fault*; but *not* that they had failed on account of *Obstruction!*"

"You think so?" he gently replied. "Allow me now to read to you this newspaper-cutting, which my friend enclosed in his letter. It is part of the report of a public speech, made by a Statesman who was at the time a member of the 'Opposition':—

"*At the close of the Session, he thought they had no reason to be discontented with the fortunes of the campaign. They had routed the enemy at every point. But the pursuit must be continued. They had only to follow up a disordered and dispirited foe.*"

"Now to what portion of your national history would you guess that the speaker was referring?"

"Really, the number of *successful* wars we have waged during the last century," I replied, with a glow of British pride, "is *far* too great for me to guess, with any chance of success, *which* it was we were then engaged in. However, I will name '*India*' as the most probable. The Mutiny was no doubt, all but crushed, at the time that speech was made. What a fine, manly, *patriotic* speech it must have been!" I exclaimed in an outburst of enthusiasm.

"You think so?" he replied, in a tone of gentle pity. "Yet my friend tells me that the '*disordered and dispirited foe*' simply meant the Statesmen who happened to be in power at the moment; that the '*pursuit*' simply meant '*Obstruction*'; and that the words '*they had routed the enemy*' simply meant that the 'Opposition' had succeeded in hindering the Government from doing any of the work which the Nation had empowered them to do!"

I thought it best to say nothing.

"It seemed queer to *us*, just at first," he resumed, after courteously waiting a minute for me to speak: "but, when once we had mastered the idea, our respect for your Nation was so great that we carried it into every department of life! It was '*the beginning of the end*' with us. My country never held up its head again!" And the poor old gentleman sighed deeply.

"Let us change the subject," I said. "Do not distress yourself, I beg!"

"No, no!" he said, with an effort to recover himself. "I had rather finish my story! The next step (after reducing our Government to impotence, and putting a stop to all useful legislation, which did not take us long to do) was to introduce what we called '*the glorious British Principle of Dichotomy*' into *Agriculture*. We persuaded many of the well-to-do farmers to divide their staff of labourers into two Parties, and to set them one against the other. They were called, like our political Parties, the '*Ins*' and the '*Outs*': the business of the '*Ins*' was to do as much of ploughing, sowing, or whatever might be needed, as they could manage in a day, and at night they were paid according to the amount they had *done*: the business of the '*Outs*' was to hinder them, and *they* were paid for the amount they had *hindered*. The farmers found they had to pay only *half* as much wages as they did before, and they didn't observe that the amount of work done was only a *quarter* as much as was done before: so they took it up quite enthusiastically, *at first*."

"And *afterwards*—?" I enquired.

"Well, *afterwards* they didn't like it quite so well. In a very short time, things settled down into a regular routine. No work *at all* was done. So the '*Ins*' got no wages, and the '*Outs*' got full pay. And the farmers never discovered, till

most of them were ruined, that the rascals had agreed to manage it so, and had shared the pay between them! While the thing lasted, there were funny sights to be seen! Why, I've often watched a ploughman, with two horses harnessed to the plough, doing his best to get it *forwards*; while the opposition-ploughman, with three donkeys harnessed at the *other* end, was doing *his* best to get it *backwards*! And the plough never moving an inch, *either* way!"

"But *we* never did anything like *that*!" I exclaimed.

"Simply because you were less *logical* than we were," replied Mein Herr. "There is *sometimes* an advantage in being a donk—Excuse me! No *personal* allusion intended. All this happened *long ago*, you know!"

"Did the Dichotomy-Principle succeed in *any* direction?" I enquired.

"In *none*," Mein Herr candidly confessed. "It had a *very* short trial in *Commerce*. The shop-keepers *wouldn't* take it up, after once trying the plan of having half the attendants busy in folding up and carrying away the goods which the other half were trying to spread out upon the counters. They said the Public didn't like it!"

"I don't wonder at it," I remarked.

"Well, we tried 'the British Principle' for some years. And the end of it all was—" His voice suddenly dropped, almost to a whisper; and large tears began to roll down his cheeks. "—the end was that we got involved in a war; and there was a great battle, in which we far out-numbered the enemy. But what could one expect, when only *half* of our soldiers were fighting, and the other half pulling them back? It ended in a crushing defeat—an utter rout. This caused a Revolution; and most of the Government were banished. I myself was accused of Treason, for having so strongly advocated 'the British Principle.' My property was all forfeited, and—and—I was driven into exile! 'Now the mischief's done,' they said, 'perhaps you'll kindly leave the country?' It nearly broke my heart, but I had to go!"

The melancholy tone became a wail: the wail became a chant: the chant became a song—though whether it was *Mein Herr* that was singing, this time, or somebody else, I could not feel certain.

"And, now the mischief's done, perhaps
You'll kindly go and pack your traps?
Since *two* (your daughter and your son)
Are Company, but *three* are none.
A course of saving we'll begin:
When change is needed, *I'll* invent it:
Don't think to put *your* finger in
This pie!" cried Tottles (and he meant it).

The music seemed to die away. Mein Herr was again speaking in his ordinary voice. "Now tell me one thing more," he said. "Am I right in thinking that in *your* Universities, though a man may reside some thirty or forty years, you examine him, once for all, at the end of the first three or four?"

"That is so, undoubtedly," I admitted.

"Practically, then, you examine a man at the *beginning* of his career!" the old man said to himself rather than to me. "And what guarantee have you that he *retains* the knowledge for which you have rewarded him—beforehand, as *we* should say?"

"None," I admitted, feeling a little puzzled at the drift of his remarks. "How do *you* secure that object?"

"By examining him at the *end* of his thirty or forty years—not at the beginning," he gently replied. "On an average, the knowledge then found is about one-fifth of what it was at first—the process of forgetting going on at a very steady uniform rate—and he, who forgets *least*, gets *most* honour, and most rewards."

"Then you give him the money when he needs it no longer? And you make him live most of his life on *nothing*!"

"Hardly that. He gives his orders to the tradesmen: they supply him, for forty, sometimes fifty, years, at their own risk: then he gets his Fellowship—which pays him in *one* year as much as *your* Fellowships pay in fifty—and then he can easily pay all his bills, with interest."

"But suppose he fails to get his Fellowship? That must occasionally happen."

"That occasionally happens." It was Mein Herr's turn, now, to make admissions.

"And what becomes of the tradesmen?"

"They calculate accordingly. When a man appears to be getting alarmingly ignorant, or stupid, they will sometimes refuse to supply him any longer. You have no idea with what enthusiasm a man will begin to rub up his forgotten sciences or languages, when his butcher has cut off the supply of beef and mutton!"

"And who are the Examiners?"

"The young men who have just come, brimming over with knowledge. You would think it a curious sight," he went on, "to see mere boys examining such old men. I have known a man set to examine his own grandfather. It was a little painful for both of them, no doubt. The old gentleman was as bald as a coot——"

"How bald would that be?" I've no idea why I asked this question. I felt I was getting foolish.

Chapter XIV. Bruno's Picnic.

"As bald as bald," was the bewildering reply. "Now, Bruno, I'll tell you a story."

"And I'll tell *oo* a story," said Bruno, beginning in a great hurry for fear of Sylvie getting the start of him: "once there were a Mouse—a little tiny Mouse—such a tiny little Mouse! Oo never saw such a tiny Mouse——"

"Did nothing ever happen to it, Bruno?" I asked. "Haven't you anything more to tell us, besides its being so tiny?"

"Nothing never happened to it," Bruno solemnly replied.

"Why did nothing never happen to it?" said Sylvie, who was sitting, with her head on Bruno's shoulder, patiently waiting for a chance of beginning *her* story.

"It were too tiny," Bruno explained.

"*That's* no reason!" I said. "However tiny it was, things might happen to it."

Bruno looked pityingly at me, as if he thought me very stupid. "It were too tiny," he repeated. "If anything happened to it, it would die—it were so *very* tiny!"

"Really that's enough about its being tiny!" Sylvie put in. "Haven't you invented any more about it?"

"Haven't invented no more yet."

"Well then, you shouldn't begin a story till you've invented more! Now be quiet, there's a good boy, and listen to *my* story."

And Bruno, having quite exhausted all his inventive faculty, by beginning in too great a hurry, quietly resigned himself to listening. "Tell about the other Bruno, please," he said coaxingly.

Sylvie put her arms round his neck, and began:—

"The wind was whispering among the trees," ("That wasn't good manners!" Bruno interrupted. "Never mind about manners," said Sylvie) "and it was evening—a nice moony evening, and the Owls were hooting——"

"Pretend they weren't Owls!" Bruno pleaded, stroking her cheek with his fat little hand. "I don't like Owls. Owls have such great big eyes. Pretend they were Chickens!"

"Are you afraid of their great big eyes, Bruno?" I said.

"Aren't *'fraid* of nothing," Bruno answered in as careless a tone as he could manage: "they're ugly with their great big eyes. I think if they cried, the tears would be as big—oh, as big as the moon!" And he laughed merrily. "Doos Owls cry ever, Mister Sir?"

"Owls cry never," I said gravely, trying to copy Bruno's way of speaking: "they've got nothing to be sorry for, you know."

"Oh, but they have!" Bruno exclaimed. "They're ever so sorry, 'cause they killed the poor little Mouses!"

"But they're not sorry when they're *hungry*, I suppose?"

"Oo don't know nothing about Owls!" Bruno scornfully remarked. "When they're hungry, they're very, *very* sorry they killed the little Mouses, 'cause if they *hadn't* killed them there'd be sumfin for supper, oo know!"

Bruno was evidently getting into a dangerously inventive state of mind, so Sylvie broke in with "Now I'm going on with the story. So the Owls—the Chickens, I mean—were looking to see if they could find a nice fat Mouse for their supper——"

"Pretend it was a nice 'abbit!" said Bruno.

"But it *wasn't* a nice habit, to kill Mouses," Sylvie argued. "I can't pretend *that!*"

"I didn't say '*habit*,' oo silly fellow!" Bruno replied with a merry twinkle in his eye. "'*abbits*—that runs about in the fields!"

"Rabbit? Well it can be a Rabbit, if you like. But you mustn't alter my story so much, Bruno. A Chicken *couldn't* eat a Rabbit!"

"But it might have wished to see if it could try to eat it."

"Well, it wished to see if it could try—oh, really, Bruno, that's nonsense! I shall go back to the Owls."

"Well then, pretend they hadn't great eyes!"

"And they saw a little Boy," Sylvie went on, disdaining to make any further corrections. "And he asked them to tell him a story. And the Owls hooted and flew away——" ("Oo shouldn't say '*flewed*;' oo should say '*flied*,'" Bruno whispered. But Sylvie wouldn't hear.) "And he met a Lion. And he asked the Lion to tell him a story. And the Lion said 'yes,' it would. And, while the Lion was telling him the story, it nibbled some of his head off——"

"Don't say 'nibbled'!" Bruno entreated. "Only little things nibble—little thin sharp things, with edges——"

“Well then, it ‘*nubbled*,’” said Sylvie. “And when it had nubbled *all* his head off, he went away, and he never said ‘thank you’!”

“That were very rude,” said Bruno. “If he couldn’t speak, he might have nodded—no, he couldn’t nod. Well, he might have shaken *hands* with the Lion!”

“Oh, I’d forgotten that part!” said Sylvie. “He *did* shake hands with it. He came back again, you know, and he thanked the Lion very much, for telling him the story.”

“Then his head had growed up again?” said Bruno.

“Oh yes, it grew up in a minute. And the Lion begged pardon, and said it wouldn’t nubble off little boys’ heads—not never no more!”

Bruno looked much pleased at this change of events. “Now that are a *really* nice story!” he said. “*Aren’t* it a nice story, Mister Sir?”

“Very,” I said. “I would like to hear another story about that Boy.”

“So would *I*,” said Bruno, stroking Sylvie’s cheek again. “*Please* tell about Bruno’s Picnic; and don’t talk about *nubbly* Lions!”

“I won’t, if it frightens you,” said Sylvie.

“*Flightens* me!” Bruno exclaimed indignantly. “It isn’t *that*! It’s ‘cause ‘nubbly’ ’s such a grumbly word to say—when one person’s got her head on another person’s shoulder. When she talks like that,” he explained to me, “the talking goes down bofe sides of my face—all the way to my chin—and it *doos* tickle so! It’s enough to make a beard grow, that it is!”

He said this with great severity, but it was evidently meant for a joke: so Sylvie laughed—a delicious musical little laugh, and laid her soft cheek on the top of her brother’s curly head, as if it were a pillow, while she went on with the story. “So this Boy——”

“But it wasn’t *me*, oo know!” Bruno interrupted. “And oo needn’t try to look as if it was, Mister Sir!”

I represented, respectfully, that I was trying to look as if it wasn’t.

“—he was a middling good Boy——”

“He were a *welly* good Boy!” Bruno corrected her. “And he never did nothing he wasn’t told to do——”

“*That* doesn’t make a good Boy!” Sylvie said contemptuously.

“That *do* make a good Boy!” Bruno insisted.

Sylvie gave up the point. “Well, he was a *very* good Boy, and he always kept his promises, and he had a big cupboard——”

“—for to keep all his promises in!” cried Bruno.

“If he kept *all* his promises,” Sylvie said, with a mischievous look in her eyes, “he wasn’t like *some* Boys I know of!”

“He had to put *salt* with them, a-course,” Bruno said gravely: “oo ca’n’t keep promises when there isn’t any salt. And he kept his birthday on the second shelf.”

“How long did he keep his birthday?” I asked. “I never can keep *mine* more than twenty-four hours.”

“Why, a birthday *stays* that long by itself!” cried Bruno. “Oo doosn’t know how to keep birthdays! This Boy kept *his* a whole year!”

“And then the next birthday would begin,” said Sylvie. “So it would be his birthday *always*.”

“So it were,” said Bruno. “Doos *oo* have treats on *oor* birthday, Mister Sir?”

“Sometimes,” I said.

"When oo're *good*, I suppose?"

"Why, it *is* a sort of treat, being good, isn't it?" I said.

"A sort of *treat*!" Bruno repeated. "It's a sort of *punishment*, I think!"

"Oh, Bruno!" Sylvie interrupted, almost sadly. "How *can* you?"

"Well, but it *is*," Bruno persisted. "Why, look here, Mister Sir! *This* is being good!" And he sat bolt upright, and put on an absurdly solemn face. "First oo must sit up as straight as pokers——"

"—as *a* poker," Sylvie corrected him.

"—as straight as *pokers*," Bruno firmly repeated. "Then oo must clasp oor hands—*so*. Then—'Why hasn't oo brushed oor hair? Go and brush it *toreckly*!' Then—'Oh, Bruno, oo mustn't dog's-ear the daisies!' Did oo learn *oor* spelling wiz daisies, Mister Sir?"

"I want to hear about that Boy's *Birthday*," I said.

Bruno returned to the story instantly. "Well, so this Boy said 'Now it's my Birthday!' And so—I'm tired!" he suddenly broke off, laying his head in Sylvie's lap. "Sylvie knows it best. Sylvie's grown-upper than me. Go on, Sylvie!"

Sylvie patiently took up the thread of the story again. "So he said 'Now it's my Birthday. Whatever shall I do to keep my Birthday? All *good* little Boys——'" (Sylvie turned away from Bruno, and made a great pretence of whispering to *me*) "—all *good* little Boys—Boys that learn their lessons quite perfect—they always keep their birthdays, you know. So of course *this* little Boy kept *his* Birthday."

"Oo may call him Bruno, if oo like," the little fellow carelessly remarked. "It weren't *me*, but it makes it more interesting."

"So Bruno said to himself 'The properest thing to do is to have a Picnic, all by myself, on the top of the hill. And I'll take some Milk, and some Bread, and some Apples: and first and foremost, I want some *Milk*!' So, first and foremost, Bruno took a milk-pail——"

"And he went and milked the Cow!" Bruno put in.

"Yes," said Sylvie, meekly accepting the new verb. "And the Cow said 'Moo! What are you going to do with all that Milk?' And Bruno said 'Please'm, I want it for my Picnic.' And the Cow said 'Moo! But I hope you wo'n't *boil* any of it?' And Bruno said 'No, *indeed* I won't! New Milk's so nice and so warm, it wants no boiling!'"

"It doesn't want no boiling," Bruno offered as an amended version.

"So Bruno put the Milk in a bottle. And then Bruno said 'Now I want some Bread!' So he went to the Oven, and he took out a delicious new Loaf. And the Oven——"

"—ever so light and so puffy!" Bruno impatiently corrected her. "Oo shouldn't leave out so many words!"

Sylvie humbly apologised. "—a delicious new Loaf, ever so light and so puffy. And the Oven said——" Here Sylvie made a long pause. "Really I don't know *what* an Oven begins with, when it wants to speak!"

Both children looked appealingly at me; but I could only say, helplessly, "I haven't the least idea! *I* never heard an Oven speak!"

For a minute or two we all sat silent; and then Bruno said, very softly, "Oven begins wiz 'O'."

"*Good* little boy!" Sylvie exclaimed. "He does his spelling *very* nicely. *He's cleverer than he knows!*" she added, aside, to *me*. "So the Oven said 'O! What

are you going to do with all that Bread?' And Bruno said 'Please——' Is an Oven 'Sir' or 'm,' would you say?' She looked to me for a reply.

"Both, I think," seemed to me the safest thing to say.

Sylvie adopted the suggestion instantly. "So Bruno said 'Please, Sirm, I want it for my Picnic.' And the Oven said 'O! But I hope you wo'n't *toast* any of it?' And Bruno said 'No, *indeed* I wo'n't! New Bread's so light and so puffy, it wants no toasting!'"

"It never doesn't want no toasting," said Bruno. "I *wiss* oo wouldn't say it so short!"

"So Bruno put the Bread in the hamper. Then Bruno said 'Now I want some Apples!' So he took the hamper, and he went to the Apple-Tree, and he picked some lovely ripe Apples. And the Apple-Tree said——" Here followed another long pause.

Bruno adopted his favourite expedient of tapping his forehead; while Sylvie gazed earnestly upwards, as if she hoped for some suggestion from the birds, who were singing merrily among the branches overhead. But no result followed.

"What *does* an Apple-tree begin with, when it wants to speak?" Sylvie murmured despairingly, to the irresponsible birds.

At last, taking a leaf out of Bruno's book, I ventured on a remark. "Doesn't 'Apple-tree' always begin with 'Eh!'"

"Why, of *course* it does! How *clever* of you!" Sylvie cried delightedly.

Bruno jumped up, and patted me on the head. I tried not to feel conceited.

"So the Apple Tree said 'Eh! What are you going to do with all those Apples?' And Bruno said 'Please, Sir, I want them for my Picnic,' And the Apple-Tree said 'Eh! But I hope you wo'n't *bake* any of them?' And Bruno said 'No, *indeed* I wo'n't! Ripe Apples are so nice and so sweet, they want no baking!'"

"They never doesn't——" Bruno was beginning, but Sylvie corrected herself before he could get the words out.

"They never doesn't nonow want no baking.' So Bruno put the Apples in the hamper, along with the Bread, and the bottle of Milk. And he set off to have a Picnic, on the top of the hill, all by himself——"

"He wasn't greedy, oo know, to have it all by himself," Bruno said, patting me on the cheek to call my attention; "cause he hadn't got no brothers and sisters."

"It was very sad to have no *sisters*, wasn't it?" I said.

"Well, I don't know," Bruno said thoughtfully; "cause he hadn't no lessons to do. So he didn't mind."

Sylvie went on. "So, as he was walking along the road, he heard behind him such a curious sort of noise—a sort of a Thump! Thump! Thump! 'Whatever *is* that?' said Bruno. 'Oh, I know!' said Bruno. 'Why, it's only my Watch a-ticking!'"

"*Were* it his Watch a-ticking?" Bruno asked me, with eyes that fairly sparkled with mischievous delight.

"No doubt of it!" I replied. And Bruno laughed exultingly.

"Then Bruno thought a little harder. And he said 'No! It *ca'n't* be my Watch a-ticking; because I haven't *got* a Watch!'"

Bruno peered up anxiously into my face, to see how I took it. I hung my head, and put a thumb into my mouth, to the evident delight of the little fellow.

“So Bruno went a little further along the road. And then he heard it again, that queer noise—Thump! Thump! Thump! ‘What ever *is* that?’ said Bruno. ‘Oh, I know!’ said Bruno. ‘Why, it’s only the Carpenter a-mending my Wheelbarrow!’”

“*Were* it the Carterpenter a-mending his Wheelbarrow?” Bruno asked me.

I brightened up, and said “It *must* have been!” in a tone of absolute conviction.

Bruno threw his arms round Sylvie’s neck. “Sylvie!” he said, in a perfectly audible whisper. “He says it *must* have been!”

“Then Bruno thought a little harder. And he said ‘No! It *ca’n’t* be the Carpenter amending my Wheelbarrow, because I haven’t *got* a Wheelbarrow!’”

This time I hid my face in my hands, quite unable to meet Bruno’s look of triumph.

“So Bruno went a little further along the road. And then he heard that queer noise again—Thump! Thump! Thump! So he thought he’d look round, *this* time, just to *see* what it was. And what should it be but a great Lion!”

“A great big Lion,” Bruno corrected her.

“A great big Lion. And Bruno was ever so frightened, and he ran——”

“No, he wasn’t *frightened* a bit!” Bruno interrupted. (He was evidently anxious for the reputation of his namesake.) “He runned away to get a good look at the Lion; ’cause he wanted to see if it were the same Lion what used to nubble little Boys’ heads off; and he wanted to know how big it was!”

“Well, he ran away, to get a good look at the Lion. And the Lion trotted slowly after him. And the Lion called after him, in a very gentle voice, ‘Little Boy, little Boy! You needn’t be afraid of *me*! I’m a very *gentle* old Lion now. I *never* nubble little Boys’ heads off, as I used to do.’ And so Bruno said ‘Don’t you *really*, Sir? Then what do you live on?’ And the Lion——”

“Oo *see* he weren’t a bit frightened!” Bruno said to me, patting my cheek again. “’cause he remembered to call it ‘Sir,’ oo know.”

I said that no doubt that was the *real* test whether a person was frightened or not.

“And the Lion said ‘Oh, I live on bread-and-butter, and cherries, and marmalade, and plum-cake——’”

“—and *apples*!” Bruno put in.

“Yes, ‘and apples.’ And Bruno said ‘Won’t you come with me to my Picnic?’ And the Lion said ‘Oh, I should like it *very much indeed*!’ And Bruno and the Lion went away together.” Sylvie stopped suddenly.

“Is that *all*?” I asked, despondingly.

“Not *quite* all,” Sylvie slyly replied. “There’s a sentence or two more. Isn’t there, Bruno?”

“Yes,” with a carelessness that was evidently put on: “just a sentence or two more.”

“And, as they were walking along, they looked over a hedge, and who should they see but a little black Lamb! And the Lamb was ever so frightened. And it ran——”

“It were *really* frightened!” Bruno put in.

“It ran away. And Bruno ran after it. And he called ‘Little Lamb! You needn’t be afraid of *this* Lion! It *never* kills things! It lives on cherries, and marmalade——’”

“—and *apples*!” said Bruno. “Oo *always* forgets the apples!”

“And Bruno said ‘Wo’n’t you come with us to my Picnic?’ And the Lamb said ‘Oh, I should like it *very much indeed*, if my Ma will let me!’ And Bruno said ‘Let’s go and ask your Ma!’ And they went to the old Sheep. And Bruno said ‘Please, may your little Lamb come to my Picnic?’ And the Sheep said ‘Yes, if it’s learnt all its lessons.’ And the Lamb said ‘Oh yes, Ma! I’ve learnt *all* my lessons!’”

“Pretend it hadn’t any lessons!” Bruno earnestly pleaded.

“Oh, that would never do!” said Sylvie. “I ca’n’t leave out all about the lessons! And the old Sheep said ‘Do you know your A B C yet? Have you learnt A?’ And the Lamb said ‘Oh yes, Ma! I went to the A-field, and I helped them to make A!’ ‘Very good, my child! And have you learnt B?’ ‘Oh yes, Ma! I went to the B-hive, and the B gave me some honey!’ ‘Very good, my child! And have you learnt C?’ ‘Oh yes, Ma! I went to the C-side, and I saw the ships sailing on the C!’ ‘Very good, my child! You may go to Bruno’s Picnic.’”



Starting for Bruno’s Picnic

“So they set off. And Bruno walked in the middle, so that the Lamb mightn’t see the Lion——”

“It were *frightened*,” Bruno explained.

“Yes, and it trembled so; and it got paler and paler; and, before they’d got to the top of the hill, it was a *white* little Lamb—as white as snow!”

“But *Bruno* weren’t frightened!” said the owner of that name. “So *he* staid black!”

“No, he *didn’t* stay black! He staid *pink*!” laughed Sylvie. “I shouldn’t kiss you like this, you know, if you were *black*!”

“Oo’d *have* to!” Bruno said with great decision. “Besides, Bruno wasn’t

Bruno, oo know—I mean, Bruno wasn't *me*—I mean—don't talk nonsense, Sylvie!"

"I won't do it again!" Sylvie said very humbly. "And so, as they went along, the Lion said 'Oh, I'll tell you what I used to do when I was a young Lion. I used to hide behind trees, to watch for little Boys.'" (Bruno cuddled a little closer to her.) "'And, if a little thin scraggy Boy came by, why, I used to let him go. But, if a little fat juicy——'"

Bruno could bear no more. "Pretend he wasn't juicy!" he pleaded, half-sobbing.

"Nonsense, Bruno!" Sylvie briskly replied. "It'll be done in a moment! '—if a little fat juicy Boy came by, why, I used to spring out and gobble him up! Oh, you've no *idea* what a delicious thing it is—a little juicy Boy!' And Bruno said 'Oh, if you please, Sir, *don't* talk about eating little boys! It makes me so *shivery!*'"

The real Bruno shivered, in sympathy with the hero.

"And the Lion said 'Oh, well, we won't talk about it, then! I'll tell you what happened on my wedding-day——'"

"I like *this* part better," said Bruno, patting my cheek to keep me awake.

"'There was, oh, such a lovely wedding-breakfast! At *one* end of the table there was a large plum-pudding. And at the other end there was a nice roasted *Lamb!* Oh, you've no *idea* what a delicious thing it is—a nice roasted Lamb!' And the Lamb said 'Oh, if you please, Sir, *don't* talk about eating Lambs! It makes me so *shivery!*' And the Lion said 'Oh, well, we won't talk about it, then!'"

Chapter XV. The Little Foxes.

"So, when they got to the top of the hill, Bruno opened the hamper: and he took out the Bread, and the Apples, and the Milk: and they ate, and they drank. And when they'd finished the Milk, and eaten half the Bread and half the Apples, the Lamb said 'Oh, my paws is so sticky! I want to wash my paws!' And the Lion said 'Well, go down the hill, and wash them in the brook, yonder. We'll wait for you!'"

"It never comed back!" Bruno solemnly whispered to me.

But Sylvie overheard him. "You're not to whisper, Bruno! It spoils the story! And when the Lamb had been gone a long time, the Lion said to Bruno 'Do go and see after that silly little Lamb! It must have lost its way.' And Bruno went down the hill. And when he got to the brook, he saw the Lamb sitting on the bank: and who should be sitting by it but an old Fox!"

"Don't know who *should* be sitting by it," Bruno said thoughtfully to himself. "A old Fox *were* sitting by it."

"And the old Fox were saying," Sylvie went on, for once conceding the grammatical point, "'Yes, my dear, you'll be ever so happy with us, if you'll only come and see us! I've got three little Foxes there, and we do love little Lambs so dearly!' And the Lamb said 'But you never *eat* them, do you, Sir?' And the Fox said 'Oh, no! What, *eat* a Lamb? We never *dream* of doing such a thing!' So the Lamb said 'Then I'll come with you.' And off they went, hand in hand."

"That Fox were welly extremely wicked, *weren't* it?" said Bruno.

"No, no!" said Sylvie, rather shocked at such violent language. "It wasn't quite so bad as that!"

“Well, I mean, it wasn’t nice,” the little fellow corrected himself.

“And so Bruno went back to the Lion. ‘Oh, come quick!’ he said. ‘The Fox has taken the Lamb to his house with him! I’m *sure* he means to eat it!’ And the Lion said ‘I’ll come as quick as ever I can!’ And they trotted down the hill.”

“Do oo think he caught the Fox, Mister Sir?” said Bruno. I shook my head, not liking to speak: and Sylvie went on.

“And when they got to the house, Bruno looked in at the window. And there he saw the three little Foxes sitting round the table, with their clean pinafores on, and spoons in their hands——”

“Spoons in their hands!” Bruno repeated in an ecstasy of delight.

“And the Fox had got a great big knife—all ready to kill the poor little Lamb——” (“Oo needn’t be flightened, Mister Sir!” Bruno put in, in a hasty whisper.)



‘Enter the Lion’

“And just as he was going to do it, Bruno heard a great ROAR——” (The real Bruno put his hand into mine, and held tight), “and the Lion came *bang* through the door, and the next moment it had bitten off the old Fox’s head! And Bruno jumped in at the window, and went leaping round the room, and crying out ‘Hooray! Hooray! The old Fox is dead! The old Fox is dead!’”

Bruno got up in some excitement. “May I do it now?” he enquired.

Sylvie was quite decided on this point. “Wait till afterwards,” she said. “The speeches come next, don’t you know? You always love the speeches, *don’t* you?”

“Yes, I doos,” said Bruno: and sat down again.

“The Lion’s speech. ‘Now, you silly little Lamb, go home to your mother, and never listen to old Foxes again. And be very good and obedient.’”

“The Lamb’s speech. ‘Oh, indeed, Sir, I will, Sir!’ and the Lamb went away.” (“But oo needn’t go away!” Bruno explained. “It’s quite the nicest part—what’s coming now!” Sylvie smiled. She liked having an appreciative audience.)

“The Lion’s speech to Bruno. ‘Now, Bruno, take those little Foxes home with you, and teach them to be good obedient little Foxes! Not like that wicked old thing there, that’s got no head!’” (“That hasn’t got no head,” Bruno repeated.)

“Bruno’s speech to the Lion. ‘Oh, indeed, Sir, I will, Sir!’ And the Lion went away.” (“It gets betterer and betterer, now,” Bruno whispered to me, “right away to the end!”)

“Bruno’s speech to the little Foxes. ‘Now, little Foxes, you’re going to have your first lesson in being good. I’m going to put you into the hamper, along with the Apples and the Bread: and you’re not to eat the Apples: and you’re not to eat the Bread: and you’re not to eat *anything*—till we get to my house: and then you’ll have your supper.’

“The little Foxes’ speech to Bruno. The little Foxes said nothing.

“So Bruno put the Apples into the hamper—and the little Foxes—and the Bread——” (“They had picnicked all the Milk,” Bruno explained in a whisper) “—and he set off to go to his house.” (“We’re getting near the end now,” said Bruno.)

“And, when he had got a little way, he thought he would look into the hamper, and see how the little Foxes were getting on.”

“So he opened the door——” said Bruno.

“Oh, Bruno!” Sylvie exclaimed, “*you’re* not telling the story! So he opened the door, and behold, there were no Apples! So Bruno said ‘Eldest little Fox, have *you* been eating the Apples?’ And the eldest little Fox said ‘No no no!’” (It is impossible to give the tone in which Sylvie repeated this rapid little ‘No no no!’ The nearest I can come to it is to say that it was much as if a young and excited duck had tried to quack the words. It was too quick for a quack, and yet too harsh to be anything else.) “Then he said ‘Second little Fox, have *you* been eating the Apples?’ And the second little Fox said ‘No no no!’ Then he said ‘Youngest little Fox, have *you* been eating the Apples?’ And the youngest little Fox *tried* to say ‘No no no!’ but its mouth was so full, it couldn’t, and it only said ‘Wauch! Wauch! Wauch!’ And Bruno looked into its mouth. And its mouth was full of Apples! And Bruno shook his head, and he said ‘Oh dear, oh dear! What bad creatures these Foxes are!’”

Bruno was listening intently: and, when Sylvie paused to take breath, he could only just gasp out the words “About the Bread?”

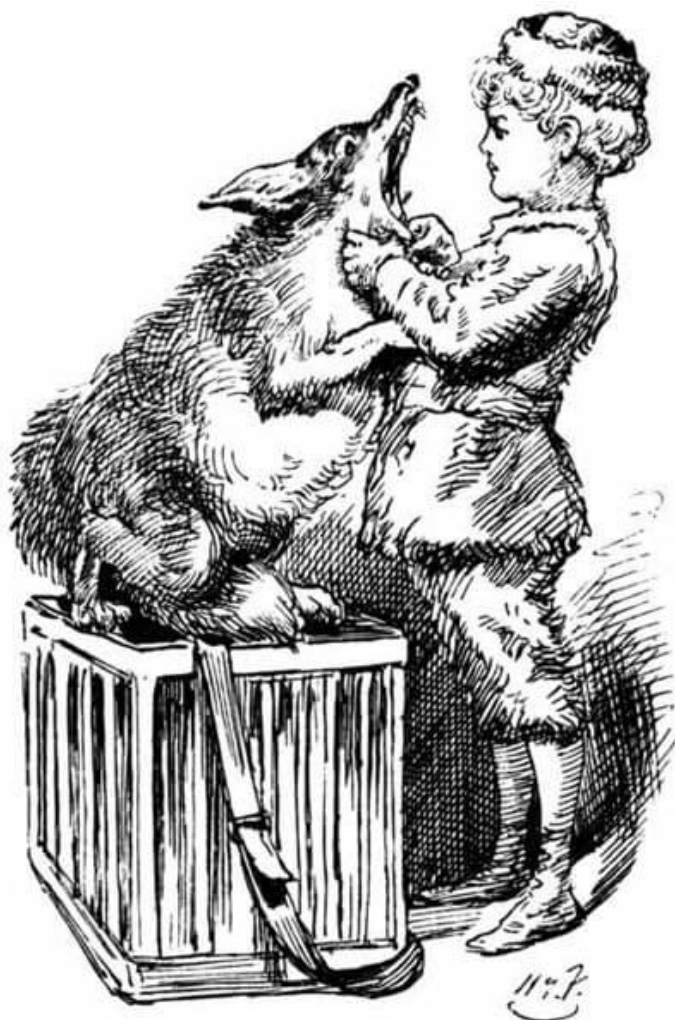
“Yes,” said Sylvie, “the Bread comes next. So he shut the door again; and he went a little further; and then he thought he’d just peep in once more. And behold, there was no Bread!” (“What do ‘behold’ *mean*?” said Bruno. “Hush!” said Sylvie.) “And he said ‘Eldest little Fox, have *you* been eating the Bread?’ And the eldest little Fox said ‘No no no!’ ‘Second little Fox, have *you* been eating the Bread?’ And the second little Fox only said ‘Wauch! Wauch! Wauch!’ And Bruno looked into its mouth, and its mouth was full of Bread!” (“It might have chokeded it,” said Bruno.) “So he said ‘Oh dear, oh dear! What *shall* I do with these Foxes?’ And he went a little further.” (“Now comes the most interesting part,” Bruno whispered.)

“And when Bruno opened the hamper again, what do you think he saw?” (“Only *two* Foxes!” Bruno cried in a great hurry.) “You shouldn’t tell it so quick. However, he *did* see only *two* Foxes. And he said ‘Eldest little Fox, have you been eating the youngest little Fox?’ And the eldest little Fox said ‘No no no!’ ‘Second little Fox, have *you* been eating the youngest little Fox?’ And the second little Fox did its very best to say ‘No no no!’ but it could only say ‘Weuchk! Weuchk! Weuchk!’ And when Bruno looked into its mouth, it was half full of Bread, and half full of Fox!” (Bruno said nothing in the pause this time. He was beginning to pant a little, as he knew the crisis was coming.)

“And when he’d got nearly home, he looked once more into the hamper, and he saw——”

“Only——” Bruno began, but a generous thought struck him, and he looked

at me. "Oo may say it, *this* time, Mister Sir!" he whispered. It was a noble offer, but I wouldn't rob him of the treat. "Go on, Bruno," I said, "you say it much the best." "Only—but—*one*—Fox!" Bruno said with great solemnity.



'Whihuauch! Whihuauch!'

"Eldest little Fox," Sylvie said, dropping the narrative-form in her eagerness, "you've been *so* good that I can hardly believe *you've* been disobedient: but I'm *afraid* you've been eating your little sister?" And the eldest little Fox said 'Whihuauch! Whihuauch!' and then it choked. And Bruno looked into its mouth, and it *was* full!" (Sylvie paused to take breath, and Bruno lay back among the daisies, and looked at me triumphantly. "Isn't it *grand*, Mister Sir?" said he. I tried hard to assume a critical tone. "It's grand," I said: "but it frightens one so!" "Oo may sit a little closer to *me*, if oo like," said Bruno.)

"And so Bruno went home: and took the hamper into the kitchen, and opened it. And he saw——" Sylvie looked at *me*, this time, as if she thought I had been rather neglected and ought to be allowed *one* guess, at any rate.

"He ca'n't guess!" Bruno cried eagerly. "I 'fraid I *must* tell him! There

weren't—*nuffin* in the hamper!" I shivered in terror, and Bruno clapped his hands with delight. "He *is* frightened, Sylvie! Tell the rest!"

"So Bruno said 'Eldest little Fox, have you been eating *yourself*, you wicked little Fox?' And the eldest little Fox said 'Whihuauch!' And then Bruno saw there was only its *mouth* in the hamper! So he took the mouth, and he opened it, and shook, and shook! And at last he shook the little Fox out of its own mouth! And then he said 'Open your mouth again, you wicked little thing!' And he shook, and shook! And he shook out the second little Fox! And he said 'Now open *your* mouth!' And he shook, and shook! And he shook out the youngest little Fox, and all the Apples, and all the Bread!"

"And then Bruno stood the little Foxes up against the wall: and he made them a little speech. 'Now, little Foxes, you've begun very wickedly—and you'll have to be punished. First you'll go up to the nursery, and wash your faces, and put on clean pinafores. Then you'll hear the bell ring for supper. Then you'll come down: and *you won't have any supper*: but you'll have a good *whipping*! Then you'll go to bed. Then in the morning you'll hear the bell ring for breakfast. *But you won't have any breakfast*! You'll have a good *whipping*! Then you'll have your lessons. And, perhaps, if you're *very* good, when dinner-time comes, you'll have a little dinner, and no more whipping!' ("How *very* kind he was!" I whispered to Bruno. "*Middling* kind," Bruno corrected me gravely.)

"So the little Foxes ran up to the nursery. And soon Bruno went into the hall, and rang the big bell. 'Tingle, tingle, tingle! Supper, supper, supper!' Down came the little Foxes, in such a hurry for their supper! Clean pinafores! Spoons in their hands! And, when they got into the dining-room, there was ever such a white table-cloth on the table! But there was nothing on it but a big whip. And they had *such* a whipping!" (I put my handkerchief to my eyes, and Bruno hastily climbed upon my knee and stroked my face. "Only *one* more whipping, Mister Sir!" he whispered. "Don't cry more than oo ca'n't help!")

"And the next morning early, Bruno rang the big bell again. 'Tingle, tingle, tingle! Breakfast, breakfast, breakfast!' Down came the little Foxes! Clean pinafores! Spoons in their hands! No breakfast! Only the big whip! Then came lessons," Sylvie hurried on, for I still had my handkerchief to my eyes. "And the little Foxes were ever so good! And they learned their lessons backwards, and forwards, and upside-down. And at last Bruno rang the big bell again. 'Tingle, tingle, tingle! Dinner, dinner, dinner!' And when the little Foxes came down—" ("Had they clean pinafores on?" Bruno enquired. "Of course!" said Sylvie. "And spoons?" "Why, you *know* they had!" "Couldn't be *certain*," said Bruno.) "—they came as slow as slow! And they said 'Oh! There'll be no dinner! There'll only be the big whip!' But, when they got into the room, they saw the most *lovely* dinner!" ("Buns?" cried Bruno, clapping his hands.) "Buns, and cake, and—" ("—and jam?" said Bruno.) "Yes, jam—and soup—and—" ("—and *sugar plums*!" Bruno put in once more; and Sylvie seemed satisfied.)

"And ever after that, they *were* such good little Foxes! They did their lessons as good as gold—and they never did what Bruno told them not to—and they never ate each other any more—and *they never ate themselves*!"

The story came to an end so suddenly, it almost took my breath away; however I did my best to make a pretty speech of thanks. "I'm sure it's very—very—very much so, I'm sure!" I seemed to hear myself say.

Chapter XVI. Beyond These Voices.

“I didn’t quite catch what you said!” were the next words that reached my ear, but certainly *not* in the voice either of Sylvie or of Bruno, whom I could just see, through the crowd of guests, standing by the piano, and listening to the Count’s song. Mein Herr was the speaker. “I didn’t quite catch what you said!” he repeated. “But I’ve no doubt you take *my* view of it. Thank you *very* much for your kind attention. There is only but *one* verse left to be sung!” These last words were not in the gentle voice of Mein Herr, but in the deep bass of the French Count. And, in the silence that followed, the final stanza of ‘Tottles’ rang through the room.



‘Never!’ yelled Tottles

See now this couple settled down
In quiet lodgings, out of town:
Submissively the tearful wife
Accepts a plain and humble life:
Yet begs one boon on bended knee:
‘My ducky-darling, don’t resent it!
Mamma might come for two or three——’
‘NEVER!’ yelled Tottles. And he meant it.

The conclusion of the song was followed by quite a chorus of thanks and compliments from all parts of the room, which the gratified singer responded to by bowing low in all directions. “It is to me a great privilege,” he said to Lady Muriel, “to have met with this so marvellous a song. The accompaniment to him is so strange, so mysterious: it is as if a new music were to be invented! I will play him once again so as that to show you what I mean.” He returned to the piano, but the song had vanished.

The bewildered singer searched through the heap of music lying on an adjoining table, but it was not there, either. Lady Muriel helped in the search:

others soon joined: the excitement grew. "What *can* have become of it?" exclaimed Lady Muriel. Nobody knew: one thing only was certain, that no one had been near the piano since the Count had sung the last verse of the song.

"Nevare mind him!" he said, most good-naturedly. "I shall give it you with memory alone!" He sat down, and began vaguely fingering the notes; but nothing resembling the tune came out. Then he, too, grew excited. "But what oddness! How much of singularity! That I might lose, not the words alone, but the tune also—that is quite curious, I suppose?"

We all supposed it, heartily.

"It was that sweet little boy, who found it for me," the Count suggested. "Quite perhaps *he* is the thief?"

"Of course he is!" cried Lady Muriel. "Bruno! Where are you, my darling?"

But no Bruno replied: it seemed that the two children had vanished as suddenly, and as mysteriously, as the song.

"They are playing us a trick!" Lady Muriel gaily exclaimed. "This is only an *ex tempore* game of Hide-and-Seek! That little Bruno is an embodied Mischief!"

The suggestion was a welcome one to most of us, for some of the guests were beginning to look decidedly uneasy. A general search was set on foot with much enthusiasm: curtains were thrown back and shaken, cupboards opened, and ottomans turned over; but the number of possible hiding-places proved to be strictly limited; and the search came to an end almost as soon as it had begun.

"They must have run out, while we were wrapped up in the song," Lady Muriel said, addressing herself to the Count, who seemed more agitated than the others; "and no doubt they've found their way back to the housekeeper's room."

"Not by *this* door!" was the earnest protest of a knot of two or three gentlemen, who had been grouped round the door (one of them actually leaning against it) for the last half-hour, as they declared. "*This* door has not been opened since the song began!"

An uncomfortable silence followed this announcement. Lady Muriel ventured no further conjectures, but quietly examined the fastenings of the windows, which opened as doors. They all proved to be well fastened, *inside*.

Not yet at the end of her resources, Lady Muriel rang the bell. "Ask the housekeeper to step here," she said, "and to bring the children's walking-things with her."

"I've brought them, my Lady," said the obsequious housekeeper, entering after another minute of silence. "I thought the young lady would have come to my room to put on her boots. Here's your boots, my love!" she added cheerfully, looking in all directions for the children. There was no answer, and she turned to Lady Muriel with a puzzled smile. "Have the little darlings hid themselves?"

"I don't see them, just now," Lady Muriel replied, rather evasively. "You can leave their things here, Wilson. *I'll* dress them, when they're ready to go."

The two little hats, and Sylvie's walking-jacket, were handed round among the ladies, with many exclamations of delight. There certainly was a sort of witchery of beauty about them. Even the little boots did not miss their share of favorable criticism. "Such natty little things!" the musical young lady exclaimed, almost fondling them as she spoke. "And what tiny tiny feet they must have!"

Finally, the things were piled together on the centre-ottoman, and the guests, despairing of seeing the children again, began to wish good-night and leave the

house.

There were only some eight or nine left—to whom the Count was explaining, for the twentieth time, how he had had his eye on the children during the last verse of the song; how he had then glanced round the room, to see what effect “de great chest-note” had had upon his audience; and how, when he looked back again, they had both disappeared—when exclamations of dismay began to be heard on all sides, the Count hastily bringing his story to an end to join in the outcry.

The walking-things had all disappeared!

After the utter failure of the search for the *children*, there was a very half-hearted search made for their *apparel*. The remaining guests seemed only too glad to get away, leaving only the Count and our four selves.

The Count sank into an easy-chair, and panted a little.

“Who then *are* these dear children, I pray you?” he said. “Why come they, why go they, in this so little ordinary a fashion? That the music should make itself to vanish—that the hats, the boots, should make themselves to vanish—how is it, I pray you?”

“I’ve no idea where they are!” was all I could say, on finding myself appealed to, by general consent, for an explanation.

The Count seemed about to ask further questions, but checked himself.

“The hour makes himself to become late,” he said. “I wish to you a very good night, my Lady. I betake myself to my bed—to dream—if that indeed I be not dreaming now!” And he hastily left the room.

“Stay awhile, stay awhile!” said the Earl, as I was about to follow the Count. “*You* are not a guest, you know! Arthur’s friend is at *home* here!”

“Thanks!” I said, as, with true English instincts, we drew our chairs together round the fire-place, though no fire was burning—Lady Muriel having taken the heap of music on her knee, to have one more search for the strangely-vanished song.

“Don’t you sometimes feel a wild longing,” she said, addressing herself to me, “to have something more to do with your hands, while you talk, than just holding a cigar, and now and then knocking off the ash? Oh, I know all that you’re going to say!” (This was to Arthur, who appeared about to interrupt her.) “The Majesty of Thought supersedes the work of the fingers. A Man’s severe thinking, *plus* the shaking-off a cigar-ash, comes to the same total as a Woman’s trivial fancies, *plus* the most elaborate embroidery. *That’s* your sentiment, isn’t it, only better expressed?”

Arthur looked into the radiant, mischievous face, with a grave and very tender smile. “Yes,” he said resignedly: “that is my sentiment, exactly.”

“Rest of body, and activity of mind,” I put in. “Some writer tells us *that* is the acme of human happiness.”

“Plenty of *bodily* rest, at any rate!” Lady Muriel replied, glancing at the three recumbent figures around her. “But what you call activity of *mind*——”

“—is the privilege of young Physicians *only*,” said the Earl. “We old men have no claim to be active! *What can an old man do but die?*”

“A good many other things, I should *hope*,” Arthur said earnestly.

“Well, maybe. Still you have the advantage of me in many ways, dear boy! Not only that *your* day is dawning while *mine* is setting, but your *interest* in Life—somehow I ca’n’t help envying you *that*. It will be many a year before you lose your hold of *that*.”

Quoted from *What can an old man do but die?* by Thomas Hood

“Yet surely many human interests *survive* human Life?” I said.

“Many do, no doubt. And *some* forms of Science; but only *some*, I think. Mathematics, for instance: *that* seems to possess an endless interest: one ca’n’t imagine *any* form of Life, or *any* race of intelligent beings, where Mathematical truth would lose its meaning. But I fear *Medicine* stands on a different footing. Suppose you discover a remedy for some disease hitherto supposed to be incurable. Well, it is delightful for the moment, no doubt—full of interest—perhaps it brings you fame and fortune. But what then? Look on, a few years, into a life where disease has no existence. What is your discovery worth, *then*? Milton makes Jove promise too much. ‘*Of so much fame in heaven expect thy meed.*’ Poor comfort, when one’s ‘fame’ concerns matters that will have ceased to have a meaning!”

Quoted from *Lycidas*
by John Milton

“At any rate, one wouldn’t care to make any *fresh* medical discoveries,” said Arthur. “I see no help for *that*—though I shall be sorry to give up my favorite studies. Still, medicine, disease, pain, sorrow, sin—I fear they’re all linked together. Banish sin, and you banish them all!”

“*Military* science is a yet stronger instance,” said the Earl. “Without sin, *war* would surely be impossible. Still any mind, that has had in this life any keen interest, not in *itself* sinful, will surely find itself *some* congenial line of work hereafter. Wellington may have no more *battles* to fight—and yet—

‘We doubt not that, for one so true,
There must be other, nobler work to do,
Than when he fought at Waterloo,
And Victor he must ever be!’”

Quoted from *Ode on
the Death of the Duke
of Wellington* by
Alfred Lord Tennyson

He lingered over the beautiful words, as if he loved them: and his voice, like distant music, died away into silence.

After a minute or two he began again. “If I’m not wearying you, I would like to tell you an idea of the future Life which has haunted me for years, like a sort of waking nightmare—I ca’n’t reason myself out of it.”

“Pray do,” Arthur and I replied, almost in a breath. Lady Muriel put aside the heap of music, and folded her hands together.

“The one idea,” the Earl resumed, “that has seemed to me to overshadow all the rest, is that of *Eternity*—involving, as it seems to do, the necessary *exhaustion* of all subjects of human interest. Take Pure Mathematics, for instance—a Science independent of our present surroundings. I have studied it, myself, a little. Take the subject of circles and ellipses—what we call ‘curves of the second degree.’ In a future Life, it would only be a question of so many years (or *hundreds* of years, if you like), for a man to work out *all* their properties. Then he *might* go to curves of the third degree. Say *that* took ten times as long (you see we have *unlimited* time to deal with). I can hardly imagine his *interest* in the subject holding out even for those; and, though there is no limit to the *degree* of the curves he might study, yet surely the time, needed to exhaust *all* the novelty and interest of the subject, would be absolutely *finite*? And so of all other branches of Science. And, when I transport myself, in thought, through some thousands or millions of years, and fancy myself possessed of as much Science as one created reason can carry, I ask myself ‘What then? With nothing more to learn, can one rest content on *knowledge*, for the eternity yet to be lived through?’ It has been a very wearying thought to me. I have sometimes fancied

one *might*, in that event, say ‘It is better *not* to be,’ and pray for personal *annihilation*—the Nirvana of the Buddhists.”

“But that is only half the picture,” I said. “Besides working for *oneself*, may there not be the helping of *others*?”

“Surely, surely!” Lady Muriel exclaimed in a tone of relief, looking at her father with sparkling eyes.

“Yes,” said the Earl, “so long as there *were* any others needing help. But, given ages and ages more, surely all created reasons would at length reach the same dead level of *satiety*. And *then* what is there to look forward to?”

“I know that weary feeling,” said the young Doctor. “I have gone through it all, more than once. Now let me tell you how I have put it to myself. I have imagined a little child, playing with toys on his nursery-floor, and yet able to *reason*, and to look on, thirty years ahead. Might he not say to himself ‘By that time I shall have had enough of bricks and ninepins. How weary Life will be!’ Yet, if we look forward through those thirty years, we find him a great statesman, full of interests and joys far more intense than his baby-life could give—joys wholly inconceivable to his baby-mind—joys such as no baby-language could in the faintest degree describe. Now, may not our life, a million years hence, have the same relation, to our life now, that the man’s life has to the child’s? And, just as one might try, all in vain, to express to that child, in the language of bricks and ninepins, the meaning of ‘politics,’ so perhaps all those descriptions of Heaven, with its music, and its feasts, and its streets of gold, may be only attempts to describe, in *our* words, things for which we *really* have no words at all. Don’t you think that, in *your* picture of another life, you are in fact transplanting that child into political life, without making any allowance for his growing up?”

“I think I understand you,” said the Earl. “The music of Heaven *may* be something beyond our powers of thought. Yet the music of Earth is sweet! Muriel, my child, sing us something before we go to bed!”

“Do,” said Arthur, as he rose and lit the candles on the cottage-piano, lately banished from the drawing-room to make room for a ‘semi-grand.’ “There is a song here, that I have never heard you sing.

‘Hail to thee, blithe spirit!
Bird thou never wert,
That from Heaven, or near it,
Pourest thy full heart!’”

Quoted from *To a Skylark* by Percy Shelley

he read from the page he had spread open before her.

“And our little life here,” the Earl went on, “is, to that grand time, like a child’s summer-day! One gets tired as night draws on,” he added, with a touch of sadness in his voice, “and one gets to long for bed! For those welcome words ‘Come, child, ’tis bed-time!’”

Chapter XVII. To the Rescue!

“It *isn’t* bed-time!” said a sleepy little voice. “The owls hasn’t gone to bed, and I s’a’n’t go to seep wizout oo sings to me!”

“Oh, Bruno!” cried Sylvie. “Don’t you know the owls have only just got up? But the *frogs* have gone to bed, ages ago.”

“Well, *I* aren’t a frog,” said Bruno.

“What shall I sing?” said Sylvie, skilfully avoiding the argument.

“Ask Mister Sir,” Bruno lazily replied, clasping his hands behind his curly head, and lying back on his fern-leaf, till it almost bent over with his weight. “This aren’t a comfable leaf, Sylvie. Find me a comfabler—please!” he added, as an after-thought, in obedience to a warning finger held up by Sylvie. “I doosn’t like being feet-upwards!”

It was a pretty sight to see—the motherly way in which the fairy-child gathered up her little brother in her arms, and laid him on a stronger leaf. She gave it just a touch to set it rocking, and it went on vigorously by itself, as if it contained some hidden machinery. It certainly wasn’t the wind, for the evening-breeze had quite died away again, and not a leaf was stirring over our heads.

“Why does that one leaf rock so, without the others?” I asked Sylvie. She only smiled sweetly and shook her head. “I don’t know *why*,” she said. “It always does, if it’s got a fairy-child on it. It *has* to, you know.”

“And can people see the leaf rock, who ca’n’t see the Fairy on it?”

“Why, of course!” cried Sylvie. “A leaf’s a leaf, and everybody can see it; but Bruno’s Bruno, and they ca’n’t see *him*, unless they’re eerie, like you.”

Then I understood how it was that one sometimes sees—going through the woods in a still evening—one fern-leaf rocking steadily on, all by itself. Haven’t you ever seen that? Try if you can see the fairy-sleeper on it, next time; but don’t *pick* the leaf, whatever you do; let the little one sleep on!

But all this time Bruno was getting sleepier and sleepier. “Sing, sing!” he murmured fretfully. Sylvie looked to me for instructions. “What shall it be?” she said.

“Could you sing him the nursery-song you once told me of?” I suggested. “The one that had been put through the mind-mangle, you know. ‘*The little man that had a little gun*,’ I think it was.”

“Why, that are one of the *Professor’s* songs!” cried Bruno. “I likes the little man; and I likes the way they spinned him—like a teetle-totle-tum.” And he turned a loving look on the gentle old man who was sitting at the other side of his leaf-bed, and who instantly began to sing, accompanying himself on his Outlandish guitar, while the snail, on which he sat, waved its horns in time to the music.

In stature the Manlet was dwarfish—
No burly big Blunderbore he:
And he wearily gazed on the crawfish
His Wifelet had dressed for his tea.

“Now reach me, sweet Atom, my gunlet,
And hurl the old shoelet for luck:
Let me hie to the bank of the runlet,
And shoot thee a Duck!”

She has reached him his minikin gunlet:
She has hurled the old shoelet for luck:
She is busily baking a bunlet,
To welcome him home with his Duck.

On he speeds, never wasting a wordlet,



Bruno's bed-time

Though thoughtlets cling, closely as wax,
To the spot where the beautiful birdlet
So quietly quacks.



'Long ceremonious calls'

Where the Lobsterlet lurks, and the Crablet
So slowly and sleepily crawls:
Where the Dolphin's at home, and the Dablet
Pays long ceremonious calls:

Where the Grublet is sought by the Froglet:
Where the Frog is pursued by the Duck:
Where the Ducklet is chased by the Doglet——
So runs the world's luck!

He has loaded with bullet and powder:
His footfall is noiseless as air:



The voices

But the Voices grow louder and louder,
And bellow, and bluster, and blare.

They bristle before him and after,
They flutter above and below,
Shrill shriekings of lubberly laughter,
Weird wailings of woe!

They echo without him, within him:
They thrill through his whiskers and beard:
Like a teetotum seeming to spin him,
With sneers never hitherto sneered.

“Avengement,” they cry, “on our Foelet!
Let the Manikin weep for our wrongs!
Let us drench him, from toplet to tolet,
With Nursery-Songs!



‘His soul shall be sad for the Spider’

“He shall muse upon ‘Hey! Diddle! Diddle!’

On the Cow that surmounted the Moon:
He shall rave of the Cat and the Fiddle,
And the Dish that eloped with the Spoon:
And his soul shall be sad for the Spider,
When Miss Muffet was sipping her whey,
That so tenderly sat down beside her,
And scared her away!

“The music of Midsummer-madness
Shall sting him with many a bite,
Till, in rapture of rollicking sadness,
He shall groan with a gloomy delight:
He shall swathe him, like mists of the morning,
In platitudes luscious and limp,
Such as deck, with a deathless adorning,
The Song of the Shrimp!

“When the Ducklet’s dark doom is decided,
We will trundle him home in a trice:
And the banquet, so plainly provided,
Shall round into rose-buds and rice:

In a blaze of pragmatic invention
He shall wrestle with Fate, and shall reign:
But he has not a friend fit to mention,
So hit him again!”

He has shot it, the delicate darling!
And the Voices have ceased from their strife:
Not a whisper of sneering or snarling;
As he carries it home to his wife:

Then, cheerily champing the bunlet
His spouse was so skilful to bake,
He hies him once more to the runlet,
To fetch her the Drake!

“He’s sound asleep now,” said Sylvie, carefully tucking in the edge of a violet-leaf, which she had been spreading over him as a sort of blanket: “good night!”

“Good night!” I echoed.

“You may well say ‘good night’!” laughed Lady Muriel, rising and shutting up the piano as she spoke. “When you’ve been nid—nid—nodding all the time I’ve been singing for your benefit! What was it all about, now?” she demanded imperiously.

“Something about a duck?” I hazarded. “Well, a bird of some kind?” I corrected myself, perceiving at once that *that* guess was wrong, at any rate.

“*Something about a bird of some kind!*” Lady Muriel repeated, with as much withering scorn as her sweet face was capable of conveying. “And that’s the way he speaks of Shelley’s Sky-Lark, is it? When the Poet particularly says ‘*Hail to thee, blithe spirit! Bird thou never wert!*’”

She led the way to the smoking-room, where, ignoring all the usages of Society and all the instincts of Chivalry, the three Lords of the Creation reposed at their ease in low rocking-chairs, and permitted the one lady who was present



Lords of the creation

to glide gracefully about among us, supplying our wants in the form of cooling drinks, cigarettes, and lights. Nay, it was only *one* of the three who had the chivalry to go beyond the common-place “thank you,” and to quote the Poet’s exquisite description of how Geraint, when waited on by Enid, was moved

“To stoop and kiss the tender little thumb
That crossed the platter as she laid it down,”

Quoted from *Idylls of the King* by Alfred Lord Tennyson

and to suit the action to the word—an audacious liberty for which, I feel bound to report, he was *not* duly reprimanded.

As no topic of conversation seemed to occur to any one, and as we were, all four, on those delightful terms with one another (the only terms, I think, on which any friendship, that deserves the name of *intimacy*, can be maintained) which involve no sort of necessity for *speaking* for mere speaking’s sake, we sat in silence for some minutes.

At length I broke the silence by asking “Is there any fresh news from the harbour about the Fever?”

“None since this morning,” the Earl said, looking very grave. “But that was alarming enough. The Fever is spreading fast: the London doctor has taken fright and left the place, and the only one now available isn’t a regular doctor at all: he is apothecary, and doctor, and dentist, and I don’t know what other trades, all in one. It’s a bad outlook for those poor fishermen—and a worse one for all the women and children.”

“How many are there of them altogether?” Arthur asked.

"There were nearly one hundred, a week ago," said the Earl: "but there have been twenty or thirty deaths since then."

"And what religious ministrations are there to be had?"

"There are three brave men down there," the Earl replied, his voice trembling with emotion, "gallant heroes as ever won the Victoria Cross! I am certain that no one of the three will ever leave the place merely to save his own life. There's the Curate: his wife is with him: they have no children. Then there's the Roman Catholic Priest. And there's the Wesleyan Minister. They go amongst their own flocks, mostly; but I'm told that those who are dying like to have *any* of the three with them. How slight the barriers seem to be that part Christian from Christian, when one has to deal with the great facts of Life and the reality of Death!"

"So it must be, and so it should be——" Arthur was beginning, when the front-door bell rang, suddenly and violently.

We heard the front-door hastily opened, and voices outside: then a knock at the door of the smoking-room, and the old house-keeper appeared, looking a little scared.

"Two persons, my Lord, to speak with Dr. Forester."

Arthur stepped outside at once, and we heard his cheery "Well, my men?" but the answer was less audible, the only words I could distinctly catch being "ten since morning, and two more just——"

"But there *is* a doctor there?" we heard Arthur say: and a deep voice, that we had not heard before, replied "Dead, Sir. Died three hours ago."

Lady Muriel shuddered, and hid her face in her hands: but at this moment the front-door was quietly closed, and we heard no more.

For a few minutes we sat quite silent: then the Earl left the room, and soon returned to tell us that Arthur had gone away with the two fishermen, leaving word that he would be back in about an hour. And, true enough, at the end of that interval—during which very little was said, none of us seeming to have the heart to talk—the front-door once more creaked on its rusty hinges, and a step was heard in the passage, hardly to be recognised as Arthur's, so slow and uncertain was it, like a blind man feeling his way.

He came in, and stood before Lady Muriel, resting one hand heavily on the table, and with a strange look in his eyes, as if he were walking in his sleep.

"Muriel—my love——" he paused, and his lips quivered: but after a minute he went on more steadily. "Muriel—my darling—they—*want* me—down in the harbour."

"*Must* you go?" she pleaded, rising and laying her hands on his shoulders, and looking up into his face with her great eyes brimming over with tears. "Must *you* go, Arthur? It may mean—death!"

He met her gaze without flinching. "It *does* mean death," he said, in a husky whisper: "but—darling—I am *called*. And even my life itself——" His voice failed him, and he said no more.

For a minute she stood quite silent, looking upwards with a helpless gaze, as if even prayer were now useless, while her features worked and quivered with the great agony she was enduring. Then a sudden inspiration seemed to come upon her and light up her face with a strange sweet smile. "*Your* life?" she repeated. "It is not *yours* to give!"

Arthur had recovered himself by this time, and could reply quite firmly, "That is true," he said. "It is not *mine* to give. It is *yours*, now, my—wife that

is to be! And you—do *you* forbid me to go? Will you not spare me, my own beloved one?"

Still clinging to him, she laid her head softly on his breast. She had never done such a thing in my presence before, and I knew how deeply she must be moved. "I *will* spare you," she said, calmly and quietly, "to God."

"And to God's poor," he whispered.

"And to God's poor," she added. "When must it be, sweet love?"



'Will you not spare me?'

"To-morrow morning," he replied. "And I have much to do before then."

And then he told us how he had spent his hour of absence. He had been to the Vicarage, and had arranged for the wedding to take place at eight the next morning (there was no legal obstacle, as he had, some time before this, obtained a Special License) in the little church we knew so well. "My old friend here," indicating me, "will act as 'Best Man,' I know: your father will be there to give you away: and—and—you will dispense with bride's-maids, my darling?"

She nodded: no words came.

“And then I can go with a willing heart—to do God’s work—knowing that we are *one*—and that we are together in *spirit*, though not in bodily presence—and are most of all together when we pray! Our *prayers* will go up together——”

“Yes, yes!” sobbed Lady Muriel. “But you must not stay longer now, my darling! Go home and take some rest. You will need all your strength to-morrow——”

“Well, I will go,” said Arthur. “We will be here in good time to-morrow. Good night, my own own darling!”

I followed his example, and we two left the house together. As we walked back to our lodgings, Arthur sighed deeply once or twice, and seemed about to speak—but no words came, till we had entered the house, and had lit our candles, and were at our bedroom-doors. Then Arthur said “Good night, old fellow! God bless you!”

“God bless you!” I echoed, from the very depths of my heart.

We were back again at the Hall by eight in the morning, and found Lady Muriel and the Earl, and the old Vicar, waiting for us. It was a strangely sad and silent party that walked up to the little church and back; and I could not help feeling that it was much more like a funeral than a wedding: to Lady Muriel it *was* in fact, a funeral rather than a wedding, so heavily did the presentiment weigh upon her (as she told us afterwards) that her newly-won husband was going forth to his death.

Then we had breakfast; and, all too soon, the vehicle was at the door, which was to convey Arthur, first to his lodgings, to pick up the things he was taking with him, and then as far towards the death-stricken hamlet as it was considered safe to go. One or two of the fishermen were to meet him on the road, to carry his things the rest of the way.

“And are you quite sure you are taking all that you will need?” Lady Muriel asked.

“All that I shall need as a *doctor*, certainly. And my own personal needs are few: I shall not even take any of my own wardrobe—there is a fisherman’s suit, ready-made, that is waiting for me at my lodgings. I shall only take my watch, and a few books, and—stay—there *is* one book I should like to add, a pocket-Testament—to use at the bedsides of the sick and dying——”

“Take mine!” said Lady Muriel: and she ran upstairs to fetch it. “It has nothing written in it but ‘Muriel,’” she said as she returned with it: “shall I inscribe——”

“No, my own one,” said Arthur, taking it from her. “What *could* you inscribe better than that? Could any human name mark it more clearly as my own individual property? Are *you* not mine? Are you not,” (with all the old playfulness of manner) “as Bruno would say, ‘my *very mine*’?”

He bade a long and loving adieu to the Earl and to me, and left the room, accompanied only by his wife, who was bearing up bravely, and was—*outwardly*, at least—less overcome than her old father. We waited in the room a minute or two, till the sound of wheels had told us that Arthur had driven away; and even then we waited still, for the step of Lady Muriel, going upstairs to her room, to die away in the distance. Her step, usually so light and joyous, now sounded slow and weary, like one who plods on under a load of hopeless misery; and I felt almost as hopeless, and almost as wretched, as she. “Are we four destined

ever to meet again, on this side the grave?" I asked myself, as I walked to my home. And the tolling of a distant bell seemed to answer me, "No! No! No!"

Chapter XVIII. A Newspaper-Cutting.

EXTRACT FROM THE "FAYFIELD CHRONICLE."

Our readers will have followed with painful interest, the accounts we have from time to time published of the terrible epidemic which has, during the last two months, carried off most of the inhabitants of the little fishing-harbour adjoining the village of Elveston. The last survivors, numbering twenty-three only, out of a population which, three short months ago, exceeded one hundred and twenty, were removed on Wednesday last, under the authority of the Local Board, and safely lodged in the County Hospital: and the place is now veritably 'a city of the dead,' without a single human voice to break its silence.

The rescuing party consisted of six sturdy fellows—fishermen from the neighbourhood—directed by the resident Physician of the Hospital, who came over for that purpose, heading a train of hospital-ambulances. The six men had been selected—from a much larger number who had volunteered for this peaceful 'forlorn hope'—for their strength and robust health, as the expedition was considered to be, even now, when the malady has expended its chief force, not unattended with danger.

Every precaution that science could suggest, against the risk of infection, was adopted: and the sufferers were tenderly carried on litters, one by one, up the steep hill, and placed in the ambulances which, each provided with a hospital nurse, were waiting on the level road. The fifteen miles, to the Hospital, were done at a walking-pace, as some of the patients were in too prostrate a condition to bear jolting, and the journey occupied the whole afternoon.

The twenty-three patients consist of nine men, six women, and eight children. It has not been found possible to identify them all, as some of the children—left with no surviving relatives—are infants; and two men and one woman are not yet able to make rational replies, the brain-powers being entirely in abeyance. Among a more well-to-do-race, there would no doubt have been names marked on the clothes; but here no such evidence is forthcoming.

Besides the poor fishermen and their families, there were but five persons to be accounted for: and it was ascertained, beyond a doubt, that all five are numbered with the dead. It is a melancholy pleasure to place on record the names of these genuine martyrs—than whom none, surely, are more worthy to be entered on the glory-roll of England's heroes! They are as follows:—

The Rev. James Burgess, M.A., and Emma his wife. He was the Curate at the Harbour, not thirty years old, and had been married only two years. A written record was found in their house, of the dates of their deaths.

Next to theirs we will place the honoured name of Dr. Arthur Forester, who, on the death of the local physician, nobly faced the imminent peril of death, rather than leave these poor folk uncared for in their last extremity. No record of his name, or of the date of his death, was found: but the corpse was easily identified, although dressed in the ordinary fisherman's suit (which he was known to have adopted when he went down there), by a copy of the New Testament, the gift of his wife, which was found, placed next his heart, with his hands crossed over it. It was not thought prudent to remove the body, for burial elsewhere: and accordingly it was at once committed to the ground, along with four others

found in different houses, with all due reverence. His wife, whose maiden name was Lady Muriel Orme, had been married to him on the very morning on which he undertook his self-sacrificing mission.

Next we record the Rev. Walter Saunders, Wesleyan Minister. His death is believed to have taken place two or three weeks ago, as the words 'Died October 5' were found written on the wall of the room which he is known to have occupied—the house being shut up, and apparently not having been entered for some time.

Last—though not a whit behind the other four in glorious self-denial and devotion to duty—let us record the name of Father Francis, a young Jesuit Priest who had been only a few months in the place. He had not been dead many hours when the exploring party came upon the body, which was identified, beyond the possibility of doubt, by the dress, and by the crucifix which was, like the young Doctor's Testament, clasped closely to his heart.

Since reaching the hospital, two of the men and one of the children have died. Hope is entertained for all the others: though there are two or three cases where the vital powers seem to be so entirely exhausted that it is but 'hoping against hope' to regard ultimate recovery as even possible.

Chapter XIX. A Fairy-Duet.

The year—what an eventful year it had been for me!—was drawing to a close, and the brief wintry day hardly gave light enough to recognise the old familiar objects, bound up with so many happy memories, as the train glided round the last bend into the station, and the hoarse cry of "Elveston! Elveston!" resounded along the platform.

It was sad to return to the place, and to feel that I should never again see the glad smile of welcome, that had awaited me here so few months ago. "And yet, if I were to find him here," I muttered, as in solitary state I followed the porter, who was wheeling my luggage on a barrow, "and if he *were* to 'strike a sudden hand in mine, And ask a thousand things of home,' I should not—no, 'I should not feel it to be strange'!"

Quoted from *In Memoriam* by Alfred Lord Tennyson

Having given directions to have my luggage taken to my old lodgings, I strolled off alone, to pay a visit, before settling down in my own quarters, to my dear old friends—for such I indeed felt them to be, though it was barely half a year since first we met—the Earl and his widowed daughter.

The shortest way, as I well remembered, was to cross through the churchyard. I pushed open the little wicket-gate and slowly took my way among the solemn memorials of the quiet dead, thinking of the many who had, during the past year, disappeared from the place, and had gone to 'join the majority.' A very few steps brought me in sight of the object of my search. Lady Muriel, dressed in the deepest mourning, her face hidden by a long crape veil, was kneeling before a little marble cross, round which she was fastening a wreath of flowers.

The cross stood on a piece of level turf, unbroken by any mound, and I knew that it was simply a memorial-cross, for one whose dust reposed elsewhere, even before reading the simple inscription:—

In loving Memory of
ARTHUR FORESTER, M.D.
whose mortal remains lie buried by the sea:
whose spirit has returned to God who gave it.
"Greater love hath no man than this, that

Quoted from John 15:13

a man lay down his life for his friends."

She threw back her veil on seeing me approach, and came forwards to meet me, with a quiet smile, and far more self-possessed than I could have expected.

"It is quite like old times, seeing *you* here again!" she said, in tones of genuine pleasure. "Have you been to see my father?"

"No," I said: "I was on my way there, and came through here as the shortest way. I hope he is well, and you also?"

"Thanks, we are both quite well. And you? Are you any better yet?"

"Not much better, I fear: but no worse, I am thankful to say."

"Let us sit here awhile, and have a quiet chat," she said. The calmness—almost indifference—of her manner quite took me by surprise. I little guessed what a fierce restraint she was putting upon herself.

"One can be so quiet here," she resumed. "I come here every—every day."

"It is very peaceful," I said.

"You got my letter?"

"Yes, but I delayed writing. It is so hard to say—on *paper*—"

"I know. It was kind of you. You were with us when we saw the last of——"

She paused a moment, and went on more hurriedly. "I went down to the harbour several times, but no one knows which of those vast graves it is. However, they showed me the house he died in: that was some comfort. I stood in the very room where—where——." She struggled in vain to go on. The flood-gates had given way at last, and the outburst of grief was the most terrible I had ever witnessed. Totally regardless of my presence, she flung herself down on the turf, burying her face in the grass, and with her hands clasped round the little marble cross, "Oh, my darling, my darling!" she sobbed. "And God meant your life to be so beautiful!"



In the church-yard

I was startled to hear, thus repeated by Lady Muriel, the very words of the

darling child whom I had seen weeping so bitterly over the dead hare. Had some mysterious influence passed, from that sweet fairy-spirit, ere she went back to Fairyland, into the human spirit that loved her so dearly? The idea seemed too wild for belief. And yet, are there not '*more things in heaven and earth than are dreamt of in our philosophy*'?

"God *meant* it to be beautiful," I whispered, "and surely it *was* beautiful? God's purpose never fails!" I dared say no more, but rose and left her. At the entrance-gate to the Earl's house I waited, leaning on the gate and watching the sun set, revolving many memories—some happy, some sorrowful—until Lady Muriel joined me.

She was quite calm again now. "Do come in," she said. "My father will be so pleased to see you!"

The old man rose from his chair, with a smile, to welcome me; but his self-command was far less than his daughter's, and the tears coursed down his face as he grasped both my hands in his, and pressed them warmly.

My heart was too full to speak; and we all sat silent for a minute or two. Then Lady Muriel rang the bell for tea. "You *do* take five o'clock tea, I know!" she said to me, with the sweet playfulness of manner I remembered so well, "even though you *ca'n't* work your wicked will on the Law of Gravity, and make the teacups descend into Infinite Space, a little faster than the tea!"

This remark gave the tone to our conversation. By a tacit mutual consent, we avoided, during this our first meeting after her great sorrow, the painful topics that filled our thoughts, and talked like light-hearted children who had never known a care.

"Did you ever ask yourself the question," Lady Muriel began, *à propos* of nothing, "what is the *chief* advantage of being a Man instead of a Dog?"

"No, indeed," I said: "but I think there are advantages on the *Dog's* side of the question, as well."

"No doubt," she replied, with that pretty mock-gravity that became her so well: "but, on *Man's* side, the chief advantage seems to me to consist in *having pockets*! It was borne in upon me—upon *us*, I should say; for my father and I were returning from a walk—only yesterday. We met a dog carrying home a bone. What it wanted it for, I've no idea: certainly there was no *meat* on it——"

A strange sensation came over me, that I had heard all this, or something exactly like it, before: and I almost expected her next words to be "perhaps he meant to make a cloak for the winter?" However what she really said was "and my father tried to account for it by some wretched joke about *pro bono publico*. Well, the dog laid down the bone—*not* in disgust with the pun, which would have shown it to be a dog of taste—but simply to rest its jaws, poor thing! I *did* pity it so! Won't you join my *Charitable Association for supplying dogs with pockets*? How would *you* like to have to carry your walking-stick in your mouth?"

Ignoring the difficult question as to the *raison d'être* of a walking-stick, supposing one had no *hands*, I mentioned a curious instance, I had once witnessed, of reasoning by a dog. A gentleman, with a lady, and child, and a large dog, were down at the end of a pier on which I was walking. To amuse his child, I suppose, the gentleman put down on the ground his umbrella and the lady's parasol, and then led the way to the other end of the pier, from which he sent the dog back for the deserted articles. I was watching with some curiosity. The

Quoted from *Hamlet*
by William
Shakespeare

dog came racing back to where I stood, but found an unexpected difficulty in picking up the things it had come for. With the umbrella in its mouth, its jaws were so far apart that it could get no firm grip on the parasol. After two or three failures, it paused and considered the matter.

Then it put down the umbrella and began with the parasol. Of course that didn't open its jaws nearly so wide, and it was able to get a good hold of the umbrella, and galloped off in triumph. One couldn't doubt that it had gone through a real train of logical thought.

"I entirely agree with you," said Lady Muriel: "but don't orthodox writers condemn that view, as putting Man on the level of the lower animals? Don't they draw a sharp boundary-line between Reason and Instinct?"

"That certainly *was* the orthodox view, a generation ago," said the Earl. "The truth of Religion seemed ready to stand or fall with the assertion that Man was the only reasoning animal. But that is at an end now. Man can still claim *certain* monopolies—for instance, such a use of *language* as enables us to utilise the work of many, by 'division of labour.' But the belief, that we have a monopoly of *Reason*, has long been swept away. Yet no catastrophe has followed. As some old poet says, '*God is where he was.*'"

"Most religious believers would *now* agree with Bishop Butler," said I, "and not reject a line of argument, even if it led straight to the conclusion that animals have some kind of *soul*, which survives their bodily death."

"I *would* like to know *that* to be true!" Lady Muriel exclaimed. "If only for the sake of the poor horses. Sometimes I've thought that, if anything *could* make me cease to believe in a God of perfect justice, it would be the sufferings of horses—without guilt to deserve it, and without any compensation!"

"It is only part of the great Riddle," said the Earl, "why innocent beings *ever* suffer. It *is* a great strain on Faith—but not a *breaking* strain, I think."

"The sufferings of *horses*," I said, "are chiefly caused by *Man's* cruelty. So *that* is merely one of the many instances of Sin causing suffering to others than the Sinner himself. But don't you find a *greater* difficulty in sufferings inflicted by animals upon each other? For instance, a cat playing with a mouse. Assuming it to have no *moral* responsibility, isn't that a greater mystery than a man over-driving a horse?"

"I think it *is*," said Lady Muriel, looking a mute appeal to her father.

"What right have we to make that assumption?" said the Earl. "*Many* of our religious difficulties are merely deductions from unwarranted assumptions. The wisest answer to most of them, is, I think, '*behold, we know not anything.*'"

"You mentioned 'division of labour,' just now," I said. "Surely it is carried to a wonderful perfection in a hive of bees?"

"So wonderful—so entirely super-human—" said the Earl, "and so entirely inconsistent with the intelligence they show in other ways—that I feel no doubt at all that it is *pure* Instinct, and *not*, as some hold, a very high order of Reason. Look at the utter stupidity of a bee, trying to find its way out of an open window! It *doesn't* try, in any reasonable sense of the word: it simply bangs itself about! We should call a puppy *imbecile*, that behaved so. And yet we are asked to believe that its intellectual level is above Sir Isaac Newton!"

"Then you hold that *pure* Instinct contains no *Reason* at all?"

"On the contrary," said the Earl, "I hold that the work of a bee-hive involves Reason of the *highest* order. But none of it is done by the *Bee*. *God* has reasoned

Quoted from
Elizabeth of York on
the sudden death of
her eldest son Arthur

Quoted from *In
Memoriam* by Alfred
Lord Tennyson

it all out, and has put into the mind of the Bee the *conclusions*, only, of the reasoning process.”

“But how do their minds come to work *together*?” I asked.

“What right have we to assume that they *have* minds?”

“Special pleading, special pleading!” Lady Muriel cried, in a most unfilial tone of triumph. “Why, you yourself said, just now, ‘the mind of the Bee’!”

“But I did *not* say ‘*minds*,’ my child,” the Earl gently replied. “It has occurred to me, as the most probable solution of the ‘Bee’-mystery, that a swarm of Bees *have only one mind among them*. We often see one mind animating a most complex collection of limbs and organs, *when joined together*. How do we know that any material connection is necessary? May not mere neighbourhood be enough? If so, a swarm of bees is simply a single animal whose many limbs are not quite close together!”

“It is a bewildering thought,” I said, “and needs a night’s rest to grasp it properly. Reason and Instinct *both* tell me I ought to go home. So, good-night!”

“I’ll ‘set’ you part of the way,” said Lady Muriel. “I’ve had no walk to-day. It will do me good, and I have more to say to you. Shall we go through the wood? It will be pleasanter than over the common, even though it *is* getting a little dark.”

We turned aside into the shade of interlacing boughs, which formed an architecture of almost perfect symmetry, grouped into lovely groined arches, or running out, far as the eye could follow, into endless aisles, and chancels, and naves, like some ghostly cathedral, fashioned out of the dream of a moon-struck poet.

“Always, in this wood,” she began after a pause (silence seemed natural in this dim solitude), “I begin thinking of Fairies! May I ask you a question?” she added hesitatingly. “Do you believe in Fairies?”

The momentary impulse was so strong to tell her of my experiences in this very wood, that I had to make a real effort to keep back the words that rushed to my lips. “If you mean, by ‘believe,’ ‘believe in their *possible* existence,’ I say ‘Yes.’ For their *actual* existence, of course, one would need *evidence*.”

“You were saying, the other day,” she went on, “that you would accept *anything*, on good evidence, that was not *à priori* impossible. And I think you named *Ghosts* as an instance of a *provable* phenomenon. Would *Fairies* be another instance?”

“Yes, I think so.” And again it was hard to check the wish to say more: but I was not yet sure of a sympathetic listener.

“And have you any theory as to what sort of place they would occupy in Creation? Do tell me what you think about them! Would they, for instance (supposing such beings to exist), would they have any moral responsibility? I mean” (and the light bantering tone suddenly changed to one of deep seriousness) “would they be capable of *sin*?”

“They can reason—on a lower level, perhaps, than men and women—never rising, I think, above the faculties of a child; and they have a moral sense, most surely. Such a being, without *free will*, would be an absurdity. So I am driven to the conclusion that they *are* capable of sin.”

“You believe in them?” she cried delightedly, with a sudden motion as if about to clap her hands. “Now tell me, have you any reason for it?”

And still I strove to keep back the revelation I felt sure was coming. “I believe that there is *life* everywhere—not *material* only, not merely what is palpable

to our senses—but immaterial and invisible as well. We believe in our own immaterial essence—call it ‘soul,’ or ‘spirit,’ or what you will. Why should not other similar essences exist around us, *not* linked on to a visible and *material* body? Did not God make this swarm of happy insects, to dance in this sunbeam for one hour of bliss, for no other object, that we can imagine, than to swell the sum of conscious happiness? And where shall we dare to draw the line, and say ‘He has made all these and no more’?”

“Yes, yes!” she assented, watching me with sparkling eyes. “But these are only reasons for not *denying*. You have more reasons than this, have you not?”

“Well, yes,” I said, feeling I might safely tell all now. “And I could not find a fitter time or place to say it. I have *seen* them—and in this very wood!”

Lady Muriel asked no more questions. Silently she paced at my side, with head bowed down and hands clasped tightly together. Only, as my tale went on, she drew a little short quick breath now and then, like a child panting with delight. And I told her what I had never yet breathed to any other listener, of my double life, and, more than that (for *mine* might have been but a noonday-dream), of the double life of those two dear children.

And when I told her of Bruno’s wild gambols, she laughed merrily; and when I spoke of Sylvie’s sweetness and her utter unselfishness and trustful love, she drew a deep breath, like one who hears at last some precious tidings for which the heart has ached for a long while; and the happy tears chased one another down her cheeks.

“I have often longed to meet an angel,” she whispered, so low that I could hardly catch the words. “I’m *so* glad I’ve seen Sylvie! My heart went out to the child the first moment that I saw her—Listen!” she broke off suddenly. “That’s Sylvie singing! I’m sure of it! Don’t you know her voice?”

“I have heard *Bruno* sing, more than once,” I said: “but I never heard Sylvie.”

“I have only heard her *once*,” said Lady Muriel. “It was that day when you brought us those mysterious flowers. The children had run out into the garden; and I saw Eric coming in that way, and went to the window to meet him: and Sylvie was singing, under the trees, a song I had never heard before. The words were something like ‘I think it is Love, I feel it is Love.’ Her voice sounded far away, like a dream, but it was beautiful beyond all words—as sweet as an infant’s first smile, or the first gleam of the white cliffs when one is coming *home* after weary years—a voice that seemed to fill one’s whole being with peace and heavenly thoughts—Listen!” she cried, breaking off again in her excitement. “That *is* her voice, and that’s the very song!”

I could distinguish no words, but there was a dreamy sense of music in the air that seemed to grow ever louder and louder, as if coming nearer to us. We stood quite silent, and in another minute the two children appeared, coming straight towards us through an arched opening among the trees. Each had an arm round the other, and the setting sun shed a golden halo round their heads, like what one sees in pictures of saints. They were looking in our direction, but evidently did not see us, and I soon made out that Lady Muriel had for once passed into a condition familiar to *me*, that we were both of us ‘eerie,’ and that, though we could see the children so plainly, we were quite invisible to *them*.

The song ceased just as they came into sight: but, to my delight, Bruno instantly said “Let’s sing it all again, Sylvie! It *did* sound so pretty!” And Sylvie replied “Very well. It’s *you* to begin, you know.”

So Bruno began, in the sweet childish treble I knew so well:—



A fairy-duett (Frontispiece)

“Say, what is the spell, when her fledgelings are cheeping,
That lures the bird home to her nest?
Or wakes the tired mother, whose infant is weeping,
To cuddle and croon it to rest?
What’s the magic that charms the glad babe in her arms,
Till it cooes with the voice of the dove?”

And now ensued quite the strangest of all the strange experiences that marked the wonderful year whose history I am writing—the experience of *first* hearing Sylvie’s voice in song. Her part was a very short one—only a few words—and she sang it timidly, and very low indeed, scarcely audibly, but the *sweetness* of her voice was simply indescribable; I have never heard any earthly music like it.

“Tis a secret, and so let us whisper it low—
And the name of the secret is Love!”

On me the first effect of her voice was a sudden sharp pang that seemed to pierce through one’s very heart. (I had felt such a pang only once before in my life, and it had been from *seeing* what, at the moment, realised one’s idea of perfect beauty—it was in a London exhibition, where, in making my way through a crowd, I suddenly met, face to face, a child of quite unearthly beauty.) Then came a rush of burning tears to the eyes, as though one could weep one’s soul away for pure delight. And lastly there fell on me a sense of awe that was almost terror—some such feeling as Moses must have had when he heard the words “*Put off thy shoes from off thy feet, for the place whereon thou standest is holy ground.*” The figures of the children became vague and shadowy, like glimmering meteors: while their voices rang together in exquisite harmony as they sang:—

Quoted from Exodus
3:5

“For I think it is Love,
For I feel it is Love,
For I’m sure it is nothing but Love!”

By this time I could see them clearly once more. Bruno again sang by himself:—

“Say, whence is the voice that, when anger is burning,
Bids the whirl of the tempest to cease?
That stirs the vexed soul with an aching—a yearning
For the brotherly hand-grip of peace?
Whence the music that fills all our being—that thrills
Around us, beneath, and above?”

Sylvie sang more courageously, this time: the words seemed to carry her away, out of herself:—

“Tis a secret: none knows how it comes, how it goes:
But the name of the secret is Love!”

And clear and strong the chorus rang out:—

“For I think it is Love,
For I feel it is Love,
For I’m sure it is nothing but Love!”

Once more we heard Bruno’s delicate little voice alone:—

“Say whose is the skill that paints valley and hill,
Like a picture so fair to the sight?
That flecks the green meadow with sunshine and shadow,
Till the little lambs leap with delight?”

And again uprose that silvery voice, whose angelic sweetness I could hardly bear:—

“’Tis a secret untold to hearts cruel and cold,
Though ’tis sung, by the angels above,
In notes that ring clear for the ears that can hear—
And the name of the secret is Love!”

And then Bruno joined in again with

“For I think it is Love,
For I feel it is Love,
For I’m sure it is nothing but Love!”

“That *are* pretty!” the little fellow exclaimed, as the children passed us—so closely that we drew back a little to make room for them, and it seemed we had only to reach out a hand to touch them: but this we did not attempt.

“No use to try and stop them!” I said, as they passed away into the shadows. “Why, they could not even *see* us!”

“No use at all,” Lady Muriel echoed with a sigh. “One would *like* to meet them again, in living form! But I feel, somehow, *that* can never be. They have passed out of *our* lives!” She sighed again; and no more was said, till we came out into the main road, at a point near my lodgings.

“Well, I will leave you here,” she said. “I want to get back before dark: and I have a cottage-friend to visit, first. Good night, dear friend! Let us see you soon—and often!” she added, with an affectionate warmth that went to my very heart. “*For those are few we hold as dear!*”

“Good night!” I answered. “Tennyson said that of a worthier friend than me.”

“Tennyson didn’t know what he was talking about!” she saucily rejoined, with a touch of her old childish gaiety; and we parted.

Quoted from
Farringford To The
Rev. F. D. Maurice
by Alfred Lord
Tennyson

Chapter XX. Gammon and Spinach.

My landlady’s welcome had an extra heartiness about it: and though, with a rare delicacy of feeling, she made no direct allusion to the friend whose companionship had done so much to brighten life for me, I felt sure that it was a kindly sympathy with my solitary state that made her so specially anxious to do all she could think of to ensure my comfort, and make me feel at home.

The lonely evening seemed long and tedious: yet I lingered on, watching the dying fire, and letting Fancy mould the red embers into the forms and faces

belonging to bygone scenes. Now it seemed to be Bruno's roguish smile that sparkled for a moment, and died away: now it was Sylvie's rosy cheek: and now the Professor's jolly round face, beaming with delight. "You're welcome, my little ones!" he seemed to say. And then the red coal, which for the moment embodied the dear old Professor, began to wax dim, and with its dying lustre the words seemed to die away into silence. I seized the poker, and with an artful touch or two revived the waning glow, while Fancy—no coy minstrel she—sang me once again the magic strain I loved to hear.

"You're welcome, little ones!" the cheery voice repeated. "I told them you were coming. Your rooms are all ready for you. And the Emperor and the Empress—well, I think they're rather pleased than otherwise! In fact, Her Highness said 'I hope they'll be in time for the Banquet!' Those were her very words, I assure you!"

"Will Uggug be at the Banquet?" Bruno asked. And both children looked uneasy at the dismal suggestion.

"Why, of course he will!" chuckled the Professor. "Why, it's his *birthday*, don't you know? And his health will be drunk, and all that sort of thing. What would the Banquet be without *him*?"

"Ever so much nicer," said Bruno. But he said it in a *very* low voice, and nobody but Sylvie heard him.

The Professor chuckled again. "It'll be a jolly Banquet, now *you've* come, my little man! I *am* so glad to see you again!"

"I 'fraid we've been very long in coming," Bruno politely remarked.

"Well, yes," the Professor assented. "However, you're very short now you're come: that's *some* comfort." And he went on to enumerate the plans for the day. "The Lecture comes first," he said. "*That* the Empress *insists* on. She says people will eat so much at the Banquet, they'll be too sleepy to attend to the Lecture afterwards—and perhaps she's right. There'll just be a little *refreshment*, when the people first arrive—as a kind of surprise for the Empress, you know. Ever since she's been—well, not *quite* so clever as she once was—we've found it desirable to concoct little surprises for her. *Then* comes the Lecture——"

"What? The Lecture you were getting ready—ever so long ago?" Sylvie enquired.

"Yes—that's the one," the Professor rather reluctantly admitted. "It *has* taken a goodish time to prepare. I've got so many other things to attend to. For instance, I'm Court-Physician. I have to keep all the Royal Servants in good health—and that reminds me!" he cried, ringing the bell in a great hurry. "This is Medicine-Day! We only give Medicine once a week. If we were to begin giving it every day, the bottles would *soon* be empty!"

"But if they were ill on the *other* days?" Sylvie suggested.

"What, ill on the wrong *day*!" exclaimed the Professor. "Oh, that would never do! A Servant would be dismissed *at once*, who was ill on the wrong day! This is the Medicine for *today*," he went on, taking down a large jug from a shelf. "I mixed it, myself, first thing this morning. Taste it!" he said, holding out the jug to Bruno. "Dip in your finger, and taste it!"

Bruno did so, and made such an excruciatingly wry face that Sylvie exclaimed, in alarm, "Oh, Bruno, you mustn't!"

"It's welly extremely nasty!" Bruno said, as his face resumed its natural shape.

"Nasty?" said the Professor. "Why, of *course* it is! What would Medicine be, if it wasn't *nasty*?"

"Nice," said Bruno.

"I was going to say—" the Professor faltered, rather taken aback by the promptness of Bruno's reply, "—that *that* would never do! Medicine *has* to be nasty, you know. Be good enough to take this jug, down into the Servants' Hall," he said to the footman who answered the bell: "and tell them it's their Medicine for *today*."

"Which of them is to drink it?" the footman asked, as he carried off the jug.

"Oh, I've not settled *that* yet!" the Professor briskly replied. "I'll come and settle that, soon. Tell them not to begin, on any account, till I come! It's really *wonderful*," he said, turning to the children, "the success I've had in curing Diseases! Here are some of my memoranda." He took down from the shelf a heap of little bits of paper, pinned together in twos and threes. "Just look at *this* set, now. '*Under-Cook Number Thirteen recovered from Common Fever—Febris Communis.*' And now see what's pinned to it. '*Gave Under-Cook Number Thirteen a Double Dose of Medicine.*' *That's* something to be proud of, *isn't* it?"

"But which happened *first*?" said Sylvie, looking very much puzzled.

The Professor examined the papers carefully. "They are not *dated*, I find," he said with a slightly dejected air: "so I fear I ca'n't tell you. But they *both* happened: there's no doubt of *that*. The *Medicine's* the great thing, you know. The *Diseases* are much less important. You can keep a *Medicine*, for years and years: but nobody ever wants to keep a *Disease*! By the way, come and look at the platform. The Gardener asked me to come and see if it would do. We may as well go before it gets dark."

"We'd like to, very much!" Sylvie replied. "Come, Bruno, put on your hat. Don't keep the dear Professor waiting!"

"Ca'n't find my hat!" the little fellow sadly replied. "I were rolling it about. And it's rolled itself away!"

"Maybe it's rolled in *there*," Sylvie suggested, pointing to a dark recess, the door of which stood half open: and Bruno ran in to look. After a minute he came slowly out again, looking very grave, and carefully shut the cupboard-door after him.

"It aren't in there," he said, with such unusual solemnity, that Sylvie's curiosity was roused.

"What *is* in there, Bruno?"

"There's cobwebs—and two spiders—" Bruno thoughtfully replied, checking off the catalogue on his fingers, "—and the cover of a picture-book—and a tortoise—and a dish of nuts—and an old man."

"An old man!" cried the Professor, trotting across the room in great excitement. "Why, it must be the Other Professor, that's been lost for ever so long!"

He opened the door of the cupboard wide: and there he was, the Other Professor, sitting in a chair, with a book on his knee, and in the act of helping himself to a nut from a dish, which he had taken down off a shelf just within his reach. He looked round at us, but said nothing till he had cracked and eaten the nut. Then he asked the old question. "Is the Lecture all ready?"

"It'll begin in an hour," the Professor said, evading the question. "First, we



The Other Professor found

must have something to surprise the Empress. And then comes the Banquet—
—”

“The Banquet!” cried the Other Professor, springing up, and filling the room with a cloud of dust. “Then I’d better go and—and brush myself a little. What a state I’m in!”

“He *does* want brushing!” the Professor said, with a critical air, “Here’s your hat, little man! I had put it on by mistake. I’d quite forgotten I had *one* on, already. Let’s go and look at the platform.”

“And there’s that nice old Gardener singing still!” Bruno exclaimed in delight, as we went out into the garden. “I do believe he’s been singing that very song ever since we went away!”

“Why, of course he has!” replied the Professor. “It wouldn’t be the thing to leave off, you know.”

“Wouldn’t be *what* thing?” said Bruno: but the Professor thought it best not to hear the question. “What are you doing with that hedgehog?” he shouted at the Gardener, whom they found standing upon one foot, singing softly to himself, and rolling a hedgehog up and down with the other foot.

“Well, I wanted fur to know what hedgehogs lives on: so I be a-keeping this here hedgehog—fur to see if it eats potatoes——”

“Much better keep a potato,” said the Professor; “and see if hedgehogs eat it!”

“That be the roight way, sure-ly!” the delighted Gardener exclaimed. “Be you come to see the platform?”

“Aye, aye!” the Professor cheerily replied. “And the children have come back, you see!”

The Gardener looked round at them with a grin. Then he led the way to the Pavilion; and as he went he sang:—

“He looked again, and found it was
A Double Rule of Three:
‘And all its Mystery,’ he said,
‘Is clear as day to me!’”

“You’ve been *months* over that song,” said the Professor. “Isn’t it finished yet?”

“There be only one verse more,” the Gardener sadly replied. And, with tears streaming down his cheeks, he sang the last verse:—

“He thought he saw an Argument
That proved he was the Pope:
He looked again, and found it was
A Bar of Mottled Soap.
‘A fact so dread,’ he faintly said,
‘Extinguishes all hope!’”

Choking with sobs, the Gardener hastily stepped on a few yards ahead of the party, to conceal his emotion.

“Did *he* see the Bar of Mottled Soap?” Sylvie enquired, as we followed.

“Oh, certainly!” said the Professor. “That song is his own history, you know.”

Tears of an ever-ready sympathy glittered in Bruno’s eyes. “I’s *welly* sorry he isn’t the Pope!” he said. “Aren’t *you* sorry, Sylvie?”

"Well—I hardly know," Sylvie replied in the vaguest manner. "Would it make him any happier?" she asked the Professor.

"It wouldn't make the *Pope* any happier," said the Professor. "Isn't the platform *lovely*?" he asked, as we entered the Pavilion.

"I've put an extra beam under it!" said the Gardener, patting it affectionately as he spoke. "And now it's that strong, as—as a mad elephant might dance upon it!"

"Thank you *very* much!" the Professor heartily rejoined. "I don't know that we shall exactly require—but it's convenient to know." And he led the children upon the platform, to explain the arrangements to them. "Here are three seats, you see, for the Emperor and the Empress and Prince Uggug. But there must be two more chairs here!" he said, looking down at the Gardener. "One for Lady Sylvie, and one for the smaller animal!"

"And may I help in the Lecture?" said Bruno. "I can do some conjuring-tricks."

"Well, it's not exactly a *conjuring* lecture," the Professor said, as he arranged some curious-looking machines on the table. "However, what can you do? Did you ever go through a table, for instance?"

"Often!" said Bruno. "*Haven't* I, Sylvie?"

The Professor was evidently surprised, though he tried not to show it. "This must be looked into," he muttered to himself, taking out a note-book. "And first—what kind of table?"

"Tell him!" Bruno whispered to Sylvie, putting his arms round her neck.

"Tell him yourself," said Sylvie.

"Ca'n't," said Bruno. "It's a *bony* word."

"Nonsense!" laughed Sylvie. "You can say it well enough, if you only try. Come!"

"Muddle—" said Bruno. "That's a bit of it."

"*What* does he say?" cried the bewildered Professor.

"He means the multiplication-table," Sylvie explained.

The Professor looked annoyed, and shut up his note-book again. "Oh, that's *quite* another thing," he said.

"It are ever so many other things," said Bruno. "*Aren't* it, Sylvie?"

A loud blast of trumpets interrupted this conversation. "Why, the entertainment has *begun*!" the Professor exclaimed, as he hurried the children into the Reception-Saloon. "I had no idea it was so late!"

A small table, containing cake and wine, stood in a corner of the Saloon; and here we found the Emperor and Empress waiting for us. The rest of the Saloon had been cleared of furniture, to make room for the guests. I was much struck by the great change a few months had made in the faces of the Imperial Pair. A vacant stare was now the *Emperor's* usual expression; while over the face of the *Empress* there flitted, ever and anon, a meaningless smile.

"So you're come at last!" the Emperor sulkily remarked, as the Professor and the children took their places. It was evident that he was *very* much out of temper: and we were not long in learning the cause of this. He did not consider the preparations, made for the Imperial party, to be such as suited their rank. "A common mahogany table!" he growled, pointing to it contemptuously with his thumb. "Why wasn't it made of gold, I should like to know?"

"It would have taken a very long——" the Professor began, but the Emperor cut the sentence short.

"Then the cake! Ordinary plum! Why wasn't it made of—of——" He broke off again. "Then the wine! Merely old Madeira! Why wasn't it——? Then this chair! That's worst of all. Why wasn't it a throne? One *might* excuse the other omissions, but I *ca'n't* get over the chair!"

"What *I* ca'n't get over," said the Empress, in eager sympathy with her angry husband, "is the *table*!"

"Pooh!" said the Emperor.

"It is much to be regretted!" the Professor mildly replied, as soon as he had a chance of speaking. After a moment's thought he strengthened the remark. "*Everything*," he said, addressing Society in general, "is *very much* to be regretted!"

A murmur of "Hear, hear!" rose from the crowded Saloon.

There was a rather awkward pause: the Professor evidently didn't know how to begin. The Empress leant forwards, and whispered to him. "A few jokes, you know, Professor—just to put people at their ease!"

"True, true, Madam!" the Professor meekly replied. "This little boy——"

"*Please* don't make any jokes about *me*!" Bruno exclaimed, his eyes filling with tears.

"I won't if you'd rather I didn't," said the kind-hearted Professor. "It was only something about a Ship's Buoy: a harmless pun—but it doesn't matter." Here he turned to the crowd and addressed them in a loud voice. "Learn your A's!" he shouted. "Your B's! Your C's! And your D's! *Then* you'll be at your ease!"

There was a roar of laughter from all the assembly, and then a great deal of confused whispering. "*What* was it he said? Something about bees, I fancy——"

The Empress smiled in her meaningless way, and fanned herself. The poor Professor looked at her timidly: he was clearly at his wits' end again, and hoping for another hint. The Empress whispered again.

"Some spinach, you know, Professor, as a surprise."

The Professor beckoned to the Head-Cook, and said something to him in a low voice. Then the Head-Cook left the room, followed by all the other cooks.

"It's difficult to get things started," the Professor remarked to Bruno. "When once we get started, it'll go on all right, you'll see."

"If oo want to startle people," said Bruno, "oo should put live frogs on their backs."

Here the cooks all came in again, in a procession, the Head-Cook coming last and carrying something, which the others tried to hide by waving flags all round it. "Nothing but flags, Your Imperial Highness! Nothing but flags!" he kept repeating, as he set it before her. Then all the flags were dropped in a moment, as the Head-Cook raised the cover from an enormous dish.

"What is it?" the Empress said faintly, as she put her spy-glass to her eye. "Why, it's *Spinach*, I declare!"

"Her Imperial Highness is surprised," the Professor explained to the attendants: and some of them clapped their hands. The Head-Cook made a low bow, and in doing so dropped a spoon on the table, as if by accident, just within reach of the Empress, who looked the other way and pretended not to see it.

"I *am* surprised!" the Empress said to Bruno. "Aren't you?"

"Not a bit," said Bruno. "I heard——" but Sylvie put her hand over his mouth, and spoke for him. "He's rather tired, I think. He wants the Lecture to



‘Her Imperial Highness is surprised!’

begin.”

“I want the *supper* to begin,” Bruno corrected her.

The Empress took up the spoon in an absent manner, and tried to balance it across the back of her hand, and in doing this she dropped it into the dish: and, when she took it out again, it was full of spinach. “How curious!” she said, and put it into her mouth. “It tastes just like *real* spinach! I thought it was an imitation—but I do believe it’s real!” And she took another spoonful.

“It wo’n’t be real much longer,” said Bruno.

But the Empress had had enough spinach by this time, and somehow—I failed to notice the exact process—we all found ourselves in the Pavilion, and the Professor in the act of beginning the long-expected Lecture.

Chapter XXI. The Professor’s Lecture.

“In Science—in fact, in most things—it is usually best *to begin at the beginning*. In *some* things, of course, it’s better to begin at the *other* end. For instance, if you wanted to paint a dog green, it *might* be best to begin with the *tail*, as it doesn’t bite at *that* end. And so——”

“May *I* help oo?” Bruno interrupted.

“Help me to do *what*?” said the puzzled Professor, looking up for a moment, but keeping his finger on the book he was reading from, so as not to lose his place.

“To paint a dog green!” cried Bruno. “*Oo* can begin wiz its *mouf*, and I’ll—
—”

“No, no!” said the Professor. “We haven’t got to the *Experiments* yet. And so,” returning to his note-book, “I’ll give you the Axioms of Science. After that I shall exhibit some Specimens. Then I shall explain a Process or two. And I shall conclude with a few Experiments. An *Axiom*, you know, is a thing that you accept without contradiction. For instance, if I were to say ‘Here we are!’, that would be accepted without any contradiction, and it’s a nice sort of remark to *begin* a conversation with. So it would be an *Axiom*. Or again, supposing I were to say ‘Here we are not!’ *that* would be——”

“—a fib!” cried Bruno.

"Oh, *Bruno!*" said Sylvie in a warning whisper. "Of course it would be an *Axiom*, if the Professor said it!"

"—that would be accepted, if people were civil," continued the Professor; "so it would be *another* Axiom."

"It *might* be an Axledum," Bruno said: "but it wouldn't be *true!*"

"Ignorance of Axioms," the Lecturer continued, "is a great drawback in life. It wastes so much time to have to say them over and over again. For instance, take the Axiom '*Nothing is greater than itself*'; that is, '*Nothing can contain itself*.' How often you hear people say 'He was so excited, he was quite unable to contain himself,' Why, *of course* he was unable! The *excitement* had nothing to do with it!"

"I say, look here, you know!" said the Emperor, who was getting a little restless. "How many Axioms are you going to give us? At *this* rate, we sha'n't get to the *Experiments* till to-morrow-week!"

"Oh, sooner than *that*, I assure you!" the Professor replied, looking up in alarm. "There are only," (he referred to his notes again) "only *two* more, that are really *necessary*."

"Read 'em out, and get on to the *Specimens*," grumbled the Emperor.

"The *First* Axiom," the Professor read out in a great hurry, "consists of these words, '*Whatever is, is*.' And the *Second* consists of *these* words, '*Whatever isn't, isn't*.' We will now go on to the *Specimens*. The first tray contains Crystals and other Things." He drew it towards him, and again referred to his note-book. "Some of the labels—owing to insufficient adhesion——" Here he stopped again, and carefully examined the page with his eyeglass. "I ca'n't quite read the rest of the sentence," he said at last, "but it *means* that the labels have come loose, and the Things have got mixed——"

"Let *me* stick 'em on again!" cried Bruno eagerly, and began licking them, like postage-stamps, and dabbing them down upon the Crystals and the other Things. But the Professor hastily moved the tray out of his reach. "They *might* get fixed to the *wrong* Specimens, you know!" he said.

"Oo shouldn't have any *wrong* peppermints in the tray!" Bruno boldly replied. "Should he, Sylvie?"

But Sylvie only shook her head.

The Professor heard him not. He had taken up one of the bottles, and was carefully reading the label through his eye-glass. "Our first Specimen——" he announced, as he placed the bottle in front of the other Things, "is—that is, it is called——" here he took it up, and examined the label again, as if he thought it might have changed since he last saw it, "is called Aqua Pura—common water—the fluid that cheers——"

"Hip! Hip! Hip!" the Head-Cook began enthusiastically.

"—but *not* inebriates!" the Professor went on quickly, but only just in time to check the "Hooroar!" which was beginning.

"Our second Specimen," he went on, carefully opening a small jar, "is——" here he removed the lid, and a large beetle instantly darted out, and with an angry buzz went straight out of the Pavilion, "—is—or rather, I should say," looking sadly into the empty jar, "it *was*—a curious kind of Blue Beetle. Did any one happen to remark—as it went past—three blue spots under each wing?"

Nobody had remarked them.

"Ah, well!" the Professor said with a sigh. "It's a pity. Unless you remark that kind of thing *at the moment*, it's very apt to get overlooked! The *next*

Specimen, at any rate, will not fly away! It is—in short, or perhaps, more correctly, at *length*—an *Elephant*. You will observe——.” Here he beckoned to the Gardener to come up on the platform, and with his help began putting together what looked like an enormous dog-kennel, with short tubes projecting out of it on both sides.

“But we’ve seen *Elephants* before,” the Emperor grumbled.

“Yes, but not through a *Megaloscope!*” the Professor eagerly replied. “You know you can’t see a *Flea*, properly, without a *magnifying-glass*—what we call a *Microscope*. Well, just in the same way, you can’t see an *Elephant*, properly, without a *minimifying-glass*. There’s one in each of these little tubes. And *this* is a *Megaloscope!* The Gardener will now bring in the next Specimen. Please open *both* curtains, down at the end there, and make way for the Elephant!”

There was a general rush to the sides of the Pavilion, and all eyes were turned to the open end, watching for the return of the Gardener, who had gone away singing “*He thought he saw an Elephant That practised on a Fife!*” There was silence for a minute: and then his harsh voice was heard again in the distance. “*He looked again—come up, then! He looked again, and found it was—woa back! and, found it was A letter from his—make way there! He’s a-coming!*”



‘He thought he saw an Elephant’

And in marched, or waddled—it is hard to say which is the right word—an Elephant, on its hind-legs, and playing on an enormous fife which it held with its fore-feet.

The Professor hastily threw open a large door at the end of the Megaloscope, and the huge animal, at a signal from the Gardener, dropped the fife, and obediently trotted into the machine, the door of which was at once shut by the Professor. “The Specimen is now ready for observation!” he proclaimed. “It is exactly the size of the Common Mouse—*Mus Communis!*”

There was a general rush to the tubes, and the spectators watched with delight the minikin creature, as it playfully coiled its trunk round the Professor’s extended finger, finally taking its stand upon the palm of his hand, while he

carefully lifted it out, and carried it off to exhibit to the Imperial party.

"Isn't it a *darling*?" cried Bruno. "May I stroke it, please? I'll touch it *wel*ly gently!"

The Empress inspected it solemnly with her eye-glass. "It is very small," she said in a deep voice. "Smaller than elephants usually are, I believe?"

The Professor gave a start of delighted surprise. "Why, that's *true*!" he murmured to himself. Then louder, turning to the audience, "Her Imperial Highness has made a remark which is perfectly sensible!" And a wild cheer arose from that vast multitude.

"The next Specimen," the Professor proclaimed, after carefully placing the little Elephant in the tray, among the Crystals and other Things, "is a *Flea*, which we will enlarge for the purposes of observation." Taking a small pill-box from the tray, he advanced to the Megaloscope, and reversed all the tubes. "The Specimen is ready!" he cried, with his eye at one of the tubes, while he carefully emptied the pill-box through a little hole at the side. "It is now the size of the Common Horse—*Equus Communis*!"

There was another general rush, to look through the tubes, and the Pavilion rang with shouts of delight, through which the Professor's anxious tones could scarcely be heard. "Keep the door of the Microscope *shut*!" he cried. "If the creature were to escape, *this size*, it would——" But the mischief was done. The door had swung open, and in another moment the Monster had got out, and was trampling down the terrified, shrieking spectators.

But the Professor's presence of mind did not desert him. "Undraw those curtains!" he shouted. It was done. The Monster gathered its legs together, and in one tremendous bound vanished into the sky.

"Where *is* it?" said the Emperor, rubbing his eyes.

"In the next Province, I fancy," the Professor replied. "That jump would take it at *least* five miles! The next thing is to explain a Process or two. But I find there is hardly room enough to operate—the smaller animal is rather in my way——"

"Who does he mean?" Bruno whispered to Sylvie.

"He means *you*!" Sylvie whispered back. "Hush!"

"Be kind enough to move—angularly—to *this* corner," the Professor said, addressing himself to Bruno.

Bruno hastily moved his chair in the direction indicated. "Did I move angrily enough?" he inquired. But the Professor was once more absorbed in his Lecture, which he was reading from his note-book.

"I will now explain the Process of—the name is blotted, I'm sorry to say. It will be illustrated by a number of—of——" here he examined the page for some time, and at last said "It seems to be either 'Experiments' or 'Specimens'——"

"Let it be *Experiments*," said the Emperor. "We've seen plenty of *Specimens*."

"Certainly, certainly!" the Professor assented. "We will have some Experiments."

"May *I* do them?" Bruno eagerly asked.

"Oh dear no!" The Professor looked dismayed. "I really don't know what would happen if *you* did them!"

"Nor nobody doosn't know what'll happen if *oo* doos them!" Bruno retorted.

"Our First Experiment requires a Machine. It has two knobs—only *two*—you can count them, if you like."

The Head-Cook stepped forwards, counted them, and retired satisfied.

“Now you *might* press those two knobs together—but that’s not the way to do it. Or you *might* turn the Machine upside-down—but *that’s* not the way to do it!”

“What *are* the way to do it?” said Bruno, who was listening very attentively.

The Professor smiled benignantly. “Ah, yes!” he said, in a voice like the heading of a chapter. “The Way To Do It! Permit me!” and in a moment he had whisked Bruno upon the table. “I divide my subject,” he began, “into three parts——”

“I think I’ll get down!” Bruno whispered to Sylvie. “It aren’t nice to be divided!”

“He hasn’t got a knife, silly boy!” Sylvie whispered in reply. “Stand still! You’ll break all the bottles!”

“The first part is to take hold of the knobs,” putting them into Bruno’s hands. “The second part is——” Here he turned the handle, and, with a loud “Oh!”, Bruno dropped both the knobs, and began rubbing his elbows.

The Professor chuckled in delight. “It had a sensible effect. *Hadn’t* it?” he enquired.

“No, it hadn’t a *sensible* effect!” Bruno said indignantly. “It were very silly indeed. It jingled my elbows, and it banged my back, and it crinkled my hair, and it buzzed among my bones!”

“I’m sure it *didn’t*!” said Sylvie. “You’re only inventing!”

“Oo doosn’t know nuffin about it!” Bruno replied. “Oo wasn’t there to see. Nobody ca’n’t go among my bones. There isn’t room!”

“Our Second Experiment,” the Professor announced, as Bruno returned to his place, still thoughtfully rubbing his elbows, “is the production of that seldom-seen-but-greatly-to-be-admired phenomenon, Black Light! You have seen White Light, Red Light, Green Light, and so on: but never, till this wonderful day, have any eyes but mine seen *Black Light*! This box,” carefully lifting it upon the table, and covering it with a heap of blankets, “is quite full of it. The way I made it was this—I took a lighted candle into a dark cupboard and shut the door. Of course the cupboard was then full of *Yellow Light*. Then I took a bottle of Black ink, and poured it over the candle: and, to my delight, every atom of the Yellow Light turned *Black*! That was indeed the proudest moment of my life! Then I filled a box with it. And now—would any one like to get under the blankets and see it?”

Dead silence followed this appeal: but at last Bruno said “*I’ll* get under, if it won’t jingle my elbows.”

Satisfied on this point, Bruno crawled under the blankets, and, after a minute or two, crawled out again, very hot and dusty, and with his hair in the wildest confusion.

“What did you see in the box?” Sylvie eagerly enquired.

“I saw *nuffin*!” Bruno sadly replied. “It were too dark!”

“He has described the appearance of the thing exactly!” the Professor exclaimed with enthusiasm. “Black Light, and Nothing, look so extremely alike, at first sight, that I don’t wonder he failed to distinguish them! We will now proceed to the Third Experiment.”

The Professor came down, and led the way to where a post had been driven firmly into the ground. To one side of the post was fastened a chain, with an iron weight hooked on to the end of it, and from the other side projected a piece of whalebone, with a ring at the end of it. “This is a *most* interesting

Experiment!" the Professor announced. "It will need *time*, I'm afraid: but that is a trifling disadvantage. Now observe. If I were to unhook this weight, and let go, it would fall to the ground. You do not deny *that*?"

Nobody denied it.

"And in the same way, if I were to bend this piece of whalebone round the post—thus—and put the ring over this hook—thus—it stays bent: but, if I unhook it, it straightens itself again. You do not deny *that*?"

Again, nobody denied it.

"Well, now, suppose we left things just as they are, for a long time. The force of the *whalebone* would get exhausted, you know, and it would stay bent, even when you unhooked it. Now, *why* shouldn't the same thing happen with the *weight*? The *whalebone* gets so used to being bent, that it ca'n't *straighten* itself any more. Why shouldn't the *weight* get so used to being held up, that it ca'n't *fall* any more? That's what *I* want to know!"

"That's what *we* want to know!" echoed the crowd.

"How long must we wait?" grumbled the Emperor.

The Professor looked at his watch. "Well, I *think* a thousand years will do to *begin* with," he said. "Then we will cautiously unhook the weight: and, if it *still* shows (as perhaps it will) a *slight* tendency to fall, we will hook it on to the chain again, and leave it for *another* thousand years."

Here the Empress experienced one of those flashes of Common Sense which were the surprise of all around her. "Meanwhile there'll be time for another Experiment," she said.

"There will *indeed*!" cried the delighted Professor. "Let us return to the platform, and proceed to the *Fourth* Experiment!"

"For this concluding Experiment, I will take a certain Alkali, or Acid—I forget which. Now you'll see what will happen when I mix it with Some——" here he took up a bottle, and looked at it doubtfully, "—when I mix it with— with Something——"

Here the Emperor interrupted. "What's the *name* of the stuff?" he asked.

"I don't remember the *name*," said the Professor: "and the label has come off." He emptied it quickly into the other bottle, and, with a tremendous bang, both bottles flew to pieces, upsetting all the machines, and filling the Pavilion with thick black smoke. I sprang to my feet in terror, and—and found myself standing before my solitary hearth, where the poker, dropping at last from the hand of the sleeper, had knocked over the tongs and the shovel, and had upset the kettle, filling the air with clouds of steam. With a weary sigh, I betook myself to bed.

Chapter XXII. The Banquet.

"*Heaviness may endure for a night: but joy cometh in the morning.*" The next day found me quite another being. Even the memories of my lost friend and companion were sunny as the genial weather that smiled around me. I did not venture to trouble Lady Muriel, or her father, with another call so soon: but took a walk into the country, and only turned homewards when the low sunbeams warned me that day would soon be over.

On my way home, I passed the cottage where the old man lived, whose face always recalled to me the day when I first met Lady Muriel; and I glanced in as I passed, half-curious to see if he were still living there.

Quoted from Psalm
30:5



An explosion

Yes: the old man was still alive. He was sitting out in the porch, looking just as he did when I first saw him at Fayfield Junction—it seemed only a few days ago!

“Good evening!” I said, pausing.

“Good evening, Maister!” he cheerfully responded. “Wo’n’t ee step in?”

I stepped in, and took a seat on the bench in the porch. “I’m glad to see you looking so hearty,” I began. “Last time, I remember, I chanced to pass just as Lady Muriel was coming away from the house. Does she still come to see you?”

“Ees,” he answered slowly. “She has na forgotten me. I don’t lose her bonny face for many days together. Well I mind the very first time she come, after we’d met at Railway Station. She told me as she come to mak’ amends. Dear child! Only think o’ that! To mak’ amends!”

“To make amends for what?” I enquired. “What could *she* have done to need it?”

“Well, it were loike this, you see? We were both on us a-waiting fur t’ train at t’ Junction. And I had setten mysen down upat t’ bench. And Station-Maister, *he* comes and he orders me off—fur t’ mak’ room for her Ladyship, you understand?”

“I remember it all,” I said. “I was there myself, that day.”

“*Was* you, now? Well, an’ she axes my pardon fur’t. Think o’ that, now! *My* pardon! An owd ne’er-do-weel like me! Ah! She’s been here many a time, sin’ then. Why, she were in here only yestere’en, as it were, asittin’, as it might be, where you’re a-sitting now, an’ lookin’ sweeter and kinder nor an angel! An’ she says ‘You’ve not got your Minnie, now,’ she says, ‘to fettle for ye.’ Minnie was my grand-daughter, Sir, as lived wi’ me. She died, a matter of two months ago—or it may be three. She was a bonny lass—and a good lass, too. Eh, but life has been rare an’ lonely without her!”

He covered his face in his hands: and I waited a minute or two, in silence, for him to recover himself.

"So she says 'Just tak' *me* fur your Minnie!' she says. 'Didna Minnie mak' your tea fur you?' says she. 'Ay,' says I. An she mak's the tea. 'An' didna Minnie light your pipe?' says she. 'Ay,' says I. An' she lights the pipe for me. 'An' didna Minnie set out your tea in t' porch?' An' I says 'My dear,' I says, 'I'm thinking you're Minnie hersen!' An' she cries a bit. We both on us cries a bit——."

Again I kept silence for a while.

"An' while I smokes my pipe, she sits an' talks to me—as loving an' as pleasant! I'll be bound I thowt it were Minnie come again! An' when she gets up to go, I says 'Winnot ye shak' hands wi' me?' says I. An' she says 'Na,' she says: 'a cannot *shak' hands* wi' thee!' she says."

"I'm sorry she said *that*," I put in, thinking it was the only instance I had ever known of pride of rank showing itself in Lady Muriel.

"Bless you, it werena *pride*!" said the old man, reading my thoughts. "She says 'Your Minnie never *shook hands* wi' you!' she says. 'An' *I'm* your Minnie now,' she says. An' she just puts her dear arms about my neck—and she kisses me on t' cheek—an' may God in Heaven bless her!" And here the poor old man broke down entirely, and could say no more.

"God bless her!" I echoed. "And good night to you!" I pressed his hand, and left him. "Lady Muriel," I said softly to myself as I went homewards, "truly you know how to 'mak' amends'!"

Seated once more by my lonely fireside, I tried to recall the strange vision of the night before, and to conjure up the face of the dear old Professor among the blazing coals. "That black one—with just a touch of red—would suit him well," I thought. "After such a catastrophe, it would be sure to be covered with black stains—and he would say:—

"The result of *that* combination—you may have noticed?—was an *Explosion*! Shall I repeat the Experiment?"

"No, no! Don't trouble yourself!" was the general cry. And we all trooped off, in hot haste, to the Banqueting-Hall, where the feast had already begun.

No time was lost in helping the dishes, and very speedily every guest found his plate filled with good things.

"I have always maintained the principle," the Professor began, "that it is a good rule to take some food—occasionally. The great advantage of dinner-parties——" he broke off suddenly. "Why, actually here's the Other Professor!" he cried. "And there's no place left for him!"

The Other Professor came in reading a large book, which he held close to his eyes. One result of his not looking where he was going was that he tripped up, as he crossed the Saloon, flew up into the air, and fell heavily on his face in the middle of the table.

"*What* a pity!" cried the kind-hearted Professor, as he helped him up.

"It wouldn't be *me*, if I didn't trip," said the Other Professor.

The Professor looked much shocked. "Almost *anything* would be better than *that*!" he exclaimed. "It never does," he added, aside to Bruno, "to be anybody else, does it?"

To which Bruno gravely replied "I's got nuffin on my plate."

The Professor hastily put on his spectacles, to make sure that the *facts* were all right, to begin with: then he turned his jolly round face upon the unfortunate



'A cannot shak' hands wi' thee!



The Other Professor's fall

owner of the empty plate. "And what would you like next, my little man?"

"Well," Bruno said, a little doubtfully, "I think I'll take some plum-pudding, please—while I think of it."

"Oh, Bruno!" (This was a whisper from Sylvie.) "It isn't good manners to ask for a dish before it comes!"

And Bruno whispered back "But I might forget to ask for some, when it comes, oo know—I *do* forget things, sometimes," he added, seeing Sylvie about to whisper more.

And *this* assertion Sylvie did not venture to contradict.

Meanwhile a chair had been placed for the Other Professor, between the Empress and Sylvie. Sylvie found him a rather uninteresting neighbour: in fact, she couldn't afterwards remember that he had made more than *one* remark to her during the whole banquet, and that was "What a comfort a Dictionary is!" (She told Bruno, afterwards, that she had been too much afraid of him to say more than "Yes, Sir," in reply; and that had been the end of their conversation. On which Bruno expressed a very decided opinion that *that* wasn't worth calling a 'conversation' at all. "Oo should have asked him a riddle!" he added triumphantly. "Why, *I* asked the Professor *three* riddles! One was that one you asked me in the morning, 'How many pennies is there in two shillings?' And another was——" "Oh, Bruno!" Sylvie interrupted. "*That* wasn't a riddle!" "It *were*!" Bruno fiercely replied.)

By this time a waiter had supplied Bruno with a plateful of *something*, which drove the plum-pudding out of his head.

"Another advantage of dinner-parties," the Professor cheerfully explained, for the benefit of any one that would listen, "is that it helps you to *see* your friends. If you want to *see* a man, offer him something to eat. It's the same rule with a mouse."

"This Cat's very kind to the Mouses," Bruno said, stooping to stroke a remarkably fat specimen of the race, that had just waddled into the room, and was rubbing itself affectionately against the leg of his chair. "Please, Sylvie, pour some milk in your saucer. Pussie's ever so thirsty!"

"Why do you want *my* saucer?" said Sylvie. "You've got one yourself!"

"Yes, I know," said Bruno: "but I wanted *mine* for to give it some *more* milk in."

Sylvie looked unconvinced: however it seemed quite impossible for her *ever* to refuse what her brother asked: so she quietly filled her saucer with milk, and handed it to Bruno, who got down off his chair to administer it to the cat.

"The room's very hot, with all this crowd," the Professor said to Sylvie. "I wonder why they don't put some lumps of ice in the grate? You fill it with lumps of coal in the winter, you know, and you sit round it and enjoy the warmth. How jolly it would be to fill it now with lumps of ice, and sit round it and enjoy the coolth!"

Hot as it was, Sylvie shivered a little at the idea. "It's very cold *outside*," she said. "My feet got almost frozen to-day."

"That's the *shoemaker's* fault!" the Professor cheerfully replied. "How often I've explained to him that he *ought* to make boots with little iron frames under the soles, to hold lamps! But he never *thinks*. No one would suffer from cold, if only they would *think* of those little things. I always use hot ink, myself, in the winter. Very few people ever think of *that*! Yet how simple it is!"

"Yes, it's very simple," Sylvie said politely. "Has the cat had enough?" This was to Bruno, who had brought back the saucer only half-emptied.

But Bruno did not hear the question. "There's somebody scratching at the door and wanting to come in," he said. And he scrambled down off his chair, and went and cautiously peeped out through the door-way.

"Who was it wanted to come in?" Sylvie asked, as he returned to his place.

"It were a Mouse," said Bruno. "And it peeped in. And it saw the Cat. And it said 'I'll come in another day.' And I said 'Oo needn't be flightened. The Cat's *welly* kind to Mouses.' And it said 'But I's got some imporkant business, what I *must* attend to.' And it said 'I'll call again to-morrow.' And it said 'Give my love to the Cat.'"

"What a fat cat it is!" said the Lord Chancellor, leaning across the Professor to address his small neighbour. "It's quite a wonder!"

"It was awfully fat when it came in," said Bruno: "so it would be more wonderfuller if it got thin all in a minute."

"And that was the reason, I suppose," the Lord Chancellor suggested, "why you didn't give it the rest of the milk?"

"No," said Bruno. "It were a betterer reason. I tooked the saucer up 'cause it were so discontented!"

"It doesn't look so to *me*," said the Lord Chancellor. "What made you think it was discontented?"

"Cause it grumbled in its throat."

"Oh, Bruno!" cried Sylvie. "Why, that's the way cats show they're *pleased*!"

Bruno looked doubtful. "It's not a good way," he objected. "Oo wouldn't say *I* were pleased, if I made that noise in my throat!"

"What a singular boy!" the Lord Chancellor whispered to himself: but Bruno had caught the words.

"What do it mean to say 'a *singular* boy'?" he whispered to Sylvie.

"It means *one* boy," Sylvie whispered in return. "And *plural* means two or three."

"Then I's welly glad I *is* a singular boy!" Bruno said with great emphasis. "It would be *horrid* to be two or three boys! P'raps they wouldn't play with me!"

"Why *should* they?" said the Other Professor, suddenly waking up out of a deep reverie. "They might be asleep, you know."

"Couldn't, if *I* was awake," Bruno said cunningly.

"Oh, but they might indeed!" the Other Professor protested. "Boys don't all go to sleep at once, you know. So these boys—but who are you talking about?"

"He *never* remembers to ask that first!" the Professor whispered to the children.

"Why, the rest of *me*, a-course!" Bruno exclaimed triumphantly. "Supposing I was two or three boys!"

The Other Professor sighed, and seemed to be sinking back into his reverie; but suddenly brightened up again, and addressed the Professor. "There's nothing more to be done *now*, is there?"

"Well, there's the dinner to finish," the Professor said with a bewildered smile: "and the heat to bear. I hope you'll enjoy the dinner—such as it is; and that you won't mind the heat—such as it isn't."

The sentence *sounded* well, but somehow I couldn't quite understand it; and the Other Professor seemed to be no better off. "Such as it isn't *what?*" he peevishly enquired.

"It isn't as hot as it might be," the Professor replied, catching at the first idea that came to hand.

"Ah, I see what you mean *now!*" the Other Professor graciously remarked. "It's very badly expressed, but I quite see it *now!* Thirteen minutes and a half ago," he went on, looking first at Bruno and then at his watch as he spoke, "you said 'this Cat's very kind to the Mouses.' It must be a singular animal!"

"So it *are,*" said Bruno, after carefully examining the Cat, to make sure how many there were of it.

"But how do you know it's kind to the Mouses—or, more correctly speaking, the *Mice?*"

"Cause it *plays* with the Mouses," said Bruno; "for to amuse them, oo know."

"But that is just what I *don't* know," the Other Professor rejoined. "My belief is, it plays with them to *kill* them!"

"Oh, that's quite a *accident!*" Bruno began, so eagerly, that it was evident he had already propounded this very difficulty to the Cat. "It 'splained all that to me, while it were drinking the milk. It said 'I teaches the Mouses new games: the Mouses likes it ever so much.' It said 'Sometimes little accidents happens: sometimes the Mouses kills theirselves.' It said 'I's always *welly* sorry, when the Mouses kills theirselves.' It said——"

"If it was so *very* sorry," Sylvie said, rather disdainfully, "it wouldn't *eat* the Mouses after they'd killed themselves!"

But this difficulty, also, had evidently not been lost sight of in the exhaustive ethical discussion just concluded. "It said——" (the orator constantly omitted, as superfluous, his own share in the dialogue, and merely gave us the replies of the Cat) "It said 'Dead Mouses *never* objects to be eaten.' It said 'There's no use wasting good Mouses.' It said 'Wifful—' sumfinoruvver. It said 'And oo may live to say 'How much I wiss I had the Mouse that then I frew away!' It said——"

"It hadn't *time* to say such a lot of things!" Sylvie interrupted indignantly.

"Oo doosn't know how Cats speaks!" Bruno rejoined contemptuously. "Cats speaks *welly* quick!"

Chapter XXIII. The Pig-Tale.

By this time the appetites of the guests seemed to be nearly satisfied, and even *Bruno* had the resolution to say, when the Professor offered him a fourth slice of plum-pudding, "I thinks three helpings is enough!"

Suddenly the Professor started as if he had been electrified. "Why, I had nearly forgotten the most important part of the entertainment! The Other Professor is to recite a Tale of a Pig—I mean a Pig-Tale," he corrected himself. "It has Introductory Verses at the beginning, and at the end."

"It ca'n't have Introductory Verses at the *end*, can it?" said Sylvie.

"Wait till you hear it," said the Professor: "then you'll see. I'm not sure it hasn't some in the *middle*, as well." Here he rose to his feet, and there was an instant silence through the Banqueting-Hall: they evidently expected a speech.

"Ladies, and gentlemen," the Professor began, "the Other Professor is so kind as to recite a Poem. The title of it is 'The Pig-Tale.' He never recited it before!"

(General cheering among the guests.) “He will never recite it again!” (Frantic excitement, and wild cheering all down the hall, the Professor himself mounting the table in hot haste, to lead the cheering, and waving his spectacles in one hand and a spoon in the other.)

Then the Other Professor got up, and began:—

Little Birds are dining
Warily and well,
Hid in mossy cell:
Hid, I say, by waiters
Gorgeous in their gaiters—
I’ve a Tale to tell.



‘Teaching Tigresses to smile’

Little Birds are feeding

Justices with jam,
Rich in frizzled ham:
Rich, I say, in oysters
Haunting shady cloisters—
That is what I am.

Little Birds are teaching
Tigresses to smile,
Innocent of guile:
Smile, I say, not smirkle—
Mouth a semicircle,
That's the proper style.

Little Birds are sleeping
All among the pins,
Where the loser wins:
Where, I say, he sneezes
When and how he pleases—
So the Tale begins.

There was a Pig that sat alone
Beside a ruined Pump:
By day and night he made his moan—
It would have stirred a heart of stone
To see him wring his hoofs and groan,
Because he could not jump.

A certain Camel heard him shout—
A Camel with a hump.
“Oh, is it Grief, or is it Gout?
What is this bellowing about?”
That Pig replied, with quivering snout,
“Because I cannot jump!”

That Camel scanned him, dreamy-eyed.
“Methinks you are too plump.
I never knew a Pig so wide—
That wobbled so from side to side—
Who could, however much he tried,
Do such a thing as *jump*!

“Yet mark those trees, two miles away,
All clustered in a clump:
If you could trot there twice a day,
Nor ever pause for rest or play,
In the far future—Who can say?—
You may be fit to jump.”

That Camel passed, and left him there,
Beside the ruined Pump.
Oh, horrid was that Pig's despair!
His shrieks of anguish filled the air.
He wrung his hoofs, he rent his hair,
Because he could not jump.



'Horried was that Pig's despair!'

There was a Frog that wandered by—
A sleek and shining lump:
Inspected him with fishy eye,
And said "O Pig, what makes you cry?"
And bitter was that Pig's reply,
"Because I cannot jump!"

That Frog he grinned a grin of glee,
And hit his chest a thump
"O Pig," said, "be ruled by me,
And you shall see what you shall see.
This minute, for a trifling fee,
I'll teach you how to jump!"

"You may be faint from many a fall,
And bruised by many a bump:
But, if you persevere through all,
And practise first on something small,
Concluding with a ten-foot wall,
You'll find that you can jump!"

That Pig looked up with joyful start:
"Oh Frog, you *are* a trump!
Your words have healed my inward smart—
Come, name your fee and do your part:
Bring comfort to a broken heart,
By teaching me to jump!"

"My fee shall be a mutton-chop,
My goal this ruined Pump.

Observe with what an airy flop
I plant myself upon the top!
Now bend your knees and take a hop,
For that's the way to jump!"



The fatal jump

Uprose that Pig, and rushed, full whack,
Against the ruined Pump:
Rolled over like an empty sack,
And settled down upon his back,
While all his bones at once went 'Crack!
It was a fatal jump.

When the Other Professor had recited this Verse, he went across to the fire-place, and put his head up the chimney. In doing this, he lost his balance, and fell head-first into the empty grate, and got so firmly fixed there that it was some time before he could be dragged out again.

Bruno had had time to say "I thought he wanted to see how many peoples was up the chimbley."

And Sylvie had said "*Chimney*—not chimbley."

And Bruno had said "Don't talk 'ubbish!"

All this, while the Other Professor was being extracted.

"You must have blacked your face!" the Empress said anxiously. "Let me send for some soap?"

"Thanks, no," said the Other Professor, keeping his face turned away. "Black's quite a respectable colour. Besides, soap would be no use without water."

Keeping his back well turned away from the audience, he went on with the Introductory Verses:—

Little Birds are writing
Interesting books,
To be read by cooks:



'Bathing Crocodiles in cream'

Read, I say, not roasted—
Letterpress, when toasted,
Loses its good looks.

Little Birds are playing
Bagpipes on the shore,
Where the tourists snore:
“Thanks!” they cry. “’Tis thrilling!
Take, oh take this shilling!
Let us have no more!”

Little Birds are bathing
Crocodiles in cream,
Like a happy dream:
Like, but not so lasting—
Crocodiles, when fasting,
Are not all they seem!



‘That Pig lay still as any stone’

That Camel passed, as Day grew dim
Around the ruined Pump.
“O broken heart! O broken limb!
It needs,” that Camel said to him,
“Something more fairy-like and slim,
To execute a jump!”

That Pig lay still as any stone,
And could not stir a stump:
Nor ever, if the truth were known,
Was he again observed to moan,
Nor ever wring his hoofs and groan,

Because he could not jump.
That Frog made no remark, for he
Was dismal as a dump:
He knew the consequence must be
That he would never get his fee—
And still he sits, in miserie,
Upon that ruined Pump!



‘Still he sits in miserie’

“It’s a miserable story!” said Bruno. “It begins miserably, and it ends miser-
abler. I think I shall cry. Sylvie, please lend me your handkerchief.”

“I haven’t got it with me,” Sylvie whispered.

“Then I won’t cry,” said Bruno manfully.

“There are more Introductory Verses to come,” said the Other Professor,
“but I’m hungry.” He sat down, cut a large slice of cake, put it on Bruno’s plate,
and gazed at his own empty plate in astonishment.

“Where did you get that cake?” Sylvie whispered to Bruno.

“He gived it me,” said Bruno.

“But you shouldn’t ask for things! You *know* you shouldn’t!”

“I *didn’t* ask,” said Bruno, taking a fresh mouthful: “he *gived* it me.”

Sylvie considered this for a moment: then she saw her way out of it. “Well,
then, ask him to give *me* some!”

“You seem to enjoy that cake?” the Professor remarked.

“Doos that mean ‘munch’?” Bruno whispered to Sylvie.

Sylvie nodded. “It means ‘to munch’ and ‘to *like* to munch.’”

Bruno smiled at the Professor. “I *doos* enjoy it,” he said.

The Other Professor caught the word. “And I hope you’re enjoying *yourself*,
little Man?” he enquired.

Bruno’s look of horror quite startled him. “No, *indeed* I aren’t!” he said.

The Other Professor looked thoroughly puzzled. "Well, well!" he said. "Try some cowslip wine!" And he filled a glass and handed it to Bruno. "Drink this, my dear, and you'll be quite another man!"

"Who shall I be?" said Bruno, pausing in the act of putting it to his lips.

"Don't ask so many questions!" Sylvie interposed, anxious to save the poor old man from further bewilderment. "Suppose we get the Professor to tell us a story."

Bruno adopted the idea with enthusiasm. "*Please* do!" he cried eagerly. "Sumfin about tigers—and bumble-bees—and robin-redbreasts, oo knows!"

"Why should you always have *live* things in stories?" said the Professor. "Why don't you have events, or circumstances?"

"Oh, *please* invent a story like that!" cried Bruno.

The Professor began fluently enough. "Once a coincidence was taking a walk with a little accident, and they met an explanation—a *very* old explanation—so old that it was quite doubled up, and looked more like a conundrum——" he broke off suddenly.

"*Please* go on!" both children exclaimed.

The Professor made a candid confession. "It's a very difficult sort to invent, I find. Suppose Bruno tells one, first."

Bruno was only too happy to adopt the suggestion.

"Once there were a Pig, and a Accordion, and two Jars of Orange-marmalade——"

"The *dramatis personæ*," murmured the Professor. "Well, what then?"

"So, when the Pig played on the Accordion," Bruno went on, "one of the Jars of Orange-marmalade didn't like the tune, and the other Jar of Orange-marmalade did like the tune—I *know* I shall get confused among those Jars of Orange-marmalade, Sylvie!" he whispered anxiously.

"I will now recite the other Introductory Verses," said the Other Professor.

Little Birds are choking
Baronets with bun,
Taught to fire a gun:
Taught, I say, to splinter
Salmon in the winter—
Merely for the fun.

Little Birds are hiding
Crimes in carpet-bags,
Blessed by happy stags:
Blessed, I say, though beaten—
Since our friends are eaten
When the memory flags.

Little Birds are tasting
Gratitude and gold,
Pale with sudden cold
Pale, I say, and wrinkled—
When the bells have tinkled
And the Tale is told.

"The next thing to be done," the Professor cheerfully remarked to the Lord



'Blessed by happy stags'

Chancellor, as soon as the applause, caused by the recital of the Pig-Tale, had come to an end, "is to drink the Emperor's health, is it not?"

"Undoubtedly!" the Lord Chancellor replied with much solemnity, as he rose to his feet to give the necessary directions for the ceremony. "Fill your glasses!" he thundered. All did so, instantly. "Drink the Emperor's health!" A general gurgling resounded all through the Hall. "Three cheers for the Emperor!" The faintest possible sound followed *this* announcement: and the Chancellor, with admirable presence of mind, instantly proclaimed "A speech from the Emperor!"

The Emperor had begun his speech almost before the words were uttered. "However unwilling to be Emperor—since you all wish me to be Emperor—you know how badly the late Warden managed things—with such enthusiasm as you have shown—he persecuted you—he taxed you too heavily—you know who is fittest man to be Emperor—my brother had no sense——."

How long this curious speech might have lasted it is impossible to say, for just at this moment a hurricane shook the palace to its foundations, bursting open the windows, extinguishing some of the lamps, and filling the air with clouds of dust, which took strange shapes in the air, and seemed to form words.

But the storm subsided as suddenly as it had risen—the casements swung into their places again: the dust vanished: all was as it had been a minute ago—with the exception of the Emperor and Empress, over whom had come a wondrous change. The vacant stare, the meaningless smile, had passed away: all could see that these two strange beings had returned to their senses.

The Emperor continued his speech as if there had been no interruption. "And we have behaved—my wife and I—like two arrant Knaves. We deserve no better name. When my brother went away, you lost the best Warden you ever had. And I've been doing my best, wretched hypocrite that I am, to cheat you into making me an Emperor. Me! One that has hardly got the wits to be a shoe-black!"

The Lord Chancellor wrung his hands in despair. "He is mad, good people!" he was beginning. But both speeches stopped suddenly—and, in the dead silence that followed, a knocking was heard at the outer door.

"What is it?" was the general cry. People began running in and out. The excitement increased every moment. The Lord Chancellor, forgetting all the rules of Court-ceremony, ran full speed down the hall, and in a minute returned, pale and gasping for breath.

Chapter XXIV. The Beggar's Return.

"Your Imperial Highnesses!" he began. "It's the old Beggar again! Shall we set the dogs at him?"

"Bring him here!" said the Emperor.

The Chancellor could scarcely believe his ears. "*Here*, your Imperial Highness? Did I rightly understand——."

"Bring him here!" the Emperor thundered once more. The Chancellor tottered down the hall—and in another minute the crowd divided, and the poor old Beggar was seen entering the Banqueting-Hall.

He was indeed a pitiable object: the rags, that hung about him, were all splashed with mud: his white hair and his long beard were tossed about in wild disorder. Yet he walked upright, with a stately tread, as if used to command:



The old Beggar's return

and—strangest sight of all—Sylvie and Bruno came with him, clinging to his hands, and gazing at him with looks of silent love.

Men looked eagerly to see how the Emperor would receive the bold intruder. Would he hurl him from the steps of the daïs? But no. To their utter astonishment, the Emperor knelt as the beggar approached, and with bowed head murmured "Forgive us!"

"Forgive us!" the Empress, kneeling at her husband's side, meekly repeated.

The Outcast smiled. "Rise up!" he said. "I forgive you!" And men saw with wonder that a change had passed over the old beggar, even as he spoke. What had seemed, but now, to be vile rags and splashes of mud, were seen to be in truth kingly trappings, broided with gold, and sparkling with gems. All knew him now, and bent low before the Elder Brother, the true Warden.

"Brother mine, and Sister mine!" the Warden began, in a clear voice that was heard all through that vast hall. "I come not to disturb you. Rule on, as Emperor, and rule wisely. For I am chosen King of Elfland. To-morrow I return there, taking nought from hence, save only—save only——" his voice trembled, and with a look of ineffable tenderness, he laid his hands in silence on the heads of the two little ones who clung around him.

But he recovered himself in a moment, and beckoned to the Emperor to resume his place at the table. The company seated themselves again—room being found for the Elfin-King between his two children—and the Lord Chancellor rose once more, to propose the next toast.

"The next toast—the hero of the day—why, he isn't here!" he broke off in wild confusion.

Good gracious! Everybody had forgotten Prince Uggug!

"He was told of the Banquet, of course?" said the Emperor.

"Undoubtedly!" replied the Chancellor. "*That* would be the duty of the Gold Stick in Waiting."

"Let the Gold Stick come forwards!" the Emperor gravely said.

The Gold Stick came forwards. "I attended on His Imperial Fatness," was the statement made by the trembling official. "I told him of the Lecture and the Banquet——."

"What followed?" said the Emperor: for the unhappy man seemed almost too frightened to go on.

"His Imperial Fatness was graciously pleased to be sulky. His Imperial Fatness was graciously pleased to box my ears. His Imperial Fatness was graciously pleased to say 'I don't care!'"

"'Don't-care' came to a bad end," Sylvie whispered to Bruno. "I'm not sure, but I *believe* he was hanged."

The Professor overheard her. "*That* result," he blandly remarked, "was merely a case of mistaken identity."

Both children looked puzzled.

"Permit me to explain. 'Don't-care' and 'Care' were twin-brothers. 'Care,' you know, killed the Cat. And they caught 'Don't-care' by mistake, and hanged him instead. And so 'Care' is alive still. But he's very unhappy without his brother. That's why they say 'Begone, dull Care!'"

"Thank you!" Sylvie said, heartily. "It's very extremely interesting. Why, it seems to explain *everything!*"

"Well, not quite *everything*," the Professor modestly rejoined. "There are two or three scientific difficulties——"

"What was your general impression as to His Imperial Fatness?" the Emperor asked the Gold Stick.

"My impression was that His Imperial Fatness was getting more——"

"More *what?*"

All listened breathlessly for the next word.

"More PRICKLY!"

"He must be sent for *at once!*" the Emperor exclaimed. And the Gold Stick went off like a shot. The Elfin-King sadly shook his head. "No use, no use!" he murmured to himself. "Loveless, loveless!"

Pale, trembling, speechless, the Gold Stick came slowly back again.

"Well?" said the Emperor. "Why does not the Prince appear?"

"One can easily guess," said the Professor. "His Imperial Fatness is, without doubt, a little preoccupied."

Bruno turned a look of solemn enquiry on his old friend. "What do that word mean?"

But the Professor took no notice of the question. He was eagerly listening to the Gold Stick's reply.

"Please your Highness! His Imperial Fatness is——" Not a word more could he utter.

The Empress rose in an agony of alarm. "Let us go to him!" she cried. And there was a general rush for the door.

Bruno slipped off his chair in a moment. "May we go too?" he eagerly asked. But the King did not hear the question, as the Professor was speaking to him. "*Preoccupied*, your Majesty!" he was saying. "That is what he is, no doubt!"

“May we go and see him?” Bruno repeated. The King nodded assent, and the children ran off. In a minute or two they returned, slowly and gravely. “Well?” said the King. “What’s the matter with the Prince?”

“He’s—what *you* said,” Bruno replied, looking at the Professor. “That hard word.” And he looked to Sylvie for assistance.

“Porcupine,” said Sylvie.

“No, no!” the Professor corrected her. “‘*Pre-occupied*,’ you mean.”



‘Porcupine!’

“No, it’s *porcupine*,” persisted Sylvie. “Not that other word at all. And please will you come? The house is all in an uproar.” (“And oo’d better bring an uproar-glass wiz oo!” added Bruno.)

We got up in great haste, and followed the children upstairs. No one took the least notice of *me*, but I wasn’t at all surprised at this, as I had long realised that I was quite invisible to them all—even to Sylvie and Bruno.

All along the gallery, that led to the Prince’s apartment, an excited crowd was surging to and fro, and the Babel of voices was deafening: against the door of the room three strong men were leaning, vainly trying to shut it—for some great animal inside was constantly bursting it half open, and we had a glimpse, before the men could push it back again, of the head of a furious wild beast, with great fiery eyes and gnashing teeth. Its voice was a sort of mixture—there was the roaring of a lion, and the bellowing of a bull, and now and then a scream like a gigantic parrot. “There is no judging by the voice!” the Professor cried in great excitement. “What is it?” he shouted to the men at the door. And a general chorus of voices answered him “Porcupine! Prince Uggug has turned into a Porcupine!”

“A new Specimen!” exclaimed the delighted Professor. “Pray let me go in. It should be labeled at once!”

But the strong men only pushed him back. “Label it, indeed! Do you want to be eaten up?” they cried.

“Never mind about Specimens, Professor!” said the Emperor, pushing his way through the crowd. “Tell us how to keep him safe!”

“A large cage!” the Professor promptly replied. “Bring a large cage,” he said to the people generally, “with strong bars of steel, and a portcullis made to go

up and down like a mouse-trap! Does any one happen to have such a thing about him?"

It didn't sound a likely sort of thing for any one to have about him; however, they brought him one directly: curiously enough, there happened to be one standing in the gallery.

"Put it facing the opening of the door, and draw up the portcullis!" This was done in a moment.

"Blankets now!" cried the Professor. "This is a most interesting Experiment!"

There happened to be a pile of blankets close by: and the Professor had hardly said the word, when they were all unfolded and held up like curtains all around. The Professor rapidly arranged them in two rows, so as to make a dark passage, leading straight from the door to the mouth of the cage.

"Now fling the door open!" This did not need to be done: the three men had only to leap out of the way, and the fearful monster flung the door open for itself, and, with a yell like the whistle of a steam-engine, rushed into the cage.

"Down with the portcullis!" No sooner said than done: and all breathed freely once more, on seeing the Porcupine safely caged.

The Professor rubbed his hands in childish delight. "The Experiment has succeeded!" he proclaimed. "All that is needed now is to feed it three times a day, on chopped carrots and——."

"Never mind about its food, just now!" the Emperor interrupted. "Let us return to the Banquet. Brother, will you lead the way?" And the old man, attended by his children, headed the procession down stairs. "See the fate of a loveless life!" he said to Bruno, as they returned to their places. To which Bruno made reply, "I always loved Sylvie, so I'll never get prickly like that!"

"He *is* prickly, certainly," said the Professor, who had caught the last words, "but we must remember that, however porcupiny, he is royal still! After this feast is over, I'm going to take a little present to Prince Uggug—just to soothe him, you know: it isn't pleasant living in a cage."

"What'll you give him for a birthday-present?" Bruno enquired.

"A small saucer of chopped carrots," replied the Professor. "In giving birthday-presents, *my* motto is—cheapness! I should think I save forty pounds a year by giving—oh, *what* a twinge of pain!"

"What is it?" said Sylvie anxiously.

"My old enemy!" groaned the Professor. "Lumbago—rheumatism—that sort of thing. I think I'll go and lie down a bit." And he hobbled out of the Saloon, watched by the pitying eyes of the two children.

"He'll be better soon!" the Elfin-King said cheerily. "Brother!" turning to the Emperor, "I have some business to arrange with you to-night. The Empress will take care of the children." And the two Brothers went away together, arm-in-arm.

The Empress found the children rather sad company. They could talk of nothing but "the dear Professor," and "what a pity he's so ill!", till at last she made the welcome proposal "Let's go and see him!"

The children eagerly grasped the hands she offered them: and we went off to the Professor's study, and found him lying on the sofa, covered up with blankets, and reading a little manuscript-book. "Notes on Vol. Three!" he murmured, looking up at us. And there, on a table near him, lay the book he was seeking when first I saw him.

“And how are you now, Professor?” the Empress asked, bending over the invalid.

The Professor looked up, and smiled feebly. “As devoted to your Imperial Highness as ever!” he said in a weak voice. “All of me, that is not Lumbago, is Loyalty!”

“A sweet sentiment!” the Empress exclaimed with tears in her eyes. “You seldom hear anything so beautiful as that—even in a Valentine!”

“We must take you to stay at the seaside,” Sylvie said, tenderly. “It’ll do you ever so much good! And the Sea’s so grand!”

“But a Mountain’s grander!” said Bruno.

“What is there grand about the Sea?” said the Professor. “Why, you could put it all into a teacup!”

“*Some* of it,” Sylvie corrected him.

“Well, you’d only want a certain number of tea-cups to hold it *all*. And *then* where’s the grandeur? Then as to a Mountain—why, you could carry it all away in a wheel-barrow, in a certain number of years!”

“It wouldn’t look grand—the bits of it in the wheel-barrow,” Sylvie candidly admitted.

“But when oo put it together again——” Bruno began.

“When you’re older,” said the Professor, “you’ll know that you *ca’n’t* put Mountains together again so easily! One lives and one learns, you know!”

“But it needn’t be the *same* one, need it?” said Bruno. “Won’t it do, if *I* live, and if *Sylvie* learns?”

“I *ca’n’t* learn without living!” said Sylvie.

“But I *can* live without learning!” Bruno retorted. “Oo just try me!”

“What I meant, was——” the Professor began, looking much puzzled, “—was—that you don’t know *everything*, you know.”

“But I *do* know everything I know!” persisted the little fellow. “I know ever so many things! Everything, ’cept the things I *don’t* know. And Sylvie knows all the rest.”

The Professor sighed, and gave it up. “Do you know what a Boojum is?”

“I know!” cried Bruno. “It’s the thing what wrenches people out of their boots!”

“He means ‘bootjack,’” Sylvie explained in a whisper.

“You ca’n’t wrench people out of *boots*,” the Professor mildly observed.

Bruno laughed saucily. “Oo *can*, though! Unless they’re *welly* tight in.”

“Once upon a time there was a Boojum——” the Professor began, but stopped suddenly. “I forget the rest of the Fable,” he said. “And there was a lesson to be learned from it. I’m afraid I forget *that*, too.”

“I’ll tell oo a Fable!” Bruno began in a great hurry. “Once there were a Locust, and a Magpie, and a Engine-driver. And the Lesson is, to learn to get up early——”

“It isn’t a bit interesting!” Sylvie said contemptuously. “You shouldn’t put the Lesson so soon.”

“When did you invent that Fable?” said the Professor. “Last week?”

“No!” said Bruno. “A deal shorter ago than that. Guess again!”

“I ca’n’t guess,” said the Professor. “How long ago?”

“Why, it isn’t invented yet!” Bruno exclaimed triumphantly. “But I *have* invented a lovely one! Shall I say it?”

"If you've *finished* inventing it," said Sylvie. "And let the Lesson be 'to try again'!"

"No," said Bruno with great decision. "The Lesson are '*not* to try again'!" "Once there were a lovely china man, what stood on the chimbley-piece. And he stood, and he stood. And one day he tumbleded off, and he didn't hurt his self one bit. Only he *would* try again. And the next time he tumbleded off, he hurted his self welly much, and breaked off ever so much varnish."

"But how did he come back on the chimney-piece after his first tumble?" said the Empress. (It was the first sensible question she had asked in all her life.)

"I put him there!" cried Bruno.

"Then I'm afraid you know something about his tumbling," said the Professor. "Perhaps you pushed him?"

To which Bruno replied, very seriously, "Didn't pushed him *much*—he were a *lovely* china man," he added hastily, evidently very anxious to change the subject.

"Come, my children!" said the Elfin-King, who had just entered the room. "We must have a little chat together, before you go to bed." And he was leading them away, but at the door they let go his hands, and ran back again to wish the Professor good night.



'Good-night, Professor!'

"Good night, Professor, good night!" And Bruno solemnly shook hands with the old man, who gazed at him with a loving smile, while Sylvie bent down to press her sweet lips upon his forehead.

"Good night, little ones!" said the Professor. "You may leave me now—to ruminate. I'm as jolly as the day is long, except when it's necessary to ruminate on some very difficult subject. All of me," he murmured sleepily as we left the room, "all of me, that isn't *Bonhomme*, is Ruminatiun!"

“What did he say, Bruno?” Sylvie enquired, as soon as we were safely out of hearing.

“I *think* he said ‘All of me that isn’t Bone-disease is Rheumatism.’ Whatever *are* that knocking, Sylvie?”

Sylvie stopped, and listened anxiously. It sounded like some one kicking at a door. “I *hope* it isn’t that Porcupine breaking loose!” she exclaimed.

“Let’s go on!” Bruno said hastily. “There’s nuffin to wait for, oo know!”

Chapter XXV. Life out of Death.

The sound of kicking, or knocking, grew louder every moment: and at last a door opened somewhere near us. “Did you say ‘come in!’ Sir?” my landlady asked timidly.

“Oh yes, come in!” I replied. “What’s the matter?”

“A note has just been left for you, Sir, by the baker’s boy. He said he was passing the Hall, and they asked him to come round and leave it here.”

The note contained five words only. “Please come at once. Muriel.”

A sudden terror seemed to chill my very heart. “The Earl is ill!” I said to myself. “Dying, perhaps!” And I hastily prepared to leave the house.

“No bad news, Sir, I hope?” my landlady said, as she saw me out. “The boy said as some one had arrived unexpectedly——.”

“I hope that is it!” I said. But my feelings were those of fear rather than of hope: though, on entering the house, I was somewhat reassured by finding luggage lying in the entrance, bearing the initials “E. L.”

“It’s only Eric Lindon after all!” I thought, half relieved and half annoyed. “Surely she need not have sent for me for *that*!”

Lady Muriel met me in the passage. Her eyes were gleaming—but it was the excitement of joy, rather than of grief. “I have a surprise for you!” she whispered.

“You mean that Eric Lindon is here?” I said, vainly trying to disguise the involuntary bitterness of my tone. “‘*The funeral baked meats did coldly furnish forth the marriage-tables,*’” I could not help repeating to myself. How cruelly I was misjudging her!

“No, no!” she eagerly replied. “At least—Eric *is* here. But——,” her voice quivered, “but there is *another*!”

No need for further question. I eagerly followed her in. There on the bed, he lay—pale and worn—the mere shadow of his old self—my old friend come back again from the dead!

“Arthur!” I exclaimed. I could not say another word.

“Yes, back again, old boy!” he murmured, smiling as I grasped his hand. “*He*,” indicating Eric, who stood near, “saved my life—*He* brought me back. Next to God, we must thank *him*, Muriel, my wife!”

Silently I shook hands with Eric and with the Earl: and with one consent we moved into the shaded side of the room, where we could talk without disturbing the invalid, who lay, silent and happy, holding his wife’s hand in his, and watching her with eyes that shone with the deep steady light of Love.

“He has been delirious till to-day,” Eric explained in a low voice: “and even to-day he has been wandering more than once. But the sight of *her* has been new life to him.” And then he went on to tell us, in would-be careless tones—I knew how he hated any display of feeling—how he had insisted on going back to the plague-stricken town, to bring away a man whom the doctor had abandoned

Quoted from *Hamlet*
by William
Shakespeare

as dying, but who *might*, he fancied, recover if brought to the hospital: how he had seen nothing in the wasted features to remind him of Arthur, and only recognised him when he visited the hospital a month after: how the doctor had forbidden him to announce the discovery, saying that any shock to the overtaxed brain might kill him at once: how he had staid on at the hospital, and nursed the sick man by night and day—all this with the studied indifference of one who is relating the commonplace acts of some chance acquaintance!

“And this was his *rival!*” I thought. “The man who had won from him the heart of the woman he loved!”



‘His wife knelt down at his side’

“The sun is setting,” said Lady Muriel, rising and leading the way to the open window. “Just look at the western sky! What lovely crimson tints! We shall have a glorious day to-morrow——” We had followed her across the room, and were standing in a little group, talking in low tones in the gathering gloom, when we were startled by the voice of the sick man, murmuring words too indistinct for the ear to catch.

“He is wandering again,” Lady Muriel whispered, and returned to the bedside. We drew a little nearer also: but no, this had none of the incoherence of delirium. “*What reward shall I give unto the Lord,*” the tremulous lips were saying, “*for all the benefits that He hath done unto me? I will receive the cup of salvation, and call—and call——*” but here the poor weakened memory failed, and the feeble voice died into silence.

His wife knelt down at the bedside, raised one of his arms, and drew it across her own, fondly kissing the thin white hand that lay so listlessly in her loving grasp. It seemed to me a good opportunity for stealing away without making her go through any form of parting: so, nodding to the Earl and Eric, I silently left the room. Eric followed me down the stairs, and out into the night.

“Is it Life or Death?” I asked him, as soon as we were far enough from the house for me to speak in ordinary tones.

“It is *Life!*” he replied with eager emphasis. “The doctors are quite agreed as to *that*. All he needs now, they say, is rest, and perfect quiet, and good nursing. He’s quite sure to get rest and quiet, here: and, as for the nursing why, I think it’s just *possible——*” (he tried hard to make his trembling voice assume a playful tone) “he may even get fairly well nursed, in his present quarters!”

Quoted from Psalm
116:12-13

"I'm sure of it!" I said. "Thank you so much for coming out to tell me!" And, thinking he had now said all he had come to say, I held out my hand to bid him good night. He grasped it warmly, and added, turning his face away as he spoke, "By the way, there is one other thing I wanted to say. I thought you'd like to know that—that I'm not—not in the mind I was in when last we met. It isn't—that I can accept Christian belief—at least, not yet. But all this came about so strangely. And she had prayed, you know. And I had prayed. And—and—" his voice broke, and I could only just catch the concluding words, "*there is a God that answers prayer!* I know it for certain now." He wrung my hand once more, and left me suddenly. Never before had I seen him so deeply moved.

So, in the gathering twilight, I paced slowly homewards, in a tumultuous whirl of happy thoughts: my heart seemed full, and running over, with joy and thankfulness: all that I had so fervently longed for, and prayed for, seemed now to have come to pass. And, though I reproached myself, bitterly, for the unworthy suspicion I had for one moment harboured against the true-hearted Lady Muriel, I took comfort in knowing it had been but a passing thought.

Not Bruno himself could have mounted the stairs with so buoyant a step, as I felt my way up in the dark, not pausing to strike a light in the entry, as I knew I had left the lamp burning in my sitting-room.

But it was no common *lamplight* into which I now stepped, with a strange, new, dreamy sensation of some subtle witchery that had come over the place. Light, richer and more golden than any lamp could give, flooded the room, streaming in from a window I had somehow never noticed before, and lighting up a group of three shadowy figures, that grew momentarily more distinct—a grave old man in royal robes, leaning back in an easy chair, and two children, a girl and a boy, standing at his side.

"Have you the Jewel still, my child?" the old man was saying.

"Oh, *yes!*" Sylvie exclaimed with unusual eagerness. "Do you think I'd *ever* lose it or forget it?" She undid the ribbon round her neck, as she spoke, and laid the Jewel in her father's hand.

Bruno looked at it admiringly. "What a lovely brightness!" he said. "It's just like a little red star! May I take it in my hand?"

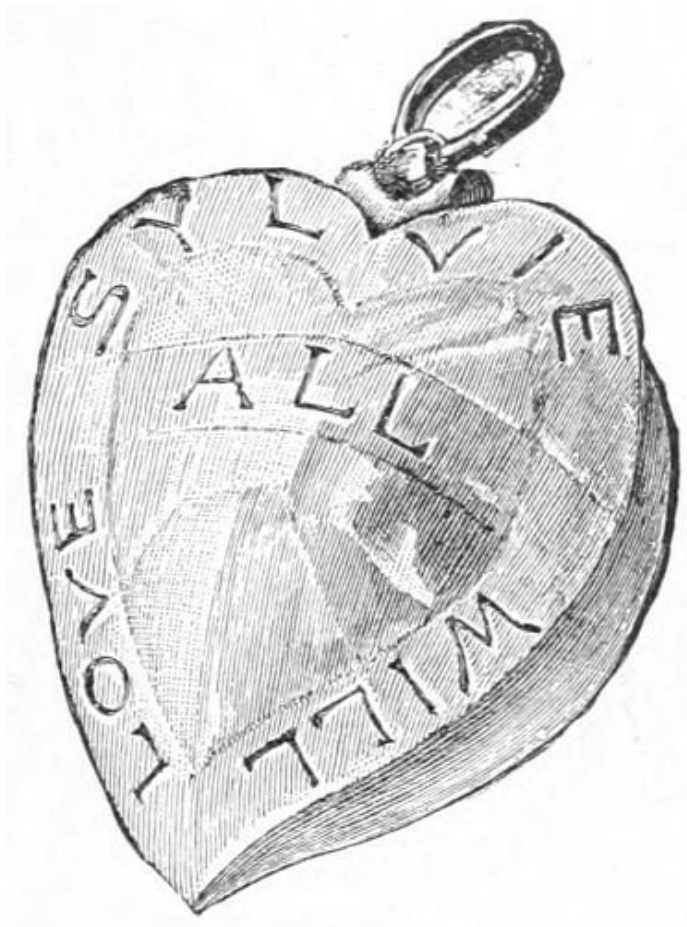
Sylvie nodded: and Bruno carried it off to the window, and held it aloft against the sky, whose deepening blue was already spangled with stars. Soon he came running back in some excitement. "Sylvie! Look here!" he cried. "I can see right through it when I hold it up to the sky. And it isn't red a bit: it's, oh such a lovely blue! And the words are all different! Do look at it!"

Sylvie was quite excited, too, by this time; and the two children eagerly held up the Jewel to the light, and spelled out the legend between them, "ALL WILL LOVE SYLVIE."

"Why, this is the *other* Jewel!" cried Bruno. "Don't you remember, Sylvie? The one you *didn't* choose!"

Sylvie took it from him, with a puzzled look, and held it, now up to the light, now down. "It's blue, *one* way," she said softly to herself, "and it's red, the *other* way! Why, I thought there were *two* of them—Father!" she suddenly exclaimed, laying the Jewel once more in his hand, "I do believe it was the *same* Jewel all the time!"

"Then you choosed it from *itself*," Bruno thoughtfully remarked. "Father, *could* Sylvie choose a thing from itself?"



The blue locket

“Yes, my own one,” the old man replied to Sylvie, not noticing Bruno’s embarrassing question, “it *was* the same Jewel—but you chose quite right.” And he fastened the ribbon round her neck again.

“SYLVIE WILL LOVE ALL—ALL WILL LOVE SYLVIE,” Bruno murmured, raising himself on tiptoe to kiss the ‘little red star.’ “And, when you look *at* it, it’s red and fierce like the sun—and, when you look *through* it, it’s gentle and blue like the sky!”

“God’s own sky,” Sylvie said, dreamily.

“God’s own sky,” the little fellow repeated, as they stood, lovingly clinging together, and looking out into the night. “But oh, Sylvie, what makes the sky such a *darling* blue?”

Sylvie’s sweet lips shaped themselves to reply, but her voice sounded faint and very far away. The vision was fast slipping from my eager gaze: but it seemed to me, in that last bewildering moment, that not Sylvie but an angel was looking out through those trustful brown eyes, and that not Sylvie’s but an angel’s voice was whispering

“It is love.”



‘It is love!’

Part 3

Short Stories

3.1 Sidney Hamilton

Source: Rectory Magazine

Chapters end with “(to be continued)” and the signature “V. X.”, this hasn’t been reproduced here

Ch. 1

“Bear with me.” Shakespeare.

Quoted from *Richard III* by William Shakespeare

It was a snowy December morning. A family party were seated in the snug little breakfast parlour of M^r Hamilton, apparently enjoying the snug fireside, the hissing urn, and the hot tea and toast, all the more for the heavy snow storm, which was to be heard at intervals, clamourously and hopelessly beating against the closely shut windows. The eldest daughter, with all the sedateness of a matron, was pouring out the tea, and dispensing to the younger members of the household their daily portions of oatmeal porridge. The said oatmeal porridge, I may as well state for the benefit of the uninformed, is a curious and indefinite compound bearing a striking resemblance to dirty paste, and in flavour not unlike a mixture of slate-pencil-dust and sand. I may as well add that connoisseurs in this delicacy are in the habit of improving it with a small portion of butter, which has the effect of giving it such an unctuous and greasy appearance as would sicken a Greenlander. The little Hamiltons, however, appeared to relish and even enjoy the wretched mess. The elder daughter would seem a very ordinary individual to any one merely regarding her outward form and figure, but look in her face and there could be no mistake; the turn of the head, the curl of the lip, the haughty eyebrow, every line and feature proclaimed the fact; she was a Hamilton out and out!

The father was a stern and thinking man: “cold and cross-grained,” the neighbours called him, though what the meaning of the term “cross-grained” may be, I will not undertake to say, as I only understand the term when applied to wood. At the present moment his thoughts appeared to be directed towards his eldest son, on whom he incessantly gazed as he sat, likewise wrapped in thought, carelessly cutting up his bread-and-butter into all sorts of fantastic

and inconceivable shapes, out of mere abstraction. How long he might have remained thus it is¹ impossible to say, as his daughter broke into the midst of his cogitations by gently reminding him that his tea was getting quite cold. Thus roused, he hastily swallowed his tea, and merely saying, "When you've finished your breakfast, Sidney, come into my study. I've something to say to you," left the room, and his son, a handsome young man of about eighteen, somewhat disturbed by this abrupt form of address, lost no time in following him, leaving his meal unfinished.

Sidney had just left school, during a flourishing career at which, he had contracted an intimate friendship with a young man of decidedly low origin, "vulgar and mean" the father was pleased to call him, with a bitter sneer at his son's bad taste in forming acquaintances: and this, be it observed, was a constant source of quarrel between father and son.

On the present occasion, when his son entered the room, he received him with a cold and distant manner, and a brow gloomier than that which he usually wore. "You are aware, of course, my dear Sidney," he commenced, in a conciliating tone, "that we are now arrived at that period of your life when I must begin to think about get you some employment, and you have hitherto expressed a preference for a mercantile line of life?" The young man gave a cold assent.

"You are aware of this," continued his father, "and you are further aware that it is in my power to give you the greatest assistance in your wishes. You are aware that I am acquainted with many powerful men, whose interest may be of the greatest service to you?" The son nodded: he did not deign a reply.

"Then observe this, young man!" continued the father, getting more and more excited as he spoke, "unless you agree to drop, at once and forever, all your *vulgar* acquaintances," (an emphasis on "vulgar" which raised a flush on the pale brow of the young man) "unless you will do this, though you would give me the world for it, I will not stir a finger, no, nor utter a syllable, in your service!"

"Look you here, sir!" shouted he, seeing that his words made little impression on his son, "obey me, or on this spot I disinherit you!"

Sadly did his son look upon him: "Father," he replied with an effort, "I owe you the highest respect, and—I should be very sorry to offend you or disobey you, but—but the calls of honour *must* be obeyed! To cast of Edmund Tracy, the dearest friend I have ever known, beyond my own family, would be an act not only of the most flagrant insolence, but, you will permit me to add, of the deepest ingratitude." Without giving his father time to reply, he turned and left the room. One moment his steps were heard echoing through the spacious hall, another, and he was gone.

Ch. 2

"A rat, a rat! dead for a ducat!" Shakespeare.

In the hall he was stopped by his sister: "Dearest Sidney!" she exclaimed, "Stop! why do you look so pale? What has my father been saying to you?"

He turned his face towards her. What a change had these few minutes wrought! The compressed lip, the glassy eye, and the unnaturally pale expression of his face, showed that some terrible straggle had been going on within.

¹"his" in manuscript

Quoted from *Hamlet*
by William
Shakespeare

"I am going away, Lucy," he replied in a strangley quiet tone, "goodbye: Kiss little Rosa for me," and without trusting himself to say any more, he snatched up his hat and hastily left the house.

His sister gazed after his retreating form with unutterable fondness as long as he remained in sight, and even then remained at the door, watching his footsteps imprinted on the deep snow, all that remained to her of him she loved so well, heed less of the storm which was beating upon her, till she heard the harsh voice of her father calling to her, "What in the world are you doing out there, Lucy? You'll catch your death of cold, come in, foolish child!" "Father," said she anxiously, she could say no more. "Well what's the matter," was his careless reply. "Oh Father! Sidney—" again she stopped.

"Speak not to me of Sidney," said her father, his anger now thouroughly roused, "he has disobeyed, wilfully, wantonly, disobeyed me: he is no longer to me a son, and you must no longer mention him as your brother. Never let his name cross your lips again! He—" She waited to hear no more, but fainted away on the spot, and her father was hardly able to catch her before she reached the ground.

Ch. 3

After walking for some distance along the hight road, through the driving snow which wet him to the skin, in a state of excitement and wretchedness which may be more easily imagined than described, Sidney overtook a covered waggon, proceeding in the same direction as himself, but at a more leisurely pace. Any change was prferable to his present distracted state, so without a moment's hesitation he asked the driver, in as unconcerned a voice as he could assume, to give him a lift to the next town: the goodnatured carter at once consented, remarking as he did so, "Why, young man, thee's something wettish. What made thee coom out such a day?" Muttering a few unintelligible words in reply, Sidney selected the most comfortable place he could find amongst the straw of the waggon, and at once composed himself to sleep.

Towards night, (for the distance to the next town was so considerable that the carrier's waggon seldom reached it before morning) the carter awoke him to offer him some food, and told him while he was eating that a few miles further on they would pass a place called by the country people "stand-and-deliver corner", on account of it's being a common resort for highway men, in fact, he concluded, "I never passes it without a bloonderbuss boy me." "Wake me up when you come to it," said Sidney sleepily. "I should rather like to see it," and, anxious as soon as possible to forget his cares in sleep, he again lay down.

Once more in the land of dreams, he imagined himself in company with Edmund Tracy, they were rowing a small boat together on the sea, all was bright and delicious. Suddenly a storm arose, and by one of those strange and sudden changes which so frequently happen in dreams, the boat was gone, and he and his friend were clinging to an oar and drifting on the rocks: his father was standing there, and he had already raised his hand to be helped out of the water, when he heard the voice of his father, harsh as it had sounded to him on that morning, pronounce the words, "Leave *him*, or perish with him!" and at the word they sunk. Oh! the horrors of that endless falling in dreams down, down, down he went, down to the fathomless abyss of ocean, clinging to his friend, with the harsh voice of his father still ringing in his ears, when he was

suddenly aroused by a push from the carter, "this is the place, young man," he whispered. He started up: a low, black grove skirted the road, and, as he gazed on it, two men sprang forth into the moonlight, one of whom seized the horse's bridle.

Ch. 4

"Speed, Malise, speed!" Scott.

Quoted from *The Lady of the Lake* by Sir Walter Scott

When Lucy Hamilton recovered, she found herself lying on one of the drawingroom sofas, where her father had put her down, and left her, caring very little whether she recovered or not. She roused herself instantly, attempted to forget the dreadful event of the morning, and to busy herself with her domestic duties, but all was of no use: the sigh unbidden was always rising to her lips, and floods of involuntary tears streaming from her eyes. A melancholy little party were they when they met that day at dinner. Her father who came in the last, eat his dinner in silence, without speaking a word to any of his family, and left the room as quickly as possible. She attempted to keep up a conversation with her brothers and sisters, but all were as wretched as herself, and the vacant chair at the table was enough of itself to throw a damp over all cheerfulness.

As Mr Hamilton gradually realised the feeling that his son was really gone, gone, in all probability, never to return, the gloom of his mind grew into absolute misery, but his pride would not yet suffer him to admit that it was his own doing, and that he had himself driven him from his roof. The hope that his son would speedily return to submit and ask forgiveness, which he had cherished in the morning, gradually faded away as the day wore on, and was succeeded by such a sickening sense of vacuity and oppression as well nigh drove him to distraction.

The pitiless storm had never ceased for a moment during the whole day, and the thought which was always coming with greater force of the distress his son must even then be enduring, goaded him to the extreme pitch of wretchedness, and sent him to bed in a state of mind bordering on insanity.

Ch. 5

"Strange the recital!" Cowper.

Quoted from *The Progress of Error* by William Cowper

Almost before he knew where he was, Sidney found himself out of the cart. To grasp one of their assailants by the shoulders, and fling him under the horse's feet was the work of a moment, but the other, taller and more muscular than his companion, proved more than a match for him, and after a short struggle, succeeded in getting him down on the ground and placing his knee on his chest. His brain reeled, he heard the clicking of a pistol at his ear, and was already preparing himself for instant death, when the report of the carter's blunderbuss was heard and the robber fell dead beside him.

The goodnatured carter, having thus saved his life, lost no time in extricating him from his fallen enemy, and the two now approached the second ruffian, who was lying stretched on his face in the middle of the road, stunned by the violence with which Sidney had thrown him down. On raising him up, it was quite evident that he was still alive, and the carter, by Sidney's advice, placed him in the cart, having first taken the precaution of binding him hand and foot.

They then proceeded, leaving the other ruffian, who had thus dearly paid the price of his own temerity, lying by the road-side.

Sidney, as before, seated himself in the cart, still greatly excited by the contest in which he had just been engaged and occupied himself in watching the inanimate ruffian who was stretched on the straw at the other side of the cart: after a short time, he fancied he saw him moving one of his arms, but taking it for an illusion of his delirious fancy, he did not think it worthwhile to mention it to the carter, but not many minutes had elapsed when the robber sprang up with a drawn knife in his hand, with which he had been cutting the cords, rushed upon Sidney with a savage yell, and in a moment had him half out of the cart.

Ch. 6

“Secure to please”

Quoted from *The Deserted Village* by Oliver Goldsmith

At five in the morning M^r Hamilton rose from his uneasy couch, plunged in even deeper melancholy than he had been the night before, distracted by the many conflicting emotions which bewildered his brain, and feeling that if he did not do something he must inevitably go mad before night. The one prevailing idea of his mind was to seek his son, and he delayed no longer to put it into execution. He accordingly left the house as quietly as he could without disturbing any of the family. The storm of the proceeding day had worn itself out: the sky was without a cloud, and the ground was covered with a thick mantle of dazzling white snow.

Wrapped up in a thick great coat, yet even then shivering with the intensity of the piercing frost, which was all the more bitter as the sun had scarcely yet risen, he traversed the high road with hasty steps, sinking every moment in the frozen snow nearly up to his knees. He knocked at the door of the first cottage he come to, forgetting in his distraction that there was very little probability of any of the inhabitants being up. After a long delay, the old Scotchwoman appeared at the door, and M^r Hamilton hastily enquired if she had seen any one go by that way during the storm of yesterday. “Ou ay,” replied the old woman, “there were twa went by yestreen. Ane was an uncolarge illfavoured body, muckle like yersel, sir: he came towards night; it had chappit eight of the clock when *he* passed.” “What was the other like?” asked M^r Hamilton impatiently. “Was it the t’other ane ye were speering at? weel, *he* was a younker, I mind: he went by in ane of those hurry-skurry, whirry-awa things, I think they ca’t a dog cart.” “What o’clock was it?” asked M^r Hamilton. “Ah, weel, it was no sae late, nor it was no sae early,” was the reply, and M^r Hamilton, with a hasty “good morning” hurried on, convinced that this must be the direction his son had taken.

On entering the next town, two or three miles further on, he entered the hotel and ordered breakfast, and as the waiter was laying the cloth, carelessly asked, “Did you happen to see a young gentleman in a dog-cart pass through here yesterday morning, waiter?” “Young gentleman in a dog cart, sir? yizzr,” was the ready reply, “put up here, sir, ordered dinner, tea and a bed, sir, for dinner, sir,” rapidly counting on his fingers, “salmon and lobster sauce, roast-chicken, two beers, one wine, one bread; tea and a bed, sir, had a glass of brandy before he went to bed sir; a pipe and the newspaper, sir, not got up yet, sir.” “Tell him a gentleman wishes to see him, when comes down,” “see him sir? yizzr.” and the

waiter rapidly vanished. M^r Hamilton waited anxiously, and about 9 o'clock, the door opened and the young gentleman entered.

Ch. 7

"My kingdom for a horse!" Shakespeare.

Quoted from *Richard III* by William Shakespeare

Such was the suddenness and violence with which Sidney was attacked that he lost his hold of the cart and fell to the ground: instantly starting up, for he had received no more serious injury than a bruise on the shoulder, he followed closely and perceived his friend the carter, who had stopped his horse at the first alarm, engaged in a murderous contest with the robber. The moment seemed favourable: he lightly vaulted over the back rail of the cart and approached the scene of conflict, but, before he reached it, his friend had disappeared, and the robber, who did not know of any one else being in the cart, began flogging on the horse, but in another moment Sidney had got him by the arm, flung him over the shaft, and taken possession of the reins. His attempts to pull up however were vain, for the animal, alarmed both at the unusual noise he heard going on behind, and at the strange hand he felt guiding him, took the bit between his teeth, and broke into a furious gallop. Sidney pulled violently at the reins for some time, but without effect, and he now gradually awoke to the disagreeable consciousness that he was being run away with by a spirited horse, alone, in a cart, on a road he did not know, and at night! He felt that his only course was to sit still and keep quiet, and he did so, as far as the jolting of the vehicle would allow him. He now began to descend a steep hill, and perceived to his alarm that the horse was gradually swerving to the right where the road shelved into a gravel pit: he attempted to turn to the other side of the road, but the animal was now beyond all control, the pace increased every instant, and in another moment horse cart and man were precipitated headlong into it.

Ch. 8

"I give thee all."

Quoted from *My Heart and Lute* by Thomas Moore

In a burst of parental feeling, entirely forgetting all ideas of anger and reproof, M^r Hamilton rose from his seat to meet his son, and threw himself upon his neck. Instead however of receiving the affectionate and filial embrace he expected, he received a tremendous blow in each eye, followed by another in the chest which felled him to the ground. On looking up he encountered the face of a stranger, his fists convulsively clenched, and his eyes glaring with fiery: "I'll tell you what, you old hypocrite," were the first words he managed to articulate, "you'd better not try to come that dodge over me again: I'm not going to have my pockets picked by a sham father for nothing, *I* can tell you: you'll find I'm not so easily done as all that," and, ringing the bell violently, he instantly dispatched the waiter for a policeman: meanwhile he seated himself in a chair to prevent the escape of his victim. "Sir, sir," began M^r Hamilton in broken and subdued accents, "there—has—been—some—some mistake—here—I believe!" "There *has* been some mistake," replied the stranger with a bitter sneer, "I've an idea *you* mistook your mark a *little* when you supposed I was green enough to be taken in by your tricks, you old vagabond: but I'm too old a bird to be

caught with chaff." "No but, I assure you," expostulated his miserable prisoner. "I had no idea—I didn't think—" "You didn't think I was up to the dodge, hey, old fellow?" replied the young man, "was that it? well, one lives and one learns, you see." At his moment the waiter returned with a constable, into whose custody M^r Hamilton was at once committed, after attempting a rambling defence, which the young man cut short at once with, "there, you'd better not waste your sweetness on the desert air, it's no go, I assure you, take him away, constable."

Ch. 9

"Is this the hend?" Dickens.

Quoted from *The Life and Adventures of Nicholas Nickleby* by Charles Dickens

On recovering his consciousness, Sidney perceived a number of people standing round, some were raising the horse and cart, some were leaning over him, and curiously touching him to discover if any bones were broken, "Poor body," said one woman who was bathing his temples with vinegar, "poor body, he's smashed all to nothing, I expect." "Not quite," said Sidney with a smile; the woman was delighted at finding him alive, and, as the others were removing the horse, which had been killed by the fall, and collecting the broken pieces of the cart, she lifted him up, and took him into her cottage which was close by; she then left him, having seated him in a chair, and soon returned with a doctor. "There are no bones broken, I assure you, good woman," said he, rapidly and skilfully examining Sidney, "the system has received a slight shake, but that is all. Give him a little brandy, and he'll be quite well again in a few hours."

His predictions were fulfilled; Sidney rapidly recovered, and, having rewarded his kind friend with something more solid than thanks, he once more set off on his return home, for his recent adventure had cooled his head, and he was anxious to be reconciled with his father. Having arrived at the post town which was a few miles off his home, he felt too faint to go further without refreshment: he accordingly ordered dinner at the inn, and strolled into the town to while away the half hour which the waiter said must elapse before it could be ready, "and if you'd like to go into the town, sir," said the waiter, "there's a most curious case being tried at the police court, there is indeed, sir. It a case of assault with robbery, I believe, sir, but it's a most curious case, sir. You see, sir, the prisoner pretended he was the other's father, sir; threw his arms round him, sir, kissed him, cried, sir, real tears, I assure you, sir, I saw them myself, sir, and it's a most curious case, I assure you, sir."

"Thank you," said Sidney, "I think I'll just look in," and with these words he departed. Having entered the court, and taken his seat among the spectators, he carelessly cast eyes around him: suddenly a flush overspread his features, what? could that be Edmund Tracy in the witness box? and his father at the bar? it was indeed! oh! day of horrors! he concealed his face, and anxiously listened to the proceedings.

"It's my opinion," said the worthy magistrate, "that it was a mistake altogether, and therefore I think the wisest thing you can do sir, is to say no more about the matter. I think it's pretty clear he didn't intend to rob you." "Well, I suppose that'll be the best course," muttered Edmund Tracy, "and so," continued the magistrate, "the case is over, and you are free, M^r Hamilton."

A general rush was immediately made to the outer air, for the court was densely crowded, and in the street Sidney joined his father, "Father!" he cried,

but his father heard him not, "my watch is gone!" was his only cry, Sidney suddenly perceived it in Tracy's hand, knocked him down, got the watch and rejoined his father, "I forgive you, my son," he said, "but—oh—the horrors of that dreadful morning—there was a whole piece of toast left—unfinished—oh! my son—whatever you do—never—never again leave your breakfast unfinished!"

3.2 Crundle Castle

Source: Rectory Magazine

Chapters end with “(to be continued)” and the signature “F. L. W.”, this hasn’t been reproduced here

Ch. 1

“Love me, love my dog.”

Quoted from a proverb

“My dear Miss Primmins!” said the kind and comfortable lady, M^{rs} Cogsby, a burly good natured body, engaged in that most delightful occupation of gardening on a summer evening, which consisted of amputating a few dead rosebuds with an enormous and sanguinary looking knife, apparently constructed originally for the rather unusual purpose of murdering crocodiles, but which she employed on the present occasion with no more apparent emotion than if it were the most delicate lady’s penknife. “My dear Miss Primmins, you mustn’t think of going a *step* further, before you’ve come in, and had a glass of my elder wine. Besides you hav’n’t seen my darling Guggy this *age*, and he’s *so* improved!”

The said darling Guggy was a rather overgrown boy of about 6 years old, the delight of his mother, and the utter detestation of all the neighbourhood, who were miserably victimised by M^{rs} Cogsby for whole evenings together, admiring him and hearing of his performances. He was always carried into the room by his mother’s express desire, though it was noticed by the more observant of her visitors that the nurse only took him up outside the door, indeed it was impossible for any human nurse to have carried him 10 yards without dropping.

“Rely, mem,” began the present victim, a sickly decayed looking young lady, of considerably over 70, who screwed all her words with some difficulty out of one of the smallest mouths, “rely, Mem, I kiddnt think of intrewding on your seclusion.” But M^{rs} Cogsby would hear of no excuse, and she was soon seated in the parlour, where in the course of half-an-hour, 8 or 10 other victims were assembled, and the darling Guggy was introduced.

“Oh! what a charming boy!” was the general exclamation on his first appearance, the charming boy meanwhile standing at his mother’s knee with his thumb in his mouth, vouchsafing not a word to any of the company; “I really must show you,” began M^{rs} Cogsby, “a remarkable production of Guggy’s. It’s a portrait of his father, wonderfully like him, (a universal elevation of eye-brows) only the poor dear man wouldn’t look at it, when I shewed it him today, but went off in a fluff.” (Probably a combination of flurry & huff, a confusion of words being one of M^{rs} Cogsby’s peculiarities.) At this moment a gentle knock was heard at the door.



Ch. 2

“They mock the air.” Gray

Quoted from *The Bard* by Thomas Gray

On the door being opened, M^r Cogsby senior timidly entered the room: he cast an anxious glance around him, detected Miss Primmins in the act of examining his portrait, and with a faint shriek of horror, sunk into a chair: M^{rs} Cogsby flew to him, and by dint of a well-directed battery of the most energetic slaps on the back, succeeded in restoring the vital spark. “My dear Alfred,” she murmured reproachfully in his ear, as soon as she saw signs of returning consciousness, “to think that *you* should yield to this weakness! *you*, to whom I’m sure I’ve been *more* than a mother—” “I beg your pardon, ma’am,” interposed a tall, pale young man, leaning over a chair, with the large head of a small stick constantly in his mouth, “but do you happen to be his—*grandmother*?” “Sir!” said M^{rs} Cogsby with a withering glance, which silenced him in a moment. Even in that awful moment she had the presence of mind to ring the bell, “Show that *person* out!” said she faintly, and the young man, rather astounded at the effect of his speech, followed the indignant maid-servant, who saw that her mistress had received *some* insult, though what it was she was by no means clear.

The danger over, M^{rs} Cogsby began to think it was *her* turn to have a scene, and accordingly began, “The brute! the beast!!! to call—a young lady—n-not thirty—t-to call her—a gran-an-an-mother—oh!” and here, having reached the climax, she fell, executing her favourite manœuvre of sinking upon a sofa in a picturesque attitude. The next moment a yell of agony was heard from Guggy, the feet of that beauteous infant being just discernible protruding from under his mother’s dress.

Ch. 3

“Foremost fighting fell.”

Quoted from
Waterloo by Lord
Byron

A series of vigorous little kicks were being applied to M^{rs} Cogsby on one side by her pet son, while her anxious female friends were employing all sorts of un-heard-of restoratives on the other. Miss Primmins, with a whole handful of burnt feathers in one hand, and a bottle of hartshorn in the other, was the most conspicuous among them. M^r Cogsby had disappeared at the first moment of alarm: he now reappeared with a smile of satisfaction on his face, and before any one could interpose to prevent him, soused his wife with the whole contents of a very large bucket of water. All symptoms of fainting vanished in an instant, and M^{rs} Cogsby with wrath and revenge in her flashing eye, rose up from her recumbent position, seized her terrified husband by the ear, and led him from the room: the miserable Guggy whom no one compassionated, was left in a crushed and wafer-like condition on the sofa, where he was found by the maid-servant, hours afterwards, howling frantically.

Shrieks and blows resounded from the next room, and the female visitors, stopping their ears, rushed out of the house, leaving the unhappy M^r Cogsby to his fate. The gentlemen were only too glad to follow them, and no one was left, save and except one deaf old gentleman, who hadn’t the smallest notion of what had been going on, and now remained sitting in the corner, with his legs crossed, and a calm and placid smile settled on his face.

What followed in M^r Cogsby’s house, it is not for us to say: Miss Primmins, on arriving at home was seized with violent hysterics.

Ch. 4

“A tale of the times of old!” *Ossian*.

Quoted from *The poems of Ossian* by James Macpherson

The deepest antipathy and most violent disgust may be got over in the slow course of time, and though for the next six months she was injured innocence personified, though she expressed the most utter abhorrence of the Cogsby conduct, and made solemn vows never again to enter the Cogsby residence, yet when M^{rs} Cogsby issued her invitations to her annual ball on New-years-day there was no one who obeyed the summons with greater alacrity, or arrived more punctually to the time, than Miss Primmins. Clad in a low satin dress of the deepest Prussian blue, with a tiara of jewels on her head, her auburne ringlets gracefully falling over her shoulders, (honestly her’s, for she had payed for them) and her fair complexion (likewise honestly her’s) blooming in all the fresh ruddiness of youth, no one who saw her then would have imagined her to be the ordinary, every-day Miss Primmins, with her sallow face, known to be the most malicious and spiteful gossip in the town, any more than he would have imagined her to be the Emperor of Russia.

And M^r Augustus Bymm was there too, contrite for all past offences, and forgiven by M^{rs} Cogsby, and of course the charming Guggy was introduced in the drawingroom, who after treading on three gentlemen’s toes, pushing a plate of cake into a lady’s lap, and deluging the table with coffee, was finally sent to bed roaring for upsetting the lamp over Miss Primmins.

All hands were immediately at work to “put out” Miss Primmins, who, enwrapped in flames, was at last enveloped by M^r Augustus Bymm in a hearthrug, and finally extinguished. This was hardly done when a more horrifying event took place. M^r Cogsby’s heels were seen for a moment balancing on the sill of the open window, the next he had vanished.

Ch. 5

“Surprising!” *Crabbe*.

Quoted from *Squire Thomas or The Precipitate Choice* by George Crabbe

All rushed to the window: the ill-fated M^r Cogsby was seen stuck in one of the flowerbeds in an inverted position, quivering like an aspen tree: it appeared that the unhappy gentleman had been gradually backing from the scene of conflagration, overcome with horror at the accident which had befallen Miss Primmins, until he had at length backed out of the room in the manner described in the former chapter. M^r Augustus Bymm was on the spot in a moment, uprooted the half-suffocated M^r Cogsby, and bore him in his arms into the house, where he consigned him to the maternal solicitude of his wife, (he did not venture to call it *grand*-maternal on *this* occasion,) and returned in a high state of self-gratulation to the smouldering Miss Primmins, who, overcome by her feelings, took off her (false) diamond necklace on the *spot*, and begged to present it to him with her compliments as a token of her heartfelt gratitude.

Order being at length restored among the agitated guests, and M^{rs} Cogsby having returned with the pleasing intelligence that the only result of M^r Cogsby’s fall had been a stiff neck and a slight attack of alloverishness, conversation proceeded in its usual train, and Miss Primmins, taking her seat by M^{rs} Cogsby’s side, begged to ask her advice in an important matter: “she was thinking,” she said, “of giving a little juvenile party in a few days, but did not *quite* know

how to manage it.” “no? were you really?” exclaimed M^{rs} Cogsby rapturously, “how delightful! well, I’m sure I’ll give you every assistance I can. I shall have no objection to let you have my darling Guggy for the occasion, who I’m sure will be the life and soul of the whole thing.” “Why, no, not, exactly,” said Miss Primmins, coughing nervously to hide her confusion as she had not foreseen this offer and her whole object had been to avoid the presence of that much-detested child, “I did not exactly ask you for *him*, you know, M^{rs} Cogsby.” “I *know* you did not, my dear Miss Primmins,” said M^{rs} Cogsby, affectionately laying her hand upon her arm, “your natural delicacy was too great for you to try to separate a mother from her darling infant, however much you might wish to do so, but I need hardly say that I have *full* confidence in your prudence and experience, and do not hesitate to trust my precious child to your care, no, and should not, if he were a hundred Guggy’s!”

Miss Primmins shuddered at the idea, and proceeded rather less hopefully than before. “But you see, M^{rs} Cogsby, that—I’m *so* nervous! and really—a number—of children,—that is—I did’n’t mean to say—but—you understand what I mean—in fact—for these reasons—I fear I must—decline—the—the—company—of—your—precious Guggy.” “My dear Miss Primmins,” replied M^{rs} Cogsby.

Ch. 6

“Go, call a coach.” Crononhotonthologus.

Quoted from
Chrononhotonthologos
by Henry Carey

“My *dear* Miss Primmins,” said M^{rs} Cogsby, “I understand your wishes, and be assured I will act accordingly.” “Thank you, thank you,” returned that agitated lady. “I am sure you understand—what I wish—that is, you know—I didn’t mean to say it—but better than I could express it myself.” “Yes, yes, I perfectly understand you,” replied M^{rs} Cogsby and here the two ladies parted, the one to seek out M^r Augustus Bymm, and again assure him that she wasn’t in the least hurt, only frightened, and that her sense of gratitude to him would survive to the latest moment of her life, the other to spend the rest of the evening in boasting among her lady-guests of the attainments of her Guggy.

The auspicious day at length arrived, and Miss Primmins, with trembling hands, was herself ornamenting the dishes which she intended to form the repast of her juvenile guests, her loud and imperious maid assisting, or rather hindering, continuously grumbling at her mistress for her ignorance and in the same breath complaining of the trouble these things always gave, and regularly winding up her paragraphs with, “there, I told you so, you’d better let me do it!” snatching the dish or other article out of her hands. One by one her little guests dropped in, shy, timid, and shrinking. “How d’you do, my dears,” began Miss Primmins, “won’t you take off your bonnets?” “There, you’d better let me do it!” remarked her maid in a surly undertone. When all had arrived, Miss Primmins was joyfully counting heads when the door opened and in marched Master George Cogsby.

Ch. 7

“A sight of horror.” Thomson.

Quoted from *The Four Seasons: Summer* by James Thomson

Master George Cogsby, who, as the reader already knows, rejoiced in the mellifluous sobriquet of Guggy, entered the room, and Miss Primmins, in whose face the most intense disgust was vividly depicted, rose to meet him. "My *darling* child," she began, "I am *delighted* to see you, how is your dear mother?" "don't know," was the darling's intelligent reply, and Miss Primmins turned to her other guests saying "Well, I *hope* you'll all enjoy yourselves," with a look which plainly added, "but I don't think you've much chance, now!" She then occupied herself in setting her little visitors to games &c but master Guggy would do nothing, join in nothing, but kept going round the room, pinching the guests, and enjoying their screams: at last he took his station by Miss Primmins herself, who was playing a brisk polka for the enlivenment of the company in general.

After listening with the profoundest attention for some time, during which he was unscrewing three wires in the inside of the piano, he suddenly asked "Is that part of the tune Miss Prim?" "Is what part of the tune, precious?" "Putting your tongue in your cheek." "No, love," she hastily replied and rising from her seat, sought another part of the room. The delightful infant then proceeded to examine the internal arrangement of the instrument, and ended in breaking off the pedal.

At last, when he had produced universal dissatisfaction among the children, and set three little girls crying, Miss Primmins thought it time to summon them to tea in another room. A magnificent cake stood at the top of the table: Miss Primmins dispensed half of it among her guests in large slices, and then left the room for some wine: on her return she missed the remainder, "Jane," she asked in a confidential whisper, "what have you done with the rest of the cake?" "If you please 'm," was the reply in an equally low whisper, "if you please 'm, Master Cogsby's eaten it!"

Ch. 8

"The hour is almost come." Shakespeare.

Quoted from *Hamlet*
by William
Shakespeare

Miss Primmins turned to Master Cogsby in horror; that infant's hand grasped a huge hunch of the cake, his cheeks were distended to their fullest extent, his jaws making a feeble attempt to move. Uttering a scream of passion she struck the cake out of his hands, and seizing his hair with one hand, administered such a shower of heavy blows on his back, that the cake was instantly swallowed, to the imminent danger of the darling's life, and from the beauteous lips of Guggy there issued forth such a horrid discordant yell, as sent the whole of the party out of the room, stopping their ears, to shut out the dreadful noise.

Miss Primmins bore it for full 20 seconds, retaining her hold of his hair, and then, finding that the noise, instead of abating was getting worse, and without check or inspiration, was gradually rising to a climax, which would beat 3 steam-engines screaming together into fits, she deserted her post, and fled upstairs into the drawing room, where her other guests were assembled.

Even there the voice of Guggy was plainly heard, echoing through the house, making the walls ring again. As a last resource she rang for a maid, and giving her a pitcher of water, screamed in her ear, so as to make herself heard above the din, "Be so good as to take this jug down to the dining room, and pour it *all over Master Cogsby!*" The maid departed, and Miss Primmins seated herself,

mentally counting the moments which must elapse before she could get down stairs. "Now," she thought, "she's on the second landing, and now she's passing the stair window. Now she's in the hall, she must have got to the dining room door by this time, and now—" The noise had been gradually dying away during these thoughts, and the party were beginning to hope that it would soon stop, but just as Miss Primmins had reached this exact point in her calculations, the house was shaken from top to bottom, and such a sudden and intensely terrible roar thundered in her ears, as can only be compared to the explosion of a large powder mill, blowing up with it a menagerie of wild beasts. Five of the party fainted away on the spot: the rest, crouching down on the floor, clung to one another in mute and agonizing terror, and when the last echo of the frightful sound had died away, the only sound that was to be heard in the house was the gasping of the terrified Miss Primmins.

The silence that succeeded was almost as terrible as the noise, & Miss Primmins, as soon as she recovered herself, hastened trembling down stairs and found Guggy, considerably discomposed, but quite quiet, standing by the table, with his mouth open, dripping like a drowned rat. The pitcher was empty on the floor, and by it was extended the unfortunate maid, in a fainting fit.

Ch. 9

The next day Miss Primmins left the place, and a few months afterwards, M^{rs} Cogsby received a couple of wedding cards, with a slice of bride-cake from, "*M^r and M^{rs} Bymm.*"

3.3 The Village School

Source: Rectory Magazine (authorship not entirely certain)

“Teach the young idea how to shoot.” Cowper.

Quoted from *The Seasons. Spring* by James Thomson

Methought I visited a village school: the mistress was reported to be mild and kind to the children, so that they all loved her, and I wished to see the fact with my own eyes, as I entered lessons were going on, “Sally Brown! don’t talk or you’ll catch it!” “Please’m, I wasn’t talking!” “Don’t answer! go into the coal hole!” (pushes her in, and locks the door) “and,” (calling through the door) “and there you’ll stay till midnight.” “John Dobbs! don’t wink!” (gives him a violent blow on the back) “Don’t hurt that little boy,” I ventured to observe, “Hold your tongue, sir! it’s none of your business!” “Don’t move! Mary Jones!” “Please’m will you let out Sally? it was me that was talking.” “Oh! it was you, was it? well, take that,” (knocks her down,) “but I ca’n’t let *her* out now.” “Don’t look at me! Jack Burns!” (pushes him into the fire.) Methought I left the school.

R. Y.

3.4 The Walking-Stick of Destiny

Source: The Rectory Umbrella

All chapters end with “(continued at page . . .)” (“at” missing in some cases) in the original, this has not been reproduced here.

Ch. 1

The Baron was pacing his tapestried chamber two mortal hours ere sunrise.¹ Ever and anon he would pause at the open casement, and gaze from its giddy height² on the ground beneath. Then a stern smile³ would light up his gloomy brow, and muttering to himself in smothered accents, “twill do” he would again resume his lonely march.

Uprose the glorious sun, and illumined⁴ the darkened world with the light of day: still was the haughty Baron pacing his chamber, albeit his step was hastier and more impatient than before, and more than once he stood motionless, listening anxiously and eagerly, then turned with a disappointed air upon his heel, while a darker shade passed over his brow. Suddenly the trumpet⁵ which hung at the castle gate gave forth a shrill⁶ blast: the Baron heard it, and savagely beating his breast with both his clenched fists, he murmured in bitter tone “the time draws nigh, I must nerve myself for action.” Then, throwing himself into an easy chair, he hastily drank⁷ off the contents of a large goblet of wine which stood on the table, and in vain attempted to assume an air of indifference. The door was suddenly thrown open and in a loud voice an attendant announced “Signor Blowski!”



“Be seated! Signor! you are early this morn, and Alonzo! ho! fetch a cup of wine for the Signor! spice⁸ it well, boy! ha! ha! ha!” and the Baron laughed loud and boisterously, but the laugh was forced and hollow,⁹ and died quickly away. Meanwhile the stranger, who had not uttered a syllable, carefully divested himself of his hat and gloves,¹⁰ and seated himself opposite to the Baron, then having quietly waited till the Baron’s laughter had subsided, he commenced in a harsh grating tone, “The Baron Muggzwig greets you, and sends you this;” why did a sudden paleness overspread the Baron Slogdod’s features? why did his fingers tremble, so that he could scarcely open the letter? for one moment he glanced at it, and then raising his head, “taste the wine, Signor,” he said in strangely altered tone, “regale yourself, I pray,” handing him one of the goblets which had just been brought in.

¹i. e. probably at about 3 o’clock in the morning.

²10 feet, vide page 630.

³vide page 625.

⁴illuminated.

⁵the usual substitute in the days of chivalry for a front-door bell.

⁶so as to be audible at a greater distance.

⁷drinking wine was his constant occupation.

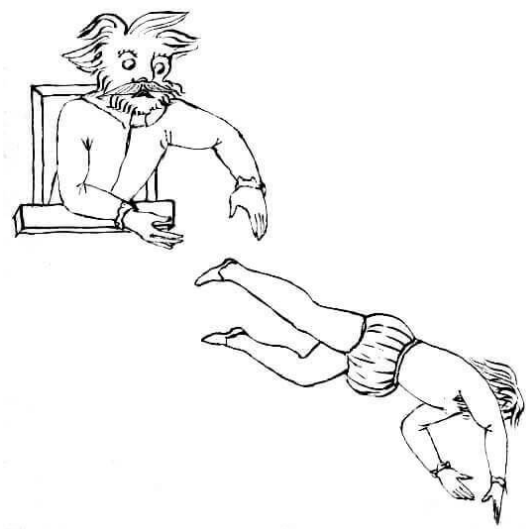
⁸hot spiced wine was much drunk in those days, vide page 627.

⁹the voice was sometimes hollow as well as the laugh, vide page 631.

¹⁰vide his exit without either, next page.

The Signor received it with a smile, put his lips to it, and then quietly changing goblets with the Baron without his perceiving it, swallowed half the contents at a draught. At that moment Baron Slogdod looked up, watched him for a moment as he drank, and smiled the smile of a wolf.¹¹

For full ten minutes there was a dead silence through the apartment, and then the Baron closed the letter, and raised his face: their eyes met: the Signor had many a time faced a savage tiger at bay without flinching, but now he involuntarily turned away his eyes. Then did the Baron speak in calm and measured tone: “you know, I presume, the contents of this letter?” the Signor bowed, “and you await an answer?” “I do:” “*this*, then, is my answer,” shouted the Baron, rushing upon him, and in another moment he had precipitated him from the open window. He gazed after him for a few seconds as he fell, and then tearing up the letter which lay on the table into innumerable pieces, he scattered them to the wind.



Ch. 2

One! two! three!” The magician set down the bottle, and sank exhausted into a seat: “nine weary hours,” he sighed, as he wiped his smoking brow, “nine weary hours have I been toiling, and only got to the eight-hundred and thirty-second ingredient! a-well! I verily believe Martin Wagner¹² hath ordered three drops of everything on the face of this earth in his prescription.¹³ However there are only a hundred and sixty-eight¹⁴ ingredients more to put in—’twill soon be done—then comes the seething¹⁵—and then—” He was checked in his

¹¹with most probably an hyena’s laugh.

¹²This celebrated individual was born in Stockholm in 1548.

¹³probably some magic charm.

	from	1000	ingredients
¹⁴	subtract	832	
	and there remain	168	more to put in.

¹⁵boiling.



soliloquy by a low timid rap outside: “’tis Blowski’s knock,” muttered the old man, as he slowly undid the bars and fastenings of the door, “I marvel what brings *him* here at this late hour. He is a bird¹⁶ of evil omen: I do mistrust his vulture face.¹⁷—Why! how now, Signor?” he cried, starting back in surprise as his visitor entered, “where got you that black eye? and verily your face is bruised like any rainbow!¹⁸ who has insulted you? or rather,” he muttered in an under tone, “whom have you been insulting, for that were the more likely of the two.”

“Never mind my face, good father,” hastily answered Blowski, “I only tripped up, coming home last night in the dark, that’s all, I do assure you. But I am now come on other business—I want advice—or rather I should say I want your opinion—on a difficult question—suppose a man was to—suppose two men—suppose there were two men, A and B¹⁹—” “suppose! suppose!” contemptuously muttered the magician, “and suppose these men, good father, that is A, was to bring B a letter, then we’ll suppose A read the letter, that is B, and then B tried—I mean A tried—to poison B—I mean A²⁰—and then suppose”—“my son,” here interposed the old man, “is this a general case you are putting? Methinks you state it in a marvellously confused manner.” “*Of course* it’s a general case,” savagely answered Blowski, “and if you’d just listen instead of interrupting, methinks you’d understand it better!” “Proceed, my son,” mildly replied the other.

“And then suppose A—that is B—threw A out of the window—or rather,” he added in conclusion, being himself by this time a little confused, “or rather I should have said the other way.” The old man rubbed his beard,²¹ and mused for some time: “aye, aye,” he said at length, “I see, A—B—so so²²—B poisons A—” “No! no!” cried the signor, “B *tries* to poison A, he didn’t really do it, I

¹⁶we have a similar expression “a jail-bird.”

¹⁷this the artist has not ventured to depict.

¹⁸viz: violet, indigo, blue, green, yellow, orange, red.

¹⁹by this idea he clearly showed his great mathematical turn of mind.

²⁰his confusion was caused by the consciousness that he was telling falsehoods.

²¹an action symbolical of deep thought.

²²meaning, “yes, yes.”



changed the—I mean,” he hastily added, turning crimson as he spoke, “you’re to *suppose* that he doesn’t really do it.” “Aye!” continued the magician, “it’s all clear *now*—B—A—to be sure—but what has all this to do with your cut²³ face?” he suddenly asked. “Nothing whatever,” stammered Blowski, “I’ve told you once that I cut my face by a fall from my horse—” “ah! well! let’s see,” repeated the other in a low voice, “tripped up in the dark—fell from his horse—hm! hm!—yes, my lad, *you’re* in for it—I should say,” he continued in a louder voice, “it were better—but troth I know not yet what the question is.” “Why, what had B better do,” said the signor. “But who is B?” inquired the magician, “standeth B for Blowski?” “No,” was the reply, “I meant A.” “Oh!” returned he, “*now* I perceive—but verily I must have time to consider it, so adieu, fair²⁴ sir,” and, opening the door he abruptly showed his visitor out: “and now,” said he to himself, “for the mixture—let me see—three drops of—yes, yes, my lad, *you’re* in for it.²⁵”

Ch. 3



It had struck twelve o’clock two minutes and a quarter. The Baron’s footman²⁶ hastily seized a large goblet,²⁷ and gasped with terror as he filled it with hot, spiced wine. “’Tis past the hour, ’tis past,” he groaned in anguish, “and surely I shall now get the red hot poker the Baron hath so often promised me, oh! woe is me! would that I had prepared the Baron’s lunch²⁸ before!” and, without pausing a second he grasped in one hand the steaming goblet and flew

²³and bruised, vide page 625.

²⁴spoken ironically.

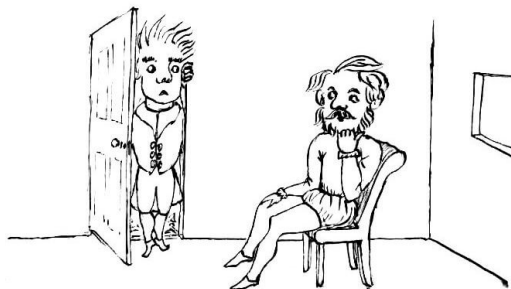
²⁵vide page 631.

²⁶or attendant. vide page 624.

²⁷the Baron’s meals seem to have consisted of nothing but hot, spiced wine. Hence his fiery temper.

²⁸the very footman calls wine his “lunch.” We *know* that he breakfasted on it, see page 624.

along the lofty passages with the speed of a race horse. In less time than we take to relate it he reached the Baron's apartment, opened the door, and—remained standing on tiptoe, not daring to move one way or the other, petrified with utter astonishment. “Now then! donkey!” roared the Baron, “why stand you there staring your eyes out like a great toad²⁹ in a fit of apoplexy?” (the Baron was remarkably choice in his similes;) “what's the matter with you? speak out! can't you?”



The unfortunate domestic made a desperate effort to speak, and managed at length to get out the words “Noble Sir!” “Very good! that's a very good beginning!” said the Baron in a rather pacified tone for he liked being called “noble,” “go ahead! don't be all day about it!” “Noble Sir!” stammered the alarmed man, “where—where—ever—is—the stranger?” “Gone!” said the Baron sternly and emphatically, pointing unconsciously his thumb over his right shoulder, “gone! he had other visits to pay, so he *condescended*³⁰ to go and pay them—but where's my wine?” he abruptly asked, and his attendant was only too glad to place the goblet in his hands, and get out of the room.

The Baron drained the goblet at a draught,³¹ and then walked to the window: his late victim was no longer to be seen, but the Baron, gazing on the spot where he had fallen muttered to himself with a stern³² smile, “methinks I see a dint³³ in the ground.” At that moment a mysterious looking figure³⁴ passed by, and the Baron, as he looked after him, could not help thinking “I wonder who that is!” long time he gazed after his retreating footsteps, and still the only thought which rose to his mind was “I do wonder who that is!”



Ch. 4.

Down went the western sun, and darkness was already stealing³⁵ over the earth when for the second³⁶ time that day the trumpet which hung at the Baron's

²⁹it is doubtful whether the Baron thought him most like a donkey or a toad.

³⁰a pun which the footman could not have understood.

³¹vide page 624.

³²The Baron's smile appears to have been always stern, vide page 624. His laugh was hollow, vide page 624.

³³probably caused by the Signor's “vulture face, vide page 626.

³⁴vide page 630.

³⁵expressing of it's slow and imperceptible advance.

³⁶vide page 624.

gate was blown. Once more did the weary domestic ascend to his master's apartment, but this time it was a stranger whom he ushered in, "M^r Milton Smith"! The Baron hastily rose from his seat at the unwonted³⁷ name, and advanced to meet his visitor.



"Greetings fair, noble sir," commenced the illustrious visitor, in a pompous tone and with a toss³⁸ of the head, "it betided me to hear of your name and abode, and I made high resolve to visit and behold you 'ere night!" "Well, fair sir, I hope you are satisfied with the sight," interrupted the Baron, wishing to cut short a conversation he neither understood nor liked. "It rejoiceth me," was the reply, "nay, so much so that I could wish to prolong the pleasure, for there is a Life and Truth³⁹ in those tones which recall to me scenes of earlier days—" "does it indeed?" said the Baron, considerably puzzled; "ay soothly," returned the other, "and now I bethink me," walking to the window, "it was the country likewise I did desire to look upon; 'tis fine, is't not?" "It's a very fine country,⁴⁰" replied the Baron, adding internally, "and I wish you were well out of it!"

The stranger stood some minutes gazing out of the window, and then said, suddenly turning to the Baron, "you must know, fair sir, that I am a poet!" "Really?" replied he, "and pray what's that?" M^r Milton Smith made no reply, but continued his observations, "perceive you, mine host, the enthusiastic⁴¹ halo which encircles yon tranquil mead?" "The quickset hedge, you mean;" remarked the Baron rather contemptuously, as he walked up to the window. "My mind," continued his guest, "feels alway a bounding—and a longing—for—what is True and Fair⁴² in Nature, and—and—see you not the gorgeous rusticity—I mean sublimity, which is wafted over, and as it were intermingled with the verdure—that is, you know, the grass?" "Intermingled with the grass? oh! you mean the butter-cups⁴³?" said the other, "yes, they've a very pretty effect." "Pardon me," replied M^r Milton Smith, "I meant not that, but—but I could almost poetise thereon!"

"Lovely meadow, thou whose fragrance

³⁷and "unwanted" too, as we afterwards learn.

³⁸vide illustration.

³⁹Dickens' style.

⁴⁰i. e. by daylight, it was now growing dark.

⁴¹reason sacrificed to poetry.

⁴²vide note (39), an imitation, but superior.

⁴³a sign of bad land, and as it was the Baron's estate, we may guess from this that he was not rich. A further proof of this may be found in page 633.

“Beams beneath the azure sky,

“Where repose the lowly—” “vagrants,”⁴⁴ suggested the Baron: “vagrants!” repeated the poet, staring with astonishment, “yes, vagrants, gipsies you know,” coolly replied his host, “there are very often some sleeping down in the meadow.” The inspired⁴⁵ one shrugged his shoulders, and went on

“Where repose the lowly violets,” “violets doesn’t rhyme half as well as vagrants,” argued the Baron, “can’t help that,” was the reply:

“Murmuring gently”—“oh my eye!”⁴⁴ said the Baron, finishing the line for him, “so there’s one stanza done, and now I must wish you good night; you’re welcome to a bed, so, when you’ve done poetising, ring the bell, and the servant will show you where to sleep.” “Thanks,” replied the poet, as the Baron left the room.

“Murmuring gently with a sigh—Ah! *that’s* all right,” he continued when the door was shut, and leaning out of the window he gave a low whistle. The mysterious figure in a cloak immediately emerged⁴⁶ from the bushes, and said in a whisper, “all right?” “*all right,*” returned the poet, “I’ve sent the old covey⁴⁷ to sleep with some poetry, by the bye I nearly forgot that stanza you taught me, I got into *such* a fix! However the coast is clear now, so look sharp.” The figure then produced a rope ladder from under his cloak, which the poet proceeded to draw up.



⁴⁴the Baron had evidently a good ear for rhyme.

⁴⁵quasi-inspired.

⁴⁶came out of.

⁴⁷the “o” long.

Ch. 5



Reader! dare you enter once more the cave of the great Magician? If your heart be not bold, abstain: close these pages: read no more. High in air suspended hung the withered forms of two black cats; between was an owl, resting on a self-supported hideous viper.

The spiders were crawling on the long grey hair of the great Astrologer, as he wrote with letters of gold an awful spell on the magic scroll which hung from the deadly viper's mouth. A strange figure like an animated⁴⁸ potatoe with arms and legs hovered over the mystic scroll, and appeared to be reading the words upside down. Hark!

A shrill scream rolled round the cave, echoing from side to side till it died⁴⁹ away in the massive roof. Horror! yet did not the Magician's heart quail, albeit his little finger shook slightly thrice, and one of his grey hairs stood out straight from his head, erect with terror: there was one other that would have followed it's example, but a spider was hanging on it, and it could not.

A flash of mystic light, black⁵⁰ as the darkest ebony, now pervades the place, and in it's momentary gleam the owl is seen to wink once. Dread omen! Did it's supporting viper hiss? Ah no! that would be *too* terrible! In the deep dead silence which followed this thrilling event, a solitary sneeze was distinctly heard from the left hand cat. Distinct, and now the Magician *did* tremble. "Gloomy spirits of the vasty deep!" he murmured in faltering tone, as his aged limbs seemed about to sink beneath him, "I did not call for ye: why come ye?" He spoke, and the potatoe answered, in hollow tone: "Thou didst!" then all was silence.

The magician recoiled in terror. What! bearded⁵¹ by a potatoe!⁵² never! He smote his aged breast in anguish, and then collecting strength to speak, he

⁴⁸it had a "hollow" voice and probably was something akin to "fishs." vide page 1930.

⁴⁹after it's death it's ghost appeared. page 632.

⁵⁰it is difficult to imagine what black light can look like. It may be obtained by pouring ink over a candle in a darkroom.

⁵¹vide page 626.

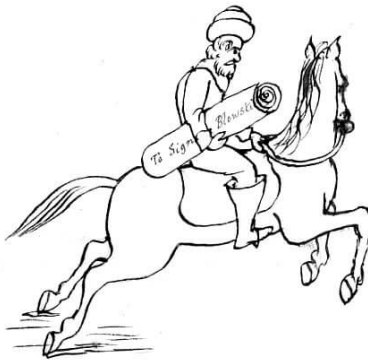
⁵²the potatoe's history should be carefully remembered, as it is important.

shouted, "Speak but the word again, and on the spot I'll boil thee!" There was an ominous pause, long, vague, and mysterious. What is about to happen? The potatoe sobbed audibly, and it's thick showering tears were heard falling heavily down on the rocky floor. Then slow, clear, and terrible came the awful words: "Gobno strodgol slok slabolgo^{53!}" and then in a low hissing whisper "'tis time!"

"Mystery! mystery!" groaned the horrified Astrologer, "The Russian war cry! oh Slogdod! Slogdod! what hast thou done?" He stood expectant, tremulous; but no sound met his anxious ear, nothing but the ceaseless dribble of the far off waterfall. At length a voice said "now!" and at the word the right hand cat fell with a heavy thump to the earth. Then an Awful Form⁵⁴ was seen, dimly looming through the darkness: it prepared to speak, but a universal cry⁵⁵ of "corkscrews!" resounded through the cave, and with a noiseless howl it vanished. A rapid fluttering was now heard pervading the whole cave, three⁵⁶ voices cried "yes!" at the same moment, and it was light. Dazzling light, so that the Magician shuddering closed his eyes, and said, "it is a dream, oh that I could wake!" He looked up, and cave, Form, cats, everything were gone: nothing remained before him but the magic scroll and pen, a stick of red sealing wax, and a lighted wax taper.

"August potatoe!" he muttered, "I obey your potent voice." Then sealing up the mystic roll, he summoned a courier, and dispatched it: "haste for thy life, post! haste! haste! for thy life post! haste!" were the last words the frightened man heard dinned in his ears as he galloped off.

Then with a heavy sigh the great magician turned back into the gloomy cave, murmuring in a hollow tone, "now for the toad^{57!}"



⁵³this is quoted from Punch: it is there stated that after singing this the soldiers are never known to give or receive quarter.

⁵⁴the ghost of the shrill scream. vide page 631.

⁵⁵it rolled spirally round the cave.

⁵⁶the Awful Form, the potatoe, and the right-hand cat.

⁵⁷vide page 634. the toad was always necessary to magical rites, see Shakespeare's "Macbeth."

Ch. 6



Hush! The Baron slumbers! two men with stealthy steps are removing his strong-box.⁵⁸ It is very heavy, and their knees tremble, partly with the weight, partly with fear. He snores and they both start: the box rattles, not a moment is to be lost, they hasten from the room. It was very, very hard to get the box out of the window but they did it at last, though not without making noise enough to waken ten ordinary sleepers: the Baron, luckily for them, was an *extraordinary* sleeper.

At a safe distance from the castle they set down the box, and proceeded to force off the lid. Four mortal hours⁵⁹ did M^r Milton Smith and his mysterious companion labour thereat: at sunrise it flew off with a noise louder than the explosion of fifty powder-magazines,⁶⁰ which was heard for miles and miles around. The Baron sprang from his couch at the sound, and full furiously did he ring his bell: up rushed the terrified domestic, and tremblingly related when he got down stairs again, how “his Honour was wisely frustrated, and pitched the poker⁶¹ at him more than ordinary savage-like!” But to return to our two adventurers: as soon as they recovered from the swoon into which the explosion had thrown them, they proceeded to examine the contents of the box. M^r M. Smith timidly put his head into it, his companion still remaining stretched on the ground, and being too lazy to get up.

M. Smith drew a long breath, and ejaculated, “Well! I never!” “Well! you never!” angrily repeated the other, “what’s the good of going on like that? just tell us what’s in the box, and don’t make such an ass of yourself!” “My dear fellow!” interposed the poet, “I give you my honour—” “I wouldn’t give twopence⁶² for your honour;” retorted his friend, savagely tearing up the grass by handfuls, “give me what’s in the box, that’s a deal more valuable.” “Well but you won’t hear me out, I was just going to tell you; there’s nothing whatever in the box but a walkingstick! and that’s a fact; if you won’t believe me, come and look yourself!” “You don’t say so!” shouted his companion, springing to his feet, his laziness gone in a moment, “surely there’s more than that!” “I tell you there isn’t!” replied the poet rather sulkily, as he stretched himself on the grass.

The other one however turned the box over, and examined it on all sides before he would be convinced, and then carelessly twirling the stick on his forefinger he began: “I suppose it’s no use taking *this* to Baron Muggzwig? it’ll be no sort of use.” “Well, I don’t know!” was the somewhat hesitating reply, “it might be as well—you see he didn’t say what he expected—” “I know that, you

⁵⁸it’s contents, as afterwards appears were very small. vide page 629, note (43).

⁵⁹probably they began at about one o’clock.

⁶⁰the amount of this noise can only be guessed at, as the experiment has never been tried.

⁶¹probably red hot. vide page 627.

⁶²we may therefore conclude it to have been worth about three-half-pence, “honour among thieves” is a proverbial expression, so they most likely had about three-pennyworth between them.

donkey!" interrupted the other impatiently, "but I don't suppose he expected a walkingstick! if that had been all, do you think he'd have given us ten dollars a piece to do the job?" "I'm sure I can't say," muttered the poet: "well! do as you please then!" said his companion angrily, and flinging the walkingstick at him as he spoke he walked hastily away.

Never had he of the hat and cloak thrown away such a good opportunity of making his fortune! At twelve⁶³ o'clock that day a visitor was announced to Baron Muggzwig, and our poet entering placed the walkingstick in his hands. The Baron's eyes flashed with joy, and hastily placing a large purse of gold in his hand he said, "adieu for the present, my dear friend! you shall hear from me again!" and then he carefully locked up the stick muttering, "nothing is now wanting but the toad!"

Ch. 7



The Baron Muggzwig was fat.⁶⁴ Far be it from the humble author of these pages to insinuate that his fatness exceeded the bounds of proportion, or the manly beauty of the human figure, but he certainly was fat, and of that fact there is not the shadow of a doubt. It may perhaps have been owing to this fatness of body that a certain thickness and obtuseness of intellect was at times perceptible in the noble Baron. In his ordinary conversation he was, to say the least of it, misty and obscure, but after dinner or when at all excited his language certainly verged on the incomprehensible. This was perhaps owing to his liberal use of the parenthesis without any definite pause to mark the different clauses of the sentence. He used to consider his arguments unanswerable, and they certainly were so perplexing, and generally reduced his hearers to such a state of bewilderment and stupefaction, that few ever ventured to attempt an answer to them.

He usually however compensated⁶⁵ in length for what his speeches wanted in clearness, and it was owing to this cause that his visitors, on the morning we are speaking of had to blow the trumpet at the gate three times before they were admitted, as the footman was at that moment undergoing a lecture from his master, supposed to have reference to the yesterday's dinner, but which, owing to a slight admixture of extraneous matter in the discourse, left on the footman's mind a confused impression that his master had been partly scolding him for not keeping a stricter watch on the fishing trade, partly setting forth his own private views on the management of railway shares, and partly finding fault with the bad arrangement of financial affairs⁶⁶ in the moon.

In this state of mind it is not surprising that his first answer to their question, "is the Baron at home?" should be, "the fish, sir, was the cook's affair, I

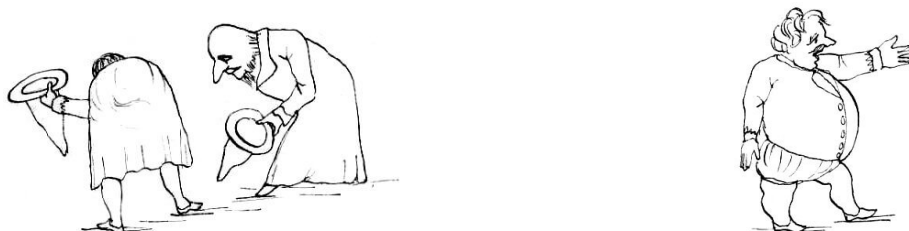
⁶³so that it was a 7 hours' walk from Baron Slogdod's to Baron Muggzwig's.

⁶⁴this Laconic commencement bears some resemblance to Hood's "My aunt Shakerly was of enormous bulk," in his "Whims and Oddities." It is hardly necessary to state which was the original.

⁶⁵the author must be understood to say that length *is* any compensation for clearness, though there certainly have been orators who seem to have held that opinion.

⁶⁶our range of information on this subject is extremely limited. There would appear to be an over-hasty precipitation in the conduct of its inhabitant, who is related to have "come down too soon."

had nothing whatsoever to do with it," which on reflection he immediately afterwards corrected to, "the trains was late, so it was impossible as the wine could come sooner." "The man is surely mad or drunk!" angrily exclaimed one of the strangers, no other than the mysterious man in a cloak: "not so," was the reply in gentle voice, as the great magician stepped forward, "but let me interrogate him—ho! fellow!" he continued in a louder tone, "is thy master at home?" The man gazed at him for a moment like one in a dream, and then suddenly recollecting himself he replied, "I begs pardon, gentlemen, The Baron *is* at home: would you please to walk in?" and with these words he ushered them up stairs.



On entering the room they made a low obeisance, and the Baron starting from his seat exclaimed with singular rapidity, "and even if you have called on behalf of Slogdod that infatuated wretch and I'm sure I've often told him—" "we have called," gravely interrupted the magician, "to ascertain whether—" "yes" continued the excited⁶⁷ Baron, "scores of times aye scores of times I have and you may believe me or not as you like for though—" "to ascertain," persisted the magician, "whether you have in your possession,⁶⁸ and if so—" "but yet" broke in Muggzwig, "he always would and as he used to say if—" "and if so," shouted the man in a cloak despairing of the Magician ever getting through the sentence, "to know what you would like to be done with regard to Signor Blowski." So saying, they retired a few steps, and waited for the Baron's reply, and their host, without further delay delivered the following remarkable⁶⁹ speech: "and though I have no wish to provoke the enmity which considering the provocations I have received and really if you reckon them up they are more than any mortal man let alone a Baron for the family temper has been known for years to be beyond nay the royal family themselves will hardly boast of considering too that he has so long a time kept which I shouldn't have found out only that rascal Blowski said and how he could bring himself to tell all those lies I ca'n't think for I always considered him quite honest and of course wishing if possible to prove him innocent⁷⁰ and the walkingstick since it is absolutely necessary in such matters and begging your pardon I consider the toad and all that humbug but that's between you and me and even when I had sent for it by two of my bandits⁷¹ and one of them bringing it to me yesterday for which I gave him a

⁶⁷wherefore excited? the thoughtful reader will doubtless enquire. the only circumstance we can offer in explanation is his recent squabble with the footman.

⁶⁸understand "the Walking-stick of Destiny."

⁶⁹It is hoped that a ready solution of any little difficulties and inconsistencies which may have occurred in the course of the story will be found by the attentive reader, in this speech, no less remarkable for its rapid change of subject, than for its uninterrupted flow.

⁷⁰the reader will naturally ask in what his guilt consisted, and for an answer we can only refer him to the first chapter.

⁷¹this explains who the man in the cloak was.

purse of gold and I hope he was grateful for it and though the employment of bandits is at all times and particularly in this case if you consider the but even on account of some civilities he showed me though I daresay there was something and by-the-bye perhaps that was the reason he pitched himself I mean him out of the window for—” here he paused, seeing that his visitors in despair had left the room. Now, Reader, prepare yourself for the last chapter.

Ch. 8 and last

All was silence.⁷² The Baron Slogdod was seated in the hall of his ancestors, in his chair of state, but his countenance wore not it’s usual expression of calm content: there was an uncomfortable restlessness about him which betokened a mind ill at ease, for why? closely packed in the hall around, so densely wedged together as to resemble one vast living ocean without a gap or hollow, were seated seven thousand human beings: all eyes were bent upon him, each breadth was held in eager expectation, and he felt, he felt in his inmost heart, though he vainly endeavoured to conceal his uneasiness under a forced and unnatural smile, that something awful was about to happen. Reader! if your nerves are not adamant, turn not this page!

Before the Baron’s seat there stood a table: what sat thereon? well knew the trembling crowds, as with blanched cheek and tottering knees they gazed upon it, and shrank from it even while they gazed: ugly, deformed, ghastly and hideous it sat, with large dull eyes, and bloated cheeks, the magic toad!

All feared and loathed it, save the Baron only, who, rousing himself at intervals from his gloomy meditations, would raise his toe, and give it a sportive⁷³ kick, of which it took not the smallest notice. *He* feared it not, no, deeper terrors possessed *his* mind, and clouded his brow with anxious thought.

Beneath the table was crouched a quivering mass, so abject and grovelling as scarce to bear the form of humanity: none regarded, and none pitied it.

Then outspoke the magician: “The man I accuse,⁷⁴ if man indeed he be, is—Blowski!” At the word, the shrunken form arose, and displayed to the horrified assembly the well-known vulture face: he opened his mouth to speak, but no sound issued from his pale and trembling lips . . . a solemn stillness settled on all around . . . the magician raised the walking-stick of destiny, and in thrilling accents pronounced the fatal words: “recreant vagabond! misguided reprobate! receive thy due deserts!” . . . Silently he sank to the earth . . . all was dark for a moment, . . . returning light revealed to their gaze . . . a heap of mashed potatoe⁷⁵ . . . a globular form faintly loomed through the darkness, and howled once audibly, then all was still. Reader, our tale is told.

⁷²This chapter, it is hoped, will clear up all the mystery in the story.

⁷³sportive in fact only, but the gloomy mind of the Baron was far from entertaining any sportive thoughts at that moment.

⁷⁴it may well be asked “of what?” and the author regrets he cannot furnish an answer.

⁷⁵many have vainly asked the author, “what had he done?” He don’t know.

3.5 The Christ-Church Commoner

Source: manuscript written 1851

A Tale

Chap: I.

'Respond! Respond! oh Muse!'
Goldsmith.

It was a glowing summer morning: the Orient sun had long risen, and gilded with his dazzling beam the topmost fane of Tom, the great tower of Christ Church. Out of the Eastern gate, known by the name of Canterbury, is walking a young man, solitary, downcast. His years are scarcely enough for a clergyman, and yet he wears a white neck-cloth and bands. Who can he be, and where is he going? Let us follow him: he approaches a vast range of buildings, ugly and un-architectural: they are called 'the schools.' As he passes along, men in the street, lounging against doorposts, look up for a moment, roused by the passing footfall, gaze on his retreating form, remark to a companion, 'On'y one o' them 'varsity coves in for a little go;' and resume their listless attitude. They notice nothing of that calm expansive brow, those eyes glistening with the fire of genius, those chiselled features: they know not *who* has passed and how should they? Let us follow him in. A long table, covered with books, and surrounded with chairs; two gloomy-browed examiners, and twelve pale-faced youths complete the picture. Seats, like those in a circus, slant up at the end of the room: these are crowded with spectators.

Chap: II.

'Veni, vidi, vici'
Caesar.

The youth is sitting at the table: before him lies a small edition of Sophocles. Sternly does the examiner remark, 'Go on at the four hundred and fiftieth line.' Slightly shading back with one hand an auburn curl from his ivory forehead, and resting his head peacefully on the other, in a low, musical tone, he commences. Some mistakes he makes, small and few: he is given two passages to translate—They are done: they are handed in: they are looked over. What is the examiner saying—'you may go.' All is over.

fragment of an unpublished novel by G. P. R. James

3.6 Wilhelm von Schmitz

Chapter I.

Source: The Whitby Gazette, September 7, 1854 (signature "B. B." and "(To be continued)" omitted here and following)

"'Twas Ever Thus." Old Play.

The sultry glare of noon was already giving place to the cool of a cloudless evening, and the lulled ocean was washing against the pier with a low murmur, suggestive to poetical minds of the kindred ideas of motion and lotion, when two travellers might have been seen, by such as chose to look that way, approaching the secluded town of Whitby by one of those headlong paths, dignified by the name of road, which serve as entrances into the place, and which were originally constructed, it is supposed, on the somewhat fantastic model of pipes running into a water-butt. The elder of the two was a sallow and careworn man; his features were adorned with what had been often at a distance mistaken for a moustache, and were shaded by a beaver hat, of doubtful age, and of appearance which, if not respectable, was at least venerable. The younger, in whom the sagacious reader already recognizes the hero of my tale, possessed a form which, once seen, could scarcely be forgotten: a slight tendency to obesity proved but a trifling drawback to the manly grace of its contour, and though the strict laws of beauty might perhaps have required a somewhat longer pair of legs to make up the proportion of his figure, and that his eyes should match rather more exactly than they chanced to do, yet to those critics who are untrammelled with any laws of taste, and there are many such, to those who could close their eyes to the faults in his shape and single out its beauties, though few were ever found capable of the task, to those above all who knew and esteemed his personal character, and believed that the powers of his mind transcended those of the age he lived in, though alas! none such has as yet turned up—to those he was a very Apollo.

What thought it had not been wholly false to assert that too much grease had been applied to his hair, and too little soap to his hands? that his nose turned too much up, and his shirt collars too much down? that his whiskers had borrowed all the colour from his cheeks, excepting a little that had run down into his waistcoat? Such trivial criticisms were unworthy the notice of any who laid claim to the envied title of the connoisseur.

He had been christened William, and his father's name was Smith, but though he had introduced himself to many of the higher circles in London under the imposing name of, "Mr. Smith, of Yorkshire," he had unfortunately not attracted so large a share of public notice as he was confident he merited: some had asked him how far back he traced his ancestry; others had been mean enough to hint that his position in society was not entirely unique; while the sarcastic enquiries of others touching the dormant peerage in his family, to which, it was suggested, he was about to lay claim, had awakened in the breast of the noble-spirited youth an ardent longing for that high birth and connection which an adverse Fortune had denied him.

Hence he had conceived the notion of that fiction, which perhaps in his case must be considered merely as a poetical licence, whereby he passed himself off

upon the world under the sounding appellation which heads this tale. This step had already occasioned a large increase in his popularity, a circumstance which his friends spoke of under the unpoetical simile of a bad sovereign fresh gilt, but which he himself more pleasantly described as, “—a violet pale, At length discovered in its mossy dale, And borne to sit with kings:” a destiny for which, as it is generally believed, violets are not naturally fitted.

The travellers, each buried in his own thoughts, paced in silence down the steep, save when an unusually sharp stone, or an unexpected dip in the road, produced one of those involuntary exclamations of pain, which so triumphantly demonstrate the connection between Mind and Matter. At length the younger traveller, rousing himself with an effort from his painful reverie, broke upon the meditations of his companion with an unexpected question, “Think you she will be much altered in feature? I trust me not.” “Think who?” testily rejoined the other; then hastily correcting himself, with an exquisite sense of grammar, he substituted the expressive phrase, “Who’s the she you’re after?” “Forget you then,” asked the young man, who was so intensely poetical in soul that he never even spoke in ordinary prose, “forget you the subject we conversed on but now? Trust me, she hath dwelt in my thoughts ever since.” “But now!” his friend repeated in sarcastic tone, “it is an hour good since you spoke last.” The young man nodded assent; “An hour? true, true. We were passing Lyth, as I bethink me, and lowly in thine ear was I murmuring that touching sonnet to the sea I writ of late, beginning, ‘Thou roaring, snoring, heaving, grieving main! which—’” “For pity’s sake!” interrupted the other, and there was real earnestness in that pleading tone, “don’t let us have it all again! I have heard it with patience once already.”

“Thou hast, thou hast,” the baffled poet replied: “well then, she shall again be the topic of my thoughts,” and he frowned, and bit his lip, muttering to himself such words as cooky, hookey, and crooky, as if he were trying to find a rhyme to something. And now the pair were passing near a bridge, and shops were on their left and water on their right; and from beneath uprose a confused hubbub of sailors’ voices, and, wafted on the landward breeze, came an aroma, dimly suggestive of salt herring, and all things from the heaving waters in the harbour to the light smoke that floated gracefully above the housetops, suggested nought but poetry to the mind of the gifted youth.

Chapter II.

Source: The Whitby Gazette, September 14, 1854

“And I, For One.” Old Play.

“But about she,” resumed the man of Prose, “what’s her name? you never told me that yet.” A faint flush crossed the interesting features of the youth; could it be that her name was unpoetical, and did not consort with his ideas of the harmony of nature? He spoke reluctantly and indistinctly; “Her name,” he faintly gasped, “is—Sukie.”

A long, low whistle was the only reply; thrusting his hands deep in his pockets, the elder speaker turned away, while the unhappy youth, whose delicate nerves were cruelly shaken by his friend’s ridicule, grasped the railing near him

to steady his tottering feet. Distant sounds of melody from the Cliff at this moment reached their ears, and while his unfeeling comrade wandered in the direction of the music, the distressed Poet hastily sought the Bridge, to give his pent-up feelings vent, unnoticed by the passers-by.

The sun was setting as he reached the spot, and the still surface of the waters below, as he crossed on to the Bridge, calmed his perturbed spirit, and sadly leaning his elbows on the rail, he pondered. What visions filled that noble soul, as, with features that would have beamed with intelligence, had they only possessed an expression at all, and a frown that only needed dignity to be appalling, he fixed upon the sluggish tide those fine though bloodshot eyes?

Visions of his early days; scenes from the happy time of pinafores, treacle, and innocence; through the long vista of the past came floating spectres of long forgotten spelling-books, slates scrawled thick with dreary sums, that seldom came out at all, and never came out right; tingling and somewhat painful sensations returned to his knuckles and the roots of his hair; he was a boy once more.

“Now, young man there!” so broke a voice upon the air, “tak whether o’ the two roads thou likes, but thou cant stop in’t middle!” The words fell idly on his ears, or served but to suggest new trains of reverie; “roads, aye, roads;” he whispered low, and then louder, as the glorious idea burst upon him, “aye, and am not I the Colossus of Rhodes?” he raised his manly form erect at the thought, and planted his feet with a firmer stride.

... Was it but a delusion of his heated brain? or stern reality? slowly, slowly yawned the Bridge beneath him, and now his footing is already grown unsteady, and now the dignity of his attitude is gone: he recks not, come what may; he is not a Colossus?

... The stride of a Colossus is possibly equal to any emergency; the elasticity of fustian is limited: it was at this critical juncture that “the force of nature could no further go,” and therefore deserted him, while the force of gravity began to operate in its stead.

In other words, he fell.

And the Hilda went slowly on its way, and knew not that it passed a Poet under the Bridge, and guessed not whose were those two feet, that disappeared through the eddying waters, kicking with spasmodic energy; and men pulled into a boat a dripping, panting form, that resembled rather a drowned rat than a Poet; and spoke to it without awe, and even said, “young feller;” and something about “greenhorn,” and laughed: what knew they of Poetry?

Turn we to other scenes: a long, low room, with high backed settles, and a sanded floor: a knot of men drinking and gossiping: a general prevalence of tobacco: a powerful conviction that spirits exist somewhere: and she, the fair Sukie herself, gliding airily through the scene, and bearing in those lily hands—what? Some garland doubtless, wreathed of the most fragrant flowers that grow? Some cherished volume, morocco-bound and golden-clasped, the works immortal of the bard of eld, whereon she loveth oft to ponder? Possibly, “The Poems of William Smith,” that idol of her affections, in two volumes quarto, published some years agone, whereof one copy only has as yet been sold, and that he bought himself—to give to Sukie. Which of these is it that the beauteous maiden carries with such tender care? Alas! none: it is those two “goes of arf-an-arf, warm without,” which have just been ordered by the guests in the taproom.

In a small parlour hard by, unknown, untended, though his Sukie was so

near, wet, moody, and dishevelled, sat the youth: the fire had been kindled at his desire, and before it he was now drying himself, but as “the cherry blaze, Blithe harbinger of wintry days,” to use his own powerful description, consisted at present of a feeble, spluttering faggot, whose only effect was to half-choke him with its smoke, he may be pardoned for not feeling, more keenly than he does, that “—fire of Soul, When, gazing on the kindling coal, A Britain feels that, spite of fone, He wots his native hearth his own!” we again employ his own thrilling words on the subject.

The waiter, unconscious that a Poet sat before him, was talking, confidently: he dwelt on various themes, and still the youth sat heedless, but when at last he spoke of Sukie, those dull eyes flashed with fire, and cast upon the speaker a wild glance of scornful defiance, that was unfortunately wasted, as its object was stirring the fire at the moment and failed to see it. “Say, oh say those words again!” he gasped. “I surely heard thee not aright!” The waiter looked astonished, but obligingly repeated his remark, “Hi were merely a saying, sir, that she’s an uncommon clever gyurl, hand as how, Hi were oping some day for to hacquire her Hart, hif so be that—” He said no more, for the Poet, with a groan of anguish, had rushed distractedly from the room.

Chapter III.

Source: The Whitby Gazette, September 21, 1854; Mischmasch (as newspaper cutting, plus illustration)

“Nay, ’tis too much!” Old Play.

Night, solemn night.

On the present occasion the solemnity of night’s approach was rendered far more striking than it is to dwellers in ordinary towns, by that time-honoured custom observed by the people of Whitby, of leaving their streets wholly unlighted: in thus making a stand against the deplorably swift advance of the tide of progress and civilization, they displayed no small share of moral courage and independent judgment. Was it for a people of sense to adopt every new-fangled invention of the age, merely because their neighbours did? It might have been urged, in disparagement of their conduct, that they only injured themselves by it, and the remark would have been undeniably true; but it would only have served to exalt, in the eyes of an admiring nation, their well earned character of heroic self-denial and uncompromising fixity of purpose.

Headlong and desperate, the love-lorn Poet plunged through the night; now tumbling up against a door-step, and now half down in a gutter, but ever onward, onward, reckless where he went.

In the darkest spot of one of those dark streets, (the nearest lighted shop window being about fifty yards off,) chance threw into his way the very man he fled from, the man whom he hated as a successful rival, and who had driven him to this pitch of frenzy. The waiter, not knowing what was the matter, had followed him to see that he came to no harm, and to bring him back, little dreaming of the shock that awaited him.

The instant the Poet perceived who it was, all his pent-up fury broke forth: to rush upon him, to grasp him by the throat with both hands, to dash him to

the ground, and there to reduce him to the extreme verge of suffocation—all this was the work of a moment.

“Traitor! villain! malcontent! regicide!” he hissed through his closed teeth, taking any abusive epithet that came into his head, without stopping to consider its suitability, “Is it thou? now shalt thou feel my wrath!” And doubtless the waiter did experience that singular sensation, whatever it may have been, for he struggled violently with his assailant, and bellowed “murder!” the instant he recovered his breath.

“Say not so,” the Poet sternly answered, as he released him, “it is thou that murderest me.” The waiter gathered himself up, and began in great surprise, “Why, Hi never—” “’Tis a lie!” the Poet screamed, “she loves thee not! Me, me alone.” “Who ever said she did?” the other asked, beginning to perceive how matters stood. “Thou! thou saidst it,” was the wild reply, “what, villain? acquire her heart? thou never shalt.”

The waiter calmly explained himself: “My ope were, sir, to hacquire her Hart of waiting at table, which she do perdigious well, sure-ly: seeing as ow Hi were thinking of happlying for to be ed-waiter at the otel.” The Poet’s wrath instantly abated, indeed, he looked rather crestfallen than otherwise; “Excuse my violence,” he gently said, “and let us take a friendly glass together.” “Hi hagree,” was the waiter’s generous answer, “but man halive, you’ve ruinated my coat!”

“Courage,” cried our hero gaily, “thou shalt have a new one anon: aye, and of the best cashmere.” “Hm!” said the other, hesitatingly, “well, Hi ardlly know—wouldn’t hany other stuff—” “I will not buy thee one of any other stuff,” returned the Poet, gently but decidedly, and the waiter gave up the point.

Arrived once more at the friendly tavern, the Poet briskly ordered a jorum of punch, and, on its being furnished, called on his friend for a toast. “Hi’ll give you,” said the waiter, who was of a sentimental turn, however little he looked like it, “hi’ll give you—Woman! She doubles our sorrows and alves our joys.” The Poet drained his glass, not caring to correct his companion’s mistake, and at intervals during the evening the same inspiring sentiment was repeated. And so the night wore away, and another jorum of punch was ordered, and another.

* * * * *

“Hand now hallow me,” said the waiter, attempting for about the tenth time to rise on to his feet and make a speech, and failing even more signally than he had yet done, “to give a toast for this appy hoccasion. Woman! she doubles—” but at this moment, probably in illustration of his favourite theory, he “doubled” himself up, and so effectually, that he instantly vanished under the table.

Occupying that limited sphere of observation, it is conjectured that he fell to moralizing on human ills in general, and their remedies, for a solemn voice was presently heard to issue from his retreat, proclaiming, feelingly though rather indistinctly, that “when the art of a man is hoppedressed with care——” here came a pause, as if he wished to leave the question open to discussion, but as no one present seemed competent to suggest the proper course to be taken in that melancholy contingency, he attempted to supply the deficiency himself with the remarkable statement “she’s hall my fancy painted er.”

Meanwhile the Poet was sitting, smiling quietly to himself, as he sipped his punch: the only notice he took of his companion’s abrupt disappearance was to

Quoted from *Alice Gray* by William Mee

help himself to a fresh glass, and say, "your health!" in a cordial tone, nodding to where the waiter ought to have been. He then cried "hear, hear!" encouragingly, and made an attempt to thump the table with his fist, but missed it. He seemed interested in the question regarding the heart oppressed with care, and winked sagaciously with one eye two or three times, as if there were a good deal he could say on that subject, if he chose: but the second quotation roused him to speech, and he at once broke into the waiter's subterranean soliloquy with an ecstatic fragment from the poem he had been just composing:



"What though the world be cross and crooky?
Of Life's fair flowers the fairest bouquet
I plucked, when I chose *thee*, my Sukie!

"Say, could'st thou grasp at nothing greater
Than to be wedded to a waiter?
And did'st thou deem thy Schmitz a traitor?

"Nay! the fond waiter was rejected,
And thou, alone, with flower-bedecked head,
Sitting, did'st sing of one expected.

"And while the waiter, crazed and silly,
Dreamed he had won that priceless lily,
At length he came, thy wished-for Willie.

"And then thy music took a new key,
For whether Schmitz be boor or duke, he
Is all in all to faithful Sukie!"

He paused for a reply, but a heavy snoring from beneath the table was the only one he got.

Chapter IV.

Source: The Whitby Gazette, September 28, 1854 (with minor differences as noted, without illustrations); Mischmasch

“Is this the hend?” Nicholas Nickleby

Quoted from *The Life and Adventures of Nicholas Nickleby* by Charles Dickens

Bathed in the radiance of the newly-risen sun, the billows are surging and bristling below the cliff, along which the Poet is thoughtfully wending his way. It may possibly surprise the reader that he should not ere this have obtained an interview with his beloved Sukie: he may ask the reason; he will ask in vain: to record with rigid accuracy the progress of events, is the sole duty of the historian: were he to go beyond that, and attempt to dive into the hidden causes of things, the why and the wherefore, he would be trespassing on the province of the metaphysician.

Scarcely observing, as he passed along, a row of newly built lodging-houses, a spacious Hotel, with excellent stabling and lock-up coach-houses, hot, cold, and shower-baths in the house, an omnibus and cabs attend the arrival and departure of each train,—a mysterious-looking wooden sugar-loaf, perched upon posts, with a handle to it above, suggesting the idea of an umbrella blown inside out,—and a series of grass-plots, shaped like saucers, he reached a small rising ground at the end of the gravel walk, where he found a seat commanding a view of the sea, and here he sunk down wearily.

For a while he gazed dreamily upon the expanse of ocean, then, struck by a sudden thought, he opened a small pocket book, and proceeded to correct and complete his last poem. Slowly to himself he muttered¹ the words “death,—saith,—breath,—” impatiently tapping the ground with his foot, “ah, that’ll do,” he said at last with an air of relief, “breath”:

“His barque hath perished in the storm,
Whirled by its fiery breath
On sunken rocks, his stalwart form
Was doomed to watery death.”

“That last line’s good,” he continued exultingly, “and on Coleridge’s principle of alliteration too, W, D, W, D, ‘was doomed to watery death.’”

“Say you so?”² growled a deep voice in his ear, “take care!”³ what you say will be used in evidence against you,—now it’s no use trying that sort of thing⁴, we’ve got you tight”: this last remark being caused by the struggles of the Poet, naturally indignant at being unexpectedly collared by two men from behind.

“He’s confessed to it, constable? you heard him?” said one of the two⁵, (who rejoiced in the euphonious title of Muggle, and whom it is almost superfluous to introduce to the reader as the elder traveler of Chapter I,) “it’s as much as his life is worth.” “I say, stow that —” warmly responded the other, “seems to me the gen’leman was a spouting potry.”

¹he muttered to himself

²“Take care,”

³(missing in the *Whitby Gazette*)

⁴trying that

⁵the first speaker

“What—what’s the matter?” here gasped our unfortunate hero, who had recovered his breath, “you—Muggle—what do you mean by it?”

“Mean by it!” blustered his quondam friend, “what do *you* mean by it, if you come to that? you’re an assassin, that’s what *you* are! where’s the waiter you had with you last night? answer me that!”

“The—the waiter?” slowly repeated the Poet, still stunned by the suddenness of his capture, “why, he’s dr——”

“I knew it!” cried his friend, who was at him in a moment, and choked up the unfinished word in his throat, “drowned, constable! I told you so—and who did it?” he continued, loosing his grasp a moment to obtain an answer.

The Poet’s answer, so far as it could be gathered, (for it came out in a very fragmentary state, and as it were by crumbs, in intervals of choking) was the following: “It was my—my—you’ll kill me—fault—I say, fault—I—I gave him—you—you’re suffoca—I say,—I gave him——” “—a push I suppose,” concluded the other, who here “shut off” the slender supply of breath he had hitherto allowed his victim, “and he fell in: no doubt. I heard some one had fallen off the bridge last night,” turning to the constable, “no doubt this unfortunate waiter. Now mark my words! from this moment I renounce this man as my friend: don’t pity him, constable! don’t think of letting him go to spare *my* feelings!”

⌊“Don’t wex yourself,” was the philosophic rejoinder, “I wouldn’t let him go—not for to spare the feelings o’ twenty sich.”⁶

⌊This reply, though it could scarcely be considered complimentary, seemed quite satisfactory to the exited Muggle, who now continued more calmly, “But don’t you go talking about poetry, constable, and trying to get him off that way, otherwise you *may* be—mark my words, I say you *may* be, acquitted as adversary before the fact!” a keen love for the use of law-terms, in which however he did not shine, being a marked trait in the character of Muggle.⁷

⌊The constable, who was chewing a straw, made no answer to this extraordinary communication, nor, to say the truth, did he appear at all interested in it.⁸ Some convulsive sounds ⌊were heard at this moment from⁹ the Poet, which, on attentive consideration, were found to be, “The punch—was—was too much—for him—it, ⌊quite¹⁰——”

“Miserable man!” sternly interposed Muggle, “can you jest about it! you gave him a punch, did you? and what then?”

“It quite—quite—upset him,” continued the unhappy Schmitz, in a sort of rambling soliloquy, which was here cut short by the impatience of the constable, and the party set forth on their return to the town.

⌊A small knot of people were assembled at the street corner to see the melancholy procession go past: the Poet was on the point of addressing them, and the words “Friends, Romans, countrymen,” rose to his lips, but on second thoughts he discarded the phrase, as inapplicable to the present occasion. Before, however, he was yet waving his right arm gracefully up and down in act to speak, a distant cry of “hinnocent! hinnocent!” was heard, and an unexpected character burst upon the scene.¹¹

⁶(paragraph missing in the *Whitby Gazette*)

⁷(paragraph missing in the *Whitby Gazette*)

⁸(missing in the *Whitby Gazette*)

⁹at this moment were heard from

¹⁰quite—it quite

¹¹(paragraph missing in the *Whitby Gazette*)

⌊The first impression the Poet formed of him was, that some baker's apprentice had gone mad, had been stopped in an attempt to drown himself, and escaped from his friends: the being in question had a white apron twisted about him in a mysterious manner, his hair was dripping with water, his eyes wild and rolling, and his manner desperate: and his whole vocabulary seemed to consist of the single word "hinnocent!" which he repeated without any pause, and with surprising emphasis.¹²

⌊A path was made for him to pass through the mob, and on arriving opposite the constable he suddenly¹³ broke into a speech, far more remarkable for energetic delivery, than for grammatical accuracy: "Hi've only just erd of it—Hi were ⌊asleep¹⁴ under table—avin taking more punch nor Hi could stand—him's as hinnocent as Hi ⌊ham¹⁵—howing to the punch, which uncommon good it were, but that's neither ere nor there—dead hindeed! Hi'd like to see im ⌊as¹⁶ said it!—Hi'm ⌊haliver¹⁷ than yer, a precious sight!"

This speech produced ⌊different¹⁸ effects on its hearers: the constable calmly released his man, ⌊and with the parting words, "All right, young 'un; wish you joy," turned on his heel whistling, and departed¹⁹: the bewildered Muggle ⌊plunged his hands into his pockets, and muttered²⁰ "Impossible! conspiracy—perjury—have it tried at assizes": while the happy Poet rushed into the arms of his deliverer, crying in a broken voice, "No, never from this hour to part, We'll live and love so true!" a sentiment which the waiter did not echo with the cordiality that might have been expected.

⌊From this transport of gratitude and delight he awoke to feel a gentle touch on his shoulder, and to see the fair Sukie herself bending over him: their meeting was—, but on second thoughts we abandon the description as hopeless: it transcends the feeble powers of language.²¹

⌊It was in the course of the same day, when Wilhelm and his Sukie²² were sitting conversing with the waiter and a ⌊few mutual friends²³, ⌊that²⁴ the penitent Muggle suddenly entered the room, placed a folded paper on the knees of Schmitz, pronounced in a hollow tone the affecting words "be happy!", vanished, and ⌊was no more seen²⁵.

After perusing the paper, ⌊the Poet²⁶ rose to his feet, ⌊and the grace of his attitude struck all present: (one of his friends afterwards compared it to the Belvidere Apollo, but the simile is supposed to be exaggerated). The inspiration of the moment roused him²⁷ into unconscious and extempore verse, ⌊positively

¹²(paragraph missing in the *Whitby Gazette*)

¹³But an unexpected character burst upon the scene and

¹⁴hasleep

¹⁵am

¹⁶has

¹⁷accidentally "halvier" in the *Whitby Gazette*

¹⁸various

¹⁹(missing in the *Whitby Gazette*)

²⁰muttered

²¹(paragraph missing in the *Whitby Gazette*)

²²Later in the day, Wilhelm and Sukie

²³few friends

²⁴when

²⁵was seen no more

²⁶Wilhelm

²⁷in the excitement of the moment he was roused

for the first and last time within the memory of man²⁸.



“My Sukie! he hath bought, yea, Muggle’s self,
Convinced at last of deeds unjust and foul,
The licence of a vacant public-house,
Which, with it’s chattels, site, and tenement,²⁹
He hands us over,—we are licensed here,
Even in this document, to sell to all
Snuff, pepper, vinegar, to sell to all
Ale, porter, spirits, but—observe you well—
‘Not to be drunk upon the premises!’
Oh, Sukie! heed it well! in other places,
Even as thou listest, be intoxicate:
Drink without limit whiles thou art abroad,
But never, never, in thy husband’s house!”

So we leave him: his after happiness who dares to doubt? has he not Sukie?

²⁸(missing in the *Whitby Gazette*)

²⁹Instead of this and all the rest of the poem:

We are licensed here to sell to all,
Spirits, porter, snuff, and ale!”

and having her, he is content, or, to use the more graceful and expressive language of the sympathetic waiter, with whose words we conclude the tale, he “henvies no hother³⁰ man on³¹ hearth, owever many may ate *im*.” *B. B.*

³⁰other
³¹hon

3.7 Photography Extraordinary

Source: The Comic Times, November 3, 1855; Mischmasch (as newspaper cuttig)

The recent extraordinary discovery in Photography, as applied to the operations of the mind, has reduced the art of novel-writing to the merest mechanical labour. We have been kindly permitted by the artist to be present during one of his experiments; but as the invention has not yet been given to the world, we are only at liberty to relate the results, suppressing all details of chemicals and manipulation.

The operator began by stating that the ideas of the feeblest intellect, when once received on properly prepared paper, could be “developed” up to any required degree of intensity. On hearing our wish that he would begin with an extreme case, he obligingly summoned a young man from an adjoining room, who appeared to be of the very weakest possible physical and mental powers. On being asked what we thought of him, we candidly confessed that he seemed incapable of anything but sleep: our friend cordially assented to this opinion.

The machine being in position, and a mesmeric rapport established between the mind of the patient and the object glass, the young man was asked whether he wished to say anything; he feebly replied “Nothing.” He was then asked what he was thinking of, and the answer, as before, was “Nothing.” The artist on this pronounced him to be in a most satisfactory state, and at once commenced the operation.

After the paper had been exposed for the requisite time, it was removed and submitted to our inspection; we found it to be covered with faint and almost illegible characters. A closer scrutiny revealed the following:—

“The eve was soft and dewy mild; a zephyr whispered in the lofty glade, and a few light drops of rain cooled the thirsty soil. At a slow amble, along the primrose-bordered path, rode a gentle-looking and amiable youth, holding a light cane in his delicate hand; the pony moved gracefully beneath him, inhaling as it went the fragrance of the roadside flowers: the calm smile, and languid eyes, so admirably harmonising with the fair features of the rider, showed the even tenor of his thoughts. With a sweet though feeble voice, he plaintively murmured out the gentle regrets that clouded his breast:—

“Alas! she would not hear my prayer!
Yet it were rash to tear my hair;
Disfigured, I should be less fair.

“She was unwise, I may say blind;
Once she was lovingly inclined;
Some circumstance has changed her mind.”

There was a moment’s silence; the pony stumbled over a stone in the path, and unseated his rider. A crash was heard among the dried leaves; the youth arose; a slight bruise on his left shoulder, and a disarrangement of his cravat, were the only traces that remained of this trifling accident.”

“This,” we remarked, as we returned the paper, “belongs apparently to the milk-and-water School of Novels.”

“You are quite right,” our friend replied, “and, in its present state, it is of course utterly unsaleable in the present day: we shall find, however, that the

next stage of development will remove it into the strong-minded or Matter-of-Fact School." After dipping it into various acids, he again submitted it to us: it had now become the following:—

"The evening was of the ordinary character, barometer at 'change': a wind was getting up in the wood, and some rain was beginning to fall; a bad look-out for the farmers. A gentleman approached along the bridle-road, carrying a stout knobbed stick in his hand, and mounted on a serviceable nag, possibly worth some £40 or so; there was a settled business-like expression on the rider's face, and he whistled as he rode; he seemed to be hunting for rhymes in his head, and at length repeated, in a satisfied tone, the following composition:—

"Well! so my offer was no go!
She might do worse, I told her so;
She was a fool to answer 'No.'
"However, things are as they stood;
Nor would I have her if I could,
For there are plenty more as good."

At this moment the horse set his foot in a hole, and rolled over; his rider rose with difficulty; he had sustained several severe bruises, and fractured two ribs; it was some time before he forgot that unlucky day."

We returned this with the strongest expression of admiration, and requested that it might now be developed to the highest possible degree. Our friend readily consented, and shortly presented us with the result, which he informed us belonged to the Spasmodic or German School. We perused it with indescribable sensations of surprise and delight.

"The night was wildly tempestuous—a hurricane raved through the murky forest—furious torrents of rain lashed the groaning earth. With a headlong rush—down a precipitous mountain gorge—dashed a mounted horseman armed to the teeth—his horse bounded beneath him at a mad gallop, snorting fire from its distended nostrils as it flew. The rider's knotted brows—rolling eye-balls—and clenched teeth—expressed the intense agony of his mind—weird visions loomed upon his burning brain—while with a mad yell he poured forth the torrent of his boiling passion:—

"Firebrands and daggers! hope hath fled!
To atoms dash the doubly dead!
My brain is fire—my heart is lead!
"Her soul is flint, and what am I?
Scorch'd by her fierce, relentless eye.
Nothingness is my destiny!"

There was a moment's pause. Horror! his path ended in a fathomless abyss—
* * * A rush—a flash—a crash—all was over. Three drops of blood, two teeth, and a stirrup were all that remained to tell where the wild horseman met his doom."

The young man was now recalled to consciousness, and shown the result of the workings of his mind: he instantly fainted away.

In the present infancy of the art we forbear from further comment on this wonderful discovery; but the mind reels as it contemplates the stupendous addition thus made to the powers of science.

Our friend concluded with various minor experiments, such as working up a passage of Wordsworth into strong, sterling poetry: the same experiment was tried on a passage of Byron, at our request, but the paper came out scorched and blistered all over by the fiery epithets thus produced.

As a concluding remark: *could* this art be applied (we put the question in the strictest confidence)—*could* it, we ask, be applied to the speeches in Parliament? It may be but a delusion of our heated imagination, but we will still cling fondly to the idea, and hope against hope.

3.8 Novelty and Romancement

Source: The Train, October 1856; illustration by William M'Connell

Several typesetting errors have been fixed, punctuation changes are not noted.

A Broken Spell

By Lewis Carroll

I had grave doubts at first whether to call this passage of my life “A Wail,” or “A Pœan,” so much does it contain that is great and glorious, so much that is sombre and stern. Seeking for something which should be a sort of medium between the two. I decided, at last, on the above heading—wrongly, of course; I am always wrong; but let me be calm. It is a characteristic of the true orator never to yield to a burst of passion at the outset; the mildest of commonplaces are all he dare indulge in at first, and thence he mounts gradually;—“*vires acquirit eundo.*” (See cover.) Suffice it, then, to say, in the first place, that *I am Leopold Edgar Stubbs*. I state this fact distinctly in commencing, to prevent all chance of the reader’s confounding me either with the eminent shoemaker of that name, of Pottle-street, Camberwell, or with my less reputable, but more widely known, namesake, Stubbs, the light comedian, of the Provinces; both which connexions I repel with horror and disdain: no offence, however, being intended to either of the individuals named—men whom I have never seen, whom I hope I never shall.

So much for commonplaces.

Tell me now, oh! man, wise in interpretation of dreams and omens, how it chanced that, on a Friday afternoon, turning suddenly out of Great Wattles-street, I should come into sudden and disagreeable collision with an humble individual of unprepossessing exterior, but with an eye that glowed with all the fire of genius? I had dreamed at night that the great idea of my life was to be fulfilled. What was the great idea of my life? I will tell you. With shame or sorrow I will tell you.

My thirst and passion from boyhood (predominating over the love of taws and running neck and neck with my appetite for toffy) has been for poetry—for poetry in its widest and wildest sense—for poetry untrammelled by the laws of sense, rhyme, or rhythm, soaring through the universe, and echoing the music of the spheres! From my youth, nay, from my very cradle, I have yearned for poetry, for beauty, for novelty, for romancement. When I say “yearned,” I employ a word mildly expressive of what may be considered as an outline of my feelings in my calmer moments: it is about as capable of picturing the headlong impetuosity of my life-long enthusiasm as those unanatomical paintings which adorn the outside of the Adelphi, representing Flexmore in one of the many conceivable attitudes into which the human frame has never yet been reduced, are of conveying to the speculative pit-goer a true idea of the feats performed by that extraordinary compound of humanity and Indian-rubber.

I have wandered from the point: that is a peculiarity, if I may be permitted to say so, incidental to life; and, as I remarked on an occasion which time will not suffer me more fully to specify, “What, after all, *is* life?” nor did I find any one of the individuals present (we were a party of nine, including the waiter, and it was while the soup was being removed that the above-recorded observation was made) capable of furnishing me with a rational answer to the question.

Quoted from *Aeneid*
by Virgil, and motto
of the *Train*

The verses which I wrote at an early period of life were eminently distinguished by a perfect freedom from conventionalism, and were thus unsuited to the present exactions of literature: in a future age they will be read and admired, "when Milton," as my venerable uncle has frequently exclaimed, "when Milton and such like is forgot!" Had it not been for this sympathetic relative, I firmly believe that the poetry of my nature would never have come out; I can still recall the feelings which thrilled me when he offered me sixpence for a rhyme to "despotism." I never succeeded, it is true, in finding the rhyme, but it was on the very next Wednesday that I penned my well known "Sonnet on a Dead Kitten," and in the course of a fortnight had commenced three epics, the titles of which I have unfortunately now forgotten.

Seven volumes of poetry have I given to an ungrateful world during my life; they have all shared the fate of true genius—obscurity and contempt. Not that any fault could be found with their contents; whatever their deficiencies may have been, *no reviewer has yet dared to criticise them*. This is a great fact.

The only composition of mine which has yet made any noise in the world, was a sonnet I addressed to one of the Corporation of Muggleton-cum-Swillside, on the occasion of his being selected Mayor of that town. It was largely circulated through private hands, and much talked of at the time; and though the subject of it, with characteristic vulgarity of mind, failed to appreciate the delicate compliments it involved, and indeed spoke of it rather disrespectfully than otherwise, I am inclined to think that it possesses all the elements of greatness. The concluding couplet was added at the suggestion of a friend, who assured me it was necessary to complete the sense, and in this point I deferred to his maturer judgment:—

"When Desolation snatched her tearful prey
From the lorn empire of despairing day;
When all the light, by gemless fancy thrown,
Served but to animate the putrid stone;
When monarchs, lessening on the wildered sight,
Crumblingly vanished into utter night;
When murder stalked with thirstier strides abroad,
And redly flashed the never-sated sword;
In such an hour thy greatness had been seen—
That is, if such an hour had ever been—
In such an hour thy praises shall be sung,
If not by mine, by many a worthier tongue;
And thou be gazed upon by wondering men,
When such an hour arrives, but not till then!"

Alfred Tennyson is Poet Laureate, and it is not for me to dispute his claim to that eminent position; still I cannot help thinking, that if the Government had only come forward candidly at the time, and thrown the thing open to general competition, proposing some subject to test the powers of the candidate (say "Frampton's Pill of Health, an Acrostic"), a very different result might have been arrived at.

But let us return to our mutttons (as our noble allies do most unromantically express themselves), and to the mechanic of Great Wattles-street. He was coming out of a small shop—rudely built it was, dilapidated exceedingly, and in its

general appearance seedy—what did I see in all this to inspire a belief that a great epoch in my existence had arrived? Reader, I saw the sign board!

Yes. Upon that rusty signboard, creaking awkwardly on its one hinge against the mouldering wall, was an inscription which thrilled me from head to foot with unwonted excitement. “Simon Lubkin. Dealer in Romancement.” Those were the very words.

It was Friday, the fourth of June, half-past four, p. m.

Three times I read that inscription through, and then took out my pocket-book, and copied it on the spot; the mechanic regarding me during the whole proceeding with a stare of serious and (as I thought at the time) respectful astonishment.

I stopped that mechanic, and entered into conversation with him: years of agony since then have gradually branded that scene upon my writhing heart, and I can repeat all that passed, word for word.

Did the mechanic (this was my first question) possess a kindred soul, or did he not?

Mechanic didn’t know as he did.

Was he aware (this with thrilling emphasis) of the meaning of that glorious inscription upon his `signboard`¹?

Bless you, mechanic knew all about that ’ere.

Would mechanic (overlooking the suddenness of the invitation) object to adjourn to the neighbouring public-house, and there discuss the point more at leisure?

Mechanic would *not* object to a drain. On the contrary.

(Adjournment accordingly: brandy-and-water for two: conversation resumed.)

Did the article sell well, especially with the “*mobile vulgus*?”

Mechanic cast a look of good-natured pity on the questioner: the article sold well, he said, and the vulgars bought it most.

Why not add “Novelty” to the inscription? (This was a critical moment: I trembled as I asked the question.)

Not so bad an idea, mechanic thought: time was, it might have answered; but time flies, you see.

Was mechanic alone in his glory, or was there any one else who dealt as largely in the article?

Mechanic would pound it there was none.

What was the article employed for? (I brought this question out with a gasp, excitement almost choking my utterance.)

It would piece a’most anything together, mechanic believed, and make it solider nor stone.

This was a sentence difficult of interpretation. I thought it over a little, and then said, doubtfully, “you mean, I presume, that it serves to connect the broken threads of human destiny? to invest with a—with a sort of vital reality the chimerical products of a fertile imagination?”

Mechanic’s answer was short, and anything but encouraging: “mought be—
— I’s no scollard, bless you.”

At this point conversation certainly began to flag; I was seriously debating in my own mind whether this could really be the fulfilment of my life-cherished dream; so ill did the scene harmonise with my ideas of romance, and so painfully

¹accidently printed “sideboard”

did I feel my companion's lack of sympathy in the enthusiasm of my nature—an enthusiasm which has found vent, ere now, in actions which the thoughtless crowd have too often attributed to mere eccentricity.

I have risen with the lark—"day's sweet harbinger"—(once, certainly, if not oftener), with the aid of a patent alarum, and have gone forth at that unseemly hour, much to the astonishment of the housemaid cleaning the door steps, to "brush with hasty steps the dewy lawn," and have witnessed the golden dawn with eyes yet half-closed in sleep. (I have always stated to my friends, in any allusion to the subject, that my raptures at that moment were such that I have never since ventured to expose myself to the influence of excitement so dangerous. In confidence, however, I admit that the reality did not come up to the idea I had formed of it over night, and by no means repaid the struggle of getting out of bed so early.)

Quoted from *Address to Health* by H. S.

I have wandered in the solemn woods at night, and bent me o'er the moss-grown fountain, to lave in its crystal stream my tangled locks and fevered brow. (What though I was laid up with a severe cold in consequence, and that my hair was out of curl for a week? Do paltry considerations such as these, I ask, affect the poetry of the incident?)

I have thrown open my small, but neatly furnished, cottage tenement, in the neighbourhood of St. John's Wood, and invited an aged beggar in to "sit by my fire, and talk the night away." (It was immediately after reading Goldsmith's "Deserted Village." True it is that he told me nothing interesting, and that he took the hall-clock with him when he departed in the morning; still my uncle has always said that he wishes he had been there, and that it displayed in me a freshness and greenness of fancy (or "disposition," I forget which) such as he had never expected to see.)

Quoted from *The Deserted Village* by Oliver Goldsmith

I feel that it is incumbent on me to enter more fully into this latter topic—the personal history of my uncle: the world will one day learn to revere the talents of that wonderful man, though a want of funds prevents, at present, the publication of the great system of philosophy of which he is the inventor. Meanwhile, out of the mass of priceless manuscripts which he has bequeathed to an ungrateful nation, I will venture to select one striking specimen. And when the day arrives that my poetry is appreciated by the world at large (distant though it now appear!) then, I feel assured, shall his genius also receive its meed of fame!

Among the papers of that respected relative, I find what appears to have been a leaf torn from some philosophical work of the day: the following passage is scored. "Is this your rose? It is mine. It is yours. Are these your houses? They are mine. Give to me (of) the bread. She gave him a box on the ear." Against this occurs a marginal note in my uncle's handwriting: "some call this unconnected writing: I have my own opinion." This last was a favourite expression of his, veiling a profundity of ethical acumen on which it would be vain to speculate; indeed, so uniformly simple was the language of this great man, that no one besides myself ever suspected his possessing more than the ordinary share of human intellect.

May I, however, venture to express what I believe would have been my uncle's interpretation of this remarkable passage? It appears that the writer intended to distinguish the provinces of Poetry, Real Property, and Personal Property. The inquirer touches first on flowers, and with what a gush of generous feeling does the answer break upon him! "It is mine. It is yours." That is the beautiful,

the true, the good; these are not hampered by petty consideration of “meum” and “tuum;” these are the common property of men. (It was with some such idea as this that I drew up the once celebrated bill, entitled “An Act for exempting Pheasants from the operation of the Game Laws, on the ground of Beauty”—a bill which would, doubtless, have passed both Houses in triumph, but that the member who had undertaken the care of it was unfortunately incarcerated in a Lunatic Asylum before it had reached the second reading.) Encouraged by the success of his first question, our inquirer passes on to “houses” (“Real Property,” you will observe); he is here met by the stern, chilling answer, “They are mine”—none of the liberal sentiment which dictated the former reply, but in its place a dignified assertion of the rights of property.

Had this been a genuine Socratic dialogue, and not merely a modern imitation, the inquirer would have probably here interrupted with “To me indeed,” or, “I, for my part,” or, “But how otherwise?” or some other of those singular expressions, with which Plato makes his characters display at once their blind acquiescence in their instructor’s opinions, and their utter inability to express themselves grammatically. But the writer takes another line of thought; the bold inquirer, undeterred by the coldness of the last reply, proceeds from questions to demands, “give me (of) the bread;” and here the conversation abruptly ceases, but the moral of the whole is pointed in the narrative: “she gave him a box on the ear.” This is not the philosophy of one individual or nation, the sentiment is, if I may so say, European; and I am borne out in this theory by the fact that the book has evidently been printed in three parallel columns, English, French, and German.

Such a man was my uncle; and with such a man did I resolve to confront the suspected mechanic. I appointed the following morning for an interview, when I would personally inspect “the article” (I could not bring myself to utter the beloved word itself). I passed a restless and feverish night, crushed by a sense of the approaching crisis.

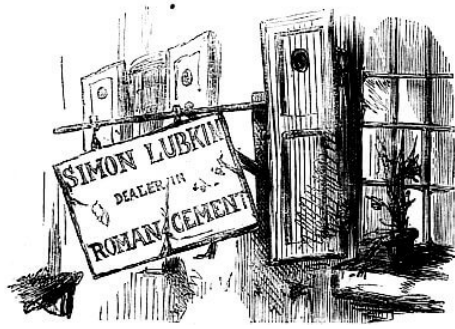
The hour came at last—the hour of misery and despair; it always does so, it cannot be put off forever; even on a visit to a dentist, as my childhood can attest with bitter experience, we are not forever getting there; the fatal door too surely dawns upon us, and our heart, which for the last half hour has been gradually sinking lower and lower, until we almost doubt its existence, vanishes suddenly downwards into depths hitherto undreamed of. And so, I repeat it, the hour came at last.

Standing before that base mechanic’s door, with a throbbing and expectant heart, my eye chanced to fall once more upon that signboard, once more I perused its strange inscription. Oh! fatal change! Oh! horror! What do I see? Have I been deluded by a heated imagination? A hideous gap yawns between the N and the C, making it not one word but two!

And the dream was over.

At the corner of the street I turned to take a sad fond look at the spectre of a phantom hope, I once had held so dear. “Adieu!” I whispered; this was all the last farewell I took, and I leant upon my walking-stick and wiped away a tear. On the following day I entered into commercial relations with the firm of Dumpy and Spagg, wholesale dealers in the wine and spirit department.

The signboard yet creaks upon the mouldering wall, but its sound shall make music in these ears nevermore—ah! nevermore.



3.9 The Legend of “Scotland”

Source: manuscript written for the daughters of Archbishop Longley, 1858

Being a true and terrible report touching the rooms of Auckland Castell, called Scotland, and of the things there endured by Matthew Dixon, Chaffer, and of a certain Ladye, called Gaunless of some, there apparent, and how that none durst in these days sleep therein, (belike through fear,) all which things fell out in ye days of Bishop Bec, of chearfull memorie, and were writ down by mee in the Yeere One Thousand Three Hundred and Twenty Five, in the Month February, on a certayn Tuesday and other days. *Edgar Cuthwellis.*

Now the said Matthew Dixon, having fetched wares unto that place, my Loods commended the same, and bade that hee should be entertained for that night, (which in sooth hee was, supping with a grete Appetite,) and sleep in a certayn roome of that apartment now called Scotland—From whence at Mid-night hee rushed forth with so grete a Scream, as awaked all men, and hastily running into those Passages, and meeting him so screaming, hee presentlie faynted away.

Whereon they hadde hym into my Loorde’s parlour, and with much ado set hym on a Chaire, wherefrom hee three several times split even to the grounde, to the grete admiration of all men.

But being stayed with divers Strong Liquors, (and, chifest, wyth Gin,) he after a whyle gave forth in a lamentable tone these following particulars, all which were presentlie sworn to by nine painful and stout farmers, who lived hard by, which witness I will here orderlie set downe.

Witness of Matthew Dixon, Chaffer, being in my right minde, and more than Fortie Yeeres of Age, though sore affrighted by reason of Sightes and Sounds in This Castell endured by mee, as touching the Vision of Scotland, and the Ghosts, all two of them, therein containd, and of A certayn straunge Ladye, and of the lamentable thyngs by her uttered, with other sad tunes and songs, by her and by other Ghosts devised, and of the coldness and shakynge of my Bones, (through sore grete feer,) and of other things very pleasant to knowe, chiefly of a Picture hereafter suddenlie to bee taken, and of what shall befall thereon, (as trulie foreshowne by Ghosts,) and of Darkness, with other things more terrible than Woordes and of that which Men call Chimera.

Matthew Dixon, Chaffer, deposeth: “that hee, having supped well over Night on a Green Goose, a Pasty, and other Condiments of the Bishop’s grete bountie provided, (looking, as he spake, at my Loorde, and essaying toe pull offe hys hatte untoe hym, but missed soe doing, for that hee hadde yt not on hys hedde,) soe went untoe hys bedde, where of a lang tyme hee was exercysed with sharp and horrible Dreems. That hee saw yn hys Dreem a young Ladye, habited, (not as yt seemed) yn a Gaun, but yn a certayn sorte of Wrapper, perchance a Wrap-Rascal.” (Hereon a Mayde of the House affirmed that noe Ladye woold weare such a thing, and hee answered, “I stand corrected,” and indeed rose from hys chaire, yet fayled to stand.)

Witness continued: “that ye sayde Ladye waved toe and froe a Grete Torche, whereat a thin Voyce shreeked ‘Gaunless! Gaunless!’ and Shee standyng yn the midst of the flor, a grete Chaunge befell her, her Countenance waxing ever more

and more Aged, and her Hayr grayer, shee all that tyme saying yn a most sad Voyce, ‘Gaunless, now, as Ladyes bee: yet yn yeeres toe come they shall not lacke for Gauns.’ At whych her Wrapper seemed slowlie toe melte, chaunging into a gaun of sylk, which puckered up and down, yes, and flounced itself out not a lyttle:” (at thys mye Loorde, waxing impatient, smote hym roundlie onne the hedde, bydding hym finish hys tale anon.)

Witness continued; “that the sayd Gaun thenne chaunged ytself into divers fashyons whych shall hereafter bee, loopyng ytself uppe yn thys place and yn that, soe gyving toe View ane pettycote of a most fiery hue, even Crimson toe looke upon, at whych dismal and blodethirstie sight he both groned and wepte. That at the laste the skyrt swelled unto a Vastness beyond Man’s power toe tell ayded, (as hee judged,) bye Hoops, Cartwheels, Balloons, and the lyke, bearing yt uppe within. That yt fylled alle that Chamber, crushing hym flat untoe hys bedde, tylle such as she appeared toe depart, fryzzling hys Hayre with her Torche as she went.

“That hee, awakyng from such Dreems, herd thereon a Rush, and saw a Light.” (Hereon a Mayde interrupted hym, crying out that there was yndeed a Rush-Light burning yn that same room, and woulde have sayde more, but that my Loorde checkt her, and sharplie bade her stow that, meening thereby, that she shoulde holde her peece.)

Witness continued: “that being mucche affrited thereat, whereby hys Bones were, (as hee sayde,) all of a dramble, hee essayed to leep from hys bedde, and soe quit. Yet tarried hee some wyle, not, as might bee thought from being stout of Harte, but rather of Bodye; whych tyme she chaunted snatches of old lays, as Maister Wil Shakespeare hath yt.”

Hereon my Loorde questioned what lays, bydding hym syng the same, and saying hee knew but of two lays: “‘Twas yn Trafalgar’s bay wee saw the Frenchmen lay,” and “There wee lay all that day yn the Bay of Biscay—O,” whych hee forthwyth hummed aloud, yet out of tune, at whych somme smyled.

Witness continued: “that hee perchance coulde chaunt the sayde lays wyth Music, but unaccompanied hee durst not.” On thys they hadde hym to the Schoolroom, where was a Musical Instrument, called a Paean-o-Forty, (meaning that yt hadde forty Notes, and was a Paean or Triumph of Art,) whereon two young ladyes, Nieces of my Loorde, that abode there, (lerning, as they deemed, Lessons; but, I wot, idlyng not a lyttle,) did wyth much thumpyng playe certyn Music wyth hys synging, as best they mighte, seeing that the Tunes were such as noe Man had herde before.

“Lorenzo dwelt at Heighington,
 (Hys cote was made of Dimity,
Least-ways yf not exactly there,
 Yet yn yt’s close proximity.
Hee called on mee—hee stayed to tee—
 Yet not a word he ut-tered,
Untyl I sayd, ‘D’ye lyke your bread
Dry?’ and hee answered ‘But-tered.’”

(Chorus whereyn all present joynd with fervour).

“Noodle dumb

Has a noodle-head,
I hate such noodles, *I* do.”

Witness continued: “that shee then appeared unto hym habited yn the same loose Wrapper, whereyn hee first saw her yn hys Dreem, and yn a stayd and piercing tone gave forth her History as followeth.”

The Ladye’s History

“On a dewie autumn evening, mighte have been seen, pacing yn the grounds harde by Aucklande Castell, a yong Ladye of a stiff and perky manner, yet not ill to look on, nay, one mighte saye, faire to a degree, save that haply that hadde been untrue.

“That yong Ladye, O miserable Man, was I” (whereon I demanded on what score shee held mee miserable, and shee replied, yt mattered not). “I plumed myself yn those tymes on my exceeding not soe much beauty as loftiness of Figure, and gretely desired that some Painter might paint my picture: but they ever were too hight, not yn skyll I trow, but yn charges.” (At thys I most humbly enquired at what charge the then Painters wrought, but shee loftily affirmed that money-matters were vulgar and that shee knew not, no, nor cared.)

“Now yt chaunced that a certyn Artist, hight Lorenzo, came toe that Quarter, having wyth hym a mervellous machine called by men a Chimera (that ys, a fabulous and wholly incredible thing;) where wyth hee took manie pictures, each yn a single stroke of Tyme, whiles that a Man might name ‘John, the son of Robin’ (I asked her, what might a stroke of Tyme bee, but shee, frowning, answered not).

“He yt was that undertook my Picture: yn which I mainly required one thyng, that yt shoulde bee at full-length, for yn none other way mighte my Loftiness bee trulie set forth. Nevertheless, though hee took manie Pictures, yet all fayled yn thys: for some, beginning at the Hedde reeched not toe the Feet; others, takyng yn the Feet, yet left out the Hedde; whereof the former were a grief unto myself, and the latter a Laughing-Stocke unto others.

“At these thyngs I justly fumed, having at the first been frendly unto hym (though yn sooth hee was dull), and oft smote hym gretely on the Eares, rending from hys Hedde certyn Locks, whereat crying out hee was wont toe saye that I made hys lyfe a burden untoe hym, whych thyng I not so much doubted as highlie rejoyced yn.

“At the last hee counselled thys, that a Picture shoulde bee made, showing so much skyrt as mighte reasonably bee gotte yn, and a Notice set below toe thys effect: ‘Item, two yards and a Half Ditto, and then the Feet.’ But thys no Whit contented mee, and thereon I shut hym ynto the Cellar, where hee remaned three Weeks, growing dayly thinner and thinner, till at the last hee floted up and downe like a Feather.

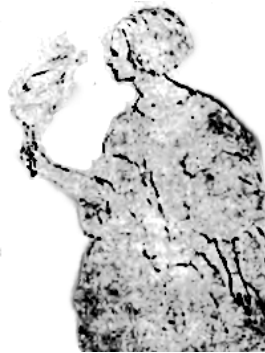
“Now yt fell at thys tyme, as I questioned hym on a certyn Day, yf hee woulde nowe take mee at full-length, and hee replying untoe mee, yn a little moning Voyce, lyke a Gnat, one chaunced to open the Door: whereat the Draft before hym uppe ynto a Cracke of the Ceiling, and I remaned awaytyng hym, holding uppe my Torche, until such time as I also faded ynto a Ghost, yet stickyng untoe the Wall.”

Then did my Loorde and the Companie haste down ynto the Cellar, for to see thys straunge sight, to whych place when they came, my Loorde bravely drew hys sword, loudly crying “Death!” (though to whom or what he explained not); then some went yn, but the more part hung back, urging on those yn front, not soe largely bye example, as Words of cheer: yet at last all entered, my Loorde last.

Then they removed from the wall the Casks and other stuff, and founde the sayd Ghost, dredful toe relate, yet extant on the Wall, at which horrid sight such screams were raysed as yn these days are seldom or never herde: some faynted, others bye large drafts of Beer saved themselves from that Extremity, yet were they scarcely alive for Feer.

Then dyd the Ladye speak unto them yn suchwise:—

“Here I bee, and here I byde,
Till such tyme as yt betyde
That a Ladye of thys place,
Lyke to mee yn name and face,
(Though my name bee never known,
My initials shall bee shown,)
Shall be fotograffed aright—
Hedde and Feet bee both yn sight—
Then my face shall disappear,
Nor agayn affrite you heer.”



Then sayd Matthew Dixon unto her, “Wherefore holdest thou uppe that Torche?” to whych shee answered, “Candles Gyve Light”: but none understood her.

After thys a thyn Voyce sayd from overhedde:

“Yn the Auckland Castell cellar,
Long, long ago,
I was shut—a brisk young feller—
Woe, woe, ah woe!
To take her at full-lengthe
I never hadde the strengthe
Tempore (and soe I tell her)
Praeterito!

Parody on *Long long ago*
by Thomas H.
Bayly

(Yn thys Chorus they durst none joyn, seeing that Latyn was untoe them a Tongue unknown.)

“She was hard—oh, she was cruel—
Long, long ago,
Starved mee here—not even gruel—
No, believe mee, no!—
Frae Scotland could I flee,
I’d gie my last bawbee,—
Arrah, bhoys, fair play’s a jhewel,
Lave me, darlints, goe!”

Then my Loorde, putting bye hys Sworde, (whych was layd up thereafter, yn memory of soe grete Bravery,) bade hys Butler fetch hym presentlie a Vessel of Beer, whych when yt was brought at hys nod, (nor, as hee merrily sayd, hys “nod, and Bec, and wreathed smyle,”) hee drank hugelie thereof: “for why?” quoth hee, “surely a Bec ys no longer a Bec, when yt ys Dry.”

3.10 A Photographer's Day Out

Source: South Shields Amateur Magazine, 1860

By Lewis Carroll

I am shaken, and sore, and stiff, and bruised. As I have told you many times already, I haven't the least idea how it happened, and there is no use in plaguing me with any more questions about it. Of course, if you wish it, I can read you an extract from my diary, giving a full account of the events of yesterday, but if you expect to find any clue to the mystery in *that*, I fear you are doomed to be disappointed.

AUGUST 23, TUESDAY.—They say that we Photographers are a blind race at best; that we learn to look at even the prettiest faces as so much light and shade; that we seldom admire, and never love. This is a delusion I long to break through—if I could only find a young lady to photograph, realising *my* ideal of beauty—above all, if her name should be—(why is it, I wonder, that I dote on the name Amelia more than any other word in the English language?)—I feel sure that I could shake off this cold, philosophic lethargy.

The time has come at last. Only this evening I fell in with young Harry Glover in the Haymarket—"Tubbs!" he shouted, slapping me familiarly on the back, "my Uncle wants you down to-morrow at his Villa, camera and all!"

"But I don't know your uncle," I replied, with my characteristic caution. (N.B. If I have a virtue, it is quiet, gentlemanly caution.)

"Never mind, old boy, he knows all about *you*. You be off by the early train, and take your whole kit of bottles, for you'll find lots of faces to uglify, and—"

"Can't go," I said rather gruffly, for the extent of the job alarmed me, and I wished to cut him short, having a decided objection to talking slang in the public streets.

"Well, they'll be precious cut up about it, that's all," said Harry, with rather a blank face, "and my cousin Amelia—"

"Don't say another word!" I cried enthusiastically, "I'll go!" And as my omnibus came by at the moment, I jumped in and rattled off before he had recovered his astonishment at my change of manner. So it is settled, and to-morrow I am to see an Amelia, and—oh Destiny, what hast thou in store for me?

AUGUST 24, WEDNESDAY.—A glorious morning. Packed in a great hurry, luckily breaking only two bottles and three glasses in doing so. Arrived at Rosemary Villa as the party were sitting down to breakfast. Father, mother, two sons from school, a host of children from the nursery, and the inevitable BABY.

But how shall I describe the daughter? words are powerless; nothing but a Talbotype could do it. Her nose was in beautiful perspective—her mouth wanting perhaps the last possible foreshortening—but the exquisite half-tints on the cheek could have blinded one to any defects, and as to the high light on her chin, it was (photographically speaking) perfection. Oh! what a picture she would have made if fate had not—but I am anticipating.

There was a Captain Flanagan present—

I am aware that the preceding paragraph is slightly abrupt, but when I reached that point, I remembered that the idiot actually believed himself engaged to Amelia, (*my* Amelia!) I choked, and could get no further. His figure,

I am willing to admit, was good: some might have admired his face; but what is face or figure without brains?

My own figure is perhaps a *little* inclined to the robust; in stature I am none of your military giraffes—but why should I describe myself? my photograph (done by myself) will be sufficient evidence to the world.

The breakfast, no doubt, was good, but I knew not what I ate or drank; I lived for Amelia only, and as I gazed on that peerless brow, those chiselled features, I clenched my fist in an involuntary transport (upsetting my coffee-cup in doing so), and mentally exclaimed, “I will photograph that woman, or perish in the attempt!”

After breakfast the work of the day commenced, which I will here briefly record.

PICTURE 1.—Paterfamilias. This I wanted to try again, but they all declared it would do very well, and had “just his usual expression;” though unless his usual expression was that of a man with a bone in his throat, endeavouring to alleviate the agony of choking by watching the end of his nose with both eyes, I must admit that this was too favourable a statement of the case.

PICTURE 2.—Materfamilias. She told us with a simper, as she sat down, that she “had been very fond of private theatricals in her youth,” and that she “wished to be taken in a favourite Shakespearian character.” What the character was, after long and anxious thought on the subject, I have given up as a hopeless mystery, not knowing any one of his heroines in whom an attitude of such spasmodic energy could have been combined with a face of such blank indifference, or who could have been thought appropriately costumed in a blue silk gown, with a Highland scarf over one shoulder, a ruffle of Queen Elizabeth’s time round the throat, and a hunting-whip.

* * * * *

PICTURE 3.—17th sitting. Placed the baby in profile. After waiting till the usual kicking had subsided, uncovered the lens. The little wretch instantly threw its head back, luckily only an inch, as it was stopped by the nurse’s nose, establishing the infant’s claim to “first blood” (to use a sporting phrase). This, of course, gave *two* eyes in the result, something that might be called a nose, and an unnaturally wide mouth. Called it a full-face accordingly and went on to

PICTURE 4.—The three younger girls, as they would have appeared, if by any possibility a black dose could have been administered to each of them at the same moment, and the three tied together by the hair before the expression produced by the medicine has subsided from any of their faces. Of course, I kept this view of the subject to myself, and merely said that “it reminded me of a picture of the three Graces,” but the sentence ended in an involuntary groan, which I had the greatest difficulty in converting into a cough.

PICTURE 5.—This was to have been the great artistic triumph of the day; a family group, designed by the two parents, and combining the domestic with the allegorical. It was intended to represent the baby being crowned with flowers, by the united efforts of the children, regulated by the advice of the father, under the personal superintendence of the mother; and to combine with this the secondary meaning of “Victory transferring her laurel crown to Innocence, with Resolution, Independence, Faith, Hope and Charity, assisting in the graceful

task, while Wisdom looks benignly on, and smiles approval!" Such, I say, was the *intention*; the result, to any unprejudiced observer, was capable of but one interpretation—that the baby was in a fit—that the mother, (doubtless under some erroneous notions of the principles of Human Anatomy,) was endeavouring to recover it by bringing the crown of its head in contact with its chest—that the two boys, seeing no prospect for the infant but immediate destruction, were tearing out some locks of its hair as mementoes of the fatal event—that two of the girls were waiting for a chance at the baby's hair, and employing the time in strangling the third—and that the father, in despair at the extraordinary conduct of his family, had stabbed himself, and was feeling for his pencil case, to make a memorandum of having done so.

All this time I had no opportunity of asking my Amelia for a sitting, but during luncheon I succeeded in finding one, and, after introducing the subject of photographs in general, I turned to her and said, "before the day is out, Miss Amelia, I hope to do myself the honour of coming to *you* for a negative."

With how sweet a smile she replied "certainly, Mr. Tubbs. There is a cottage near here, that I wish you would try after luncheon, and when you've done that, I shall be at your service."

Faix! an' I hope she'll give you a decoisive one!" broke in that awkward Captain Flanagan, "won't you, Mely Darlint?" "I trust so, Captain Flanagan," I interposed with great dignity: but all politeness is wasted on that animal; he broke into a great "haw! haw!" and Amelia and I could hardly refrain from laughing at his folly. She, however, with ready tact turned it off, saying to the bear, come, come, Captain, we mustn't be *too* hard on him! (Hard on *me!* on *me!* bless thee, Amelia!)

The sudden happiness of that moment nearly overcame me; tears rose to my eyes as I thought, "the wish of a Life is accomplished! I shall photograph an Amelia!" Indeed, I almost think I should have gone down on my knees to thank her, had not the table-cloth interfered with my so doing, and had I not known what a difficult position it is to recover from.

However, I seized an opportunity toward the conclusion of the meal to give utterance to my overwrought feelings: turning toward Amelia, who was sitting next to me, I had just murmured the words, "there beats in this bosom a heart," when a general silence warned me to leave the sentence unfinished. With the most admirable presence of mind she said, "some tart, did you say, Mr Tubbs? Captain Flanagan, may I trouble you to cut Mr Tubbs some of that tart?"

"It's nigh done," said the captain, poking his great head almost into it, "will I send him the dish, Mely?"

"No, sir!" I interrupted, with a look that ought to have crushed him, but he only grinned and said, "Don't be modest now, Tubbs, me bhoy, sure there's plenty more in the larder."

Amelia was looking anxiously at me, so I swallowed my rage—and the tart.

Luncheon over, after receiving directions by which to find the cottage, I attached to my camera the hood used for developing pictures in the open air, placed it over my shoulder, and set out for the hill which had been pointed out to me.

My Amelia was sitting in the window working, as I passed with the machine; the Irish idiot was with her. In reply to my look of undying affection, she said anxiously, "I'm sure that's too heavy for you, Mr Tubbs. Won't you have a boy to carry it?"

“Or a donkey?” giggled the captain.

I pulled up short, and faced round, feeling that now, if ever, the dignity of Man, and the liberty of the subject, must be asserted. To *her* I merely said, “thanks, thanks!” kissing my hand as I spoke; then, fixing my eyes on the idiot at her side, I hissed through my clenched teeth, “*we shall meet again, Captain!*”

“Sure, I hope so, Tubbs,” said the unconscious blockhead, “sharp six is the dinner hour, mind!” A cold shiver passed over me; I had made my great effort, and had *failed*; I shouldered my camera again, and strode moodily on.

Two steps, and I was myself again; *her* eyes, I knew, were upon me, and once more I trod the gravel with an elastic tread. What mattered to me, in that moment, the whole tribe of captains? should *they* disturb my equanimity?

The hill was nearly a mile from the house, and I reached it tired and breathless. Thoughts of Amelia, however, bore me up. I selected the best point of view for the cottage, so as to include a farmer and a cow in the picture, cast one fond look towards the distant villa, and, muttering, “Amelia, ’tis for thee!” removed the lid of the lens; in 1 minute and 40 seconds I replaced it: “it is over!” I cried in uncontrollable excitement, “Amelia, thou art mine!”

Eagerly, tremblingly, I covered my head with the hood, and commenced the development. Trees rather misty—well! the wind had blown them about a little; *that* wouldn’t show much—the farmer? well, *he* had walked on a yard or two, and I should be sorry to state how many legs and arms he appeared with—never mind! call him a spider, a centipede, anything—the cow? I must, however, reluctantly, confess that the cow had three heads, and though such an animal may be curious, it is *not* picturesque. However, there could be no mistake about the cottage; its chimnies were all that could be desired, and, “all things considered,” I thought, “Amelia will——”

At this point my soliloquy was interrupted by a tap on the shoulder, more, peremptory than suggestive. I withdrew myself from the hood, need I say with what quiet dignity? and turned upon the stranger. He was a thick-built man, vulgar in dress, repulsive in expression, and carried a straw in his mouth: his companion outdid him in these peculiarities. “Young man,” began the first “y’are trespassing here, and ya mun take yourself off, and no bones about it.” I need hardly say that I took no notice of this remark, but took up the bottle of hypo-sulphate of soda, and proceeded to fix the picture; he tried to stop me; I resisted: the negative fell, and was broken. I remember nothing further, except that I have an indistinct notion that I hit somebody.

If you can find anything in what I have just read to you to account for my present condition, you are welcome to do so; but, as I before remarked, all I can tell you is that I am shaken, and sore, and stiff, and bruised, and that how I came so I haven’t the faintest idea.

3.11 Bruno's Revenge

Source: Aunt Judy's Magazine, December 1867; illustration by F. Gilbert

Other version:
→ 2.5, p. 395



It was a very hot afternoon—too hot to go for a walk or do anything—or else it wouldn't have happened, I believe.

In the first place, I want to know why fairies should always be teaching *us* to do our duty, and lecturing *us* when we go wrong, and we should never teach

them anything? You can't mean to say that fairies are never greedy, or selfish, or cross, or deceitful, because that would be nonsense, you know. Well then, don't you agree with me that they might be all the better for a little scolding and punishing now and then?

I really don't see why it shouldn't be tried, and I'm almost sure (only *please* don't repeat this loud in the woods) that if you could only catch a fairy, and put it in the corner, and give it nothing but bread and water for a day or two, you'd find it quite an improved character—it would take down its conceit a little, at all events.

The next question is, what is the best time for seeing fairies? I believe I can tell you all about that.

The first rule is, that it must be a *very* hot day—that we may consider as settled: and you must be just a *little* sleepy—but not too sleepy to keep your eyes open, mind. Well, and you ought to feel a little—what one may call “fairyish”—the Scotch call it “eerie,” and perhaps that's a prettier word; if you don't know what it means, I'm afraid I can hardly explain it; you must wait till you meet a fairy, and then you'll know.

And the last rule is, that the crickets shouldn't be chirping. I can't stop to explain that rule just now—you must take it on trust for the present.

So, if all these things happen together, you've a good chance of seeing a fairy—or at least a much better chance than if they didn't.

The one I'm going to tell you about was a real, naughty little fairy. Properly speaking, there were two of them, and one was naughty and one was good, but perhaps you would have found that out for yourself.

Now we really *are* going to begin the story.

It was Tuesday afternoon, about half past three—it's always best to be particular as to dates—and I had wandered down into the wood by the lake, partly because I had nothing to do, and that seemed to be a good place to do it in, and partly (as I said at first) because it was too hot to be comfortable anywhere, except under trees.

The first thing I noticed, as I went lazily along through an open place in the woods, was a large beetle lying struggling on its back, and I went down directly on one knee to help the poor thing on its feet again. In some things, you know, you can't be quite sure what an insect would like: for instance, I never could quite settle, supposing I were a moth, whether I would rather be kept out of the candle, or be allowed to fly straight in and get burnt—or again, supposing I were a spider, I'm not sure if I should be *quite* pleased to have my web torn down, and the fly let loose—but I felt quite certain that, if I were a beetle and had rolled over on my back, I should always be glad to be helped up again.

So, as I was saying, I had gone down on one knee, and was just reaching out a little stick to turn the beetle over, when I saw a sight that made me draw back hastily and hold my breath, for fear of making any noise and frightening the little creature away.

Not that she looked as if she would be easily frightened: she seemed so good and gentle that I'm sure she would never expect that any one could wish to hurt her. She was only a few inches high, and was dressed in green, so that you really would hardly have noticed her among the long grass; and she was so delicate and graceful that she quite seemed to belong to the place, almost as if she were one of the flowers. I may tell you, besides, that she had no wings (I don't believe in fairies with wings), and that she had quantities of long brown

hair and large earnest brown eyes, and then I shall have done all I can to give you an idea of what she was like.

Sylvie (I found out her name afterwards) had knelt down, just as I was doing, to help the beetle; but it needed more than a little stick for *her* to get it on its legs again; it was as much as she could do, with both arms, to roll the heavy thing over; and all the while she was talking to it, half scolding and half comforting, as a nurse might do with a child that had fallen down.

“There, there! You needn’t cry so much about it; you’re not killed yet—though if you were, you couldn’t cry, you know, and so it’s a general rule against crying, my dear! And how did you come to tumble over? But I can see well enough how it was—I needn’t ask you that—walking over sand-pits with your chin in the air, as usual. Of course if you go among sand-pits like that, you must expect to tumble; you should look.”

The beetle murmured something that sounded like “I *did* look,” and Sylvie went on again:

“But I know you didn’t! You never do! You always walk with your chin up—you’re so dreadfully conceited. Well, let’s see how many legs are broken this time. Why, none of them, I declare! though that’s certainly more than you deserve. And what’s the good of having six legs, my dear, if you can only kick them all about in the air when you tumble? Legs are meant to walk with, you know. Now don’t be cross about it, and don’t begin putting out your wings yet; I’ve some more to say. Go down to the frog that lives behind that buttercup—give him my compliments—Sylvie’s compliments—can you say ‘compliments’?”

The beetle tried and, I suppose, succeeded.

“Yes, that’s right. And tell him he’s to give you some of that salve I left with him yesterday. And you’d better get him to rub it in for you; he’s got rather cold hands, but you mustn’t mind that.”

I think the beetle must have shuddered at this idea, for Sylvie went on in a graver tone—“Now you needn’t pretend to be so particular as all that, as if you were too grand to be rubbed by a frog. The fact is, you ought to be very much obliged to him. Suppose you could get nobody but a toad to do it, how would you like that?”

There was a little pause, and then Sylvie added, “Now you may go. Be a good beetle, and don’t keep your chin in the air.” And then began one of those performances of humming, and whizzing, and restless banging about, such as a beetle indulges in when it has decided on flying, but hasn’t quite made up its mind which way to go. At last, in one of its awkward zigzags, it managed to fly right into my face, and by the time I had recovered from the shock, the little fairy was gone.

I looked about in all directions for the little creature, but there was no trace of her—and my “eerie” feeling was quite gone off, and the crickets were chirping again merrily—so I knew she was really gone.

And now I’ve got time to tell you the rule about the crickets. They always leave off chirping when a fairy goes by—because a fairy’s a kind of queen over them, I suppose—at all events it’s a much grander thing than a cricket—so whenever you’re walking out, and the crickets suddenly leave off chirping, you may be sure that either they see a fairy, or else they’re frightened at your coming so near.

I walked on sadly enough, you may be sure. However, I comforted myself with thinking “It’s been a very wonderful afternoon, so far—I’ll just go quietly

on and look about me, and I shouldn't wonder if I come across another fairy somewhere."

Peering about in this way, I happened to notice a plant with rounded leaves, and with queer little holes cut out in the middle of several of them. "Ah! The leafcutter bee," I carelessly remarked—you know I am very learned in natural history (for instance, I can always tell kittens from chickens at one glance)—and I was passing on, when a sudden thought made me stoop down and examine the leaves more carefully.

Then a little thrill of delight ran through me—for I noticed that the holes were all arranged so as to form letters; there were three leaves side by side, with "B," "R," and "U" marked on them, and after some search I found two more, which contained an "N" and an "O."

By this time the "eerie" feeling had all come back again, and I suddenly observed that no crickets were chirping; so I felt quite sure that "Bruno" was a fairy, and that he was somewhere very near.

And so indeed he was—so near that I had very nearly walked over him without seeing him; which would have been dreadful, always supposing that fairies *can* be walked over—my own belief is that they are something of the nature of will-o'-the-wisps, and there's no walking over *them*.

Think of any pretty little boy you know, rather fat, with rosy cheeks, large dark eyes, and tangled brown hair, and then fancy him made small enough to go comfortably into a coffee-cup, and you'll have a very fair idea of what the little creature was like.

"What's your name, little fellow?" I began, in as soft a voice as I could manage. And, by the way, that's another of the curious things in life that I never could quite understand—why we always begin by asking little children their names; is it because we fancy there isn't quite enough of them, and a name will help to make them a little bigger? You never thought of asking a real large man his name, now, did you? But, however that may be, I felt it quite necessary to know *his* name; so, as he didn't answer my question, I asked it again a little louder. "What's your name, my little man?"

"What's yours?" he said, without looking up.

"My name's Lewis Carroll," I said, quite gently, for he was much too small to be angry with for answering so uncivilly.

"Duke of Anything?" he asked, just looking at me for a moment and then going on with his work.

"Not Duke at all," I said, a little ashamed of having to confess it.

"You're big enough to be two Dukes," said the little creature; "I suppose you're Sir Something, then?"

"No," I said, feeling more and more ashamed. "I haven't got any title."

The fairy seemed to think that in that case I really wasn't worth the trouble of talking to, for he quietly went on digging, and tearing the flowers to pieces as fast as he got them out of the ground.

After a few minutes I tried again. "*Please* tell me what your name is."

"B'uno," the little fellow answered, very readily: "why didn't you say 'please' before?"

"That's something like what we used to be taught in the nursery," I thought to myself, looking back through the long years (about a hundred and fifty of them) to the time when I used to be a little child myself. And here an idea

came into my head, and I asked him "Aren't you one of the fairies that teach children to be good?"

"Well, we have to do that sometimes," said Bruno. "and a d'eadful bother it is." As he said this he savagely tore a heartsease in two, and trampled on the pieces.

"What *are* you doing there, Bruno?" I said.

"Spoiling Sylvie's garden," was all the answer Bruno would give at first. But, as he went on tearing up the flowers, he muttered to himself "The nasty c'oss thing—wouldn't let me go and play this morning, though I wanted to ever so much—said I must finish my lessons first—lessons, indeed!—I'll vex her finely, though!"

"Oh, Bruno, you shouldn't do that!" I cried. "Don't you know that's revenge? And revenge is a wicked, cruel, dangerous thing!"

"River-edge?" said Bruno. "What a funny word! I suppose you call it c'ooel and dangerous because if you went too far and tumbled in, you'd get d'owned."

"No, not river-edge," I explained; "rev-enge" (saying the word very slowly and distinctly). But I couldn't help thinking that Bruno's explanation did very well for either word.

"Oh!" said Bruno, opening his eyes very wide, but without attempting to repeat the word.

"Come! Try and pronounce it, Bruno!" I said cheerfully. "Rev-enge, rev-enge."

But Bruno only tossed his little head, and said he couldn't; that his mouth wasn't the right shape for words of that kind. And the more I laughed, the more sulky the little fellow got about it.

"Well, never mind, little man!" I said. "Shall I help you with the job you've got there?"

"Yes, please," Bruno said, quite pacified. "Only I wish I could think of something to vex her more than this. You don't know how hard it is to make her ang'y!"

"Now listen to me, Bruno, and I'll teach you quite a splendid kind of revenge!"

"Something that'll vex her finely?" Bruno asked with gleaming eyes.

"Something that'll vex her finely. First, we'll get up all the weeds in her garden. See, there are a good many at this end—quite hiding the flowers."

"But *that* won't vex her," said Bruno, looking rather puzzled.

"After that," I said, without noticing the remark, "we'll water this highest bed—up here. You see, it's getting quite dry and dusty."

Bruno looked at me inquisitively, but he said nothing this time.

"Then after that," I went on, "the walks want sweeping a bit; and I think you might cut down that tall nettle—it's so close to the garden that it's quite in the way—"

"What *are* you talking about?" Bruno impatiently interrupted me. "All that won't vex her a bit!"

"Won't it?" I said, innocently. "Then, after that, suppose we put in some of these coloured pebbles—just to mark the divisions between the different kinds of flowers, you know. That'll have a very pretty effect."

Bruno turned round and had another good stare at me. At last there came an odd little twinkle in his eye, and he said, with quite a new meaning in his voice, "Ve'y well—let's put 'em in rows—all the 'ed together, and all the blue together."

"That'll do capitally," I said; "and then—what kind of flowers does Sylvie like best in her garden?"

Bruno had to put his thumb in his mouth and consider a little before he could answer. "Violets," he said, at last.

"There's a beautiful bed of violets down by the lake——"

"Oh, let's fetch 'em!" cried Bruno, giving a little skip into the air. "Here! Catch hold of my hand and I'll help you along. The g'ass is rather thick down that way."

I couldn't help laughing at his having so entirely forgotten what a big creature he was talking to. "No, not yet, Bruno," I said; "we must consider what's the right thing to do first. You see we've got quite a business before us."

"Yes, let's consider," said Bruno, putting his thumb into his mouth again, and sitting down upon a dead mouse.

"What do you keep that mouse for?" I said. "You should bury it, or throw it into the lake."

"Why, it's to measure with!" cried Bruno. "How ever would you do a garden without one? We make each bed th'ee mouses and a half long, and two mouses wide."

I stopped him, as he was dragging it off by the tail to show me how it was used, for I was half afraid the "eerie" feeling might go off before we had finished the garden, and in that case I should see no more of him or Sylvie. "I think the best way will be for *you* to weed the beds, while *I* sort out these pebbles, ready to mark the walks with."

"That's it!" cried Bruno. "And I'll tell you about the caterpillars while we work."

"Ah, let's hear about the caterpillars," I said, as I drew the pebbles together into a heap, and began dividing them into colours.

And Bruno went on in a low, rapid tone, more as if he were talking to himself. "Yesterday I saw two little caterpillars, when I was sitting by the brook, just where you go into the wood. They were quite g'een, and they had yellow eyes, and they didn't see *me*. And one of them had got a moth's wing to carry—a g'eat b'own moth's wing, you know, all d'y, with feathers. So he couldn't want it to eat, I should think—perhaps he meant to make a cloak for the winter?"

"Perhaps," I said, for Bruno had twisted up the last word into a sort of question, and was looking at me for an answer.

One word was quite enough for the little fellow, and he went on merrily. "Well, and so he didn't want the other caterpillar to see the moth's wing, you know—so what must he do but t'y to carry it with all his left legs, and he t'ied to walk on the other set. Of course he toppled over after that."

"After what?" I said, catching the last word, for, to tell the truth, I hadn't been attending much.

"He toppled over," Bruno repeated, very gravely, "and if *you* ever saw a caterpillar topple over, you'd know it's a serious thing, and not sit g'inning like that—and I shan't tell you any more."

"Indeed and indeed, Bruno, I didn't mean to grin. See, I'm quite grave again now."

But Bruno only folded his arms, and said "Don't tell *me*. I see a little twinkle in one of your eyes—just like the moon."

"Am *I* like the moon, Bruno?" I asked.

"Your face is large and round like the moon," Bruno answered, looking at me thoughtfully. "It doesn't shine quite so bright—but it's cleaner."

I couldn't help smiling at this. "You know I wash *my* face, Bruno. The moon never does that."

"Oh, doesn't she though!" cried Bruno; and he leant forwards and added in a solemn whisper "The moon's face gets dirtier and dirtier every night, till it's black all ac'oss. And then, when it's dirty all over—*so*—" (he passed his hand across his own rosy cheeks as he spoke) "then she washes it."

"And then it's all clean again, isn't it?"

"Not all in a moment," said Bruno. "What a deal of teaching you want! She washes it little by little—only she begins at the other edge."

By this time he was sitting quietly on the dead mouse with his arms folded, and the weeding wasn't getting on a bit: so I was obliged to say "Work first and pleasure afterwards—no more talking till that bed's finished."

After that we had a few minutes of silence, while I sorted out the pebbles, and amused myself with watching Bruno's plan of gardening. It was quite a new plan to me: he always measured each bed before he weeded it, as if he was afraid the weeding would make it shrink; and once, when it came out longer than he wished, he set to work to thump the mouse with his tiny fist, crying out "There now! It's all 'ong again! Why don't you keep your tail st'aight when I tell you!"

"I'll tell you what I'll do," Bruno said in a half-whisper, as we worked: "I'll get you an invitation to the king's dinner-party. I know one of the head-waiters."

I couldn't help laughing at this idea. "Do the waiters invite the guests?" I asked.

"Oh, not *to sit down!*" Bruno hastily replied. "But to help, you know. You'd like that, wouldn't you? To hand about plates, and so on."

"Well, but that's not so nice as sitting at the table, is it?"

"Of course it isn't," Bruno said, in a tone as if he rather pitied my ignorance; "but if you're not even Sir Anything, you can't expect to be allowed to sit at the table, you know."

I said, as meekly as I could that I didn't expect it, but it was the only way of going to a dinner-party that I really enjoyed. And Bruno tossed his head, and said, in a rather offended tone, that I might do as I pleased—there were many he knew that would give their ears to go.

"Have you ever been yourself, Bruno?"

"They invited me once last year," Bruno said, very gravely. "It was to wash up the soup-plates—no, the cheese-plates I mean—that was g'and enough. But the g'andest thing of all was, *I* fetched the Duke of Dandelion a glass of cider!"

"That *was* grand!" I said, biting my lip to keep myself from laughing.

"Wasn't it?" said Bruno, very earnestly. "You know it isn't every one that's had such an honour as *that!*"

This set me thinking of the various queer things we call "an honour" in this world, which, after all, haven't a bit more honour in them than what the dear little Bruno enjoyed (by the way, I hope you're beginning to like him a little, naughty as he was?) when he took the Duke of Dandelion a glass of cider.

I don't know how long I might have dreamed on in this way, if Bruno hadn't suddenly roused me. "Oh, come here quick!" he cried, in a state of the wildest excitement. "Catch hold of his other horn! I can't hold him more than a minute!"

He was struggling desperately with a great snail, clinging to one of its horns, and nearly breaking his poor little back in his efforts to drag it over a blade of grass.

I saw we should have no more gardening if I let this sort of thing go on, so I quietly took the snail away, and put it on a bank where he couldn't reach it. "We'll hunt it afterwards, Bruno," I said, "if you really want to catch it. But what's the use of it when you've got it?"

"What's the use of a fox when you've got it?" said Bruno. "I know you big things hunt foxes."

I tried to think of some good reason why "big things" should hunt foxes, and he shouldn't hunt snails, but none came into my head: so I said at last "Well, I suppose one's as good as the other. I'll go snail-hunting myself some day."

"I should think you wouldn't be so silly," said Bruno, "as to go snail-hunting all by yourself. Why, you'd never get the snail along, if you hadn't somebody to hold on to his other horn!"

"Of course I shan't go alone," I said, quite gravely. "By the way, is that the best kind to hunt, or do you recommend the ones without shells?"

"Oh no, we never hunt the ones without shells," Bruno said, with a little shudder at the thought of it. "They're always so c'oss about it; and then, if you tumble over them, they're ever so sticky!"

By this time we had nearly finished the garden. I had fetched some violets, and Bruno was just helping me to put in the last, when he suddenly stopped and said, "I'm tired."

"Rest, then," I said: "I can go on without you."

Bruno needed no second invitation: he at once began arranging the dead mouse as a kind of sofa. "And I'll sing you a little song," he said as he rolled it about.

"Do," said I: "there's nothing I should like better."

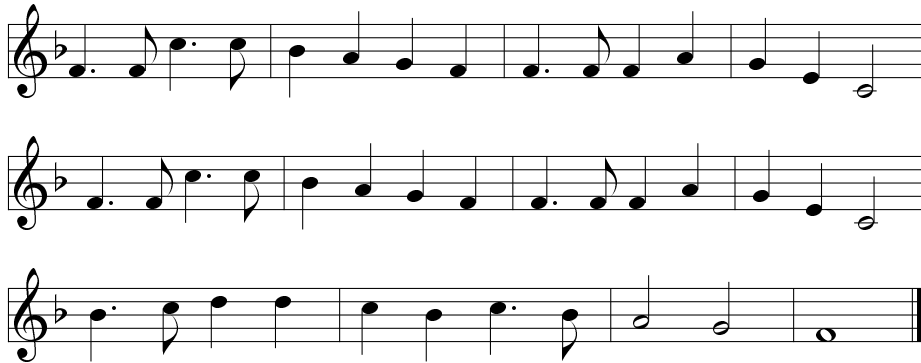
"Which song will you choose?" Bruno said, as he dragged the mouse into a place where he could get a good view of me. "'Ting, ting, ting,' is the nicest."

There was no resisting such a strong hint as this: however, I pretended to think about it for a moment, and then said: "Well, I like 'Ting, ting, ting' best of all."

"That shows you're a good judge of music," Bruno said, with a pleased look. "How many blue-bells would you like?" And he put his thumb into his mouth to help me to consider.

As there was only one blue-bell within easy reach, I said very gravely that I thought one would do *this* time, and I picked it and gave it to him. Bruno ran his hand once or twice up and down the flowers, like a musician trying an instrument, producing a most delicious delicate tinkling as he did so. I had never heard flower-music before—I don't think one can, unless one's in the "eerie" state—and I don't know quite how to give you an idea of what it was like, except by saying that it sounded like a peal of bells a thousand miles off. When he had satisfied himself that the flowers were in tune, he seated himself on the dead mouse (he never seemed really comfortable anywhere else), and, looking up at me with a merry twinkle in his eyes, he began. By the way, the tune was rather a curious one, and you might like to try it for yourself, so here are the notes.¹

¹Later Errata state:



“Rise, oh, rise! The daylight dies:
 The owls are hooting, ting, ting, ting!
 Wake, oh, wake! Beside the lake
 The elves are fluting, ting, ting, ting!
 Welcoming our fairy king
 We sing, sing, sing.”

He sang the first four lines briskly and merrily, making the blue-bells chime in time with the music; but the last two he sang quite slowly and gently, and merely waved the flowers backwards and forwards above his head. And when he had finished the first verse, he left off to explain. “The name of our fairy king is Obberwon” (he meant “Oberon,” I believe), “and he lives over the lake—*there*—and now and then he comes in a little boat—and then we go and meet him—and then we sing this song, you know.”

“And then you go and dine with him?” I said, mischievously.

“You shouldn’t talk,” Bruno hastily said: “it interrupts the song so.”

I said I wouldn’t do it again.

“I never talk myself when I’m singing,” he went on, very gravely; “so you shouldn’t either.” Then he tuned the blue-bells once more, and sang.

“Hear, oh, hear! From far and near
 A music stealing, ting, ting, ting!
 Fairy bells adown the dells
 Are merrily pealing, ting, ting, ting!
 Welcoming our fairy king
 We ring, ring, ring.

“See, oh, see! On every tree
 What lamps are shining, ting, ting, ting!
 They are eyes of fiery flies
 To light our dining, ting, ting, ting!
 Welcoming our fairy king
 They swing, swing, swing.

1st line of music 3rd bar, for FFFA read EFGA.
 2nd ” ” make same correction.
 3rd ” 2nd bar, for CBCB read CACB.

Only the third correction was applied in *Sylvie and Bruno*.

“Haste, oh, haste! to take and taste
The dainties waiting, ting, ting, ting!
Honey-dew is stored——”

“Hush, Bruno!” I interrupted, in a warning whisper. “She’s coming!”

Bruno checked his song only just in time for Sylvie not to hear him, and then, catching sight of her as she slowly made her way through the long grass, he suddenly rushed out headlong at her like a little bull, shouting “Look the other way! Look the other way!”

“Which way?” Sylvie asked, in rather a frightened tone, as she looked round in all directions to see where the danger could be.

“*That* way!” said Bruno, carefully turning her round with her face to the wood. “Now, walk backwards—walk gently—don’t be frightened: you shan’t t’ip!”

But Sylvie did “t’ip” notwithstanding: in fact he led her, in his hurry, across so many little sticks and stones, that it was really a wonder the poor child could keep on her feet at all. But he was far too much excited to think of what he was doing.

I silently pointed out to Bruno the best place to lead her to, so as to get a view of the whole garden at once: it was a little rising ground, about the height of a potato; and, when they had mounted it, I drew back into the shade, that Sylvie mightn’t see me.

I heard Bruno cry out triumphantly “*Now* you may look!” and then followed a great clapping of hands, but it was all done by Bruno himself. Sylvie was quite silent—she only stood and gazed with her hands clasped tightly together, and I was afraid she didn’t like it after all.

Bruno too was watching her anxiously, and when she jumped down off the mound, and began wandering up and down the little walks, he cautiously followed her about, evidently anxious that she should form her own opinion of it all, without any hint from him. And when at last she drew a long breath, and gave her verdict—in a hurried whisper, and without the slightest regard to grammar—“It’s the loveliest thing as I never saw in all my life before!” the little fellow looked as well pleased as if it had been given by all the judges and juries in England put together.

“And did you really do it all by yourself, Bruno?” said Sylvie. “And all for me?”

“I was helped a bit,” Bruno began, with a merry little laugh at her surprise. “We’ve been at it all the afternoon—I thought you’d like——” and here the poor little fellow’s lip began to quiver, and all in a moment he burst out crying, and running up to Sylvie he flung his arms passionately round her neck, and hid his face on her shoulder.

There was a little quiver in Sylvie’s voice too, as she whispered “Why, what’s the matter, darling?” and tried to lift up his head and kiss him.

But Bruno only clung to her, sobbing, and wouldn’t be comforted till he had confessed all. “I tried—to spoil your garden—first—but—I’ll never—never——” and then came another burst of tears, which drowned the rest of the sentence. At last he got out the words “I liked—putting in the flowers—for *you*, Sylvie—and I never was so happy before——” and the rosy little face came up at last to be kissed, all wet with tears as it was.

Sylvie was crying too by this time, and she said nothing but “Bruno, dear!” and “*I* never was so happy before—” though why two children who had never been so happy before should both be crying, was a great mystery to me.

I felt very happy too, but of course I didn’t cry: “big things” never do, you know—we leave all that to the fairies. Only I think it must have been raining a little just then, for I found a drop or two on my cheeks.

After that they went through the whole garden again, flower by flower, as if it were a long sentence they were spelling out, with kisses for commas, and a great hug by way of a full-stop when they got to the end.

“Do you know, that was my river-edge, Sylvie?” Bruno began, looking solemnly at her.

Sylvie laughed merrily. “What *do* you mean?” she said; and she pushed back her heavy brown hair with both hands, and looked at him with dancing eyes in which the big tear-drops were still glittering.

Bruno drew in a long breath, and made up his mouth for a great effort. “I mean rev—enge,” he said: “now you under’tand.” And he looked so happy and proud at having said the word right at last, that I quite envied him. I rather think Sylvie didn’t “under’tand” at all; but she gave him a little kiss on each cheek, which seemed to do just as well.

So they wandered off lovingly together, in among the buttercups, each with an arm twined round the other, whispering and laughing as they went, and never so much as once looked back at poor me. Yes, once, just before I quite lost sight of them, Bruno half turned his head, and nodded me a saucy little good-bye over one shoulder. And that was all the thanks I got for *my* trouble.

I know you’re sorry the story’s come to an end—aren’t you?—so I’ll just tell you one thing more. The very last thing I saw of them was this—Sylvie was stooping down with her arms round Bruno’s neck, and saying coaxingly in his ear “Do you know, Bruno, I’ve quite forgotten that hard word—do say it once more. Come! Only this once, dear!”

But Bruno wouldn’t try it again.

Lewis Carroll

3.12 The Wasp in a Wig

Source: proof sheets with a few corrections for a removed chapter (or rather not a whole chapter, but probably something that was meant to be a large part of one chapter, together with some parts of what are today chapters 8 and 9) from *Through the Looking-Glass*, 1870

[A very few steps brought her to the edge of the brook,] and she was just going to spring over, when she heard a deep sigh, which seemed to come from the wood behind her.

“There’s somebody *very* unhappy there,” she thought, looking anxiously back to see what was the matter. Something like a very old man (only that his face was more like a wasp) was sitting on the ground, leaning against a tree, all huddled up together, and shivering as if he were very cold.

“I don’t *think* I can be of any use to him,” was Alice’s first thought, as she turned to spring over the brook:—“but I’ll just ask him what’s the matter,” she added, checking herself on the very edge. “If I once jump over, everything will change, and then I can’t help him.”

So she went back to the Wasp—rather unwillingly, for she was *very* anxious to be a Queen.

“Oh, my old bones, my old bones!” he was grumbling, as Alice came up to him.

“It’s rheumatism, I should think,” Alice said to herself, and she stooped over him, and said very kindly, “I hope you’re not in much pain?”

The Wasp only shook his shoulders, and turned his head away. “Ah, dreary me!” he said to himself.

“Can I do anything for you?” Alice went on. “Aren’t you rather cold here?”

“How you go on!” the Wasp said in a peevish tone. “Worryity, worryity! There never was such a child!”

Alice felt rather offended at this answer, and was very nearly walking on and leaving him, but she thought to herself “Perhaps it’s only pain that makes him so cross.” So she tried once more.

“Won’t you let me help you round to the other side? You’ll be out of the cold wind there.”

The Wasp took her arm, and let her help him round the tree, but when he got settled down again he only said, as before, “Worryity, worryity! Can’t you leave a body alone?”

“Would you like me to read you a bit of this?” Alice went on, as she picked up a newspaper which had been lying at his feet.

“You may read it if you’ve a mind to,” the Wasp said, rather sulkily. “Nobody’s hindering you, that *I* know of.”

So Alice sat down by him, and spread out the paper on her knees, and began. “*Latest News. The Exploring Party have made another tour in the Pantry, and have found five new lumps of white sugar, large and in fine condition. In coming back—*”

“Any brown sugar?” the Wasp interrupted.

Alice hastily ran her eye down the paper and said “No. It says nothing about brown.”

“No brown sugar!” grumbled the Wasp. “A nice exploring party!”

“In coming back,” Alice went on reading, *“they found a lake of treacle. The banks of the lake were blue and white, and looked like china. While tasting the treacle, they had a sad accident: two of their party were engulfed—”*

“Were *what?*” the Wasp asked in a very cross voice.

“En-gulph-ed,” Alice repeated, dividing the word into syllables.

“There’s no such word in the language!” said the Wasp.

“It’s in this newspaper, though,” Alice said a little timidly.

“Let it stop there!” said the Wasp, fretfully turning away his head.

Alice put down the newspaper. “I’m afraid you’re not well,” she said in a soothing tone. “Can’t I do anything for you?”

“It’s all along of the wig,” the Wasp said in a much gentler voice.

“Along of the wig?” Alice repeated, quite pleased to find that he was recovering his temper.

“You’d be cross too, if you’d a wig like mine,” the Wasp went on. “They jokes at one. And they worrits one. And then I gets cross. And I gets cold. And I gets under a tree. And I gets a yellow handkerchief. And I ties up my face—as at the present.”

Alice looked pityingly at him. “Tying up the face is very good for the toothache,” she said.

“And it’s very good for the conceit,” added the Wasp.

Alice didn’t catch the word exactly. “Is that a kind of toothache?” she asked.

The Wasp considered a little. “Well, no,” he said: “it’s when you hold up your head—*so*—without bending your neck.”

“Oh, you mean stiff-neck,” said Alice.

The Wasp said “That’s a new-fangled name. They called it conceit in my time.”

“Conceit isn’t a disease at all,” Alice remarked.

“It is, though,” said the Wasp: “wait till you have it, and then you’ll know. And when you catches it, just try tying a yellow handkerchief round your face. It’ll cure you in no time!”

He untied the handkerchief as he spoke, and Alice looked at his wig in great surprise. It was bright yellow like the handkerchief, and all tangled and tumbled about like a heap of sea-weed. “You could make your wig much neater,” she said, “if only you had a comb.”

“What, you’re a Bee, are you?” the Wasp said, looking at her with more interest. “And you’ve got a comb. Much honey?”

“It isn’t that kind,” Alice hastily explained. “It’s to comb hair with—your wig’s so *very* rough, you know.”

“I’ll tell you how I came to wear it,” the Wasp said. “When I was young, you know, my ringlets used to wave—”

A curious idea came into Alice’s head. Almost every one she had met had repeated poetry to her, and she thought she would try if the Wasp couldn’t do it too. “Would you mind saying it in rhyme?” she asked very politely.

“It ain’t what I’m used to,” said the Wasp: “however I’ll try; wait a bit.” He was silent for a few moments, and then began again—

*“When I was young, my ringlets waved
And curled and crinkled on my head:
And then they said ‘You should be shaved,
And wear a yellow wig instead.’*

*But when I followed their advice,
 And they had noticed the effect,
 They said I did not look so nice
 As they had ventured to expect.
 They said it did not fit, and so
 It made me look extremely plain:
 But what was I to do, you know?
 My ringlets would not grow again.
 So now that I am old and gray,
 And all my hair is nearly gone,
 They take my wig from me and say
 'How can you put such rubbish on?'
 And still, whenever I appear,
 They hoot at me and call me 'Pig!'
 And that is why they do it, dear,
 Because I wear a yellow wig."*

"I'm very sorry for you," Alice said heartily: "and I think if your wig fitted a little better, they wouldn't tease you quite so much."

"Your wig fits very well," the Wasp murmured, looking at her with an expression of admiration: "it's the shape of your head as does it. Your jaws ain't well shaped, though—I should think you couldn't bite well?"

Alice began with a little scream of laughter, which she turned into a cough as well as she could. At last she managed to say gravely, "I can bite anything I want."

"Not with a mouth as small as that," the Wasp persisted. "If you was a-fighting, now—could you get hold of the other one by the back of the neck?"

"I'm afraid not," said Alice.

"Well, that's because your jaws are too short," the Wasp went on: "but the top of your head is nice and round." He took off his own wig as he spoke, and stretched out one claw towards Alice, as if he wished to do the same for her, but she kept out of reach, and would not take the hint. So he went on with his criticisms.

"Then your eyes—they're too much in front, no doubt. One would have done as well as two, if you *must* have them so close—"

Alice did not like having so many personal remarks made on her, and as the Wasp had quite recovered his spirits, and was getting very talkative, she thought she might safely leave him. "I think I must be going on now," she said. "Good-bye."

"Good-bye, and thank-ye," said the Wasp, and Alice tripped down the hill again, quite pleased that she had gone back and given a few minutes to making the poor old creature comfortable.

3.13 Isa's Visit to Oxford. 1888.

Source: manuscript written for Isa Bowman's visit, 1888

Chap. I.

On Wednesday, the Eleventh of July, Isa happened to meet a friend at Paddington Station at half-past-ten. She can't remember his name, but she says he was an old old old gentleman, and he had invited her, she thinks, to go with him somewhere or other, she can't remember where.

Chap. II.

The first thing they did, after calling at a shop, was to go to the Panorama of the "Falls of Niagara". Isa thought it very wonderful. You seemed to be on the top of a tower, with miles and miles of country all round you. The things in front were real, and somehow they joined into the picture behind, so that you couldn't tell where the real things ended and the picture began. Near the foot of the Falls, there was a steam-packet crossing the river, which showed what a tremendous height the Falls must be, it looked so tiny. In the road in front were two men and a dog, standing looking the other way. They may have been wooden figures, or part of the picture, there was no knowing which. The man, who stood next to Isa, said to another man "That dog looked round just now. Now see, I'll whistle to him, and make him look round again!" And he began whistling: and Isa almost expected, it looked so exactly like a real dog, that it would turn its head to see who was calling it!

After that Isa and her friend (the Aged Aged Man) went to the house of a Mr Dymes. Mrs Dymes gave them some dinner, and two of her children, called Helen and Maud, went with them to Terry's Theatre, to see the play of "Little Lord Fauntleroy". Little Véra Beringer was the little Lord Fauntleroy. Isa would have liked to play the part, but the Manager at the Theatre did not allow her, as she did not know the words, which would have made it go off badly. Isa liked the whole play very much: the passionate old Earl, and the gentle Mother of the little boy, and the droll "Mr. Hobbs", and all of them.

Then they all went off by the Metropolitan Railway, and the two Miss Dymeses got out at their station, and Isa and the A. A. M. went on to Oxford. A kind old lady, called Mrs Symonds, had invited Isa to come and sleep at her house: and she was soon fast asleep, and dreaming that she and little Lord Fauntleroy were going in a steamer down the Falls of Niagara, and whistling to a dog, who was in such a hurry to go *up* the Falls that he wouldn't attend to them.

Chap. III.

The next morning Isa set off, almost before she was awake, with the A. A. M., to pay a visit to a little College, called "Christ Church". You go in under a magnificent tower, called "Tom Tower", nearly four feet high (so that Isa had hardly to stoop at all, to go under it) into the Great Quadrangle (which very vulgar people call "Tom Quad".) You should always be polite, even when speaking to

a Quadrangle: it might seem not to take any notice, but it doesn't like being called names. On their way to Christ Church they saw a tall monument, like the spire of a church, called the "Martyrs' Memorial", put up in memory of three Bishops, Cranmer, Ridley and Latimer, who were burned in the reign of Queen Mary, because they would not be Roman Catholics. Christ Church was built in 1546.

They had breakfast at Ch. Ch., in the rooms of the A. A. M., and then Isa learned how to print with the "Type-Writer", and printed several beautiful volumes of poetry, all of her own invention. By this time it was 1 o'clock, so Isa paid a visit to the Kitchen, to make sure that the chicken, for her dinner, was being properly roasted. The Kitchen is about the oldest part of the College, so was built about 1546. It has a fire-grate large enough to roast forty legs of mutton at once.

Then they saw the Dining Hall, in which the A. A. M. has dined several times, (about 8000 times, perhaps). After dinner, they went, through the quadrangle of the Bodleian Library, into Broad Street, and, as a band was just going by, of course they followed it. (Isa likes Bands better than anything in the world, except Lands, and walking on Sands, and wringing her Hands). The Band led them into the gardens of Wadham College (built in 1613), where there was a school-treat going on. The treat was, first marching twice round the garden—then having a photograph done of them, all in a row—then a *promise* of "Punch and Judy", which wouldn't be ready for 20 minutes, so Isa, and Co., wouldn't wait, but went back to Ch. Ch., and saw the "Broad Walk." In the evening they played at "Reversi", till Isa had lost the small remainder of her temper. Then she went to bed, and dreamed she was Judy, and was beating Punch with a stick of barley-sugar.

Chap. IV.

On Friday morning (after taking her medicine very amiably), went with the A. A. M. (who *would* go with her, though she told him over and over she would rather be alone) to the gardens of Worcester College (built in 1714) where they didn't see the swans (who ought to have been on the lake), nor the hippopotamus, who ought not to have been walking about among the flowers, gathering honey like a busy bee.

After breakfast, Isa helped the A. A. M. to pack his luggage, because he thought he would go away, he didn't know where, some day, he didn't know when. So she put a lot of things, she didn't know what, into boxes, she didn't know which.

After dinner they went to St. John's College (built in 1555), and admired the large lawn, where more than 150 ladies, dressed in robes of gold and silver, were not walking about.

Then they saw the Chapel of Keble College (built in 1870): and then the New Museum, where Isa quite lost her heart to a charming stuffed Gorilla, that smiled on her from a glass case. The Museum was finished in 1860. The most curious thing they saw there was a "Walking Leaf", a kind of insect that looks exactly like a withered leaf.

Then they went to New College (built in 1386), & saw, close to the entrance, a "skew" arch (going slantwise through the wall) one of the first ever built in England. After seeing the gardens, they returned to Ch. Ch. (Parts of the old

City walls run round the gardens of New College: and you may still see some of the old narrow slits, through which the defenders could shoot arrows at the attacking army, who could hardly succeed in shooting through them from the outside).

They had tea with Mrs Paget, wife of Dr. Paget one of the Canons of Ch. Ch. Then, after a sorrowful evening, Isa went to bed, and dreamed she was buzzing about among the flowers, with the dear Gorilla: but there wasn't any honey in them—only slices of bread-and-butter, and multiplication-tables.

Chap. V.

On Saturday Isa had a Music Lesson, and learned to play on an American OrguINETTE. It is not a *very* difficult instrument to play, as you only have to turn a handle round and round: so she did it nicely. You put a long piece of paper in, and it goes through the machine, and the holes in the paper make different notes play. They put one in wrong end first, and had a tune backwards, and soon found themselves in the day before yesterday: so they dared not go on, for fear of making Isa so young she would not be able to talk. The A. A. M. does not like visitors who only howl, and get red in the face, from morning to night.

In the afternoon they went round Ch. Ch. meadow, and saw the Barges belonging to the Colleges, and some pretty views of Magdalen Tower through the trees.

Then they went through the "Botanical Gardens, built in the year—no, by the bye, they never were built at all. And then to Magdalen College. At the top of the wall, in one corner, they saw a very large jolly face, carved in stone, with a broad grin, and a little man at the side, helping him to laugh by pulling up the corner of his mouth for him. Isa thought that, the next time she wants to laugh, she will get Nellie and Maggie to help her. With two people to pull up the corners of your mouth for you, it is as easy to laugh as can be!

They went into Magdalen Meadow, which has a pretty walk all round it, arched over with trees: and there they met a lady "from Amurrica", as she told them, who wanted to know the way to "Addison's Walk", and particularly wanted to know if there would be "any danger" in going there. They told her the way, and that *most* of the lions and tigers and buffaloes, round the meadow, were quite gentle and hardly ever killed people: so she set off, pale and trembling, and they saw her no more: only they heard her screams in the distance: so they guessed what had happened to her.

Then they rode in a tram-car to another part of Oxford, and called on a lady called Mrs Jeane, and her little grand-daughter, called "Noël", because she was born on Christmas-Day. ("Noël" is the French name for "Christmas".) And there they had so much Tea that at last Isa nearly turned into a "Teaser".

Then they went home, down a little narrow street, where there was a little dog standing fixed in the middle of the street, as if its feet were glued to the ground: they asked it how long it meant to stand there, and it said (as well as it could) "till the week after next".

Then Isa went to bed, and dreamed she was going round Magdalen Meadow, with the "Amurrican" lady, and there was a buffalo sitting at the top of every tree, handing her cups of tea as she went underneath: but they all held the cups upside-down, so that the tea poured all over her head and ran down her face.

Chap. VI.

On Sunday morning they went to St. Mary's church, in High Street. In coming home, down the street next to the one where they had found a fixed dog, they found a fixed cat—a poor little kitten, that had put out its head through the bars of the cellar-window, and get back again. They rang the bell at the next door, but the maid said the cellar wasn't in that house, and, before they could get to the right door the cat had unfixed its head—either from its neck or from the bars, and had gone inside. Isa thought the animals in this city have a curious way of fixing themselves up and down the place, as if they were hat-pegs.

Then they went back to Ch. Ch., and looked at a lot of dresses, which the A. A. M. kept in a cupboard, to dress up children in, when they come to be photographed. Some of the dresses had been used in Pantomimes at Drury Lane: some were rags, to dress up beggar-children in: some had been very magnificent once, but were getting quite old and shabby. Talking of old dresses, there is one College in Oxford, so old that it is not known for certain when it was built. The people, who live there, say it was built more than 1000 years ago: and, when they say this, the people who live in the other Colleges never contradict them, but listen most respectfully—only they wink a little with one eye, as if they didn't *quite* believe it.

The same day, Isa saw a curious book of pictures of ghosts. If you look hard at one for a minute, and then look at the ceiling, you see another ghost there: only, when you have a black one in the book, it is a *white* one on the ceiling: when it is green in the book, it is *pink* on the ceiling.

In the middle of the day, as usual, Isa had her dinner: but this time it was grander than usual. There was a dish of "Meringues" (this is pronounced "Marangs"), which Isa thought so good that she would have liked to live on them all the rest of her life.

They took a little walk in the afternoon, and in the middle of Broad Street they saw a cross buried in the ground, very near the place where the Martyrs were burned. Then they went into the gardens of Trinity College (built in 1554) to see the "Lime Walk", a pretty little avenue of lime-trees. The great iron "gates" at the end of the garden are not real gates, but all done in one piece: and they couldn't open them, even if you knocked all day. Isa thought them a miserable sham.

Then they went into the "Parks" (this word doesn't mean "parks of grass, with trees and deer", but "parks" of guns: that is, great rows of cannons, which stood there when King Charles the First was in Oxford, and Oliver Cromwell fighting against him.

They saw "Mansfield College", a new College just begun to be built, with such tremendously narrow windows that Isa was afraid the young gentlemen who come there will not be able to see to learn their lessons, and will go away from Oxford just as wise as they came.

Then they went to the evening service at New College, and heard some beautiful singing and organ-playing. Then back to Ch. Ch., in pouring rain. Isa tried to count the drops: but, when she had counted four millions, three hundred and seventy-eight thousand, two hundred and forty-seven, she got tired of counting, and left off.

After dinner, Isa got somebody or other (she is not sure who it was) to finish this story for her. Then she went to bed, and dreamed she was fixed in

the middle of Oxford, with her feet fast to the ground, and her head between the bars of a cellar-window, in a sort of final tableau. Then she dreamed the curtain came down, and the people all called out "encore!" But she cried out "Oh, not again! It would be *too* dreadful to have my visit all over again!" But, on second thoughts, she smiled in her sleep, and said "Well, do you know, after all, I think I wouldn't mind so very much if I *did* have it all over again!"

Lewis Carroll

Part 4

Geometrical Texts

4.1 A Syllabus of Plane Algebraical Geometry

Source: A Syllabus of Plane Algebraical Geometry
Currently only introduction

Introduction

In teaching the subject of Algebraical Geometry, I have found the advantage of giving formal definitions of such words as “axis,” “ordinate,” and “radius-vector,” as giving the learner a clearer notion of the elements of the subject than he could gather for himself from the ordinary treatises.

In drawing up these definitions I found that several of the geometrical terms borrowed from Euclid could not be used in Algebraical Geometry without some modification of their definitions as given by him, whilst other terms were wanted for which he had given no definition at all; hence I was led to prefix to my Definitions of Algebraical Geometry a modernised version of Euclid’s Definitions. The Propositions also of the subject appeared to me to be wanting in uniformity; for example, the relation between an equation of the first degree and a right line is discussed by one writer in the form “to find the equation to a straight line,” (thus assuming the *possibility* of such an equation being found;) by another, in the form “we proceed to enquire the geometrical signification of a *single* equation between the co-ordinates.” To remedy such defects as these I endeavoured to reduce the subject to a uniform series of formal Propositions. Such was the origin of the present Syllabus.

I hope it will not be thought presumptuous in me if I here state in order those defects which appear to me to exist in the modern treatises, and for which I have attempted to furnish a remedy; next, the method I have pursued in doing so; and lastly, the defects which still remain unremedied, and to which those, who are desirous of forwarding towards perfection this beautiful science, would do well to turn their attention.

The defects which I have attempted to remedy relate to three main points in the subject; I. Definitions, II. Enunciations, and III. Treatment of Subject.

I. Definitions. Many of the technical terms employed by the various writers on the subject are left undefined, or only with such definitions as may be gathered from a page or more of explanatory matter; others are *inadequately* defined, (as, for instance, the angle employed in Polar Co-ordinates, the definition of which, as given in Mr. Salmon's Conic Sections, p. 9, will not apply to the case of a negative radius-vector); and even when a correct and formal definition is furnished, it is only to be found in the passage where the term first occurs, a method likely to give much unnecessary trouble in referring to it afterwards.

II. Enunciations. These, in the present treatises, are only given along with their demonstrations, which again are interspersed with much explanatory and illustrative matter, all liable to confuse the student who desires to review the subject, briefly and connectedly, as a whole. Moreover there is a great want of uniformity in the language employed, the data being put first in some, and the quæsitæ in others; while some propositions have no "general enunciation" at all, but begin at once with the "particular enunciation."

III. Treatment of Subject. The propositions are in too many cases made to depend on each other, so that if we wish to make out the proof of any particular theorem by itself, it is necessary to refer back to the proposition from which it is deduced, and from that perhaps to another, and so at last to build up the required proof. This method would not be so liable to objection if there were any received text-book on the subject, answering to Euclid in Geometry, and furnishing a recognised series of consecutive propositions which could be appealed to as authority; but, as the case now stands, when one writer may prove A from B, and another B from A, the whole system is illogical and therefore unsatisfactory.

Again, an unphilosophical method is employed in arriving at various of the necessary formulæ; it is a method neither analytical nor synthetical, but begins in synthesis, and concludes with a kind of analysis, introduced to prove the lawfulness of the assumption made, but giving no information as to how it was originally arrived at. As an instance, we may take the conversion of the equation $Ax + By + C = 0$, into the form of $x \cdot \cos a + y \cdot \sin a - \rho = 0$, where the rule is laid down "divide by $\sqrt{A^2 + B^2}$," and we are afterwards told that we *may* assume $\frac{A}{\sqrt{A^2 + B^2}} = \cos a$, and $\frac{B}{\sqrt{A^2 + B^2}} = \sin a$ "since the sum of the squares of these two quantities = 1." Again, the focus of the ellipse is introduced by arbitrarily taking two points on the major axis, at a distance from the centre equal to $\pm\sqrt{a^2 - b^2}$, and discussing their properties; but no reason is given why these, rather than any other points, are so chosen for discussion.

A third deficiency is to be found in the notation adopted, where the symbols and language are not adapted to the expansion, which is necessary to meet the larger requirements of Algebraical Geometry of three dimensions. For instance, in the equations, $\frac{x-x'}{l} = \frac{y-y'}{m}$, and $y = tx + b$, when referred to rectangular Cartesian axes, it is usual to define "*l*" and "*m*" as "the cosine and sine of the angle which the line makes with the X-axis,"¹ and "*t*" as "the tangent of the same angle." On coming to oblique axes, it is found necessary to modify both definitions; "*l*" and "*m*" become "the ratios which the sines of the angles, made by the line with the two axes respectively, bear to the sine of the angle between the axes," and "*t*," "the ratio between these two sines themselves." On

¹(Or, which is the same thing, as "the cosines of the angles which the line makes with the two axes.")

examination it appears that the definitions for rectangular axes are included as a particular case of these, and it may now be thought that we have got definitions sufficiently broad for the whole subject, but on coming to Solid Geometry we have to return to the cosines for rectangular axes, (as otherwise the phrase “the sine of the angle between the axes” would be unmeaning,) while for oblique axes we are forced upon the entirely new theory of projections, unless we choose to adopt the following definition for “ l ,” “the ratio which the sine of the angle made by the line with the intersection of two planes, (namely, the plane in which the line itself and the X-axis lie, and that in which the Y-axis and Z-axis lie,) bears to the sine of the angle made by the X-axis with the same intersection”! This instance will shew how necessary it is to consider the future requirements of Solid Geometry in dealing with Plane Geometry.

The method I have pursued in endeavouring to remedy these defects may be most conveniently discussed under the same three headings.

I. As to Definitions. In those borrowed from Euclid I have altered no word of his, except where it was necessary, either to bring the language into uniformity with the other definitions, or to meet the new requirements of Algebraical Geometry. In the rest, I have always taken his as the model, being careful at the same time to provide for the subsequent expansion necessary in Solid Geometry. And these definitions I have placed all together, at the commencement of each Book.

II. As to Enunciations. These I have given by themselves, without their proofs, to afford the student a convenient means of reviewing the subject, and testing his knowledge of it, by taking each enunciation in succession, and considering whether or no his unassisted memory can supply the demonstration. Where any difficulty is found in doing this, he is recommended to add a marginal reference to the place where the demonstration may be found, whether in the text-book which he employs on the subject, or in the Appendix to this Syllabus. I have endeavoured to reduce all these enunciations to one uniform shape, always placing the “data” before the “quæsitæ” or “demonstranda.” Lastly, I have endeavoured to make all the enunciations “general;” and I trust it will be found that they have thus gained in uniformity what they have, in some instances, lost in brevity and clearness.

III. As to Treatment of Subject. I have endeavoured, for reasons which I have already mentioned, to render each proposition, as far as possible, *independent* of others; and being thus released from the necessity of stringing them together in a consecutive series, I was able to adopt what seemed the more natural principle of arrangement, of beginning with those which involved the fewest and simplest conditions, and so going on to the more complicated. Whether I was right in attempting the further simplification of separating Problems from Theorems, I am now doubtful; it introduced several difficulties which would not have otherwise arisen; still, the great advantages of clearness and convenience of reference made the experiment a plausible one.

Next, I have introduced every new formula in a method as purely *analytical* as I found possible. For instance, in arriving at the equation to a right line, I first investigate the method of representing a point (the original purpose for which the system of co-ordinates is introduced); then, on finding that *two* equations are necessary for this, it naturally follows that we should consider the geometrical signification of *one* such equation taken by itself. Similarly, the rule already

alluded to for reducing the equation $Ax + By + C = 0$, to the form $x \cdot \cos a + y \cdot \sin a - \rho = 0$, is found at once by simply applying the test that two equations shall represent the same line. And similarly, the co-ordinates of the "focus" of an ellipse may be easily found by solving the Problem "to find a point whose distance, from any given point on the curve, shall be a simple function of the abscissa of that given point."

Another innovation will be found in the method of treating what is called by Mr. Salmon "abridged notation." It appeared to me that the symbols " α " and " β ," employed in that system, are in no other sense abridged forms of " $x \cdot \cos a + y \cdot \sin a - p$ &c., than that in which " x " is an abridged form of " $\rho \cdot \cos \theta$," (the relation between a Cartesian and a Polar System,) or of " $x' \cdot \cos \theta - y' \cdot \sin \theta$," (the relation between two rectangular Cartesian Systems inclined at an angle θ). In other words, it appeared to me simpler, and I have certainly found it to be so in practice, to constitute a new System of reference, which I have called the "Distantial" System, and only to introduce the fact that $\alpha = x \cdot \cos a + y \cdot \sin a - p$, as a *formula of transformation from a Distantial to a Cartesian System*.

The distinction introduced between an infinitely small quantity and absolute zero needs perhaps a word of apology, as it is not noticed in other treatises, and indeed belongs more properly to the subject of Differential Calculus. Still it is, at worst, superfluous, and those who think it merely fanciful will find that it can easily be omitted, as nothing in the book is made to depend upon it.

Apology is also due for the number of new words I have introduced; I have not done so in any case without an apparent necessity, to avoid the constant repetition of a cumbrous periphrasis. I will here enumerate the new words introduced, with reference to the pages where their definitions may be found. I have endeavoured to make them, as far as possible, suggest their meaning by their derivations:

divisional-angles, and divisional-ratio	18
direction-angles	21
abscissa-ratio, ordinate-ratio, and co-ordinate-ratio	22
sagittal-line, sagittal-angles, and sagit	22, 23
interceptive, sagittal, and directional equations	29
fixed-radius	30
vectorial-line	30
distantial system, lines of reference, vertex of reference, principal portion, and referent	36
interceptor	44
co-radical circles	96

It remains that I should enumerate those defects in the subject, for which I have not been able here to furnish a remedy.

In the first place, there is something unphilosophical in the very groundwork of the science. It professes to prove, from independent sources, many of the propositions of Pure Geometry, while it is so entirely dependent upon that science for its merest elements, that even the equation to a straight line cannot be investigated without assuming Euclid, Book VI, Prop. 4. As long as Algebraical Geometry requires the previous proof of so large a range of geometrical propositions, it cannot fairly be employed to prove any theorems which fall within that range.

Secondly, there are terms employed in the science in more senses than one;

for the secondary meaning a new word should be introduced. For example, while we have “superficies” to denote a surface of indefinite extent, and “figure” to denote a limited portion of one—while we have “space” to denote indefinite extent of three dimensions, and “solid” to denote a limited portion of space—the word “line” is made to do double duty. Another example may be found in the word “direction,” discussed in the Appendix, p. 124.

Thirdly, there are several instances of two or more words being used in precisely the same sense; these require to be desynonymised, or, if that be impossible, all the synonymous terms, but one, should be excluded from use, and reserved for the possible future requisitions of the subject. As instances of this may be mentioned,

denote, represent, indicate, express;
contain, involve, require, postulate;
constant, fixed, invariable, determinate;
given, known, determined.

Fourthly, some simple rules are required for ascertaining, in any given problem, whether it may best be solved by the Cartesian, Polar, or Distantial System.

Many defects in the present Syllabus have been discovered and rectified while the sheets were passing through the press; many more, in an attempt so new, and (so to speak) experimental, have no doubt escaped my notice; there is also a great hiatus in the subject of Trigonometry, the whole of which needs to be systematised in the same way. Still I have thought it better to publish it in its present incomplete state, in order that by bringing it under the notice of more mathematicians than would otherwise have seen it, and so getting more suggestions for its improvement than could otherwise have been obtained, means may be afforded, whether to myself or to some other writer, of hereafter reducing the whole subject to a complete and uniform system, which shall occupy, with regard to Algebraical Geometry, the same position which is occupied by that of Euclid with regard to Pure Geometry.

4.2 Notes on the First Two Books of Euclid

Source: Notes on the First Two Books of Euclid

Designed for Candidates for Resposions.

Notes on the Definitions

A POINT. It must not be supposed that a Point has *only* negative qualities, in which case it would be identical with absolute *nothing*. It has the positive quality of *position*, and it is this which enables us to distinguish one Point from another.

A PLANE ANGLE. It should be observed that an angle is *not* the point where two lines intersect; it is *not* the lines themselves; it is *not* the space between them; but it *is* the “inclination,” (or “bending,”) of the two lines to each other.

A TRIANGLE. A Triangle may be said to consist of 6 parts, viz., 3 sides and 3 angles. In order to prove one Triangle equal in all respects to another, it must be first given, (or proved) that 3 of these 6 parts in the one are equal to the corresponding 3 in the other. The various cases are:—

Prop. IV. Two sides and the included angle of the one equal to two sides and the included angle of the other.

Prop. VII. The three sides of the one equal to the three sides of the other.

Prop. XXVI. Two angles and one side of the one equal to two angles and one side of the other.

Additional Definitions

I.

A POSTULATE is something to be done, for which no proof is given. (From *postulatum*, because it is *demanded* that the reader should grant it to be possible.)

II.

AN AXIOM is something to be believed, for which no proof is given. (From *ἀξιωμα*, because it is *thought worthy* of belief.)

III.

A PROPOSITION is something either to be done, or to be believed, for which a proof is given. (From *propositum*, because it is *put before* the reader.) Propositions therefore are of 2 kinds, Problems, and Theorems.

IV.

A PROBLEM is something to be done, for which a proof is given. (From *πρόβλημα*, for the same reason as the last.)

V.

A THEOREM is something to be believed, for which a proof is given. (From θεωρημα, because it is to be *considered*, as to its being true or false.)

VI.

THE ENUNCIATION of a Proposition states (1) what is given, (2) what is required to be done or proved true: these two parts of the Enunciation are called THE DATA, and THE QUÆSITA.

VII.

THE HYPOTHESIS of a Proposition is the same as its Data: it is a word used only with reference to Theorems. (From υπόθεσις, because it is *supposed* to be true.)

VIII.

A COROLLARY is something proved in the course of Proposition, which it was not the object of the Proposition to prove. (From corolla, because it is a sort of ornament, or *garland*, of the Proposition.)

IX.

TWO PROPOSITIONS are said to be CONVERSE to each other when that which is given in the first is to be done or believed in the second, and that which is to be done or believed in the first is given in the second. For example, the Propositions, “*if 2 sides of a triangle be equal, the opposite angles are equal,*” and “*if 2 angles of a triangle be equal, the opposite sides are equal,*” are converse to each other.

X.

“A FORTIORI,” (or “*much more then,*”) is a phrase used when the conclusion has a *stronger* claim to be believed than any of the facts from which it is proved. For example, “3 is greater than 2, and 4 is greater than 3; *much more then* is 4 greater than 2.”

XI.

REDUCTIO AD ABSURDUM is the name of a form of argument, in which something is proved true, by showing that, if it were *not* true, an absurdity, (or impossibility,) would follow. For example, Prop. XXVII. “*If a straight line, falling on 2 other straight lines, make the alternate angles equal to each other; these 2 straight lines shall be parallel,*” is proved true, by showing that, if they were *not* parallel, an absurdity would follow.

The following scheme may assist the reader in understanding the first five Definitions given above.

Things set before us in Geometry may be of 2 kinds, viz.:

(without proofs)		(with proofs)	
		i. e. PROPOSITIONS.	
(to be done)		(to be believed)	
i. e. POSTULATES.	i. e. AXIOMS.	i. e. PROBLEMS.	i. e. THEOREMS.

A Proposition may be divided into the following parts:—

- I. General Enunciation.
 - (1) Data.
 - (2) Quæsitæ.
- II. Particular Enunciation.
 - (1) Data.
 - (2) Quæsitæ.
- III. Construction.
- IV. Proof.
- V. Particular Conclusion.
- VI. General Conclusion. (Only found in Theorems.)

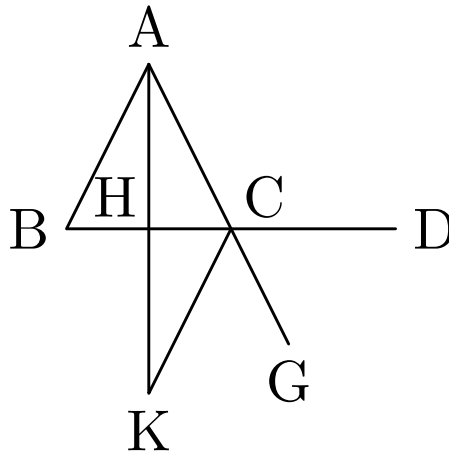
Take, for example, Prop. VI of Book I.

- I. General Enunciation.
 - (1) Data.
If two angles of a triangle be equal to each other,
 - (2) Quæsitæ.
the sides also which subtend the equal angles, shall be equal to each other.
- II. Particular Enunciation.
 - (1) Data.
Let ABC be a \triangle having $\angle ABC = \angle ACB$,
 - (2) Quæsitæ.
then side AB shall = side AC .
- III. Construction.
For, if $AB \neq AC$, one of them is $>$ the other;
let AB be $> AC$;
from BA cut off $BD = AC$, and join DC ,
- IV. Proof.
Then, in \triangle s DBC, ABC ,
 $\therefore DB = AC$, and BC is common, and $\angle DBC = \angle ABC$;
 \therefore base $DC =$ base AB ,
and $\triangle DBC = \triangle ABC$,
the $< =$ the $>$, which is absurd;
 $\therefore AB$ is not $\neq AC$;
- V. Particular Conclusion.
that is, $AB = AC$.
- VI. General Conclusion.
Therefore, if two triangles, &c. Q. E. D.

Notes on the Propositions

When two Propositions are converse to each other, the *second* has generally no “construction,” and is proved by a “reductio ad absurdum.”

Book I. Prop. XVI. The second part may be proved thus:—



Bisect BC in H , join AH , and produce it to K , making $HK = AH$, and join CK ;

$\therefore AH = HK$, and $BH = HC$, and $\angle AHB = \angle KHC$, (being vertical angles);

$\therefore CK = AB$, and $\angle KCH = \angle ABH$, i. e. $\angle ABC$;

but $\angle GCB > \angle KCB$;

$\therefore \angle GCB > \angle ABC$;

and $\angle ACD = \angle GCB$, (being vertical angles);

$\therefore \angle ACB > \angle ABC$.

Q. E. D.

Book I. Prop. XXXV. Here the taking away of the triangles from the trapezium is meant to be done thus:—

From the trapezium $ABCF$ take the triangle FDC , and observe that there remains the parallelogram $ABCD$; then replace this triangle, so as to make the trapezium complete again; then take away from it the triangle EAB , and observe that there remains the parallelogram $EBCF$. Since, in the two subtractions, equal triangles are taken away, the remainders are equal.

Book II. Prop. VII. It should be observed, that on the space $CGKB$ there are supposed to be *two* squares, one lying over the other. One of these is supposed to be added to the complement AG , the other to the complement GE .

Book II. Prop. XIII. This may be proved more simply thus:—

\therefore (in fig. 1.) BC is divided into 2 parts in D ,

and \therefore (in fig. 2.) BD is divided into 2 parts in C ,

\therefore (in both) $BC^2 + BD^2 = 2BC \cdot BD + CD^2$;

add to each AD^2 ;

$\therefore BC^2 + BD^2 + AD^2 = 2BC \cdot BD + CD^2 + AD^2$;

but $BD^2 + AD^2 = AB^2$,

and $CD^2 + AD^2 = AC^2$;
 $\therefore BC^2 + AB^2 = 2BC \cdot BD + AC^2$;
 $\therefore AC^2 < BC^2 + AB^2$ by $2BC \cdot BD$.
 Also \therefore (in fig. 3.) $AB^2 = BC^2 + AC^2$,
 add to each BC^2 ;
 $\therefore BC^2 + AB^2 = 2BC^2 + AC^2$;
 $\therefore AC^2 < BC^2 + AB^2$ by $2BC^2$, i. e. by $2BC \cdot BC$.
 Therefore in any triangle, &c.

Q. E. D.

List of Abbreviations

$/AB$	means	the line AB
$\angle BAC$	"	the angle BAC
\perp	"	right angle
\perp	"	at right angles to
\odot	"	circle
\triangle	"	triangle
\parallel	"	parallel to
\nparallel	"	not parallel to
$=$	"	equal to
\neq	"	not equal to
$>$	"	greater than
$<$	"	less than
\nless	"	not greater than
\nless	"	not less than
\square	"	parallelogram
AB^2	"	the square described on AB
$AB \cdot AC$	"	the rectangle contained by AB, AC
\therefore	"	because
\therefore	"	therefore
Q. E. F.	"	quod erat faciendum
Q. E. D.	"	quod erat demonstrandum

N.B. The symbol for "less than" must be carefully distinguished from that for "angle."

The symbols for "greater than" and "less than" may be distinguished from each other by remembering that the *greater* end of the symbol is placed next the *greater* quantity. Thus " $A > B$ " shows that A is the greater, " $A < B$ " that B is the greater.

The symbols for "because" and "therefore" may be distinguished thus: when "because" is used, the pyramid (\therefore) is balanced on the point, to show that the argument is still unsettled; but when "therefore" is used, the pyramid (\therefore) is placed on the base, to show that the argument is settled.

4.3 The Formulæ of Plane Trigonometry

Source: The Formulæ of Plane Trigonometry

Preface

Other version:
→ 9.21, p. 1466

This Pamphlet is published with two objects: first, to exhibit a specimen of a collection of “Formulæ of Pure Mathematics,” which I am preparing for publication; secondly, to suggest the substitution of symbols for the cumbersome expressions “sin,” “tan,” “cosec,” &c., at present employed in Trigonometry.

As to the first of these objects, I am in hopes that, by publishing this specimen by itself, I may receive, from other mathematicians, suggestions both as to the form and the matter of the larger work; and any simple and compendious formulæ, not given in the published treatises, or superseding those which are there given, will be most acceptable for this object.

As to the second, I am anxious to ascertain what probability there is of others’ consenting to adopt these, or any similar symbols, before employing them either in the above-mentioned “Formulæ of Pure Mathematics,” or in another work, (also in preparation,) on Algebraical Geometry, (on the plan indicated in a Syllabus published in 1860,) into both of which works these symbols would of course enter largely.

Objections may be raised, first, against the introduction of any symbols at all into this subject, and, secondly, against the particular symbols here suggested: these objections I proceed to examine.

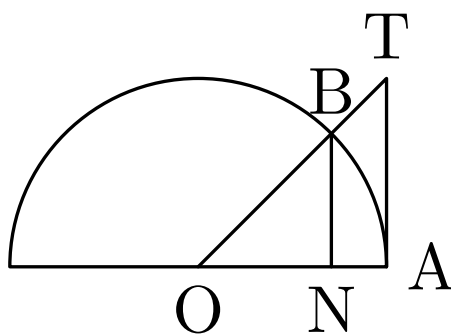
First, then, as to the introduction of any symbols at all: if it could be shown that such symbols were likely to confuse those who are used to the existing notation, or to make the books at present in use unintelligible to those who learn only the new notation, I grant that it would be much too late in the history of Trigonometry to attempt any such radical change. But I am sure that no such effects would be produced; the new symbols would still be *called* “sin,” “cos,” &c., so that the old names would not die out, and those who use the new symbols would find no more difficulty in reading books where the names are given in full, than we do in reading old mathematical books where the words “plus,” and “minus” occur. And there can be no question that the use of symbols would save much time, space, and labour; all of which are points of great importance to those who are much engaged in writing or printing Mathematics.

Secondly, as to the particular symbols here suggested: on this point I speak much more doubtfully; and I shall be very willing, if simpler and more appropriate symbols be proposed, to adopt them instead of these; still, as these have not been chosen without some thought, and the trial and rejection of many others, I have great hopes that they may be found sufficiently simple and expressive for the purpose: and perhaps a simple account of the way in which they originated will be the best explanation and defence of them which I can offer.

It seemed necessary, then, that symbols for such a purpose should be—easily written—suggestive (as far as possible) of their meaning—connected with each other—and, above all, distinct from all symbols at present in use. Letters of the alphabet of course suggested themselves first: but besides that all the alphabets, capital and small, Roman, Greek, even Old English and Hebrew, are already

largely appropriated in Mathematics, it did not seem that any but initials were sufficiently connected with the words to stand much chance of being remembered. Now the words “sine, secant, cosine, cosecant, cotangent, tangent,” have unfortunately only three initials among them; and of these “*S*” and “*C*” (whether we take them as capital or small letters,) are already distinctly appropriated in this very subject of Algebraical Geometry—“*S*” and “*C*” signifying, one, the semi-perimeter of a triangle; the other, one of its angles—and “*s*” and “*c*” signifying, one, an arc of a curve; the other, one of the sides of a triangle: as to the latter indeed it is sufficient to point out that the phrase “ $a. \cos A + b. \cos B + c. \cos C$ ” would, under this notation, be written “ $a. cA + b. cB + c. cC$ ”!

Setting aside, then, all alphabets, and (of course) all purely *mathematical* symbols, such as numerals, &c., no course remained but to *invent* new symbols for this purpose. In setting about this I took as principles—to secure their being easily written, that each should consist of *two* strokes of the pen only—to connect them with each other, that *one* of these two strokes should be the same in all—to make them suggestive of their meaning, that they should represent (as nearly as possible) the *geometrical* lines to which these ratios belong. And as, in modern Trigonometry, each of these ratios involves *two* lines, I thought it better to fall back on the older theory, where the sine, cosine, &c., are all *single* lines.



In the annexed diagram, *BN* is the *sine* of the angle *AOB*, *ON* its *cosine*, *TO* its *secant*, and *AT* its *tangent*. It occurred to me, then, to construct a set of symbols for these by taking the semicircle itself as the part *common* to all the symbols, and these lines as their distinctive features, altering them only so far as to make each symbol symmetrical. I shall now consider each “goniometrical ratio” by itself.

I. “Sine,” \cap . In this it will be seen that the line *BN* has merely been shifted to the middle of the figure.

II. “Cosine,” \sqcup . In this the line *ON* has been produced, (which in hasty writing one could hardly avoid doing,) and taken a little *beyond* the curve, to avoid confusion with the existing symbol for “semicircle.” Observe here also that the line in this symbol is *at right angles* to that in the last; which may be connected with the fact that these are corresponding ratios of *complemental* angles (i. e. of angles, whose sum is a *right angle*).

III. “Secant,” \sphericalangle . In this the line *TO* has been produced downwards, to avoid all chance of confusion with the symbol \cap .

IV. "Cosecant," \curvearrowright . This I derived from the former, by turning the line round through a *right angle*, on the principle which I have explained in II.

V. "Tangent," $\overline{\cap}$. If the symbol for this were taken from the diagram, it would have a one-sided effect, and it would be difficult to find an analogous symbol for "cotangent," since the three other positions in which it might be placed are pre-occupied by the letters h , μ , and y . I therefore preferred placing it horizontally on the top of the curve, leaving a little interval between the two, to avoid confusion with the letter π .

VI. "Cotangent," $\underline{\cup}$. I could not derive this from the last, on the principle of II, without destroying its character as a *tangent*. I therefore simply *inverted* the former symbol, which may be taken to indicate the fact that each is the *reciprocal* of the other: so that if $\overline{\cap} = \frac{a}{b}$, $\underline{\cup} = \frac{b}{a}$, which seems to be a very consistent and self-interpreting notation.

VII. "Versed-sine," \curvearrowleft . This is of course a combination of the semicircle with the letter "V"; it contains one stroke more than the other symbols, but as it is very seldom used, this is of little importance.

I have thus endeavoured to show that the proposed symbols satisfy three of the four requisitions, viz.: that they should be—easily written—suggestive of their meaning—and connected with each other. As to whether they are distinct from existing symbols, it is for the objectors to point out any with which they are liable to be confused; none such have been suggested to me, except the letter Ω , which is something like the new symbol \triangleleft ; but, as the latter is closed, instead of open, below, and much wider in proportion to its height than the former, I do not think there is much danger of either's being mistaken for the other.

I will conclude by putting into the form of definite questions the points to which I wish to draw the attention of those mathematicians into whose hands this may come:

(1) Do you object *in limine* to the introduction of *any symbols whatever* as substitutes for the words *sin*, *cos*, &c.? If not,

(2) Can you suggest others, better adapted than these for such a purpose? If not,

(3) Do you so far approve of the symbols here suggested, that, if they were employed in a published work, you would not, *on that account alone*, object to use or to recommend such a work?

Ch. Ch. June 11, 1861.

Preliminary Remarks.

The subject-matter usually assigned to Plane Trigonometry may be more properly arranged thus:

Part I. *Goniometry Proper*. i. e. the measurement of angles by *angular units*.

Part II. *Goniometry by Ratios*. i. e. the *indication*, (not *measurement*,) of angles by what are called "goniometrical ratios."

Part III. *Trigonometry*. i. e. the properties of rectilinear figures.

Before proceeding to enumerate the Formulæ of the subject, I shall make a few remarks on each of these three Parts.

Part I. Goniometry Proper.

Two different units are in common use:

- (1). a right angle.
- (2). the angle which is subtended, (in any circle), by an arc equal to the radius; this can easily be proved to be the same, whatever be the size of the circle, and to be about $\frac{2}{3}$ of a right angle.

This angle I propose to call “a radial angle.”

When (1) is employed, it is subdivided, either into 90 degrees (English measure), or 100 grades (French measure).

When (2) is employed, the following proportion holds good;

$$\text{No. of radial angles contained} : 1 :: \text{arc} : \text{radius},$$

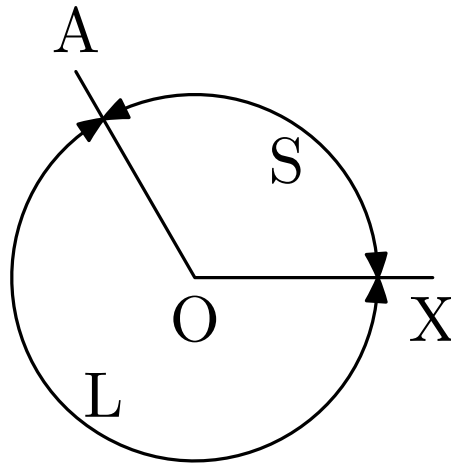
which may be briefly expressed thus; $\text{angle} = \frac{\text{arc}}{\text{radius}}$.

The quantity “2 right angles” would be algebraically represented—in English measure by “180°”—in French measure by 200^g—and in “radial” measure by “3.14159... radial angles.”

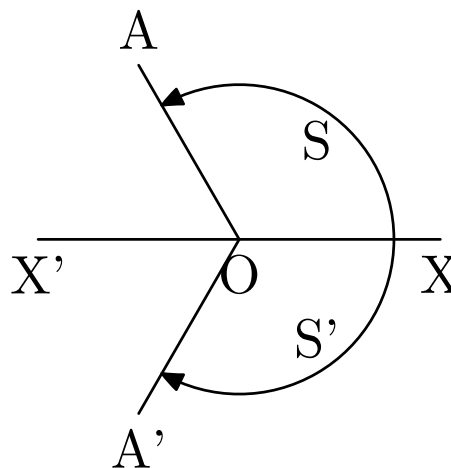
Part II. Goniometry by Ratios.

The student will do well to observe that the statement, to be found in most treatises on Trigonometry, that “if any of the quantities, $\sin A$, $\cos A$, &c., be given, the angle A may be determined,” is untrue. The word “angle” is used in various senses; in one of these senses, it could not be determined, even if *all* the “goniometrical ratios” were given, and even in its simplest sense “ $\sin A$ ” is *never* sufficient to determine it. I believe that the chief difficulty of Trigonometry is surmounted, when we have once arrived at a clear notion of the different meanings of this word “angle.” It may be thought that the following explanation is unnecessarily complicated, but if such complication really exists in the science itself, it surely deserves investigation; we can never get rid of the difficulties of a subject by ignoring them.

First, then, there is the “geometrical angle,” or the angle as treated of by Euclid: of this it may be remarked, that it is considered as an *absolute magnitude*, without regard to *direction*, and that it is always measured the *shortest* way round, so that it can never exceed two right angles. Thus, in the annexed figure, the “geometrical angle” contained between OX and OA is measured (whether from X to A , or from A to X , does not matter) along the arrow marked S , and *not* along that marked L . If OX and OA were in one straight line, the angle might still be called geometrical, though not treated of in Euclid; it would then be *equal* to two right angles, and might of course be measured either way round at pleasure.

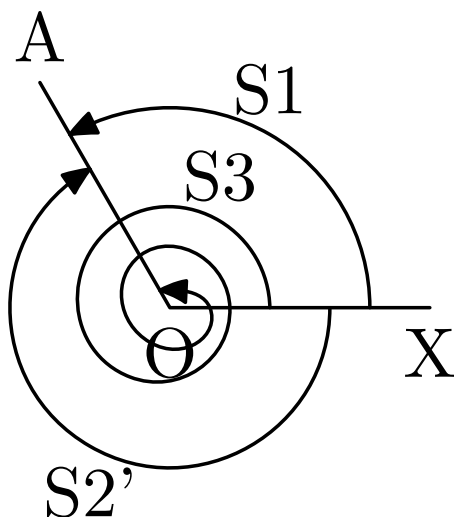


Secondly, there is the “angle of position”: in measuring this, *one* of the lines is supposed to be fixed in position, and the angle to be measured, *from* it, *to* the other, the shortest way round: and as this angle may lie in either of two opposite directions, these are distinguished as “positive“ and “negative.” Thus, in the annexed figure, the angles XOA and XOA' are identical when viewed as “geometrical angles” only, since they have the same magnitude: nevertheless OA and OA' have different positions with regard to OX , and these may be distinguished by calling the angle XOA “positive,” and XOA' “negative.” Observe also, that every possible position of OA , if *above* the line $X'OX$, may be represented by a positive “geometrical angle,” if *below* it, by a negative one, and if coinciding with OX' , by a positive or negative one, equal to two right angles; but that in no case need the angle *exceed* two right angles.



Thirdly, there is the “angle of revolution”: in measuring this, *one* of the lines is (as before) supposed to be fixed, and the angle to be measured *from* it *to* the other; but no longer are we obliged to do this the *shortest* way round, nor even to stop measuring it the first time we come upon the other line: we may go round and round the circle any number of times, the only rule being

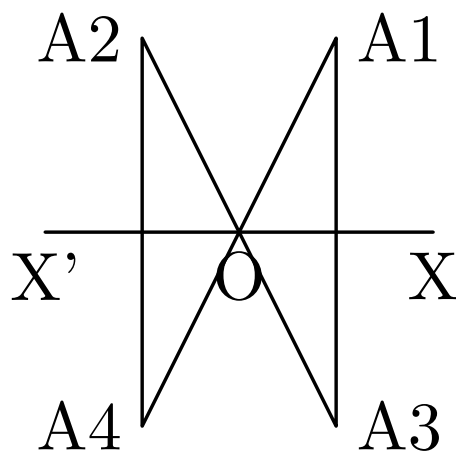
that we must at last stop on the other line. Thus, in the annexed figure, the arrows, S_1 , S_2 , and S_3 , are specimens of the various ways in which the “angle of revolution” may be measured from OX to OA ; S_1 and S_3 being “positive,” and S_2 “negative.”



Let us now consider how far the “goniometrical ratios” enable us to determine an angle under each of these senses.

It is evident that these ratios depend *only* on the *position* of OA with regard to OX , and are unaffected by the method in which we may choose to measure the angle; so that they are of no use in determining the “angle of *revolution*”; this can only be expressed by referring it to some angular unit.

How far, then, will they help us in determining the “angle of *position*”? We may see by the annexed figure that if the *sine* only of XOA_1 were given, we could not distinguish it from XOA_2 ; nor, by its *cosine* only, could we distinguish it from XOA_3 ; nor, by its *tangent* only, from XOA_4 ; and the same may be said of its *cosecant*, its *secant*, and its *cotangent*, which are the reciprocals of the former three. Hence *no one* of the goniometrical ratios is sufficient by itself to determine an “angle of position”: and since from any one we may determine the *magnitude* of *all* the rest, and the *magnitude* and *sign* of the *reciprocal* ratio, we may lay it down as a rule, that in order to determine an “angle of position” we require to know the *magnitude* of some *one* ratio, and the *signs* of *two*, and that these two must *not* be reciprocals of each other, (to which we may add, that they must *not* be the cosine and versed-sine).



But in the case of the “*geometrical* angle,” (as, for instance, when we are treating of one of the angles of a triangle, which is always positive, and can never exceed two right angles,) can *this* never be determined unless *two* “goniometrical ratios” are given? In some cases it can: but not in all. If in the last figure we confine our attention to the *positive* angles only, we see that if the *sine* only of XOA_1 were given, we could not distinguish it from XOA_2 , (and the same may be said of its reciprocal, the cosecant); but that from any one of the remaining ratios the angle might be absolutely determined.

Hence the statement, which I quoted at the beginning of this dissertation, that “if any of the quantities, $\sin A$, $\cos A$, &c., be given the angle A may be determined,” ought to be read thus: “to determine the angle A as a *geometrical angle*, one of the 4 quantities, $\cos A$, $\tan A$, $\sec A$, $\cot A$, must be given ($\sin A$ and cosec A not being sufficient for this purpose): to determine it as an *angle of position*, the magnitude of *one* of these 6 quantities must be given, and the signs of *two* (which two must not be reciprocals): to determine it as *angle of revolution*, it must be referred to some angular unit.”

N.B. The phrase “goniometrical ratio,” besides being too long for constant repetition, conveys the false notion of its *measuring* the angle, (whereas the measure always varies as the thing measured,) instead of merely *indicating* its value: and does *not* convey the notion that *two* of these ratios are generally necessary to determine the angle; for this latter purpose some term analogous to “co-ordinate,” (which, by the way should rather be “co-ordinant,”) is needed. I propose, then, to call them the “co-indicants” of the angle.

In the following Formulæ, the “data” are separated from the “quæsitæ,” so that, by covering half of the page, the student may test for himself the accuracy of his recollection of them.

The following are the new symbols introduced:

Symbol.	Name.	Meaning.
\cap .	sin.	sine.
\sqcup .	cos.	cosine.
\sphericalangle .	sec.	secant.
\sphericalangle .	cosec.	cosecant.
$\overline{\cap}$.	tan.	tangent.
$\underline{\cup}$.	cot.	cotangent.
\sphericalangle .	versin.	versed-sine.

Part III. Trigonometry.

It should be observed that the angles of a rectilinear Figure are considered as angles of *absolute magnitude only*, i. e. as “geometrical angles.” Hence the angle A can be determined from $\cos A$, or $\sec A$, or $\tan A$, or $\cot A$; but it can *not* be determined from $\sin A$, or $\text{cosec } A$: this gives rise to what is called the “ambiguous case” in the solution of Triangles.

Formulæ of Part I.

Given an angle expressed in one of the 3 measures, English, French, and radial; to express it in another

N.B. The number of English degrees in an angle is represented by “ E ”; the number of French grades by “ F ”; the number of radial angles by “ Θ ”; and the number of radial angles contained in two right angles, (i. e. 3.14159&c,) by “ π .”

- (1) Formula connecting E and F ,
 E and Θ ,

$$E : F :: 9 : 10.$$

$$E : \Theta :: 180 : \pi.$$

Other version:
 → 8.6, p. 1267

Formulæ of Part II.

I. FORMULÆ CONCERNING *one* ANGLE ONLY.

(α) *Given magnitude and sign of a co-indicant: to find magnitude and sign of one other.*

- (1) The pairs of reciprocals are,
 (β) *Given magnitude of a co-indicant: to find magnitude of the rest.*

- (2) Formula connecting \cap and \sqcup ,

- (3) $\overline{\cap}$, \cap , and \sqcup ,

- (4) \sphericalangle and $\overline{\cap}$,

- (5) \sphericalangle and \cap ,

(γ) *Given certain angles: to find their co-indicants.*

- (6) \cap , \sqcup , and $\overline{\cap}$ of $0^\circ =$
 $90^\circ =$

$$\cap \text{ and } \sphericalangle, \sqcup \text{ and } \sphericalangle, \overline{\cap} \text{ and } \underline{\cup}.$$

$$\cap^2 + \sqcup^2 = 1.$$

$$\overline{\cap} = \frac{\cap}{\sqcup}.$$

$$\sphericalangle^2 = \overline{\cap}^2 + 1.$$

$$\sphericalangle = 1 - \cap.$$

$$0, 1, 0.$$

$$1, 0, \frac{1}{0}.$$

$$\begin{aligned}
180^\circ &= 0, -1, 0. \\
270^\circ &= -1, 0, \frac{1}{0}. \\
45^\circ &= \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}, 1. \\
60^\circ &= \frac{\sqrt{3}}{2}, \frac{1}{2}, \sqrt{3}. \\
30^\circ &= \frac{1}{2}, \frac{\sqrt{3}}{2}, \frac{1}{\sqrt{3}}.
\end{aligned}$$

II. FORMULÆ CONCERNING 2 OR MORE ANGLES.

(α) Given the co-indicants of 2 angles: to find the co-indicants of their sum and difference.

$$\begin{aligned}
(7) \quad \cap \overline{A+B} &= \\
\cap \overline{A-B} &= \\
\sqcup \overline{A+B} &= \\
\sqcup \overline{A-B} &=
\end{aligned}$$

Hence $\cap 2A =$
 $\sqcup 2A$, in terms of $\cap A$ and $\sqcup A$, =
in terms of $\cap A$ only, =
in terms of $\sqcup A$ only, =

$$\begin{aligned}
(8) \quad \overline{\cap A+B} &= \\
\overline{\cap A-B} &=
\end{aligned}$$

Hence $\overline{\cap 2A} =$

(9) The formulæ of (8) may also be written thus, by taking $\overline{\cap^{-1} t}$ to mean "the angle whose tangent is t ."

$$\begin{aligned}
\overline{\cap^{-1} t_1 + \overline{\cap^{-1} t_2}} &= \\
\overline{\cap^{-1} t_1 - \overline{\cap^{-1} t_2}} &= \\
2 \overline{\cap^{-1} t} &=
\end{aligned}$$

(β) Given the co-indicants of 3 angles: to find the co-indicants of their sum.

$$\begin{aligned}
(10) \quad \cap \overline{A+B+C} &= \\
\sqcup \overline{A+B+C} &=
\end{aligned}$$

Hence $\cap 3A =$
 $\sqcup 3A =$

$$(11) \quad \overline{\cap A+B+C} =$$

Hence $\overline{\cap 3A} =$

$$(12) \quad \overline{\cap^{-1} t_1 + \overline{\cap^{-1} t_2 + \overline{\cap^{-1} t_3}}} =$$

Hence $3 \overline{\cap^{-1} t} =$

(γ) Given 2 angles: to reduce the sum or difference of their corresponding co-indicants to one term (for logarithmic computation).

$$\begin{aligned}
(13) \quad \cap A + \cap B &= \\
\cap A - \cap B &= \\
\sqcup A + \sqcup B &= \\
\sqcup A - \sqcup B &=
\end{aligned}$$

$$\begin{aligned}
\cap A. \sqcup B + \sqcup A. \cap B. \\
\cap A. \sqcup B - \sqcup A. \cap B. \\
\sqcup A. \sqcup B - \cap A. \cap B. \\
\sqcup A. \sqcup B + \cap A. \cap B. \\
2 \cap A. \sqcup A. \\
\sqcup^2 A - \cap^2 A. \\
1 - 2 \cap^2 A. \\
2 \sqcup^2 A - 1. \\
\frac{\overline{\cap A + \overline{\cap B}}}{1 - \overline{\cap A. \overline{\cap B}}}. \\
\frac{\overline{\cap A - \overline{\cap B}}}{1 + \overline{\cap A. \overline{\cap B}}}. \\
\frac{2 \overline{\cap A}}{1 - \overline{\cap^2 A}}.
\end{aligned}$$

$$\begin{aligned}
\overline{\cap^{-1} \frac{t_1+t_2}{1-t_1 t_2}}. \\
\overline{\cap^{-1} \frac{t_1-t_2}{1+t_1 t_2}}. \\
\overline{\cap^{-1} \frac{2t}{1-t^2}}.
\end{aligned}$$

$$\begin{aligned}
\sqcup A. \sqcup B. \sqcup C. (\overline{\cap A + \overline{\cap B + \overline{\cap C} - \overline{\cap A. \overline{\cap B. \overline{\cap C}}}}). \\
\sqcup A. \sqcup B. \sqcup C. (1 - \overline{\cap B. \overline{\cap C} - \overline{\cap C. \overline{\cap A} - \overline{\cap A. \overline{\cap B}}}). \\
\cap A. (3 - 4 \cap^2 A). \\
\sqcup A. (4 \sqcup^2 A - 3). \\
\frac{\overline{\cap A + \overline{\cap B + \overline{\cap C} - \overline{\cap A. \overline{\cap B. \overline{\cap C}}}}}{1 - (\overline{\cap B. \overline{\cap C} + \overline{\cap C. \overline{\cap A} + \overline{\cap A. \overline{\cap B}}})}. \\
\frac{3 \overline{\cap A} - \overline{\cap^3 A}}{1 - 3 \overline{\cap^2 A}}. \\
\overline{\cap^{-1} \frac{t_1+t_2+t_3-t_1.t_2.t_3}{1-(t_2 t_3+t_3 t_1+t_1 t_3)}}. \\
\overline{\cap^{-1} \frac{3t-t^3}{1-3t^2}}.
\end{aligned}$$

$$\begin{aligned}
2 \cap \frac{A+B}{2}. \sqcup \frac{A-B}{2}. \\
2 \sqcup \frac{A+B}{2}. \cap \frac{A-B}{2}. \\
2 \sqcup \frac{A+B}{2}. \sqcup \frac{A-B}{2}. \\
-2 \cap \frac{A+B}{2}. \cap \frac{A-B}{2}.
\end{aligned}$$

$$\overline{\cap} A + \overline{\cap} B =$$

$$\overline{\cap} A - \overline{\cap} B =$$

III. FORMULÆ CONCERNING THE POWERS OF CO-INDICANTS.

(15) Demoiivre's theorem, viz.: $(\sqcup \theta \pm \sqrt{-1} \cdot \cap \theta)^n =$

Hence, if $2 \sqcup \theta = v + \frac{1}{v}$,

then $2\sqrt{-1} \cdot \cap \theta =$

$$2 \sqcup n\theta =$$

$$2\sqrt{-1} \cdot \cap n\theta =$$

(16) Formula expressing $\sqcup^n \theta$ in terms of $\sqcup \theta$, $\sqcup 2\theta$, $\sqcup 3\theta$, &c. Rule is

(17) Formula expressing $\cap^n \theta$ in terms of $\cap \theta$, $\cap 2\theta$, $\cap 2\theta$, &c. Rule is

(18) Formula expressing $\overline{\cap}^n \theta$ in terms of $\overline{\cap} \theta$, $\overline{\cap} 2\theta$, $\overline{\cap} 3\theta$, &c. Rule is

IV. SUMMATION OF SERIES OF CO-INDICANTS.

$$(19) \cap A + \cap(A+B) + \dots + \cap(A + \overline{n+1}. B) =$$

$$\sqcup A + \sqcup(A+B) + \dots + \sqcup(A + \overline{n+1}. B) =$$

$$\text{Hence } \cap A + \cap 2A + \dots + \cap nA =$$

$$\sqcup A + \sqcup 2A + \dots + \sqcup nA =$$

V. FORMULÆ CONNECTING THE CO-INDICANTS OF AN ANGLE WITH ITS RADIAL MEASURE.

N.B. The number $\left(1 + \frac{1}{\underline{1}} + \frac{1}{\underline{2}} + \dots \text{ad inf.}\right)$, i. e. the number 2.71828&c., is represented by "e." Also, when the symbol θ is used without any co-indicant symbol, it represents the angle in *radial* measure.

(20) Formulæ expressing $\cap \theta$ and $\sqcup \theta$ in terms of θ , θ^2 , θ^3 , &c.

(21) Gregorie's series, expressing θ in terms of $\overline{\cap} \theta$, $\overline{\cap}^3 \theta$, &c. (i. e. expressing $\overline{\cap}^{-1} t$ in terms of t , t^3 , &c.)

Hence to find π .

(22) Euler's series to find π .

Rule is

Rule is

$$\frac{\cap(A+B)}{\sqcup A \cdot \sqcup B} \cdot$$

$$\frac{\cap(A-B)}{\sqcup A \cdot \sqcup B} \cdot$$

$$\sqcup n\theta \pm \sqrt{-1} \cdot \cap n\theta.$$

$$v - \frac{1}{v}.$$

$$v^n + \frac{1}{v^n}.$$

$$v^n - \frac{1}{v^n}.$$

$$\text{let } (2 \sqcup \theta)^n = \left(v + \frac{1}{v}\right)^n.$$

$$\text{let } (2\sqrt{-1} \cdot \cap \theta)^n = \left(v - \frac{1}{v}\right)^n.$$

in Demoiivre's theorem, equate the possible and impossible parts on both sides, and divide one by the other.

$$\frac{\cap \frac{nB}{2}}{\cap \frac{B}{2}} \cdot \cap \left(A + \frac{(n-1) \cdot B}{2}\right).$$

$$\frac{\cap \frac{nB}{2}}{\cap \frac{B}{2}} \cdot \sqcup \left(A + \frac{(n-1) \cdot B}{2}\right).$$

$$\frac{\cap \frac{nA}{2}}{\cap \frac{A}{2}} \cdot \cap \frac{(n+1) \cdot A}{2}.$$

$$\frac{\cap \frac{nA}{2}}{\cap \frac{A}{2}} \cdot \sqcup \frac{(n+1) \cdot A}{2}.$$

$$\sqcup \theta = 1 - \frac{\theta^2}{\underline{2}} + \frac{\theta^4}{\underline{4}} - \&c.$$

$$\cap \theta = \theta - \frac{\theta^3}{\underline{3}} + \frac{\theta^5}{\underline{5}} - \&c.$$

$$\theta = \frac{\overline{\cap} \theta}{1} - \frac{\overline{\cap}^3 \theta}{3} + \frac{\overline{\cap}^5 \theta}{5} - \&c.$$

$$\text{i. e. } \overline{\cap}^{-1} t = \frac{t}{1} - \frac{t^3}{3} + \frac{t^5}{5} - \&c.$$

let $\theta = \frac{1}{2}$ a right angle.

in the formula $\overline{\cap}^{-1} t_1 - \overline{\cap}^{-1} t_2 = \overline{\cap}^{-1} \frac{t_1 - t_2}{1 + t_1 t_2}$,

let $t_1 = 1$, and $t_2 = \frac{1}{2}$, and use Gregorie's series.

(23) Machin's series to find π . Rule is

(24) Formulæ expressing $\cap \theta$ and $\sqcup \theta$ in terms of θ and ϵ .

$$\begin{aligned}\cap \theta &= \frac{1}{2} \cdot (\epsilon^{\theta\sqrt{-1}} + \epsilon^{-\theta\sqrt{-1}}), \\ \sqcup \theta &= \frac{1}{2\sqrt{-1}} \cdot (\epsilon^{\theta\sqrt{-1}} - \epsilon^{-\theta\sqrt{-1}}).\end{aligned}$$

in the formula $2 \overline{\cap}^{-1} t = \overline{\cap}^{-1} \frac{2t}{1-t^2}$, let $t = \frac{1}{5}$, multiply both sides by 2, and reduce the right-hand side by the same formula; subtract the equation $\left(\frac{\pi}{4} = \overline{\cap}^{-1} 1\right)$ from the result, and use Gregorie's series.

Formulæ of Part III.

(α) *Given certain magnitudes concerning a triangle: to find certain other magnitudes.*

N.B. The 3 sides are represented by " a, b, c "; the opposite angles by " A, B, C "; and the quantity $\frac{a+b+c}{2}$ by " S ."

- (1) "Formula of sines."
- (2) "Formula of sides."
- (3) "Formula of tangents."
- (4) $\sqcup \frac{A}{2}$, in terms of the sides, =
- $\cap \frac{A}{2}$, in terms of the sides, =
- (5) $\cap A$, in terms of the sides, =
- (6) Area of triangle, in terms of the sides, =
- (7) Area of triangle, in terms of 2 sides and the included angle, =

N.B. The radius of the circle inscribed in a triangle is represented by " r "; the radius of the circumscribed circle by " R "; and the radii of the 3 escribed circles, respectively touching the sides " a, b, c ," by " R_a, R_b, R_c ." Also the quantity $\sqrt{S \cdot (S-a) \cdot (S-b) \cdot (S-c)}$ is represented by M .

- (8) r , in terms of the sides, =
- (9) R , in terms of the sides, =
- (10) R_a, R_b , and R_c , in terms of the sides, =

(β) *Given certain magnitudes connected with a quadrilateral figure, whose opposite angles are supplementary: to find certain other magnitudes.*

N.B. The 4 sides are represented by " a, b, c, d "; the quantity $\frac{a+b+c+d}{2}$ by " S "; and the quantity $\sqrt{(ab+cd) \cdot (ac+bd) \cdot (ad+bc)}$ by " D ".

- (11) Area of figure, in terms of the sides, =
- (12) Length of diagonal lying between the sides a, b , and the sides c, d , =

$$\begin{aligned}\frac{\cap A}{a} &= \frac{\cap B}{b} = \frac{\cap C}{c}. \\ \sqcup A &= \frac{b^2+c^2-a^2}{2bc}. \\ \frac{a-b}{a+b} &= \overline{\cap} \frac{A-B}{2} \cdot \overline{\cap} \frac{C}{2}. \\ &\sqrt{\frac{S \cdot (S-a)}{bc}}. \\ &\sqrt{\frac{(S-b) \cdot (S-c)}{bc}}. \\ \frac{2}{bc} \sqrt{S \cdot (S-a) \cdot (S-b) \cdot (S-c)}. \\ &\sqrt{S \cdot (S-a) \cdot (S-b) \cdot (S-c)}.\end{aligned}$$

$$\frac{bc}{2} \cdot \cap A.$$

$$\begin{aligned}&\frac{M}{S}. \\ &\frac{abc}{4M}. \\ &\frac{M}{S-a}, \frac{M}{S-b}, \text{ and } \frac{M}{S-c}.\end{aligned}$$

$$\sqrt{(S-a) \cdot (S-b) \cdot (S-c) \cdot (S-d)}.$$

$$\frac{D}{ab+cd}.$$

(13) Length of diagonal lying between the sides a, d , and the sides b, c , =

$$\frac{D}{ad+bc}.$$

N.B. The radius of the circumscribed circle is represented by " R ," and the quantity $\sqrt{(S-a)(S-b)(S-c)(S-d)}$ by M .

(14) R , in terms of sides, =

$$\frac{D}{4M}.$$

(γ) *Given certain magnitudes connected with a regular polygon: to find certain other magnitudes.*

N.B. The length of each side is represented by " a ," and the number of the sides by " n ."

(15) Area, in terms of a , =

$$\frac{na^2}{4} \cdot \cup \frac{180^\circ}{n}.$$

N.B. The radius of the inscribed circle is represented by " r ," and of the circumscribed by " R ."

(16) r , in terms of a , =

$$\frac{a}{2} \cdot \cup \frac{180^\circ}{n}.$$

(17) R , in terms of a , =

$$\frac{a}{2} \cdot \cap \frac{180^\circ}{n}.$$

(18) Area, in terms of r , =

$$nr^2 \cdot \cup \frac{180^\circ}{n}.$$

(19) Area, in terms of R , =

$$\frac{nR^2}{2} \cdot \cap \frac{360^\circ}{n}.$$

4.4 Euclid and His Modern Rivals

Source: Euclid and His Modern Rivals, second edition

Act I.

Scene I.

'Confusion worse confounded.'

Quoted from
Paradise Lost by
John Milton

[*Scene, a College study. Time, midnight. MINOS discovered seated between two gigantic piles of manuscripts. Ever and anon he takes a paper from one heap, reads it, makes an entry in a book, and with a weary sigh transfers it to the other heap. His hair, from much running of fingers through it, radiates in all directions, and surrounds his head like a halo of glory, or like the second Corollary of Euc. I. 32. Over one paper he ponders gloomily, and at length breaks out in a passionate soliloquy.*]

Min. So, my friend! *That's* the way you prove I. 19, is it? Assuming I. 20? Cool, refreshingly cool! But stop a bit! Perhaps he doesn't 'declare to win' on Euclid. Let's see. Ah, just so! 'Legendre,' of course! Well, I suppose I must give him full marks for it: what's the question worth?—Wait a bit, though! Where's his paper of yesterday? I've a very decided impression he was all for 'Euclid' then: and I know the paper had I. 20 in it. . . . Ah, here it is! 'I think we do know the sweet Roman hand.' Here's the Proposition, as large as life, and proved by I. 19. 'Now, infidel, I have thee on the hip!' You shall have such a sweet thing to do in *vivâ-voce*, my very dear friend! You shall have the two Propositions together, and take them in any order you like. It's my profound conviction that you don't know how to prove either of them without the other. They'll have to introduce each other, like Messrs. Pyke and Pluck. But what fearful confusion the whole subject is getting into! (*Knocking heard.*) Come in!

Quoted from *Twelfth Night* by William Shakespeare

Quoted from *The Merchant of Venice* by William Shakespeare

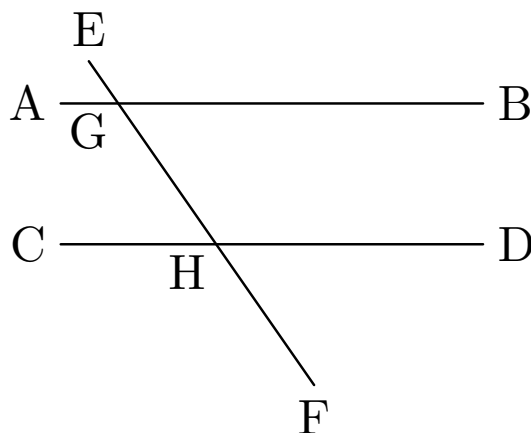
Enter RHADAMANTHUS.

Rhad. I say! Are we bound to mark an answer that's a clear logical fallacy?

Min. Of course you are—with that peculiar mark which cricketers call 'a duck's egg,' and thermometers 'zero.'

Rhad. Well, just listen to this proof of I. 29.

Reads.



‘Let EF meet the two parallel Lines AB , CD , in the points GH . The alternate angles AGH , GHD , shall be equal.

‘For AGH and EGB are equal because vertically opposite, and EGB is also equal to GHD (Definition 9); therefore AGH is equal to GHD ; but these are alternate angles.’

Did you ever hear anything like that for calm assumption?

Min. What does the miscreant mean by ‘Definition 9’?

Rhad. Oh, that’s the grandest of all! You must listen to that bit too. There’s a reference at the foot of the page to ‘Cooley.’ So I hunted up Mr. Cooley among the heaps of Geometries they’ve sent me—(by the way, I wonder if they’ve sent *you* the full lot? Forty-five were left in my rooms to-day, and ten of them I’d never even heard of till to-day!)—well, as I was saying, I looked up Cooley, and here’s the Definition.

Reads.

‘Right Lines are said to be parallel when they are equally and similarly inclined to the same right Line, or make equal angles with it towards the same side.’

Min. That is very soothing. So far as I can make it out, Mr. Cooley quietly assumes that a Pair of Lines, which make equal angles with *one* Line, do so with *all* Lines. He might just as well say that a young lady, who was inclined to *one* young man, was ‘equally and similarly inclined’ to *all* young men!

Rhad. She might ‘make equal angling’ with them all, anyhow. But, seriously, what are we to do with Cooley?

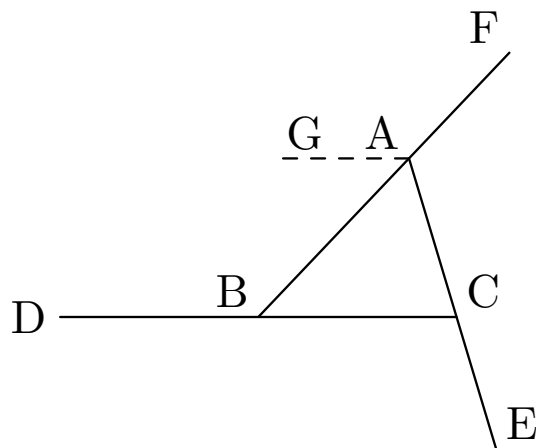
Min. (*thoughtfully*) Well, if we had him in the Schools, I *think* we should pluck him.

Rhad. But as to this answer?

Min. Oh, give it full marks! What have we to do with logic, or truth, or falsehood, or right, or wrong? ‘We are but markers of a larger growth’—only that *we* have to mark foul strokes, which a respectable billiard-marker doesn’t do, as a general rule!

Rhad. There’s one thing more I want you to look at. Here’s a man who puts ‘Wilson’ at the top of his paper, and proves Euc. I. 32 from first principles, it seems to me, without using any other Theorem at all.

Min. The thing sounds impossible.
Rhad. So *I* should have said. Here's the proof.



‘Slide $\angle DBA$ along BF into position GAF , GA having same direction as DC (Ax. 9); similarly slide $\angle BCE$ along AE into position GAC . Then the ext. $\angle s = CAF, FAG, GAC =$ one revolution $=$ two straight $\angle s$. But the ext. and int. $\angle s = 3$ straight $\angle s$. Therefore the int. $\angle s =$ one straight $\angle = 2$ right angles. Q. E. D.’

I'm not well up in 'Wilson': but surely he doesn't beg the whole question of Parallels in one axiom like this!

Min. Well, no. There's a Theorem and a Corollary. But this is a sharp man: he has seen that the Axiom does just as well by itself. Did you ever see one of those conjurers bring a globe of live fish out of a pocket-handkerchief? That's the kind of thing we have in Modern Geometry. A man stands before you with nothing but an Axiom in his hands. He rolls up his sleeves. 'Observe, gentlemen, I have nothing concealed. There is no deception!' And the next moment you have a complete Theorem, Q. E. D. and all!

Rhad. Well, so far as *I* can see, the proof's worth nothing. What am I to mark it?

Min. Full marks: we *must* accept it. Why, my good fellow, I'm getting into that state of mind, I'm ready to mark *any* thing and *any* body. If the Ghost in Hamlet came up this minute and said 'Mark me!' I should say 'I will! Hand in your papers!'

Rhad. Ah, it's all very well to chaff, but it's enough to drive a man wild, to have to mark all this rubbish! Well, good night! I must get back to my work. [*Exit.*]

Min. (*indistinctly*) I'll just take forty winks, and—

(*Snores.*)

Scene II.

Οὐκ ἀγαθὸν πολυκοιρανίη ἐἴς κοίρανος ἔστω,
 Εἴς βασιλεὺς.

Quoted from *Iliad* by
 Homer

[MINOS *sleeping: to him enter the Phantasm of EUCLID. MINOS opens his eyes and regards him with a blank and stony gaze, without betraying the slightest surprise or even interest.*]

§ 1. **A priori reasons for retaining Euclid's Manual.** *Enc.* Now what is it you really require in a Manual of Geometry?

Min. Excuse me, but—with all respect to a shade whose name I have revered from early boyhood—is not that *rather* an abrupt way of starting a conversation? Remember, we are twenty centuries apart in history, and consequently have never had a personal interview till now. Surely a few preliminary remarks—

Enc. Centuries are long, my good sir, but *my* time to-night is short: and I never was a man of many words. So kindly waive all ceremony and answer my question.

Min. Well, so far as I can answer a question that comes upon me so suddenly, I should say—a book that will exercise the learner in habits of clear definite conception, and enable him to test the logical value of a scientific argument.

Enc. You do *not* require, then, a complete repertory of Geometrical truth?

Min. Certainly not. It is the ἐνέργεια rather than the ἔργον that we need here.

Enc. And yet many of my Modern Rivals have thus attempted to improve upon me—by filling up what they took to be my omissions.

Min. I doubt if they are much nearer to completeness themselves.

Enc. I doubt it too. It is, I think, a friend of yours who has amused himself by tabulating the various Theorems which might be enunciated in the single subject of Pairs of Lines. How many did he make them out to be?

Min. About two hundred and fifty, I believe.

Enc. At that rate, there would probably be, within the limits of my First Book, about how many?

Min. A thousand, at least.

Enc. What a popular school-book it will be! How boys will bless the name of the writer who first brings out the complete thousand!

Min. I think your Manual is fully long enough already for all possible purposes of teaching. It is not in the region of new matter that you need fear your Modern Rivals: it is in *quality*, not in *quantity*, that they claim to supersede you. Your methods of proof, so they assert, are antiquated, and worthless as compared with the new lights.

Enc. It is to that very point that I now propose to address myself: and, as we are to discuss this matter mainly with reference to the wants of *beginners*, we may as well limit our discussion to the subject-matter of Books I and II.

Min. I am quite of that opinion.

Enc. The first point to settle is whether, for purposes of teaching and examining, you desire to have one fixed logical sequence of Propositions, or would allow the use of conflicting sequences, so that one candidate in an examination might use *X* to prove *Y*, and another use *Y* to prove *X*—or even that the same candidate might offer *both* proofs, thus 'arguing in a circle.'

Min. A very eminent Modern Rival of yours, Mr. Wilson, seems to think that no such fixed sequence is really necessary. He says (in his Preface, p. 10) 'Geometry when treated as a science, treated inartificially, falls into a certain

order from which there can be no very wide departure; and the manuals of Geometry will not differ from one another nearly so widely as the manuals of algebra or chemistry; yet it is not difficult to examine in algebra and chemistry.'

Euc. Books may differ very 'widely' without differing in logical sequence—the only kind of difference which could bring two text-books into such hopeless collision that the one or the other would have to be abandoned. Let me give you a few instances of conflicting logical sequences in Geometry. Legendre proves my Prop. 5 by Prop. 8, 18 by 19, 19 by 20, 27 by 28, 29 by 32. Cuthbertson proves 37 by 41. Reynolds proves 5 by 20. When Mr. Wilson has produced similarly conflicting sequences in the manuals of algebra or chemistry, we may then compare the subjects: till then, his remark is quite irrelevant to the question.

Min. I do not think he will be able to do so: indeed there are very few logical chains *at all* in those subjects—most of the Propositions being proved from first principles. I think I may grant at once that it is essential to have *one* definite logical sequence, however many manuals we employ: to use the words of another of your Rivals, Mr. Cuthbertson (Pref. p. viii.), 'enormous inconvenience would arise in conducting examinations with no recognised sequence of Propositions.' This however applies to *logical* sequences only, such as your Props. 13, 15, 16, 18, 19, 20, 21, which form a continuous chain. There are many Propositions whose place in a manual would be partly arbitrary. Your Prop. 8, for instance, is not wanted till we come to Prop. 48, so that it might occupy any intermediate position, without involving risk of circular argument.

Euc. Now, in order to secure this uniform logical sequence, we should require to know, as to any particular Proposition, what other Propositions were its logical descendants, so that we might avoid using any of these in proving it?

Min. Exactly so.

Euc. We might of course give this information by attaching to each enunciation references to its logical descendants: but this would be a very cumbersome plan. A better way would be to give them in the form of a genealogy, but this would be very bulky if the enunciations themselves were inserted: so that it would be desirable to have numbers to distinguish the enunciations. In that case (supposing *my* logical sequence to be adopted) the genealogy would stand thus:—(see *Frontispiece*).

Min. Would it not be enough to publish an arranged list (which would be all the better if numbered also), and to enact that no Proposition should be used to prove any of its predecessors?

Euc. That would hamper the writers of manuals very much more than the genealogy would. Suppose, for instance, that you adopted, in the list, the order of Theorems in my First Book, and that a writer wished to prove Prop. 8 by Prop. 47: this would not interfere with my logical sequence, and yet your list would bar him from doing so.

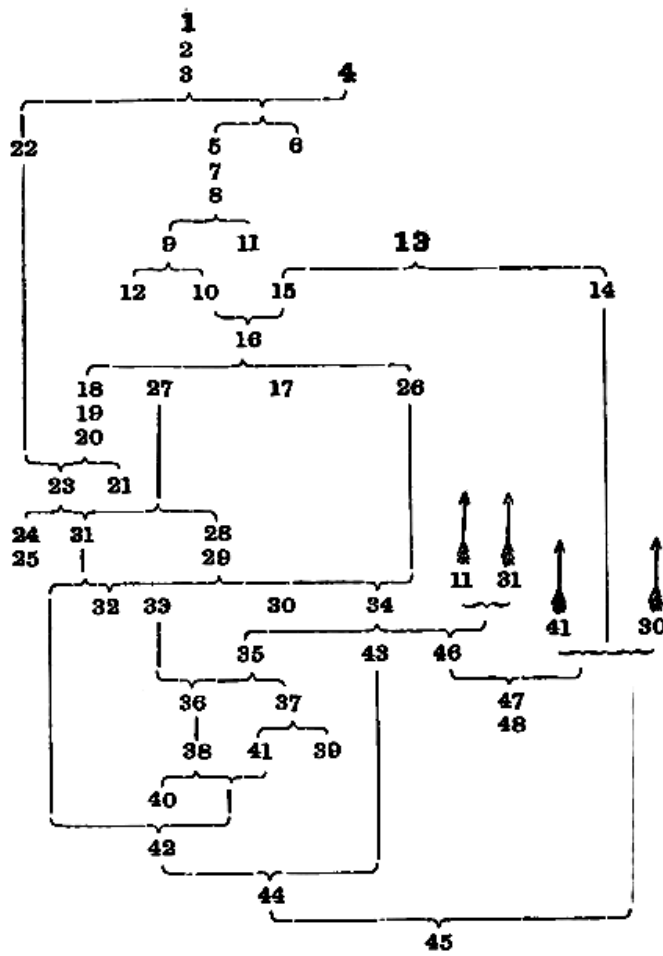
Min. But we might place 8 close before 48, and he would then be free to do as you suggest.

Euc. And suppose some other writer wished to prove 24 by 8?

Min. I see now that any single list must necessarily prevent many possible arrangements which would not conflict with the agreed-on logical sequence. And yet this is what the Committee of the Association for the Improvement of Geometrical Teaching have approved of, namely, 'a standard sequence for examination purposes,' and what the Association have published in their 'Syllabus of Plane Geometry.'

Euclid, Book I.

Arranged in Logical Sequence.



Euc. I think they have overlooked the fact that they are enacting many more sequences, as binding on writers, than the one logical sequence which they desire to secure. Their ‘standard sequence’ would be fitly replaced by a ‘standard genealogy.’ But in any case we are agreed that it is desirable to have, besides a standard logical sequence, a standard list of enunciations, numbered for reference?

Min. We are.

Euc. The next point to settle is, *what* sequence and numbering to adopt. You will allow, I think, that there are strong *a priori* reasons for retaining *my* numbers. The Propositions have been known by those numbers, for two thousand years; they have been referred to, probably, by hundreds of writers—in many cases by the numbers only, without the enunciations: and some of them, I. 5 and I. 47 for instance—‘the Asses’ Bridge’ and ‘the Windmill’—are now historical characters, and their nicknames are ‘familiar as household words.’

Min. Even if no better *sequence* than yours could be found, it might still be urged that a new set of *numbers* must be adopted, in order to introduce, in their proper places, some important Theorems which have been added to the subject since your time.

Euc. That want, if it were proved to exist, might, I think, be easily provided for without discarding my system of numbers. If you wished, for instance, to insert two new Propositions between I. 13 and I. 14, it would be far less inconvenient to call them 13 B and 13 C than to abandon the old numbers.

Min. I give up the objection.

Euc. You will allow then, I think, that my sequence and system of numbers should not be abandoned without good cause?

Min. Oh, certainly. And the *onus probandi* lies clearly on your Modern Rivals, and not on you.

Euc. Unless, then, it should appear that one of my Modern Rivals, whose logical sequence is incompatible with mine, is so decidedly better in his treatment of really important topics, as to make it worth while to suffer all the inconvenience of a change of numbers, you would not recognise his demand to supersede my Manual?

Min. On that point let me again quote Mr. Wilson. In his Preface, p. 15, he says, ‘In a few years I hope that our leading mathematicians will have published, perhaps in concert, one or more text-books of Geometry, not inferior, to say the least, to those of France, and that they will supersede Euclid by the sheer force of superior merit.’

Euc. And I should be quite content to be so superseded. ‘A fair field and no favour’ is all I ask.

§ 2. Method of procedure in examining Modern Rivals. *Min.* You wish me then to compare your book with those of your Modern Rivals?

Euc. Yes. But, in doing this, I must beg you to bear in mind that a Modern Rival will not have proved his case if he only succeeds in showing

- (1) that certain Propositions might with advantage be omitted (for this a teacher would be free to do, so long as he left the logical sequence complete);
- or (2) that certain proofs might with advantage be changed for others (for these might be interpolated as ‘alternative proofs’);

or (3) that certain new Propositions are desirable (for these also might be interpolated, without altering the numbering of the existing Propositions).

All these matters will need to be fully considered hereafter, if you should decide that my Manual ought to be retained: but they do not constitute the evidence on which that decision should be based.

Min. *That*, I think, you have satisfactorily proved. But what *would* you consider to be sufficient grounds for abandoning your Manual in favour of another?

Euc. Many grave charges have been brought against my Manual; but, of all these, there are only *two* which I regard as *crucial* in this matter. The first concerns my arrangement of Problems and Theorems: the second my treatment of Parallels.

If it be agreed that Problems and Theorems ought to be treated separately, my system of numbering must of course be abandoned, and no reason will remain why my Manual should then be retained as a *whole*; which is the only point I am concerned with. This question you can, of course, settle on its own merits, without examining any of the new Manuals.

If, again, it be agreed that, in treating Parallels, some other method, *essentially* different from mine, ought to be adopted, I feel that, after so vital a change as that, involving (as no doubt it would) the abandonment of my sequence and system of numbering, the remainder of my Manual would not be worth fighting for, though portions of it might be embodied in the new Manual. To settle this question, you must, of course, examine one by one the new methods that have been proposed.

Min. You would not even ask to have your Manual retained as an alternative for the new one?

Euc. No. For I think it essential for purposes of teaching, that in treating this vital topic one uniform method should be adopted; and that this method should be the best possible (for it is almost inconceivable that two methods of treating it should be *equally* good). An alternative proof of a minor Proposition may fairly be inserted now and then as about equal in merit to the standard proof, and may make a desirable variety: but on this one vital point it seems essential that nothing but the best proof existing should be offered to the limited capacity of a learner. *Vacuis committere venis nil nisi lene decet.*

Min. I agree with you that we ought to have one system only, and that the best, for treating the subject of Parallels. But would you have me limit my examination of your 'Modern Rivals' to this single topic?

Euc. No. There are several other matters of so great importance, and admitting of so much variety of treatment, that it would be well to examine any method of dealing with them which differs much from mine—not with a view of substituting the new Manual for mine, but in order to make such changes in my proofs as may be thought desirable. There are other matters again, where changes have been suggested, which you ought to consider, but on *general* grounds, not by examining particular writers.

Let me enumerate what I conceive should be the subjects of your enquiry, arranged in order of importance.

- (1) The combination, or separation, of Problems and Theorems.
- (2) The treatment of Pairs of Lines, especially Parallels, for which various new methods have been suggested. These may be classified as involving—
 - (α) Infinite series: suggested by LEGENDRE.

- (β) Angles made with transversals: COOLEY.
- (γ) Equidistance: CUTHBERTSON.
- (δ) Revolving Lines: HENRICI.
- (ε) Direction: WILSON, PIERCE, WILLOCK.
- (ζ) The substitution of 'Playfair's Axiom' for my Axiom 12.

If your decision, on these two crucial questions, be given in my favour, we may take it as settled, I think, that my Manual ought to be retained as a *whole*: how far it should be modified to suit modern requirements will be matter for further consideration.

- (3) The principle of superposition.
- (4) The use of diagonals in Book II.

These two are *general* questions, and will not need the examination of particular authors.

Besides this, it will be well, in order that your enquiry into the claims of my Modern Rivals may be as complete as possible, to review them one by one, with reference to their treatment of matters not already discussed, especially:—

- (5) Right Lines.
- (6) Angles, including right angles.
- (7) Propositions of mine omitted.
- (8) Propositions of mine treated by a new method.
- (9) New Propositions.
- (10) And you may as well conclude, in each case, with a general survey of the book, as to style, &c.

The following may be taken as a fairly complete catalogue of the books to be examined:—

- | | |
|-----------------|---------------------------------|
| 1. Legendre. | 8. Chauvenet. |
| 2. Cooley. | 9. Loomis. |
| 3. Cuthbertson. | 10. Morell. |
| 4. Henrici. | 11. Reynolds. |
| 5. Wilson. | 12. Wright. |
| 6. Pierce. | 13. Wilson's 'Syllabus'-Manual. |
| 7. Willock. | |

You should also examine the Syllabus, published by the Association for the Improvement of Geometrical Teaching, on which the last-named Manual is based. Not that it can be considered as a '*Rival*'—in fact, it is not a text-book at all, but a mere list of enunciations—but because, first, it comes with an array of imposing names to recommend it, and secondly, it discards my system of numbers, so that its adoption, as a standard for examinations, would seriously interfere with the retention of my Manual as the standard text-book.

Now, of these questions, I shall be most happy to discuss with you the *general* ones (I mean questions 1, 2 (ζ), 3, and 4) before we conclude this interview: but, when it comes to criticising particular authors, I must leave you to yourself, to deal with them as best you can.

Min. It will be weary work to do it all alone. And yet I suppose you cannot, even with *your* supernatural powers, fetch me the authors themselves?

Euc. I dare not. The living human race is so strangely prejudiced. There is nothing men object to so emphatically as being transferred by ghosts from place to place. I cannot say they are consistent in this matter: they are for ever 'raising' or 'laying' us poor ghosts—we cannot even haunt a garret without

having the parish at our heels, bent on making us change our quarters: whereas if *I* were to venture to move one single small boy—say to lift him by the hair of his head over only two or three houses, and to set him down safe and sound in a neighbour’s garden—why, I give you my word, it would be the talk of the town for the next month!

Min. I can well believe it. But what *can* you do for me? Are their *Doppelgänger* available?

Euc. I fear not. The best thing I can do is to send you the Phantasm of a German Professor, a great friend of mine. He has read all books, and is ready to defend any thesis, true or untrue.

Min. A charming companion! And his name?

Euc. Phantasms have no names—only numbers. You may call him ‘Herr Niemand,’ or, if you prefer it, ‘Number one-hundred-and-twenty-three-million-four-hundred-and-fifty-six-thousand-seven-hundred-and-eighty-nine.’

Min. For *constant* use, I prefer ‘Herr Niemand.’ Let us now consider the question of the separation of Problems and Theorems.

§ 3. The combination, or separation, of Problems and Theorems.

Euc. I shall be glad to hear, first, the reasons given for separating them, and will then tell you *my* reasons for mixing them.

Min. I understand that the Committee of the Association for the Improvement of Geometrical Teaching, in their Report on the Syllabus of the Association, consider the separation as ‘equivalent to the assertion of the principle that, while Problems are from their very nature dependent for the form, and even the possibility, of their solution on the arbitrary limitation of the instruments allowed to be used, Theorems, being truths involving no arbitrary element, ought to be exhibited in a form and sequence independent of such limitations.’ They add however that ‘it is probable that most teachers would prefer to introduce Problems, not as a separate section of Geometry, but rather in connection with the Theorems with which they are essentially related.’

Euc. It seems rather a strange proposal, to print the Propositions in one order and read them in another. But a stronger objection to the proposal is that several of the Problems are Theorems as well—such as I. 46, for instance.

Min. How is that a Theorem?

Euc. It proves that there is such a thing as a Square. The definition, of course, does not assert real existence: it is merely provisional. Now, if you omit I. 46, what right would you have, in I. 47, to say ‘draw a Square’? How would you know it to be possible?

Min. We could easily deduce that from I. 34.

Euc. No doubt a Theorem might be introduced for that purpose: but it would be very like the Problem: you would have to say ‘if a figure were drawn under such and such conditions, it would be a Square.’ Is it not quite as simple to draw it?

Then again take I. 31, where it is required to draw a Parallel. Although it has been proved in I. 27 that such things as parallel Lines *exist*, that does not tell us that, for every Line and for every point without that Line, there exists a real Line, parallel to the given Line *and passing through the given point*. And yet that is a fact essential to the proof of I. 32.

Min. I must allow that I. 31 and I. 46 have a good claim to be retained in their places: and if two are to be retained, we may as well retain all.

Euc. Another argument, for retaining the Problems where they are, is the importance of keeping the numbering unchanged—a matter we have already discussed.

But perhaps the strongest argument is that it saves you from ‘hypothetical constructions,’ the danger of which has been so clearly pointed out by Mr. Todhunter (see pp. 222, 241).

Min. I think you have proved your case very satisfactorily. The next subject is ‘the treatment of Pairs of Lines.’ Would it not be well, before entering on this enquiry, to tabulate the Propositions that have been enunciated, whether as Axioms or Theorems, respecting them?

Euc. That will be an excellent plan. It will both give you a clear view of the field of your enquiry, and enable you to recognise at once any doubtful Axioms which you may meet with.

Min. Will you then favour me with your views on this matter?

Euc. Willingly. It is a subject which I need hardly say I considered very carefully before deciding what Definitions and Axioms to adopt.

§ 4. Syllabus of propositions relating to Pairs of Lines. Let us begin with the simplest possible case, a Pair of infinite Lines which have two common points, and which therefore coincide wholly, and let us consider how such a Pair may be defined, and what other properties it possesses.

After that we will take a Pair of Lines which have a common point and a separate point (‘a separate point’ being one that lies on one of the Lines but not on the other), and which therefore have no other common point, and treat it in the same way.

And in the third place we will take a Pair of Lines which have *no* common point.

And let us understand, by ‘the distance between two points,’ the length of the right Line joining them; and, by ‘the distance of a point from a Line,’ the length of the perpendicular drawn, from the point, to the Line.

Now the properties of a Pair of Lines may be ranged under four headings:—

- (1) as to common or separate points;
- (2) as to the angles made with transversals;
- (3) as to the equidistance, or otherwise, of points on the one from the other;
- (4) as to direction.

We might distinguish the first two classes, which I have mentioned, as ‘coincident’ and ‘intersecting’: and these names would serve very well if we were going to consider only infinite Lines; but, as all the relations of infinite Lines, with regard to angles made with transversals, equidistance of points, and direction, are equally true of finite portions of them, it will be well to use names which will include them also. And the names I would suggest are ‘coincidental,’ ‘intersectional,’ and ‘separational.’

By ‘coincidental Lines,’ then, I shall mean Lines which either coincide or would do so if produced: and by ‘intersectional Lines’ I shall mean Lines which either intersect or would do so if produced; and, by ‘separational Lines,’ Lines which have no common point, however far produced.

In the same way, when I speak of ‘Lines having a common point,’ or of ‘Lines having two common points,’ I shall mean Lines which either have such points or would have them if produced.

It will also save time and trouble to agree on the use of a certain conventional phrase respecting transversals.

It admits of easy proof that, if a Pair of Lines make, with a certain transversal, either (a) a pair of alternate angles equal, or (b) an exterior angle equal to the interior opposite angle on the same side of the transversal, or (c) a pair of interior angles on the same side of the transversal supplementary; they will make, with the same transversal, (d) each pair of alternate angles equal, and (e) every exterior angle equal to the interior opposite angle on the same side of the transversal, and (f) each pair of interior angles on the same side of the transversal supplementary.

You will accept that as a simple Theorem, though with a somewhat lengthy enunciation?

Min. Certainly.

Euc. The phrase I propose is as follows. When I speak of a Pair of Lines as ‘equally inclined to’ a transversal, I wish it to be understood that they fulfil some one of the three conditions (a), (b), (c), and *therefore* all the three conditions (d), (e), (f).

Min. A most convenient abridgment.

Euc. Similarly, it admits of easy proof that, if a Pair of Lines make, with a certain transversal, either (a) a pair of alternate angles unequal, or (b) an exterior angle unequal to the interior opposite angle on the same side of the transversal, or (c) a pair of interior angles on the same side of the transversal not supplementary; they will make, with the same transversal, (d) each pair of alternate angles unequal, and (e) every exterior angle unequal to the interior opposite angle on the same side of the transversal, and (f) each pair of interior angles on the same side of the transversal not supplementary.

And when I speak of a Pair of Lines as ‘unequally inclined to’ a transversal, I wish it to be understood that they fulfil some one of the three conditions (a), (b), (c), and *therefore* all the three conditions (d), (e), (f).

Min. Very well.

Euc. Now the Propositions relating to Pairs of Lines may be divided into two classes, the first covering the ground occupied by my Axiom 10 (‘two straight Lines cannot enclose a space’) and my Propositions I. 16, 17, 27, 28, 31; the second that occupied by my Axiom 12 and Propositions I. 29, 30, 32. Those in the first class are logical deductions from Axioms which have never been disputed: the second class has furnished, through all ages, a battle-field for rival mathematicians. That *some one* of the Propositions in this class must be assumed as an Axiom is agreed on all hands, and each combatant in turn proclaims his own special favourite to be the *one* axiomatic truth of the series, insisting that all the rest ought to be proved as Theorems.

Let us now consider the properties of Pairs of Lines.

Such pairs may be arranged in three distinct classes. I will take them separately, and enumerate, for each class, first the ‘subjects,’ and secondly the ‘predicates,’ of Propositions concerning it.

Min. Let us make sure that we understand each other as to those two words. I presume that a ‘subject’ will include just so much ‘property’ as is needed to

indicate the Pair of Lines referred to, i. e. to serve as a sufficient Definition for them?

Euc. Exactly so. Now, if we are told that a certain Pair of Lines fulfil some one of the following conditions:—

(1) they have two common points;

or (2) they have a common point, and are equally inclined to a certain transversal;

or (3) they have a common point, and one of them has two points on the same side of, and equidistant from, the other;

or (4) they have a common point and identical directions;

we may conclude that they fulfil *all* the following conditions:—

(1) they are coincidental;

(2) they are equally inclined to any transversal;

(3) they are ‘equidistantial,’ i. e. any two points on one are equidistant from the other;

(4) they have identical directions.

Min. You mean, by ‘conclude,’ that we may *prove* our conclusion?

Euc. Yes, wherever proof is needed. Conclusions (1) and (4) need none, and are usually stated as Axioms.

Min. In subject (4), instead of ‘identical directions,’ why not say ‘the same direction’?

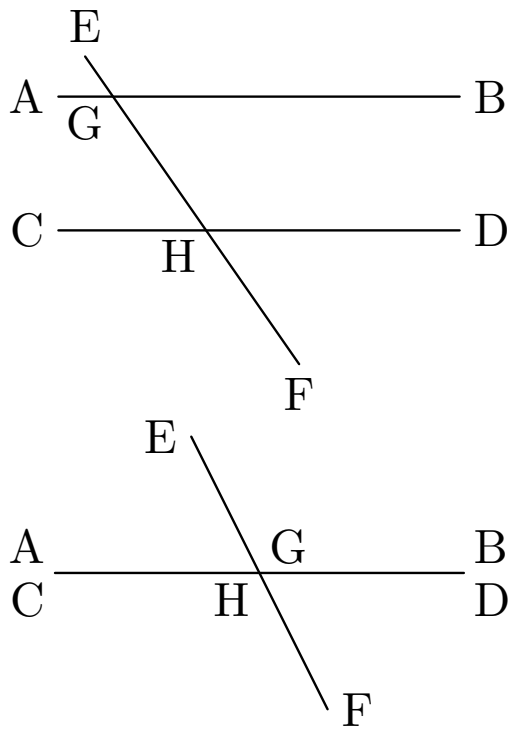
Euc. Because I want to keep clearly in view that there are *two* Lines.

Min. In predicate (2), you speak of ‘*any* transversal’: a little while ago, you spoke of ‘*every* exterior angle.’ Do you make any distinction between ‘any’ and ‘every’?

Euc. Where the things spoken of are limited in number, I use ‘every’; where infinite, I use ‘any’ in order to bring the idea within the grasp of our finite intellects. For instance, you may talk of ‘*every* grain of sand in the world’: there are, no doubt, what country-folk would call ‘a good few’ of them, but still the number is limited, and the mind can just grasp the idea. But if you tell me that ‘*every* cubic inch of Space contains eight cubic half-inches,’ my mind is unable to form a distinct conception of the subject of your Proposition: you would convey the same truth, and in a form I *could* grasp, by saying ‘*any* cubic inch.’

Min. The angles made with the transversal are a little bewildering when the Pair of Lines shrinks, as it does in this case, into *one* Line. For instance, what becomes of the pair of interior angles on the same side of the transversal?

Euc. A diagram will make it clear.



By examining the second figure (in which, as you see, there are three points with double names) we find that the alternate angles AGF , EHD , have become *vertical* angles; that the exterior and interior opposite angles EGB , EHD , have become *the same* angle; and that the two interior angles BGF , DHE , have become *adjacent* angles.

Min. That is quite clear.

Euc. Let us go on to the second class of Pairs of Lines.

If we are told that a certain Pair of Lines fulfil some one of the following conditions:—

- (1) they have a common point and a separate point;
- or (2) they have a common point, and are unequally inclined to a certain transversal;
- or (3) they have a common point, and one of them has two points not-equidistant from the other;
- or (4) they have a common point and different directions;

we may conclude that they fulfil *all* the following conditions:—

- (1) they are separational;
- (2) they are unequally inclined to any transversal;
- (3) any two points on one, which are on the same side of the other, are not equidistant from it;
- (4) a point may be found on each, whose distance from the other shall exceed any assigned length;
- (5) they have different directions.

And thirdly, if we are told that a certain Pair of Lines fulfil some one of the following conditions:—

(1) they have a separate point, and are equally inclined to a certain transversal;

or (2) they have a separate point, and one of them has two points on the same side of, and equidistant from, the other;

we may conclude that they are separational.

Min. Why not use your own word 'parallel'?

Euc. Because that word is not uniformly employed, by modern writers, in one and the same sense. I would advise you, in discussing the works of my Modern Rivals, to disallow the use of the word 'parallel' altogether, and to oblige each writer to adopt a word which shall express his own definition.

Min. When you speak of two points on one Line, *which are on the same side of the other*, being 'equidistant from it,' do you include the case of their lying on the other Line?

Euc. Certainly. You may take them as lying on either side you like, and at zero-distances. The only case excluded is, where both points are *outside* the other Line, and on *opposite* sides of it.

Min. I understand you.

Euc. We shall find the Table of Propositions, which I now lay before you, very convenient to refer to. I have placed contranominal Propositions (i. e. Propositions of the form 'All X is Y,' 'All not-Y is not-X') in the same section.

TABLE I.

Containing twenty Propositions, of which some are undisputed Axioms, and the rest real and valid Theorems, deducible from undisputed Axioms.

[N.B. Those marked * have been proposed as Axioms.]

*1. A Pair of Lines, which have two common points, are coincidental.

or

*. Two Lines cannot enclose a space. [Euc. Ax.]

2. (a) A Pair of Lines, which have a separate point, have not two common points.

(b) A Pair of Lines, which have a common point and a separate point, are intersectional.

3. If there be given a Line and a point, it is possible to draw a Line, through the given point, intersectional with the given Line.

4. A Pair of intersectional Lines are unequally inclined to any transversal.

Cor. 1. In either pair of alternate angles, that, which is on the side, of the transversal, remote from the point of intersection, is the greater. [I. 16.]

Cor. 2. Every exterior angle, which is on the side, of the transversal, next to the point of intersection, is greater than the interior opposite angle on the same side. [I. 16.]

Cor. 3. The pair of interior angles, which are on the side, of the transversal, next to the point of intersection, are together less than two right angles. [I. 17.]

5. A Pair of Lines, which have a common point and are equally inclined to a certain transversal, are coincidental.

6. A Pair of Lines, which have a separate point and are equally inclined to a certain transversal, are separational. [I. 27, 28.]

7. If there be given a Line and a point without it, it is possible to draw a Line, through the given point, separational from the given Line. [I. 31.]
8. A Pair of intersectional Lines are such that any two points on one, which are on the same side of the other, are not equidistant from it. Cor. That which is the more remote from the point of intersection has the greater distance.
9. A Pair of Lines, which have a common point and of which one has two points on the same side of and equidistant from the other, are coincidental.
10. A Pair of Lines, which have a separate point and of which one has two points on the same side of and equidistant from the other, are separational.
11. Each of a Pair of intersectional Lines has, in each portion of it, a point whose distance from the other exceeds any given length. or A Pair of intersectional Lines diverge without limit.
12. A Pair of Lines, which have two common points, have identical directions.
*13. (a) A Pair of Lines, which have different directions, have not two common points. (b) A Pair of Lines, which have a common point and different directions, are intersectional.
*14. A Pair of intersectional Lines have different directions.
*15. A Pair of Lines, which have a common point and identical directions, are coincidental.
*16. If there be given a Line and a point without it: it is possible to draw a Line, through the given point, having a direction different from that of the given Line.
17. A Line, which has a point in common with one of two coincidental Lines has a point in common with the other also.
18. A Line, which has a point in common with one of two separational Lines, has a point separate from the other.
*19. A Line, which has a point in common with one of two separational Lines and also a point in common with the other, is intersectional with both.
*20. If there be three Lines; the first a right Line; the second, not assumed to be right, having a point separate from the first and being equidistant from it; the third a right Line intersecting the first and diverging from it without limit on the side next to the second: the third is intersectional with the second.

Min. I see that 2 (a) is the contranominal of 1. But where does 2 (b) come from?

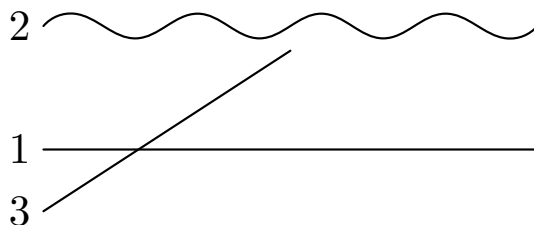
Euc. It is got from 2 (a) by adding, to each term, the property 'having a common point'—just as if we were to deduce, from 'all men are mortal,' 'all fat men are fat mortals.'

Min. You mean 5 to be contranominal to 4, I suppose. But 'coincidental' is not equivalent to 'non-intersectional.'

Euc. True: but I have added a new condition, viz. 'which have a common point,' to the subject. Non-intersectional Lines, which have a common point, are coincidental, just as, in the next Proposition, non-intersectional Lines, which

have a separate point, are separational.

Min. 20 is rather a difficult enunciation to grasp.



Euc. A diagram will make it clear. As a matter of fact. No. 2 would be a right Line: but, as we have no right, at present, to assume this, I have drawn it as a wavy line.

Min. I can suggest two Contranominals which you have omitted: one, deducible from 13 (*b*), ‘Two Lines, which are not intersectional and which have different directions, have no common point, i. e. are separational’; the other, deducible from 15, ‘Two Lines, which have a separate point and identical directions, have no common point, i. e. are separational.’

Euc. They are *valid* deductions, but in neither case do we know the ‘subject’ to be *real*.

Min. The ‘contranominality’—if such a fearful word be allowable—of 17, 18, 19, seems obscure.

Euc. I will do what I can to make it less so.

Let us name the three Lines ‘*A, B, C.*’

Then 17 may be read ‘A Line (*C*), which has a point in common with one (*A*) of two coincidental Lines (*A, B*), has a point in common with the other (*B*) also.’

From this we may deduce two Contranominals.

The first is ‘If *A, C*, have a common point; and *B, C*, are separational: *A, B* have a separate point.’ That is, ‘a Line (*A*), which has a point in common with one (*C*) of two separational Lines (*B, C*), has a point separate from the other (*B*)’: and thus we get 18.

The other Contranominal is ‘If *A, C*, have a common point; and *A, B*, have a common point; and *B, C*, are separational: *A, B*, are intersectional.’ That is, ‘A Line (*A*), which has a point in common with one (*C*) of two separational Lines (*B, C*), and also a point in common with the other (*B*), is intersectional with that other (*B*).’

But we may evidently interchange *B* and *C* without interfering with the argument, and thus prove that *A* is *also* intersectional with *C*. Hence *A* is intersectional with *both*: and thus we get 19.

Min. That is quite clear.

Euc. We will now go a little further into the subject of separational Lines, as to which Table I. has furnished us with only three Propositions. There are, however, many other Propositions concerning them, which are fully admitted to be *true*, though no one of them has yet been proved from undisputed Axioms: and we shall find that they are so related to one another that, if any *one* be granted as an Axiom, all the rest may be proved; but, unless some one be so

granted, none can be proved. Two thousand years of controversy have not yet settled the knotty question *which* of them, if any, can be taken as axiomatic.

If we are told that a certain Pair of Lines fulfil some one of the following conditions:—

- (1) they are separational;
- (2) they have a separate point and are equally inclined to a certain transversal;
- (3) they have a separate point, and one of them has two points on the same side of and equidistant from the other;

we may prove (though not without the help of *some* disputed Axiom) that they fulfil *both* the following conditions:—

- (1) they are equally inclined to any transversal;
- (2) they are equidistantial from each other.

These Propositions, with the addition of my own I. 30, I. 32, and certain others, I will now arrange in a tabular form, placing Contranominals in the same section.

TABLE II.	
<i>Containing eighteen Propositions, of which no one is an undisputed Axiom, but all are real and valid Theorems, which, though not deducible from undisputed Axioms, are such that, if any one be admitted as an Axiom, the rest can be proved.</i>	
[N.B. Those marked * have been, or parts of them have been, proposed as Axioms.]	
1. A Pair of separational Lines are equally inclined to any transversal.	[I. 29.]
*2. A Pair of Lines, which are unequally inclined to a certain transversal, are intersectional.	[Euc. Ax.]
3. Through a given Point, without a given Line, a Line may be drawn such that the two Lines are equally inclined to any transversal.	
4. A Pair of Lines, which are equally inclined to a certain transversal, are so to any transversal.	
5. A Pair of Lines, which are unequally inclined to a certain transversal, are so to any transversal.	
6. A Pair of separational Lines are equidistantial from each other.	
*7. A Pair of Lines, of which one has two points on the same side of, and not equidistant from, the other, are intersectional.	
*8. Through a given point, without a given Line, a Line may be drawn such that the two Lines are equidistantial from each other.	
9. A Pair of Lines, of which one has two points on the same side of, and equidistant from, the other, are equally inclined to any transversal.	
10. A Pair of Lines, which are unequally inclined to a certain transversal, are such that any two points on one, which are on the same side of the other, are not equidistant from it.	

<p>11. A Pair of Lines, which are equally inclined to a certain transversal, are equidistant from each other.</p> <p>12. A Pair of Lines, of which one has two points on the same side of, and not equidistant from, the other, are unequally inclined to any transversal.</p>
<p>13. A Pair of Lines, of which one has two points on the same side of, and equidistant from, the other, are equidistant from each other.</p> <p>14. A Pair of Lines, of which one has two points on the same side of, and not equidistant from, the other, are such that any two points on one, which are on the same side of the other, are not equidistant from it.</p>
<p>15. (a) A Pair of Lines, which are separational from a third Line, are not intersectional with each other.</p> <p>(b) A Pair of Lines, which have a common point and are separational from a third Line, are coincidental with each other.</p> <p style="text-align: center;">or,</p> <p>If there be given a Line and a point without it, only one Line can be drawn, through the given point, separational from the given Line.</p> <p>(c) A Pair of Lines, which have a separate point and are separational from a third Line, are separational from each other. [I. 30.]</p> <p>*16. (a) A Pair of intersectional Lines cannot both be separational from the same Line.</p> <p>(b) A Line, which is intersectional with one of two separational Lines, is intersectional with the other also.</p>
<p>*17. A Line cannot recede from and then approach another; nor can one approach and then recede from another while on the same side of it.</p>
<p>18. (a) If a side of a Triangle be produced, the exterior angle is equal to each of the interior opposite angles. [I. 32.]</p> <p>(b) The angles of a Triangle are together equal to two right angles. [I. 32.]</p>

You will find it convenient to have the Propositions, that have been proposed as Axioms, repeated in a Table by themselves.

<p>TABLE III.</p> <p><i>Containing five Propositions, taken from Table II, which have been proposed as Axioms.</i></p>
<p>EUCLID'S AXIOM.</p> <p>A Pair of Lines, which have a separate point and make, with a certain transversal, two interior angles on one side of it together less than two right angles, are intersectional on that side.</p> <p>[This is one case of II. 2, with an additional statement as to the <i>side</i> of the transversal on which the Lines will meet.]</p>
<p>T. SIMPSON'S AXIOM.</p> <p>A Pair of Lines, which have a separate point and of which one has two points on the same side of, and not equidistant from, the other, are intersectional.</p> <p>[<i>This is</i> II. 7.]</p>

<p>CLAVIUS' AXIOM.</p> <p>Through a given Point, without a given Line, a Line may be drawn equidistantial from the given Line.</p> <p>[<i>This is part of II, 8.</i>]</p>
<p>PLAYFAIR'S AXIOM.</p> <p>A pair of intersectional Lines cannot both be separational from the same Line.</p> <p>[<i>This is II. 16 (a).</i>]</p>
<p>R. SIMPSON'S AXIOM.</p> <p>A Line cannot recede from and then approach another: nor can one approach and then recede from another while on the same side of it.</p> <p>[<i>This is II. 17.</i>]</p>

Min. In the predicate of 2, what right have you to say 'are intersectional'? The true contradictory of 'separational' would be 'have a common point.'

Euc. True: but we may assume as an Axiom 'A Pair of coincidental Lines are equally inclined to any transversal.' This, combined with 1, gives 'A Pair of not-intersectional Lines are equally inclined to any transversal,' whose Contranominal is 2.

Similarly, we may combine, with 6, the Axiom 'A Pair of coincidental Lines are equidistantial from each other,' and thus get a Theorem whose Contranominal is 7.

Min. In classing 15 (a), (b), and (c) under one number, you mean, I suppose, that they are so related that, if any one of them be granted, the others may be deduced?

Euc. Certainly.

Min. I see that if (a) be given, (b) may be deduced by simply adding 'having a common point' to subject and predicate. And I see that (b) and (c) are Contranominals, so that, if either be given, the other follows. But I don't see how, if (b) only were given, you would prove (a).

Euc. You can prove (c) from it, as you say: and then, from (b) and (c) combined, you can prove (a) thus:—

Any Pair of Lines, which are separational from a third Line, must belong to one or both of the two classes, 'having a common point,' 'having a separate point.' Hence if we take these two classes together, we include *any* Pair that can be proposed. Thus we get the Theorem 'Any Pair of Lines, which are separational from a third Line, are either coincidental or separational'; the predicate of which is equivalent to 'are not intersectional.'

Min. I see. And how are 16 (a) and 16 (b) related to 15?

Euc. Each of them is a Contranominal of 15 (a); and they are also contranominal to each other.

Min. I should like to see that drawn out.

Euc. Let 'A, B, C' be three Lines. Then 16 (a) may be written 'A Pair of Lines (A, B), which are separational from a third Line (C), are not intersectional with each other.'

This yields three Contranominals. The first is ‘If A, B , are intersectional; it cannot be true that B, C , are separational, and also A, C .’ i. e. ‘A Pair of intersectional Lines (A, B) cannot both be separational from a third Line (C):’ the second is ‘If B, C are separational, and A, B intersectional; then A, C are not separational.’ i. e. ‘A Line (A) which is intersectional with one (B) of two separational Lines (B, C), is not separational from the other (C):’ and the third proves a similar Theorem for B .

Min. Yes, but your conclusion *now* is ‘ A is not separational from C ’: whereas 16 (*b*) says ‘is intersectional.’

Euc. That is so: but since A is intersectional with a Line (B) which is separational from C , it is axiomatic that it has a point separate from C , and so cannot be coincidental with it. Hence, its being ‘not separational from C ’ proves that it must be intersectional with it.

Min. I suppose I must take it on trust that any one of these 18 is sufficient logical basis for the other 17: I can hardly ask you to go through 306 demonstrations!

Euc. I can do it with 11. You will grant me that, when two Propositions are contranominal, so that each can be proved from the other, I may select either of the two for my series of proofs, but need not include *both*?

Min. Certainly.

Euc. Here are the proofs, which you can read afterwards at your leisure. (See Appendix III.)

§ 5. Playfair’s Axiom. *Euc.* The next *general* question to be discussed is the proposed substitution of Playfair’s Axiom for mine. With regard to mine, I am quite ready to admit that it is not axiomatic until Prop. 17 has been proved. What is an Axiom at one stage of our knowledge is often anything but an Axiom at an earlier stage.

Min. The great question is whether it is axiomatic then.

Euc. I am quite aware of that: and it is because this is not only the great question of the whole First Book, but also the crucial test by which my method, as compared with those of my ‘Modern Rivals,’ must stand or fall, that I entreat your patience in speaking of a matter which cannot possibly be dismissed in a few words.

Min. Pray speak at whatever length you think necessary to so vital a point.

Euc. Let me remark in the first place—it is a minor matter, but yet one that *must* come in somewhere, and I do not want to break the thread of my argument—that we need, in any complete geometrical treatise, *some* practical geometrical test by which we can prove that two given finite Lines will meet if produced. My Axiom serves this purpose—a secondary purpose it is true—but it is incumbent on any one, who proposes to do away with it, to provide some sufficient substitute.

Min. I admit all that.

Euc. Now, if the test I propose—that the two Lines make with a certain transversal two interior angles on the same side of it together less than two right angles—be objected to as not sufficiently simple, the question arises, what simpler test can be proposed?

Min. The supporters of Playfair’s Axiom would of course reply ‘that one of the two Lines should cut a Line known to be parallel to the other.’

Euc. Assuming that what is needed is a distinct conception of the geometrical relationship of the two Lines, whose future meeting we are asked to believe in, which picture, think you, is the more likely to yield us such a conception—two finite Lines, both intersected by a transversal, and having a known angular relation to that transversal and so to each other—or two Lines ‘known to be parallel,’ that is two Lines of whose geometrical relationship, so far as our field of vision extends, we know absolutely nothing, but can only say that, in the far-away region of infinity, they do *not* meet?

Min. In clearness of conception, your picture seems to have the advantage. In fact, I could not form any mental picture *at all* of the relative position of two finite Lines, if *all* I knew about them was their never meeting however far produced: and it would be equally impossible to form any mental picture of the position which a Line, crossing one of them, would have relatively to the other. But, though your picture may be *more* easy to conceive, I doubt if it is enough so to constitute an axiom.

Euc. Taken by itself, it may be, as you say, not entirely axiomatic. But I think I can put before you a few considerations which will make it more acceptable.

Min. They will be well worth having. An absolute *proof* of it, from first principles, would be received, I can assure you, with absolute *rapture*, being an *ignis fatuus* that mathematicians have been chasing from your age down to our own.

Euc. I know it. But I cannot help you. Some mysterious flaw lies at the root of the subject. Probabilities are all I have to offer you.

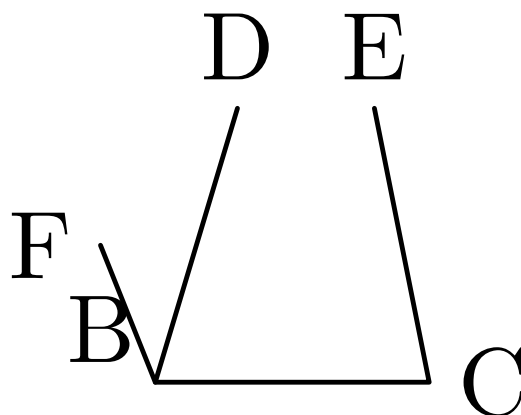
Now suppose you were assured, with regard to two finite Lines placed before you, that, when produced in a certain direction, one of them *approached* the other, that is, contained two points, of which the second was nearer, to the other Line, than the first, would you not think it probable—if not absolutely certain—that they would meet at last?

Min. Utilising—as I suppose you will allow me to do—my knowledge of the properties of *asymptotes*, I should say ‘No. The mere fact of *approach*, granted as to two Lines, does *not* secure a future *meeting*.’

Euc. But, if you look into the depths of your own consciousness—assuming such depths to exist—you will find, I believe, an eternal distinction maintained, in this respect, between straight and curved Lines: so that Lines of the one kind *must*, if they approach, ultimately meet, whereas those of the other kind need not.

Min. I will grant it, provisionally, if only to know what you are going to deduce from it.

Euc. I will now ask you to consider this diagram.



Suppose it given that the Lines BD , CE , make with BC two angles together less than two right angles. My object is to show that probably—if not certainly—they will meet, if produced towards D , E .

Let BF be so drawn that the angles FBC , BCE , may be together equal to two right angles.

Now, if any point in BD be nearer to CE than B is, what is required is proved, since BD approaches CE .

But, if this be not so, then F (which is obviously further from CE than some point in BD is) must also be further from CE than B is; i. e. FB must approach EC ; i. e. FB and EC must ultimately meet, below BC , and so form a Triangle, whose angles at B and C will be (by my Prop. 17) less than two right angles. Hence the angles FBC , BCE , must be *greater* than two right angles, since the four angles are (by my Prop. 13) equal to four right angles. But this is absurd, since they were made *equal* to two right angles.

Hence D is nearer to CE than B is; i. e. BD approaches CE , and so will meet it if produced.

Min. You certainly *have* made your Axiom a little more axiomatic. It is, I presume, an afterthought of yours: otherwise you would have made your Axiom deal with *approaching* Lines, and would then have proved your present Axiom as a Theorem.

Euc. Excuse me. Whatever the habits of modern geometricians may be, in *our* day we always investigated a subject down to the very roots. No ‘afterthought’ was possible. You of the nineteenth century may ‘look before and after,’ if it so please you, so long as *we* have liberty to look at what is at our feet: *you* may ‘sigh for what is not,’ and welcome, so long as we may chuckle at what *is*!

Quoted from *To a Skylark* by Percy Bysshe Shelley

Min. Flippancy will not serve your turn. If you have no better reason than *that*—

Euc. I *have* a better reason. How could I have dealt with *approaching* Lines without first strictly defining ‘the distance of a point from a Line’?

Min. Nohow, I grant you.

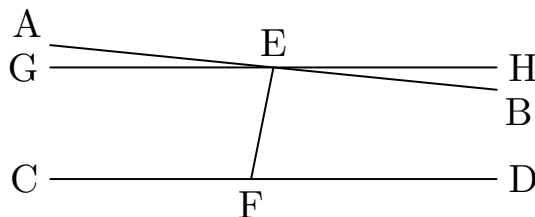
Euc. Which would have entailed a definition of ‘the distance of a point from a point,’ i. e. the length of the *shortest* path by which the one can pass to the other—which again would have entailed the comparison of all possible paths—which again would have entailed the estimation of the lengths of curved Lines—which again—

Min. This is uncanny! It is whichcraft!

Euc. (*preserves a disgusted silence*).

Min. I beg your pardon. I grant that you have made out a very good case for your own Axiom, and but a bad one for Playfair's.

Euc. I will make it worse yet, before I have done. My next remark will be best explained with the help of a diagram.



Let AB and CD make, with EF , the two interior angles BEF , EFD , together less than two right angles. Now if through E we draw the Line GH such that the angles HEF , EFD may be equal to two right angles, it is easy to show (by Prop. 28) that GH and CD are 'separational.'

Min. Certainly.

Euc. We see, then, that any Lines which have the property (let us call it ' α ') of making, with a certain transversal, two interior angles together less than two right angles, have also the property (let us call it ' β ') that one of them intersects a Line which is separational from the other.

Min. I grant it.

Euc. Now suppose you decline to grant my 12th Axiom, but are ready to grant Playfair's Axiom, that two intersectional Lines cannot both be separational from the same Line: then you have in fact granted my Axiom.

Min. Be good enough to prove that.

Euc. Lines, which have property ' α ,' have property ' β .' Lines, which, have property ' β ,' meet if produced; for, if not, there would be two Lines both separational from the same Line, which is absurd. Hence Lines, which have property ' α ,' meet if produced.

Min. I see now that those who grant Playfair's Axiom have no right to object to yours: and yours is certainly the more simple one.

Euc. To make assurance doubly sure, let me give you two additional reasons for preferring my Axiom.

In the first place, Playfair's Axiom (or rather the Contranomial of it which I have been using, that 'a Line which intersects one of two separational Lines will also meet the other') does not tell us *which way* we are to expect the Lines to meet. But this is a very important matter in constructing a diagram.

Min. We might obviate that objection by re-wording it thus:—'If a Line intersect one of two separational Lines, that portion of it which falls between them will, if produced, meet the other.'

Euc. We might: and therefore I lay little stress on *that* objection.

Euc. In the second place, Playfair's Axiom asserts *more* than mine does: and all the additional assertion is superfluous, and a needless strain on the faith of the learner.

Min. I do not see that in the least.

Enc. It is rather an obscure point, but I think I can make it clear. We know that all Pairs of Lines, which have property ' α ,' have also property ' β '; but we do *not* know as yet (till we have proved I. 29) that all, which have property ' β ,' have also property ' α .'

Min. That is so.

Enc. Then, for anything we know to the contrary, class ' β ' *may* be larger than class ' α .' Hence, if you assert anything of class ' β ,' the logical effect is more extensive than if you assert it of class ' α ': for you assert it, not only of that portion of class ' β ' which is known to be included in class ' α ,' but also of the unknown (but possibly existing) portion which is *not* so included.

Min. I see that now, and consider it a real and very strong reason for preferring your axiom.

But so far you have only answered Playfair. What do you say to the objection raised by Mr. Potts? 'A stronger objection appears to be that the converse of it forms Euc. I. 17; for both the assumed Axiom and its converse should be so obvious as not to require formal demonstration.'

Enc. Why, I say that I deny the general law which he lays down. (It is, of course, the *technical* converse that he means, not the *logical* one. 'All X is Y ' has for its technical converse 'All Y is X '; for its logical, 'Some Y is X .') Let him try his law on the Axiom 'All right angles are equal,' and its technical converse 'All equal angles are right'!

Min. I withdraw the objection.

§ 6. The Principle of Superposition. *Min.* The next subject is the principle of 'superposition.' You use it twice only (in Props. 4 and 8) in the First Book: but the modern fancy is to use it on all possible occasions. The Syllabus indicates (to use the words of the Committee) 'the free use of this principle as desirable in many cases where Euclid prefers to keep it out of sight.'

Enc. Give me an instance of this modern method.

Min. It is proposed to prove I. 5 by taking up the isosceles Triangle, turning it over, and then laying it down again *upon itself*.

Enc. Surely that has too much of the Irish Bull about it, and reminds one a little too vividly of the man who walked down his own throat, to deserve a place in a strictly philosophical treatise?

Min. I suppose its defenders would say that it is conceived to leave a trace of itself behind, and that the reversed Triangle is laid down upon the trace so left.

Enc. That is, in fact, the same thing as conceiving that there are *two* coincident Triangles, and that one of them is taken up, turned over, and laid down upon the other. And what does their subsequent coincidence prove? Merely this: that the right-hand angle of the first is equal to the left-hand angle of the second, and *vice versâ*. To make the proof complete, it is necessary to point out that, owing to the original coincidence of the Triangles, this same 'left-hand angle of the second' is *also* equal to the *left*-hand angle of the first: and then, and not till then, we may conclude that the base-angles of the first Triangle are equal. This is the full argument, strictly drawn out. The Modern books on Geometry often attain their much-vaunted brevity by the dangerous process of omitting links in the chain; and some of the new proofs, which at first sight seem to be shorter than mine, are really longer when fully stated. In this particular

case I think you will allow that I had good reason for not adopting the method of superposition?

Min. You had indeed.

Euc. Mind, I do not object to that proof, if appended to mine as an *alternative*. It will do very well for more advanced students. But, for beginners, I think it much clearer to have two non-isosceles Triangles to deal with.

Min. But your objection to laying a Triangle down *upon itself* does not apply to such a case as I. 24.

Euc. It does not. Let us discuss that case also. The Moderns would, I suppose, take up the Triangle ABC , and apply it to DEF so that AB should coincide with DE ?

Min. Yes.

Euc. Well, that would oblige you to say ‘and join C , in its new position, to E and F .’ The words ‘in its new position’ would be necessary, because you would now have *two* points in your diagram, both called ‘ C .’ And you would also be obliged to give the points D and E additional names, namely ‘ A ’ and ‘ B .’ All which would be very confusing for a beginner. You will allow, I think, that I was right here in constructing a new Triangle instead of transferring the old one?

Min. Cuthbertson evades that difficulty by re-naming the point C , and calling it ‘ Q .’

Euc. And do the points A and B take their names with them?

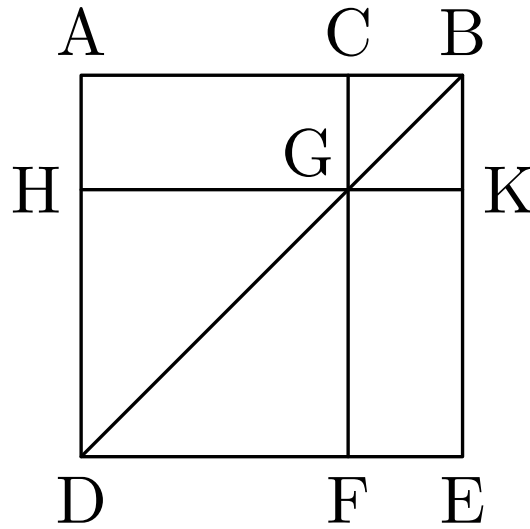
Min. No. They adopt the names ‘ D ’ and ‘ E .’

Euc. It is very like making a new Triangle!

Min. It is indeed. I think you have quite disposed of the claims of ‘superposition.’ The only remaining subject for discussion is the omission of the diagonals in Book II.

§ 7. The omission of diagonals in Euc. II. *Euc.* Let us test it on my II. 4. We will go through *my* proof of it, and then the proof given by some writer who ignores the diagonal, supplying if necessary any of those gaps in argument which my Modern Rivals so often indulge in, and which give to their proofs a delusive air of neatness and brevity.

‘If a Line be divided into any two parts, the square of the Line is equal to the squares of the two parts with twice their rectangle.’



Let AB be divided at C . It is to be proved that square of AB is equal to squares of AC , CB , with twice rectangle of AC , CB .

On AB describe Square $ADEB$; join BD ; from C draw CF parallel to AD or BE , cutting BD at G ; and through G draw HK parallel to AB or DE .

$\therefore BD$ cuts Parallels AD , CF ,

\therefore exterior angle $CGB =$ interior opposite angle ADB . [I. 29]

also $\therefore AD = AB$,

\therefore angle $ADB =$ angle ABD ; [I. 5]

\therefore angle $CGB =$ angle ABD ;

$\therefore CG = CB$; [I. 6]

but $BK = CG$, and $GK = CB$; [I. 34]

$\therefore CK$ is equilateral.

also, \therefore angle CBK is right,

$\therefore CK$ is rectangular; [I. 46. Cor.]

$\therefore CK$ is a Square.

Similarly HF is a Square and $=$ square of AC , for $HG = AC$. [I. 34]

Also, $\therefore AG$, GE are equal, being complements, [I. 43]

$\therefore AG$ and $GE =$ twice AG ;

$=$ twice rectangle of AC , CB .

But these four figures make up AE .

Therefore the square of AB &c.

Q. E. D.'

That is just 128 words, counting from 'On AB describe' down to the words 'rectangle of AC , CB .' What author shall we turn to for a rival proof?

Min. I think Wilson will be best.

Euc. Very well. Do the best you can for him. You may use all my references if you like, and if you can do so legitimately.

Min. 'Describe Square $ADEB$ on AB . Through C draw CF parallel to AD , meeting—'

Euc. You must insert 'or BE ,' to make the comparison fair.

Min. Certainly. I will mark the necessary insertions by parentheses. 'Through C draw CF parallel to AD (or BE), meeting DE in F .'

Euc. You may omit those four words, as they do not occur in my proof.

Min. Very well. 'Cut off (from CF) $CG = CB$. Through G draw HK parallel to AB (or DE). It is easily shewn that CK, HF are squares of CB, AC ; and that AG, GE , are each of them rectangle of AC, CB .'

Euc. We can't admit 'it is easily shewn'! He is bound to *give* the proof.

Min. I will do it for him as briefly as I can. ' $\because CG = CB$, and $BK = CG$, and $GK = CB$, $\therefore CK$ is equilateral. It is also rectangular, since angle CBK is right. $\therefore CK$ is a Square.' I'm afraid I mustn't say 'Similarly HF is a Square'?

Euc. Certainly not: it requires a different proof.

Min. 'Because $CE = AD = AB$, and CG, CB , parts of them, are equal, \therefore remainder $GF =$ remainder $AC, = HG$. But $HD = GF$, and $DF = HG$; $\therefore HF$ is equilateral. It is also rectangular, since angle HDF is right. $\therefore HF$ is a Square, and = square of AC . Also AG is rectangle of AC, CB .' I fear I can't assume GE to be equal to AG ?

Euc. I fear I cannot permit you to assume the truth of my I. 43.

Min. 'Also GE is rectangle of AC, CB , since $GF = AC$, and $GK = CB$. $\therefore AG$ and $GE =$ twice rectangle of AC, CB .'

Euc. That will do. How many words do you make it?

Min. 145.

Euc. Then the omission of the diagonal, instead of shortening the proof, has really lengthened it by seventeen words! Well! Has it any advantage in the way of neatness to atone for its greater length?

Min. Certainly not. It is quite unsymmetrical. I very much prefer your method of appealing to the beautiful Theorem of the equality of complements.

Euc. Then that concludes our present interview: we will meet again when you have reviewed my Modern Rivals one by one. If you had any slow music handy, I would vanish to it: as it is—

(*Vanishes without slow music.*)

Act II.

Manuals which reject Euclid's treatment of Parallels.

Scene I.

'E fumo dare lucem.'

Quoted from *Art of Poetry* by Horace

[MINOS sleeping. To him enter, first a cloud of tobacco-smoke; secondly the bowl, and thirdly the stem, of a gigantic meerschaum; fourthly the phantasm of HERR NIEMAND, carrying a pile of phantom-books, the works of Euclid's *Modern Rivals*, phantastically bound.]

Niemand. The first author we have to consider is M. Legendre, is it not?

Minos. (*aside*) Not a single word of greeting! He plunges *in medias res* with a more fearful suddenness than Euclid himself! (*Aloud*) It is so, mein lieber Herr.

Nie. No time to waste in civil speeches! It is for you to question, for me to answer. I have read M. Legendre's book. Ach! It is beautiful! You shall find in it no flaw!

Min. I do not expect to do so.

Scene II.

Treatment of Parallels by methods involving infinite series.

LEGENBRE.

'Fine by degrees, and beautifully less.'

Quoted from Henry
and Emma by
Matthew Prior

Nie. I lay before you '*Éléments de Géométrie*' by Mons. A. M. Legendre, the 14th edition, 1860.

Min. Let me begin by asking you (since I consider you and your client as one in this matter) how you define a straight Line.

Nie. As 'the shortest path from one point to another.'

Min. This does not seem to me to embody the primary idea which the word 'straight' raises in the mind. Is not the natural process of thought to realise *first* the notion of 'a straight Line,' and *then* to grasp the fact that it is the shortest path between two points?

Nie. That may be the natural process: but surely you will allow our Definition to be a legitimate one?

Min. I think not: and I have the great authority of Kant to support me. In his 'Critique of Pure Reason,' he says (I quote from Meiklejohn's translation, in Bohn's Philosophical Library, pp. 9, 10), 'Mathematical judgments are always synthetical . . . "A straight Line between two points is the shortest" is a synthetical Proposition. For my conception of *straight* contains no notion of *quantity*, but is merely *qualitative*. The conception of the *shortest* is therefore wholly an addition, and by no analysis can it be extracted from our conception of a straight Line.'

This may fairly be taken as a denial of the fitness of the Axiom to stand as a Definition. For all Definitions ought to be the expressions of analytical, not of synthetical, judgments: their predicates ought not to introduce anything which is not already included in the idea corresponding to the subject. Thus, if the idea of 'shortest distance' cannot be obtained by a mere analysis of the conception represented by 'straight Line,' the Axiom ought not to be used as a Definition.

Nie. We are not particular as to whether it be taken as a Definition or Axiom: either will answer our purpose.

Min. Let us then at least banish it from the *Definitions*. And now for its claim to be regarded as an *Axiom*. It involves the assertion that a straight Line is shorter than any *curved* Line between the two points. Now the length of a curved Line is altogether too difficult a subject for a beginner to have to consider: it is moreover unnecessary that he should consider it at all, at least in the earlier parts of Geometry: all he really needs is to grasp the fact that it is shorter than any *broken* Line made up of straight Lines.

Nie. That is true.

Min. And all cases of broken Lines may be deduced from their simplest case, which is Euclid's I. 20.

Nie. Well, we will abate our claim and simply ask to have I. 20 granted us as an Axiom.

Min. But it can be *proved* from your own Axioms: and it is a generally admitted principle that, at least in dealing with beginners, we ought not to

take as axiomatic any Theorem which can be proved by the Axioms we already possess.

Nie. For *beginners* we must admit that Euclid's method of treating this point is the best. But you will allow ours to be a legitimate and elegant method for the advanced student?

Min. Most certainly. The whole of your beautiful treatise is admirably fitted for advanced students: it is only from the *beginner's* point of view that I venture to criticise it at all.

Your treatment of angles and right angles does not, I think, differ much from Euclid's?

Nie. Not much. We *prove*, instead of assuming, that all right angles are equal, deducing it from the Axiom that two right Lines cannot enclose a space.

Min. I think some such proof a desirable interpolation.

I will now ask you how you prove Euc. I. 29.

Nie. What preliminary Propositions will you grant us as proved?

Min. Euclid's series consists of Ax. 12, Props. 4, 5, 7, 8, 13, 15, 16, 27, 28. I will grant you as much of that series as you have proved by methods not radically differing from his.

Nie. That is, you grant us Props. 4, 13, and 15. Prop. 16 is not in our treatise. The next we require is Prop. 6.

Min. That you may take as proved.

Nie. And, next to that. Prop. 20: *that* we assume as an Axiom, and from it, with the help of Prop. 6, we deduce Prop. 19.

Min. For our present purpose you may take Prop. 19 as proved.

Nie. From Props. 13 and 19 we deduce Prop. 32; and from that, Ax. 12; from which Prop. 29 follows at once.

Min. Your proof of Prop. 32 is long, but beautiful. I need not, however, enter on a discussion of its merits. It is enough to say that what we require is a proof suited to the capacities of *beginners*, and that this Theorem of yours (Prop. XIX, at p. 20) contains an infinite series of Triangles, an infinite series of angles, the terms of which continually decrease so as to be ultimately less than any assigned angle, and magnitudes which vanish simultaneously. These considerations seem to me to settle the question. I fear that your proof of this Theorem, though a model of elegance and perspicuity as a study for the advanced student, is wholly unsuited to the requirements of a beginner.

Nie. That we are not prepared to dispute.

Min. It seems superfluous, after saying this, to ask what test for the meeting of Lines you have provided: but we may as well have that stated, to complete the enquiry.

Nie. We give Euclid's 12th Axiom, which we prove from Prop. 32, using the principle of Euc. X. 1 (second part), that 'if the greater of two unequal magnitudes be bisected, and if its half be bisected, and so on; a magnitude will at length be reached less than the lesser of the two magnitudes.'

Min. That again is a mode of proof entirely unsuited to beginners.

The general style of your admirable treatise I shall not attempt to discuss: it is one I would far rather take as a model to imitate than as a subject to criticise.

I can only repeat, in conclusion, what I have already said, that your book, though well suited for advanced students, is not so for beginners.

Nie. At this rate we shall make short work of the twelve Modern Rivals!

Scene III.

Treatment of Parallels by angles made with transversals.

COOLEY.

'The verbal solemnity of a hollow logic.'

COOLEY, *Pref. p. 20.*

Nie. I have now the honour to lay before you *'The Elements of Geometry, simplified and explained,'* by W. D. COOLEY, A.B., published in 1860.

Min. Please to hand me the book for a moment. I wish to read you a few passages from the Preface. It is always satisfactory—is it not?—to know that a writer, who attempts to 'simplify' Euclid, begins his task in a becoming spirit of humility, and with some reverence for a name that the world has accepted as an authority for two thousand years.

Nie. Truly.

MINOS *reads.*

'The Elements of Plane Geometry . . . are here presented in the reduced compass of 36 Propositions, perfectly coherent, fully demonstrated, and reaching quite as far as the 173 Propositions contained in the first six books of Euclid.' Modest, is it not?

Nie. A little high-flown, perhaps. Still, you know, if they really *are* 'fully demonstrated'—

Min. If! In page 4 of the Preface he talks of 'Euclid's circumlocutory shifts': in the same page he tells us that 'the doctrine of proportion, as propounded by Euclid, runs into prolixity though wanting in clearness': and again, in the same page, he states that most of Euclid's *ex absurdo* proofs 'though containing little,' yet 'generally puzzle the young student, who can hardly comprehend why gratuitous absurdities should be so formally and solemnly dealt with. These Propositions therefore are omitted from our Book of Elements, and the Problems also, for the science of Geometry lies wholly in the Theorems. Thus simplified and freed from obstructions, the truths of Geometry may, it is hoped, be easily learned, even by the youngest.' But perhaps the grandest sentence is at the end of the Preface. 'Then as to those Propositions (the first and last of the 6th Book), in which, according to the same authority' (he is alluding to the Manual of Euclid by Galbraith and Haughton), 'Euclid so beautifully illustrates his celebrated Definition, they appear to our eyes to exhibit only the verbal solemnity of a hollow logic, and to exemplify nothing but the formal application of a nugatory principle.' Now let us see, mein Herr, whether Mr. Cooley has done anything worthy of the writer of such 'brave 'orts' (as Shakespeare has it): and first let me ask how you define Parallel Lines.

NIEMAND *reads.*

'Right Lines are said to be parallel when they are equally and similarly inclined to the same right Line, or make equal angles with it towards the same side.'

Min. That is to say, if we see a Pair of Lines cut by a certain transversal, and are told that they make equal angles with it, we say 'these Lines are parallel';

and conversely, if we are told that a Pair of Lines are parallel, we say 'then there is a transversal, *somewhere*, which makes equal angles with them'?

Nie. Surely, surely.

Min. But we have no means of finding it? We have no right to draw a transversal at random and say 'this is the one which makes equal angles with the Pair'?

Nie. Ahem! Ahem! Ahem!

Min. You seem to have a bad cough.

Nie. Let us go to the next subject.

Min. Not till you have answered my question. *Have* we any means of finding the particular transversal which makes the equal angles?

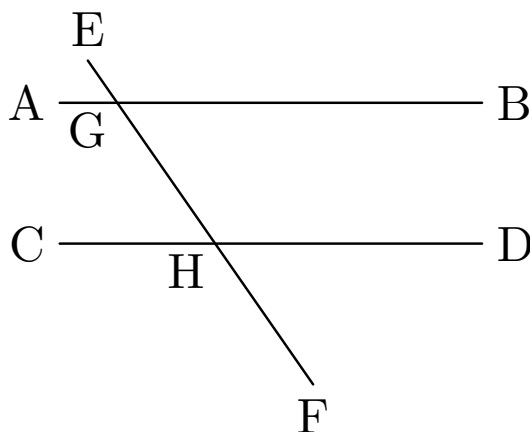
Nie. I am sorry for my client, but, since you are so *exigeant*, I fear I must confess that we have *no* means of finding it.

Min. Now for your proof of Euc. I. 32.

Nie. You will allow us a preliminary Theorem?

Min. As many as you like.

Nie. Well, here is our Theorem 11. 'When two parallel straight Lines AB , CD , are cut by a third straight Line EF , they make with it the alternate angles AGH , GHD , equal; and also the two internal angles at the same side BGH , GHD equal to two right angles.'



For AGH and EGB are equal because vertically opposite, and EGB is also equal to GHD (Definition); therefore—'

Min. There I must interrupt you. How do you know that EGB is equal to GHD ? I grant you that, by the Definition, AB and CD make equal angles with a *certain* transversal: but have you any ground for saying that EF is the transversal in question?

Nie. We have not. We surrender at discretion. You will permit us to march out with the honours of war?

Min. We grant it you of our royal grace. March him off the table, and bring on the next Rival.

Scene IV.

Treatment of Parallels by equidistances.

CUTHBERTSON.

'Thou art so near, and yet so far.'

Modern Song.

Quoted from song by
Alexander Reichardt

Nie. I now lay before you '*Euclidian Geometry*,' by FRANCIS CUTHBERTSON, M.A., late Fellow of C. C. C, Cambridge; Head Mathematical Master of the City of London School; published in 1874.

Min. It will not be necessary to discuss with you *all* the innovations of Mr. Cuthbertson's book. The questions of the separation of Problems and Theorems, the use of superposition, and the omission of the diagonals in Book II, are general questions which I have considered by themselves. The only points, which you and I need consider, are the methods adopted in treating Right Lines, Angles, and Parallels, wherever those methods differ from Euclid's.

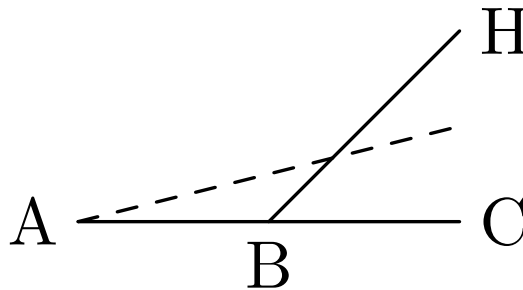
The first subject, then, is the Right Line. How do you define and test it?

Nie. As in Euclid. But we *prove* what Euclid has assumed as an Axiom, namely, that two right Lines cannot have a common segment.

Min. I am glad to hear you assert that Euclid has assumed it 'as an Axiom,' for the interpolated and illogical corollary to Euc. I. 11 has caused many to overlook the fact that he has assumed it as early as Prop. 4, if not in Prop. 1. What is your proof?

NIEMAND *reads.*

'Two straight Lines cannot have a common segment.'



'For if two straight Lines ABC , ABH could have a common segment AB ; then the straight Line ABC might be turned about its extremity A , towards the side on which BH is, so as to cut BH ; and thus two straight Lines would enclose a space, which is impossible.'

Min. You assume that, *before* C crosses BH , the portions coinciding along AB will diverge. But, if ABH is a right Line, this will not happen till C has passed H .

Nie. But you would then have one portion of the revolving Line in motion, and another portion at rest.

Min. Well, why not?

Nie. We may assume *that* to be impossible; and that, if a Line revolves about its extremity, it all moves at once.

Min. Which, I take the liberty to think, is *quite* as great an assumption as Euclid's. I think the Axiom quite plain enough without any proof.

Your treatment of angles, and right angles, is the same as Euclid's, I think?

Nie. Yes, except that we *prove* that 'all right angles are equal.'

Min. Well, it *is* capable of proof, and therefore had better not be retained as an Axiom.

I must now ask you to give me your proof of Euc. I. 32.

Nie. We prove as far as I. 28 as in Euclid. In order to prove I. 29, we first prove, as a Corollary to Euc. I. 20, that 'the shortest distance between two points is a straight Line.'

Min. What is your next step?

Nie. A Problem (Pr. F. p. 52) in which we prove the Theorem that, of all right Lines drawn from a point to a Line, the perpendicular is the least.

Min. We will take that as proved.

Nie. We then deduce that the perpendicular is the shortest path from a point to a Line.

Next comes a Definition. 'By the distance of a point from a straight Line is meant the shortest path from the point to the Line.'

Min. Have you anywhere defined the distance of one point from another?

Nie. No.

Min. We had better have that first.

Nie. Very well. 'The distance of one point from another is the shortest path from one to the other.'

Min. Might we not say 'is the length of the right Line joining them?'

Nie. Yes, that is the same thing.

Min. And similarly we may modify the Definition you gave just now.

Nie. Certainly. 'The distance of a point from a right Line is the length of the perpendicular let fall upon it from the given point.'

Min. What is your next step?

NIEMAND *reads.*

P. 33. *Ded. G.* 'If points be taken along one of the arms of an angle farther and farther from the vertex, their distances from the other arm will at length be greater than any given straight line.'

In proving this we assume as an Axiom that the lesser of two magnitudes of the same kind can be multiplied so as to exceed the greater.

Min. I accept the Axiom and the proof.

NIEMAND *reads.*

P. 34. *Ax.* 'If one right Line be drawn in the same Plane as another, it cannot first recede from and then approach to the other, neither can it first approach to and then recede from the other on the same side of it.'

Min. Here, then, you assume, as axiomatic, one of the Propositions of Table II. After this, you ought to have no further difficulty in proving Euc. I. 32 and all other properties of Parallels. How do you proceed?

Nie. We prove (p. 34. *Lemma*) that, if two Lines have a common perpendicular, each is equidistant from the other.

Min. What then?

Nie. Next, that any Line intersecting one of these will intersect the other (p. 35).

Min. That, I think, depends on Deduction *G*, at p. 33?

Nie. Yes.

Min. A short, but not very easy, Theorem; and one containing a somewhat intricate diagram. However, it proves the point. What is your next step?

NIEMAND *reads.*

P. 34. Lemma. ‘Through a given point without a given straight Line one and only one straight Line can be drawn in the same Plane with the former, which shall never meet it. Also all the points in each of these straight Lines are equidistant from the other.’

Min. I accept all that.

Nie. We then introduce Euclid’s definition of ‘Parallels’. It is of course now obvious that parallel Lines are equidistant, and that equidistant Lines are parallel.

Min. Certainly.

Nie. We can now, with the help of Euc. I. 27, prove I. 29, and thence I. 32.

Min. No doubt. We see, then, that you propose, as a substitute for Euclid’s 12th Axiom, a new Definition, two new Axioms, and what virtually amounts to five new Theorems. In point of ‘axiomatization’ I do not think there is much to choose between the two methods. But in point of brevity, clearness, and suitability to a beginner, I give the preference altogether to Euclid’s axiom.

The next subject to consider is your practical test, if any, for two given Lines meeting when produced.

Nie. One test is that one of the Lines should meet a Line parallel to the other.

Min. Certainly: and that will suffice in such a case as Euc. I. 44 (Pr. M. p. 60, in this book) though you omit to point out *why* the Lines may be assumed to meet. But what if the diagram does not contain ‘a Line parallel to the other’? Look at Pr. (*h*) p. 69, where we are told to make, at the ends of a Line, two angles which are together less than two right angles, and where it is assumed that the Lines, so drawn, will meet. That is, you assume the truth of Euclid’s 12th Axiom. And you do the same thing at pp. 70, 123, 143, and 185.

Nie. Euclid’s 12th Axiom is easily proved from our Theorems.

Min. No doubt: but you have not done it, and the omission makes a very serious hiatus in your argument. It is not a thing that beginners are at all likely to be able to supply for themselves.

I have no adverse criticisms to make on the general style of the book, which seems clear and well written. Nor is it necessary to discuss the claims of the book to *supersede* Euclid, since the writer makes no such claim, but has been careful (as he states in his preface) to avoid any arrangement incompatible with Euclid’s order. The chief novelty in the book is the introduction of the principle of ‘equidistance,’ which does not seem to me a desirable feature in a book meant for beginners: otherwise it is little else than a modified version of Euclid.

Scene V.

Source: also in Supplement to “Euclid and His Modern Rivals” (with minor differences as noted)

Treatment of Parallels by revolving Lines.

HENRICI.

'In order that an aggregate of elements may be called a spread, it is necessary that they follow continuously.'—HENRICI'S *Art of Dining*, p. 12.

Nie. I lay before you '*Elementary Geometry: Congruent Figures*,' by OLAUS HENRICI, Ph.D., F.R.S., Professor of Pure Mathematics in University College, London, 1879.

Min. What is your Definition of a Line?

Nie. 'The boundary of a surface or of part of a surface is called a *Line* or a *curve*.' (p. 5.)

Min. Good—'Line,' I presume, meaning 'right Line.' But that throws us back upon 'surface.' Of course *that* is defined correctly?

Nie. I will tell you in a moment. (*He turns over a few pages*) Yes, here it is. 'A surface is the—' (*He gives a perceptible start, stops reading, and turns a few pages back*) Yes, it's all right. 'That which bounds a solid and separates it from other parts of Space is called its *surface*.' (p. 4.)

Min. (*aside*) There is more here than meets the eye! (*Aloud*) You will be good enough to read that *other* Definition of 'surface.'

Nie. (*innocently*) What other Definition?

Min. No evasions, Sir! Read it at once! You know the one I mean.

Nie. (*desperately*) It's only this—'A surface is the path of a moving curve.' (p. 9.) Merely another way of looking at it, you know.

Min. (*contemptuously*) Oh! Merely another way of looking at it, is it? Of course the curve preserves its shape as it moves?

Nie. No doubt.

Min. Now look here. Take this Jargonelle pear—

Nie. Thank you very much. It *is* rather dry work—

Min. Stop! Don't eat it yet! Look at it. Would you call its curvature regular?

Nie. Certainly not: it bulges here and there, in all sorts of queer ways.

Min. Well, now take this bit of wire: bend it into any curve you like, and then move it so that its path may coincide with the surface of the pear.

Nie. (*uneasily*) I cannot do it.

Min. Well, eat it, then. *That* is possible, at all events. So! We start with a Definition which is simply ridiculous! Now for the distinction between 'right Line' and 'curve'—

Nie. Here my client's meaning is not very clear. The first Definition I can find is that of a *curve*. He says (p. 6) 'a point may be moved, and then it will describe a path. This path of a moving point is a curve.'

Min. Surely he does not mean that a point can never move *straight*? He must mean that there are two kinds of curves, 'curved curves,' and 'straight curves'—as the Irish talk of 'tay-tay' and 'coffee-tay.' But, if so, he makes 'Line' and 'curve' synonymous.

Nie. I have looked a little further on, and I find a description of a 'Line,' which seems to limit the word to *bent* Lines. He says (p. 7) 'The notion of a Line may be obtained directly by considering a wire bent into any shape and abstracting all thickness from it.'

Min. So then a 'Line' *must* be bent, though a 'curve' need not be so? Your client has clearly *one* merit—great originality of style!

Nie. Here is another definition of ‘curve,’ which may be more to your taste, ‘A curve is a *one-way spread, with points as elements.*’ (p. 10.)

Min. Too much like a dinner *à la Russe*. I don’t like ‘spread’ at all.

Nie. He illustrates his use of ‘spread’ by applying it to other subjects. For instance, ‘a musical tone allows of variations which form a two-way spread, with different degrees of intensity and of pitch as elements.’ (p. 12.)

Min. That explains the phrase ‘too-tooing on a flute.’ How simple and intelligible all this must be to boys just beginning Geometry! But I am still waiting for a definition of ‘right Line.’

Nie. (*after turning over several pages*) I have found it at last—after passing over a good deal about ‘continuity’ and ‘space’ and ‘congruence.’ We say (p. 17) ‘If we suspend a weight by a string, the string becomes stretched; and we say it is straight.’

Min. That will serve very well to give a *notion* of ‘straight.’ For a *working* definition we require of course some practical test, such as ‘two straight Lines cannot enclose a space.’

Nie. We have that. At p. 20 we give you Axiom IV. ‘Through two points always one, and only one, Line can be drawn.’ And at p. 18 we at last distinguish ‘Line’ and ‘curve.’ ‘A straight Line will in future be called a *Line* simply. All other Lines will be called *curved Lines*, or *curves.*’

Min. Better late than never: though it makes wild work of your former theory—in which you got the notion of ‘Line’ from a bent wire, and of ‘curve’ from the path of a moving point. Now for the Definition of ‘angle.’

Nie. (*after turning the leaves backwards and forwards for some time, begins to read in an unsteady voice*) ‘The part of a pencil of half-rays, described by a half-ray on turning about its end point from one position to another, is called an angle.’ (p. 47.)

Min. So you reject the notion of ‘inclination’ (or rather ‘declination’)? Well! This *is* an innovation! We must investigate it thoroughly. You mean by ‘half-ray,’ I presume, what Euclid calls ‘a Line terminated in one direction but not in the other’?

Nie. Certainly.

Min. Now what is a ‘pencil’?

Nie. ‘The aggregate of all Lines in a plane which pass through a given point.’ (p. 38.)

Min. Aha! And where will you get your angular magnitude, I should like to know? What kinds of magnitude is a Line capable of possessing?

Nie. Length only, of course.

Min. Two Lines?

Nie. (*uneasily*) Length only.

Min. A million?

Nie. (*more uneasily*) Length only.

Min. A pencil?

Nie. (*faintly*) Spare me!

Min. So much for the *quality* of your angular magnitude! Now for its *quantity*. What is the length of one of these half-rays?

Nie. Infinite, of course.

Min. And the aggregate length of all the half-rays in your ‘angle’ cannot well be less. Thus we may deduce a truly delightful definition of angular magnitude. ‘As to *quality*, it is linear. As to *quantity*, it is infinite!’

Nie. (*writhes, but says nothing*).

Min. Will you not throw up your brief?

Nie. Not yet: I must fight it out.

Min. Then we must review this marvellous book 'to the bitter end.' What have you to say about 'right angles'?

Nie. We have 'angles of rotation' and 'angles of continuation' (p. 48); and the axiom 'all angles of rotation are equal' (p. 49) as a substitute for 'all right angles are equal.'

Min. It is a practicable method, but not so suitable for beginners as Euclid's. This matter I have already discussed (see p. 744). And now for the subject of Parallels.

Nie. We have Playfair's Axiom (or rather its equivalent) 'Through a given point only one Line can be drawn parallel to a given Line' (p. 68), but this we do not simply lay down *as* an Axiom. We lead up to it by two or three pages of reasoning.

Min. This is *most* interesting! Let us examine the argument minutely. A logical *proof* of that Axiom would be perhaps the greatest advance ever made in the subject since the days of Euclid.

Nie. 'Two indefinite Lines in a Plane may intersect, as we have seen. We shall now consider the possibility of there being such Lines which do not intersect.' (p. 65.)

Min. That, of course, you can easily prove, without appealing to any disputable Axiom. It is simply Euc. I. 27. Do you prove it in Euclid's way?

Nie. Not exactly. Our argument is quite different from Euclid's: and we come to *two* conclusions—one being the real existence of Parallels, the other the equivalent of Playfair's Axiom.

Min. I very much doubt your proving the first by any simpler method than Euclid's: and as to proving the second, by any method *at all*, without assuming some disputable Axiom, I defy you to do it! However, let us hear your argument.

Nie. We take a Line, and a point without it: and from the point we draw two 'half-rays' intersecting the line. These half-rays we then turn about the point, in opposite directions, until they cease to intersect the Line. And then we proceed to consider where their 'productions' have got to.

Min. Like 'little Bo-peep,' you are anxious about their '*tails*' in fact; taking their 'heads' to be the ends which at first intersected the given Line.

Nie. We say that there are only three conceivable cases: one, where the *tails* fall next to the given Line; another, where the *heads* fall next to it; the third, where the tail of each coincides with the head of the other.

Min. I admit all that.

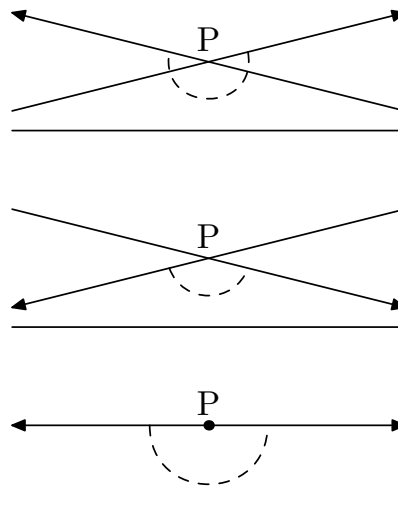
Nie. The first case we say is inadmissible because, if it were true, any Line through *P*, lying within the angle formed by the head of one ray and the tail of the other, would cut the given Line both ways.

Min. A *reductio ad absurdum*, no doubt; but it only holds good on the supposition that you *can* draw Lines through *P*, so as to lie within that angle. But this supposition requires a finite angle. If we suppose that, the moment one ray begins to revolve so as to bring its head nearer to the given line, it instantly coincides with the other ray, head with tail and tail with head, it will not then be *possible* to draw any such Line as you suggest: and *then* where is your *reductio ad absurdum*?

Nie. We do not seem to have noticed that case.

Min. In point of fact, your *three* cases are really *five*. Before going any further let us have them all clearly stated.

We assume, in all three figures, that the ray-heads, as drawn, do *not* intersect the given line; but that either of them would, if it began to revolve towards the given Line, instantly intersect it. In other words we assume that any half-ray, drawn from *P* in the dotted angular space, *would* intersect the given Line: but that any half-ray, drawn from *P* in the undotted angular space, as well as the two ray-heads which limit that angular space, would *not* intersect it. And as to the ray-tails, it is obvious that in fig. 1 they *do* intersect the given Line, but in figs. 2, 3, they do *not* do so.



Nie. That is all clear enough.

Min. Then these are the five cases:—

(α) Figure 1. The head of each ray must revolve downwards through a *finite* angle before it can coincide with the tail of the other ray.

(β) Same figure. The head of each ray, on beginning to revolve downwards, *instantly* coincides with the tail of the other ray.

(γ) Figure 2. The head of each ray must revolve upwards through a *finite* angle before it can coincide with the tail of the other ray.

(δ) Same figure. The head of each ray, on beginning to revolve upwards, *instantly* coincides with the tail of the other ray.

(ε) Figure 3.

These five cases suggest a few observations.

In case (α) a number of Lines may be drawn through *P*, in the angular space contained between the head of one ray and the tail of the other: and all such Lines will intersect the given line *both* ways.

In case (β) this absurdity does not arise: all Lines, through *P*, intersect the given Line one way or the other: there is no instance of a Line intersecting it *both* ways, nor of one wholly separate from it.

In case (γ) a number of Lines may be drawn as in case (α): and all such Lines will be wholly separate from the given Line.

In case (δ) the two rays themselves, as drawn in the figure, are wholly separate from the given Line: but no other such Line can be drawn through *P*.

In case (ε) there is only *one* Line through *P* wholly separate from the given Line.

Now let us hear what you make of these five cases.

Nie. We exclude case (α), as I told you just now, by a *reductio ad absurdum*. Case (β) we have failed to notice.

Min. True: but it *can* be excluded by Euc. I. 27: so that if you can manage, by pure reasoning, from ordinary Axioms, and without assuming any disputable Axiom, to exclude cases (γ) and (δ), you will have achieved what geometers have been vainly trying to do for the last two thousand years!

Nie. We go on thus. 'But our Axioms are not sufficient to decide which of the remaining two cases actually does occur.' (p. 67.)

Min. Or rather ‘the remaining *three* cases.’

Nie. ‘In looking at the figures the reader will at once feel that the third case’ (we mean your ‘case (ε)’) ‘is the true one.’

Min. An appeal to sentiment! What if the reader *doesn't* feel it?

Nie. ‘But this cannot be considered decisive;’

Min. It cannot.

Nie. ‘for the two Lines may include a very small angle—’

Min. Aye, or even a large one.

Nie. ‘that is, they may very nearly coincide without actually doing so. Or it may be that sometimes the one, sometimes the other, happens, according as we take the point P at a smaller or greater distance from the Line.’

Min. That seems a fair statement of the difficulty. And now, how are you going to grapple with it?

Nie. ‘The only way of settling this point is to make an assumption, and to see whether the consequences drawn from it do or do not agree with our experience.’

Min. If you find a consequence *not* agreeing with experience, you may of course conclude that your assumption was false; but, if it *does* agree, what then?

Nie. Nothing, I fear, unless you can prove that this is the case with *one* assumption only, and that all other possible assumptions lead to absurd results.

Min. Exactly so. If, then, you want to prove case (ε), your logical course is to assume case (γ) as true, and from that assumption to deduce some consequence which is evidently contrary to experience. And then to exclude case (δ) by a similar argument. Is that your method?

Nie. Well, hardly. We say ‘The assumption to be made is, that the third case’ (i. e. case (ε)) ‘only happens, and this will give us a new axiom.’ (p. 67.)

Min. You may assume it as an *axiom*, if you like. Then you will merely be in the same boat with Playfair. But if you are going to discuss the *consequences* of its being true, and get anything out of *that*, look to your feet! There are pitfalls about!

Nie. ‘In the second case’ (i. e. case (γ)) ‘we should have to—’

Min. Oho! Then it is case (γ), after all, that you are provisionally assuming as true?

Nie. Apparently so.

Min. Well, go on. You are on the right track now.

Nie. In this case we should have to turn the ray ‘through a finite angle’ before its tail would cut the given Line: ‘or there would be an indefinite number of Lines through P which do not cut’ it. (p. 68.)

Min. What do you mean by ‘or’? That one result would follow, *or* the other, but not both?

Nie. We mean that the two results are equivalent.

Min. Then you should say ‘that is.’ ‘Or’ is misleading. However, I grant you that this consequence *would* follow, if case (γ) were true. What then? Is there any obvious absurdity in such a consequence?

Nie. *That* we do not assert. We merely make the remark—and we now proceed to case (ε).

Min. A weak and pointless remark: but let that pass. Do you omit case (δ)?

Nie. We do. We proceed thus. ‘But in the third case (i. e. in case (ε)) there would be only *one* Line through P which does not cut’ the given Line. ‘As soon as we turn this Line about P it would meet it to the right or to the left.’

Min. Certainly. And what then? Do you expect me to admit that, because case (ε) would lead to a consequence not obviously absurd, therefore it is *the* case which always happens, to the exclusion of cases (γ) and (δ)?

Nie. (*hesitatingly*) Well, I think that *is* what we expect. But we first deduce the real existence of Parallels. ‘Thus we are led to the conclusion that there exist Lines in a Plane which, though both be unlimited, do not meet. Such Lines are called *parallel*.’

Min. Oh most lame and impotent conclusion! After all these magnificent Catherine-wheels of revolving half-rays, to deduce Euc. I. 27! And even *this* wretched result you have no right to. Just consider what your argument has been. There are five conceivable cases, (α), (β), (γ), (δ), and (ε). If (α) or (β) were true, *no* Line could be drawn, through *P*, parallel to the given Line: if (γ), *many* such Lines could be drawn: if (δ), *two* such Lines: if (ε), *one* such Line. Now what have you proved? Positively nothing whatever but this—that case (α) would lead to an absurd result. You leave me perfectly free to range about among the other four cases, one of which, (β), denies the real existence of Parallels, which existence you tell me you have *proved*! And so, for the ‘long course of logical reasoning’ which you object to so much in Euclid, you substitute a *short* course of *illogical* reasoning! But you deduce another conclusion, do you not?

Nie. Yes, one other. ‘The assumption mentioned in § 113’ (the assumption that case (ε) is the only true one) ‘may now be stated thus:—Axiom VI. *Through a given point only one Line can be drawn parallel to a given Line.*’

Min. May it indeed? And why ‘now’ rather than three pages back? Is there a single word, in all this argument, which tends to show that case (ε) is—I will not say certainly true, but—even fairly probable?

Nie. (*cautiously*) I will not assert that there is.

Min. In point of fact the odds are exactly three to one against it—since you have only excluded *one* of the five cases, and the other four are, for anything we know to the contrary, equally probable.

Nie. I will not dispute it.

Min. Well! Then it only remains to say that your attempted *proof* of Playfair’s Axiom is an utter failure. Anything more hopelessly illogical I have *never* met with, not even in [Cooley]¹—and that is saying a great deal!

Nie. I confess I do not see my way to defending this proof. But even if we abandon the whole of it, we are no worse off than any other writer who assumes Playfair’s Axiom.

Min. That I quite admit.

Nie. And then, my client instructs me to plead, this Manual (*handing it to Minos*) being so distinctly better than Euclid’s in every other particular—

Min. Gently, gently! You are anticipating. I have not yet had my general survey of the book.

Nie. (*refilling his pipe*) Well, let us have it then.

Min. I will begin with the general remark that the first 151 pages of this book (the rest of it going beyond the limits of Euc. I, II) contain (excluding 7 pages on Logic and 22 pages of Exercises) 122 pages of text, which I presume the learner is expected to master.

Nie. A great deal of that is merely explanatory.

¹Wilson

Min. True: but even omitting all that, we have, of Definitions, 80: and of Theorems, 145. And when the unfortunate learner has mastered all these—more than there are in Euclid's first six Books—he finds he has learned no more Euclid than Props. 1 to 34!

Nie. But he will have learned a good deal that is *not* in Euclid.

Min. Undoubtedly: and it would have been easy to crowd in twice as many Theorems as Mr. Henrici has done, without passing Prop. 34. I believe the subject to be practically inexhaustible. But fancy having to master 145 Theorems before even hearing of so important a one as Prop. 47!

Nie. If all the new matter is *good*, it is a poor objection to raise that there is too much of it.

Min. You think the *quantity* unassailable? Well, let us test its *quality* a little, then.

The book begins with a page or two of very general considerations. Time and Force, Kinetics and Kinematics, Chemistry and Biology, cross the stage in a grand but shadowy procession. Then when the pupil has been sufficiently crushed by the spectacle of how much there is to know, we allow him, little by little, to contract his view: till at last we condescend to contemplate so trifling an entity as Infinite Space.

And here I notice a singular mental process. 'Two material bodies,' we are told, 'cannot occupy the same space. We are thus led to recognise a third property common to all bodies: every body has *position*.' (p. 3.) The word '*thus*' is what I want to call your special attention to: for I confess *I* can see no such sequence of thought as it would seem to imply. Suppose bodies *could* occupy the same space: wouldn't they have 'position' just as much as if they couldn't? Does an orange—to take the favourite logical entity—lose its position because another orange most uncivilly insists on permeating it and occupying the same portion of Space? But if not, what is the meaning of 'thus'? As Artemus Ward would say, 'why this thussness?'

Nie. I can't say.

Min. A little further on I find a 'therefore' which is equally shadowy. The writer's logical ideas—in spite of his actually introducing a 'Digression on Logic'—are, I fear, a little vague. He says 'If we bring different points together into the same position, they will never give us anything but a point; we never obtain any extension. We cannot, therefore, say that Space is made up of points' (p. 6). I venture to say that there is no such sequence as 'therefore' seems to imply: he has made the whole argument null and void by using the words 'into the same position.'

Nie. I do not understand you.

Min. I will put it in another way. The *real* reason why you cannot construct Space of points is that they have no *size*: if they *had* size you *could* do it. But, under the condition here laid down—of bringing them 'together into the same position'—you make the thing impossible, whether they have size or not.

I have often found it the best way for exhibiting the unsoundness of an argument, to make another exactly like it, but leading to an absurd conclusion. I will try it here. You grant that a cubic foot² can be made up of cubic inches?

Nie. Certainly.

²Space

Min. Well, I will prove to you that it *cannot*; and I will do so by an argument just as good as Mr. Henrici's. 'If we bring different cubic inches together into the same position they will never give us anything but a cubic inch; we never obtain any extension—'

Nie. That won't do! You have the 'extension' of one cubic inch.

Min. Yes, but you had that to begin with. You don't 'obtain' any extension by squeezing in *other* cubic inches, do you?

Nie. No, I suppose not.

Min. Then the argument is sound so far. And now comes my triumphant conclusion, *à la Henrici*. 'We cannot, *therefore*, say that a cubic foot³ is made up of cubic inches.'

Nie. I see your meaning now. I give up the words 'into the same position.'

Min. I haven't quite done with points yet. I find an assertion that they never jump. Do you think that arises from their having 'position,' which they feel might be compromised by such conduct?

Nie. I cannot tell without hearing the passage read.

Min. It is this:—'A point, in changing its position on a curve, passes, in moving from one position to another, through all intermediate positions. It does not move by jumps.' (p. 12.)

Nie. That is quite true.

Min. Tell me, then—is every centre of gravity a point?

Nie. Certainly.

Min. Let us now consider the centre of gravity of a flea. Does it—

Nie. *(indignantly)*⁴ Another word, and I shall vanish! I cannot waste a night on such trivialities.

Min. Forgive me. I drop the flea. My next remark shall be serious. I wish to point out to you the illogical *tone* of the book. I do not say that the instances I am going to give are crucial or fatal to the argument. But, however unimportant, and however easily corrected, they will, I think, justify me in asking 'Is a text-book, which contains such loosely reasoned arguments as these, to be trusted?'

My first selection is § 52, p. 23. For brevity's sake I shall omit superfluous words. The passages in parentheses are interpolations of my own.

(see *Henrici*, p. 23.)

'If we conceive a Plane (and a point *A* chosen anywhere in Space; then, either the Plane already passes through *A*, or) we may move it until a point on it comes to *A*, which has been chosen anywhere in Space. (If we now fix a second point *B*; then, either the Plane already passes through *B*, or) if we keep *A* fixed we may turn the Plane about it, until the Plane comes to pass also through *B*, likewise chosen arbitrarily in Space. (If we now fix a third point *C*; then, either the Plane already passes through *C*, or) we may still move the Plane, as only two points of it are fixed, by turning it about the Line joining them, until the Plane passes through *C*, chosen arbitrarily, like *A* and *B*. Thus it appears that we may place a Plane so as to pass through three points, *A*, *B*, *C*, chosen anywhere in Space.'

You accept that, interpolations and all?

³Space

⁴missing in Supplement

Nie. Certainly.

Min. Omit the interpolations, and what do you say of it then?

Nie. It remains true. The three successive movings do no harm, but they are not always *necessary*.

Min. Would this statement be correct? ‘Three “movings” are *generally* necessary: but there are three exceptions. If the Plane at first passes through *A*, the *first* “moving” is unnecessary; if, after being made to pass through *A*, it be found to pass through *B* also, the *second* “moving” is unnecessary; and if, after being made to pass through *A* and *B*, it be found to pass through *C* also, the *third* “moving” is unnecessary?’

Nie. Certainly.

Min. You would not, on finding some one ‘moving’ unnecessary, call it ‘an open question’ whether the result were attainable?

Nie. What? When it is already attained? By no means.

Min. Now read this, at p. 23.

(hands the book)

‘But if *C* happens to lie on the Line joining *A* and *B*, then a Plane through *A* and *B*, which did not pass through *C*, could never be made to pass through *C* by being rotated about *A* and *B*; for if it did contain *C* in one position, it would contain it in all positions, as this point would remain fixed during rotation.’ What do you say to that?

Nie. Well, it is his way of discussing your third exception. Of course, when he talks of ‘a Plane through *A* and *B*, which did not pass through *C*,’ he is describing a nonentity: but it is all logical as an argument.

Min. What kind of argument?

Nie. (doubtfully) I should call it a—kind of—*Reductio ad Absurdum*.

Min. I don’t wonder at your hesitation. A thoughtful boy might read it thus:—‘then a Plane through *A* and *B*, which did not pass through *C* (but no such Plane can exist!), could never be made to pass through *C* by being rotated about *A* and *B* (why, it needs no ‘making’!); for if it did contain *C* in one position (which it does!), it would contain it in all positions (which also it does!’)

You and I can recognise the *Reductio ad Absurdum*—though so abnormal and hideous—which the writer intends. But what do you think would be the effect, on a thoughtful boy, of a course of such arguments, where he is expected to accept as *data* what he knows to be absurd, and to recognise as an absurdity what he knows to be a necessary truth?

Nie. At first, Mania: ultimately. Dementia.

Min. Now read Mr. Henrici’s deduction from this fearful argument, at p. 24.

‘We ought, therefore, to limit the conclusion arrived at as follows:—Through three points *which do not lie in a Line* we may always pass a Plane. Whether a Plane may be drawn through three points which do lie in a Line, remains for the moment an open question.’

Are you prepared to back that statement? *Is* it an ‘open question’?

Nie. I cannot say that it is.

Min. Now here is a most curious bit of bad Logic. (reads)

‘If two Planes have two points, *A* and *B*, in common, they must necessarily have more points in common. For, since each extends continuously without

limit, a point moving in the one Plane through *A* or *B* will cross the other Plane at this point;' (p. 25.)

I pause to ask—will it *necessarily* do so? How if it moved along their Line of intersection?

Nie. That is an exception, I grant.

Min. (*reads*) 'hence one Plane will lie partly on the one and partly on the other side of the second Plane. They must therefore intersect.'

Now the conclusion—that the Planes intersect—is undoubtedly true, so long as we assume that, by 'two planes,' the writer means 'two *different* Planes.' But does it follow from the *premisses*? Have the words 'hence' and 'therefore' any logical value?

Nie. I fear not.

Min. At p. 74 I observe 'If two Lines be each perpendicular to a third, they will be parallel to one another.' This is not true. They might be coincidental. The same mistake is made in p. 75.

Now comes a wonderful specimen of slipshod writing. 'We understand by the angles of a Polygon those angles of which the part near the vertex lies within the Polygon.' Does not this oblige us to contemplate an angle as consisting of *two parts*—one 'near the vertex,' the other further off?

Nie. Undoubtedly.

Min. And if either part were gone, the angle would be less?

Nie. (*uneasily*) It would seem so.

Min. And this might be effected by shortening the Lines, so that they would not reach beyond the region 'near the vertex'?

Nie. I fear you have got us into a corner. Be merciful!

Min. You mean that I have driven you into 'that part of an angle which lies near the vertex.' Well, you may come out now. We will seek 'fresh fields and pastures new.'

Quoted from *Lycidas*
by John Milton

At pages 91 to 96 I find no less than forty-six theorems on Symmetry, arranged in two columns—one headed 'Axial Symmetry,' the other 'Central Symmetry.' Here is a specimen pair, at p. 95.

'Corresponding Polygons are congruent but of opposite sense.'	|	'Corresponding Polygons are congruent and of like sense.'
---	--	--

I hardly know which to pity most—the master who has to teach these Theorems, or the boy who has to learn them!

But I have neither the 'one-way spread with moments as elements' nor the 'three-way spread with points as elements' to—

Nie. (*gasping*) What *are* you talking about?

Min. Excuse me. I fear I am getting demoralised. I meant to say—I have neither the time nor the space to criticise this book throughout.

I will, however, try to sum up its faults in a general description.

'Olla Podrida' is perhaps the best name for it, its contents are so hopelessly jumbled together. Most of the Axioms, and all the Theorems, are without numbers, and, as there is no index, the difficulty of finding them when wanted is obvious: and none the less that they are imbedded in oceans of 'padding.' Dip into the book anywhere, and you find yourself in the midst of some discursive talk, which perhaps culminates in an Axiom. Then perhaps comes a Definition. Then comes a little more talk, which, after appealing to sentiment, or probability, or some other motive degrading to Pure Mathematics, gradually becomes

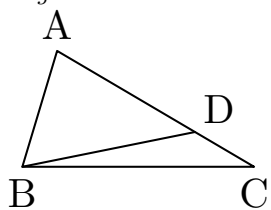
more and more logical, and at last warms into a regular proof—but of what? The reader has no warning as to *what* is to be proved. Unsuspectingly he glides on with the stream, till with a crash he is landed on an enunciation, and finds himself committed to an entire Theorem. This singular writer always reserves the enunciation for the *end* of the Proposition. It may be prejudice, but I cannot help thinking that Euclid's plan—of first clearly stating what he is going to prove and then proving it—is to be preferred to this conjurer's trick of 'forcing a card.'

The book is, I think, *very* hard for beginners to master: the majority of the new Theorems are much more fitted for 'exercises,' than to be embodied in a text-book: and, to crown all, the ambitious attempt to construct a *proof* of Playfair's Axiom is, as we have seen, a lamentable failure.

I think I cannot better conclude my review of this book than by giving you, in two parallel columns, Euclid's Props. I. 18, 19, and Mr. Henrici's proposed substitute for them, at p. 107.

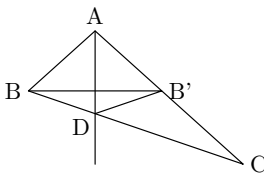
(turn over.)

EUCLID.
The greater side of a Triangle is opposite to the greater angle.



Let ABC be a triangle having $AC > AB$: then shall the angle ABC be $>$ the angle C . From AC cut off AD equal to AB ; and draw BD . Then, $\because AB = AD$, \therefore the angle $ABD =$ the angle ADB ; but the angle ADB is exterior to the Triangle BCD , and $\therefore <$ the angle C ; \therefore the angle ABD also $>$ the angle C ; much more is the angle $ABC >$ the angle C . Q. E. D.

HENRICI.

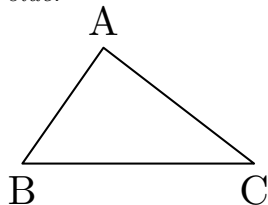


Let us now suppose a Triangle ABC , in which the bisector of the angle BAC is not an axis of symmetry. Then the contra-positive form of the theorem of § 162 tells us that AB is not equal to AC , that the angle B is not equal to the angle C , and that the bisector AD of the angle A is not perpendicular to BC , and hence, that the two angles ADB and ADC are unequal. Between these angles there exists the relation

$$\text{'the angle } ABC + \text{the angle } BDA \\ = \text{the angle } C + \text{the angle } CDA,\text{'}$$

for each sum makes with half the angle A an angle of continuation. Hence it follows that, if the angle $ABC >$ the angle C , the angle $BDA <$ the angle CDA .

The greater angle of a Triangle is opposite to the greater side.



Let ABC be a Triangle having the $\angle B >$ the angle C : then shall AC be $> AB$.

For if not, it must be equal or less.

It is not equal, for then the angle B would = the angle C . It is not less, for then the angle B would $<$ the angle C .

$\therefore AC > AB$. Q. E. D.

If we now fold the figure along AD , then AB will fall along AC ; and B will fall between A and C if we suppose that AB is the shorter of the two unequal Lines AB and AC . The line DB therefore takes the position DB' within the angle ADC . But the angle $AB'D$, which = the angle ABC , is exterior to the triangle DCB' , and $\therefore >$ the angle C .

Conversely, if the angle $ADB <$ the angle ADC , the line DB will fall within the angle ADC , and $\therefore B$ will fall between A and C ; that is, AB will be less than AC . This always happens (see above) if the angle $ABC >$ the angle C , for then the angle $BDA <$ the angle ADC .

Theorem. In every Triangle the greater side is opposite to the greater angle, and conversely, the greater angle is opposite to the greater side.

Now, if you could get some schoolmaster—one who had no bias whatever in favour of Euclid or of Henrici—to teach these two columns (one containing 169, the other 282 words) to two ordinary boys of equal intelligence, or rather of equal stupidity, what result would you expect?

Nie. (with a cunning smile) I don't think I could find such a schoolmaster.

Min. Ah, crafty man! You evade the question! I can't resist giving you just one more tit-bit—the definition of a Square, at p. 123.

'A quadrilateral which is a kite, a symmetrical trapezium, and a parallelogram is a Square!'

And now, farewell, Henrici! 'Euclid, with all thy faults, I love thee still!' Indeed I might say 'with twice thy faults,' or 'with thrice thy faults,' if the alternative be Henrici! (returns the book, which Niemand receives in solemn silence.)

Quoted from *The Task, Book II: The Time-Piece* by William Cowper

Scene VI.

Treatment of Parallels by direction.

§ 1. WILSON.

'There is moreover a logic besides that of mere reasoning.'

WILSON, *Pref.* p. xiii.

Nie. You have made but short work of four of the five methods of treating Parallels.

Min. We shall have all the more time to give to the somewhat intricate subject of Direction.

Nie. I lay on the table '*Elementary Geometry*,' by J. M. WILSON, M.A., late Fellow of St. John's College, Cambridge, late Mathematical Master of Rugby School, now Head Master of Clifton College. The second edition, 1869. And I

warn you to be careful how you criticise it, as it is already adopted in several schools.

Min. *Tant pis pour les écoles.* So you and your client deliberately propose to supersede Euclid as a text-book?

Nie. 'I am of opinion that the time is come for making an effort to supplant Euclid in our schools and universities.' (Pref. p. xiv.)

Min. It will be necessary, considering how great a change you are advocating, to examine your book *very* minutely and critically.

Nie. With all my heart. I hope you will show, in your review, 'the spirit without the prejudices of a geometrician.' (Pref. p. xv.)

Min. We will begin with the Right Line. And first, let me ask, how do you define it?

Nie. As 'a Line which has the same direction at all parts of its length.' (p. 3)

Min. You do not, I think, make any practical use of that as a test, any more than Euclid does of the property of lying evenly as to points on it?

Nie. No, we do not.

Min. You construct and test it as in Euclid, I believe? And you have his Axiom that 'two straight Lines cannot enclose a space?'

Nie. Yes, but we extend it. Euclid asserts, in effect, that two Lines, which coincide in two points, coincide *between* those points: *we* say they 'coincide wholly,' which includes coincidence *beyond* those points.

Min. Euclid tacitly assumes that.

Nie. Yes, but he has not expressed it.

Min. I think the addition a good one. Have you any other Axioms about it?

Nie. Yes, 'that a straight Line marks the shortest distance between any two of its points.' (p. 5. Ax. 1.)

Min. That I have already fully discussed in reviewing M. Legendre's book (see p. 736).

Nie. We have also 'A Line may be conceived as transferred from any position to any other position, its magnitude being unaltered.' (p. 5. Ax. 3.)

Min. True of *any* geometrical magnitude: but hardly worth stating, I think. I have now to ask you how you define an Angle?

Nie. 'Two straight Lines that meet one another form an angle at the point where they meet.' (p. 5.)

Min. Do you mean that they form it 'at the point' and nowhere else?

Nie. I suppose so.

Min. I fear you allow your angle no magnitude, if you limit its existence to so small a locality!

Nie. Well, we *don't* mean 'nowhere else.'

Min. (*meditatively*) You mean 'at the point—and *somewhere* else.' *Where* else, if you please?

Nie. We mean—we don't quite know why we put in the words at all. Let us say 'Two straight Lines that meet one another form an angle.'

Min. Very well. It hardly tells us what an angle *is*, and, so far, it is inferior to Euclid's Definition: but it may pass. Do you put any limit to the *size* of an angle?

Nie. We have not named any, but the largest here treated of is what we call 'one revolution.'

Min. You admit reëntrant angles then?

Nie. Yes.

Min. Then your Definition only states half the truth: you should have said ‘form *two* angles.’

Nie. That would be true, no doubt.

Min. But this extension of limit will require several modifications in Euclid’s language: for instance, what is your Definition of an obtuse angle?

NIEMAND *reads.*

P. 8. Def. 13. ‘An *obtuse angle* is one which is greater than a right angle.’

Min. So you tumble headlong into the very first pitfall you come across! Why, that includes such angles as 180° and 360° . You would teach your pupil, I suppose, that one portion of a straight Line makes an obtuse angle with the other, and that every straight Line has an obtuse angle at each end of it!

Nie. It is an oversight—of course we ought to have added ‘but less than two right angles.’

Min. A very palpable oversight. I fear we shall find more as we go on. What Axioms have you about angles?

NIEMAND *reads.*

P. 5. Ax. 4. ‘An angle may be conceived as transferred to any other position, its magnitude being unaltered.’

Min. Hardly worth stating. Proceed.

NIEMAND *reads.*

P. 5. Ax. 5. ‘Angles are equal when they could be placed on one another so that their vertices would coincide in position, and their arms in direction.’

Min. ‘Placed on one another’! Did you ever see the child’s game, where a pile of four hands is made on the table, and each player tries to have a hand at the top of the pile?

Nie. I know the game.

Min. Well, did you ever see both players succeed at once?

Nie. No.

Min. Whenever that feat is achieved, you may *then* expect to be able to place two angles ‘on one another’! You have hardly, I think, grasped the physical fact that, when one of two things is *on* the other, the second is *underneath* the first. But perhaps I am hypercritical. Let us try an example of your Axiom: let us place an angle of 90° on one of 270° . I think I could get the vertices and arms to coincide in the way you describe.

Nie. But the one angle would not be *on* the other; one would extend round one-fourth of the circle, and the other round the remaining three-fourths.

Min. Then, after all, the angle is a mysterious entity, which extends from one of the Lines to the other? That is much the same as Euclid’s Definition. Let us now take your definition of a Right Angle.

Nie. We first define ‘one revolution,’ which is the angle described by a Line revolving, about one extremity, round into its original position.

Min. That is clear enough.

Nie. We then say (p. 7. Def. 9) ‘When it coincides with what was initially its continuation, it has described *half a revolution*, and the angle it has then described is called a *straight angle*.’

Min. How do you know that it has described *half a revolution*?

Nie. Well, it is not difficult to prove. Let that portion of the Plane, through which it has revolved, be rolled over, using as an axis the arm (in its initial position) and its continuation, until it falls upon the other portion of the Plane. The two angular magnitudes will now together make up 'one revolution': therefore each is 'half a revolution.'

Min. A proof, I grant: but you are *very* sanguine if you expect beginners in the subject to supply it for themselves.

Nie. It is an omission, we admit.

Min. And then 'a straight angle'! 'Straight' is necessarily unbending: while 'angle' is from ἄγκλος, 'a bend or hook': so that your phrase is exactly equivalent to 'an unbending bend'! In 'the Bairnslea Foaks' Almanack' I once read of 'a mad chap' who spent six weeks 'a-trying to maäk a straät hook': but he failed. He ought to have studied your book. Have you Euclid's Axiom 'all right angles are equal'?

Nie. We deduce it from 'all straight angles are equal': and that we prove by applying one straight angle to another.

Min. That is all very well, though I cannot think 'straight angles' a valuable contribution to the subject. I will now ask you to state your method of treating Pairs of Lines, as far as your proof of Euc. I. 32.

Nie. To do that we shall of course require parallel Lines: and, as our definition of them is 'Lines having the same direction,' we must begin by discussing direction.

Min. Undoubtedly. How do you define direction?

Nie. Well, we have not attempted *that*. The idea seemed to us to be too elementary for definition. But let me read you what we have said about it.

Reads

P. 2. Def. 2. 'A *geometrical Line* has position, and length, and at every point of it it has direction'

P. 3. Def. 4. 'A *straight Line* is a Line which has the *same* direction at all parts of its length. It has also the opposite direction A straight Line may be conceived as generated by a point moving always in the *same* direction.'

I will next quote what we have said about two Lines having 'the same direction' and 'different directions.'

Min. We will take that presently: I have a good deal to say first as to what you have read. I gather that you consider direction to be a *property* of a geometrical entity, but not itself an entity?

Nie. Just so.

Min. And you ascribe this property to a Line, and also to the motion of a point?

Nie. We do.

Min. For simplicity's sake, we will omit all notice of curved Lines, etc., and will confine ourselves to straight Lines and rectilinear motion, so that in future, when I use the word 'Line,' I shall mean 'straight Line.' Now may we not give a notion of 'direction' by saying—that a moving point must move in a certain 'direction'—that, if two points, starting from a state of coincidence, move along two equal straight Lines which do not coincide (so that their movements are alike in point of departure, and in magnitude), that quality of each movement,

which makes it differ from the other, is its 'direction'—and similarly that, if two equal straight Lines are terminated at the same point, but do not coincide, that quality of each which makes it differ from the other, is its 'direction' from the common point?

Nie. It is all very true: but you are using 'straight Line' to help you in defining 'direction.' *We*, on the contrary, consider 'direction' as the more elementary idea of the two, and use it in defining 'straight Line.' But we clearly agree as to the meanings of both expressions.

Min. I am satisfied with that admission. Now as to the phrase 'the same direction,' which you have used in reference to a single Line and the motion of a single point. May we not say that portions of the same Line have 'the same direction' as one another? And that, if a point moves along a Line without turning back, its motion at one instant is in 'the same direction' as its motion at another instant?

Nie. Yes. That expresses our meaning in other language.

Min. I have altered the language in order to bring out clearly the fact that, in using the phrase 'the same direction,' we are really contemplating *two* Lines, or *two* motions. We have now got (considering 'straight Line' as an understood phrase) accurate geometrical Definitions of at least *two* uses of the phrase. And to these we may add a third, viz. that two coincident Lines have 'the same direction.'

Nie. Certainly, for they are one and the same Line.

Min. And you intend, I suppose, to use the word 'different' as equivalent to 'not-same.'

Nie. Yes.

Min. So that if we have, for instance, two equal Lines terminated at the same point, but not coinciding, we say that they have 'different directions'?

Nie. Yes, with one exception. If they are portions of one and the same infinite Line, we say that they have 'opposite directions.' Remember that we said, of a Line, 'it has also the opposite direction.'

Min. You did so: but, since 'same' and 'different' are contradictory epithets, they must together comprise the whole genus of 'pairs of directions.' Under which heading will you put 'opposite directions'?

Nie. No doubt, strictly speaking, 'opposite directions' are a particular kind of 'different directions.' But we shall have endless confusion if we include them in that class. We wish to avoid the use of the word 'opposite' altogether, and to mean, by 'different directions,' all kinds of directions that are not the same, with the exception of 'opposite.'

Min. It is a most desirable arrangement: but you have not clearly stated it in your book. Tell me whether you agree in this statement of the matter. Every Line has a pair of directions, opposite to each other. And if two Lines be said to have 'the same direction,' we must understand 'the same *pair* of directions'; and if they be said to have 'different directions,' we must understand 'different *pairs* of directions.' And even this is not enough: for suppose I draw, on the map of England, a straight Line joining London and York; I may say 'This Line has a pair of directions, the first being "London-to-York" and the second "York-to-London."' I will now place another Line upon this, and *its* pair of directions shall be, first "York-to-London" and second "London-to-York." Then it has a different first-direction from the former Line, and also a different second-direction: that is, it has a 'different pair of directions.' Clearly *this* is not intended: but, in

order to exclude such a possibility, we must extend yet further the meaning of the phrase, and, if two Lines be said to have ‘the same direction,’ we must understand ‘pairs of directions which can be arranged so as to be the same’; and if they be said to have ‘different directions,’ we must understand ‘pairs of directions which cannot be arranged so as to be the same.’

Nie. Yes, that expresses our meaning.

Min. You must admit, I think, that your theory of direction involves a good deal of obscurity at the very outset. However, we have cleared it up, and will not use the word ‘opposite’ again. Tell me now whether you accept this as a correct Definition of the phrases ‘the same direction’ and ‘different directions,’ when used of a Pair of infinite Lines which have a common point:—

If two infinite Lines, having a common point, coincide, they have ‘the same direction’; if not, they have ‘different directions.’

Nie. We accept it.

Min. And, since a finite Line has the same direction as the infinite Line of which it is a portion, we may generalise thus:—‘Coincidental Lines have the same direction. Non-coincidental Lines, which have a common point, have different directions.’

But it must be carefully borne in mind that we have as yet no geometrical meaning for these phrases, *unless when applied to two Lines which have a common point.*

Nie. Allow me to remark that what *you* call ‘coincidental Lines’ *we* call ‘the same Line’ or ‘parts of the same Line,’ and that what *you* call ‘non-coincidental Lines’ *we* call ‘different Lines.’

Min. I understand you: but I cannot employ these terms, for two reasons: first, that your phrase ‘the same Line’ loses sight of a fact I wish to keep in view, that we are considering a *Pair* of Lines; secondly, that your phrase ‘different Lines’ might be used, with strict truth, of two different portions of the same infinite Line, so that it is not definite enough for my purpose.

Let us now proceed ‘to consider the relations of two or more straight Lines in one Plane in respect of direction.’

And first let me ask which of the propositions of Table II you wish me to grant you as an axiom?

Nie. (*proudly*) Not one of them! We have got a new patent process, the ‘direction’ theory, which will dispense with them all.

Min. I am *very* curious to hear how you do it.

NIEMAND *reads.*

P. 11. Ax. 6. ‘Two different Lines may have either the same or different directions.’

Min. That contains two assertions, which we will consider separately. First, you say that ‘two different Lines (i. e. ‘non-coincidental Lines,’ or ‘Lines having a separate point’) ‘may have the same direction’. Now let us understand each other quite clearly. We will take a fixed Line to begin with, and a certain point on it: there is no doubt that we can draw, through that point, a second Line coinciding with the first: the direction of this Line will of course be ‘the same’ as the direction of the first Line; and it is equally obvious that if we draw the second Line in any *other* direction, so as *not* to coincide with the first, its direction will *not* be ‘the same’ as that of the first: that is, they will

have 'different' directions. If we want a geometrical definition of the assertion that this second Line has 'the same direction' as the first Line, we may take the following:—'having such a direction as will cause the Lines to be the same Line.' If we want a geometrical construction for it, we may say 'take any other point on the fixed Line; join the two points, and produce the Line, so drawn, at both ends': this construction we know will produce a Line which will be 'the same' as the first Line, and whose direction will therefore be 'the same' as that of the first Line. If, in a certain diagram, whose geometrical history we know, we want to test whether two Lines, passing through a common point, have, or have not, 'the same direction,' we have simply to take any other point on one of the Lines, and observe whether the other Line does, or does not, pass through it. This relationship of direction, which *you* call 'having the same direction,' and *I* 'having identical directions,' we may express by the word 'co-directional.'

Nie. All very true. My only puzzle is, why you have explained it at such enormous length: my meerschaum has gone out while I have been listening to you!

Min. Allow me to hand you a light. As to the 'enormous length' of my explanation, we are in troubled waters, my friend! There are breakers ahead, and we cannot 'heave the lead' too often.

Nie. It is 'lead' indeed!

Min. Let us now return to our fixed Line: and this time we will take a point *not* on it, and through this point we will draw a second Line. You say that we can, if we choose, draw it in 'the same direction' as that of the first Line?

Nie. We do.

Min. In that case let me remind you of the warning I gave you a few minutes ago, that we have no geometrical meaning for the phrase 'the same direction,' *unless when used of Lines having a common point*. What geometrical meaning do you attach to the phrase when used of other Lines?

Nie. (*after a pause*) I fear we cannot give you a geometrical definition of it at present.

Min. No? Can you construct such Lines?

Nie. No, but really that is not necessary. We allow of 'hypothetical constructions' now-a-days.

Min. Well then, can you test whether a given Pair of Lines *have* this property? I mean, if I give you a certain diagram, and tell you its geometrical history, can you pronounce, on a certain Pair of finite Lines, which have no visible common point, as to whether they have this property?

Nie. We cannot undertake it.

Min. You ask me, then, to believe in the reality of a class of 'Pairs of Lines' possessing a property which you can neither define, nor construct, nor test?

Nie. We can do none of these things, we admit: but yet the class is not quite so indefinite as you think. We can give you a geometrical *description* of it.

Min. I shall be delighted to hear it.

Nie. We have agreed that a Pair of coincidental finite Lines have a certain relationship of direction, which we call 'the same direction,' and which you allow to be an intelligible geometrical relation?

Min. Certainly.

Nie. Well, all we assert of this new class is that their relationship of direction is identical with that which belongs to coincidental Lines.

Min. It cannot be identical in *all* respects, for it certainly differs in this, that we cannot reach the conception of it by the same route. I can form a conception of 'the same direction,' when the phrase is used of two Lines which have a common point, but it is only by considering that one 'falls on' the other—that they have all other points common—that they coincide. When you ask me to form a conception of this relationship of direction, when asserted of other Lines, you know that none of these considerations will help me, and you do not furnish me with any substitutes for them. To me the relationship does *not* seem to be identical: I should prefer saying that separational Lines have 'collateral,' or 'corresponding,' or 'separational' directions, to using the phrase 'the same direction' over again. It is, of course, true that 'collateral' directions produce the same results, as to angles made with a transversal, as 'identical' directions; but this seems to me to be a Theorem, not an Axiom.

Nie. You say that the relationship does *not* seem to you to be identical. I should like to know *where* you think you perceive any difference?

Min. I will try to make my meaning clearer by an illustration.

Suppose that I and several companions are walking along a railway, which will take us to a place we wish to visit. Some amuse themselves by walking on one of the rails; some on another; others wander along the line, crossing and recrossing. Now as we are all bound for the same place, we may say, roughly speaking, that we are *all* moving 'in the same direction': but that is speaking very roughly indeed. We make our language more exact, if we exclude the wanderers, and say that those who are walking along the rails are so moving. But it seems to me that our phrase becomes still more exact, if we limit it to those who are walking on one and the same rail.

As a second illustration, suppose two forces, acting on a certain body; and let them be equal in amount and opposite in direction. Now, if they are acting along the same Line, we know that they neutralise each other, and that the body remains at rest. But if one be shifted ever so little to one side, so that they act along parallel Lines, then, though still equal in amount and (according to the 'direction' theory) opposite in direction, they no longer neutralise each other, but form a 'couple.'

As a third illustration, take two points on a certain Plane. We may, first, draw a Line through them and cause them to move along that Line: they are then undoubtedly moving 'in the same direction.' We may, secondly, draw two Lines through them, which meet or at least would meet if produced, and cause them to move along those Lines: they are then undoubtedly moving 'in different directions.' We may, thirdly, draw two parallel Lines through them, and cause them to move along those Lines. Surely this is a new relationship of motion, not absolutely identical with either of the former two? But if this new relationship be not absolutely identical with that named 'in the same direction,' it must belong to the class named 'in different directions.'

Still, though this new relationship of direction is not identical with the former in *all* respects, it is in *some*: only, to prove this, we must use *some* disputed Axiom, as it will take us into Table II. For instance, they are identical as to angles made with transversals: this fact is embodied in Tab. II. 4. (See p. 725). Would you like to adopt that as your Axiom?

Nie. No. We are trying to dispense with Table II altogether.

Min. It is a vain attempt.

There is another remark I wish to make, before considering your second

assertion. In asserting that there is a real class of non-coincidental Lines that have 'the same direction,' are you not also asserting that there is a real class of Lines that have no common point? For, if they had a common point, they must have '*different* directions.'

Nie. I suppose we are.

Min. We will then, if you please, credit you with an Axiom you have not expressed, viz. 'It is possible for two Lines to have no common point.' And here I must express an opinion that this ought to be *proved*, not assumed. Euclid has proved it in I. 27, which rests on no disputed Axiom; and I think it may be recorded as a distinct defect in your treatise, that you have assumed, as axiomatic, a truth which Euclid has *proved*.

My conclusion, as to this first assertion of yours, is that it is most decidedly *not* axiomatic.

Let us now consider your second assertion, that some non-coincidental Lines have 'different directions.' Here I must ask, as before, are you speaking of Lines which have a common point? If so, I am quite ready to grant the assertion.

Nie. Not exactly. It is rather a difficult matter to explain. The Lines we refer to *would*, as a matter of fact, meet if produced, and yet we do not suppose that fact known in speaking of them. What we ask you to believe is that there is a real class of non-coincidental finite Lines, which we do not yet know to have a common point, but which have 'different directions.' We shall assert presently, in another Axiom, that such Lines will meet if produced; but we ask you to believe their reality independently of that fact.

Min. But the only geometrical meaning I know of, as yet, for the phrase 'different directions,' refers to Lines known to have a common point. What geometrical meaning do you attach to the phrase when used of other Lines?

Nie. We cannot define it.

Min. Nor construct it? Nor test it?

Nie. No.

Min. You ask me, then, to believe in the reality of *two* classes of 'pairs of Lines,' each possessing a property that you can neither define, nor construct, nor test?

Nie. That is true. But surely you admit the reality of the second class? Why, intersectional Lines are a case in point.

Min. Certainly. And so much I am willing to grant you. I allow that *some* non-coincidental Lines, viz. intersectional Lines, have 'different directions.' But as to 'the *same* direction,' you have given me no reason whatever for believing that there are *any* non-coincidental Lines which possess that property.

Nie. But surely there are two real distinct classes of non-coincidental Lines, 'intersectional' and 'separational'?

Min. Yes. Thanks to Euc. I. 27, you may now assume the reality of both.

Nie. And you will hardly assert that the relationship of direction, which belongs to a Pair of intersectional Lines, is identical with that which belongs to a Pair of separational Lines?

Min. I do not assert it.

Nie. And you allow that intersectional Lines have 'different directions'?

Min. Yes. Are you going to argue, from that, that separational Lines must have 'the *same* direction'? Why may I not say that intersectional Lines have *one* kind of 'different directions' and that separational Lines have *another* kind?

Nie. But *do* you say it?

Min. Certainly not. There is no evidence, at present, one way or the other. For anything we know, Pairs of separational Lines may always have ‘the same direction,’ or they may always have ‘different directions,’ or there may be Pairs of each kind. I fear I must decline to grant the first part of your Axiom altogether, and the second part in the sense of referring to Lines not known to have a common point. You may now proceed.

NIEMAND *reads.*

P. 11. Ax. 7. ‘Two different straight Lines which meet one another have different directions.’

Min. That I grant you, heartily. It is, in fact, a Definition for the phrase ‘different directions,’ when used of Lines which have a common point.

NIEMAND *reads.*

P. 11. Ax. 8. ‘Two straight Lines which have different directions would meet if prolonged indefinitely.’

Min. Am I to understand that, if we have before us a Pair of finite Lines which are not known to have a common point, but of which we *do* know that they have different directions, you ask me to believe that they will meet if produced?

Nie. That is our meaning.

Min. We had better heave the lead once more, and return to our fixed Line, and a point not on it, through which we wish to draw a second Line. You ask me to grant that, if it be drawn so as to have a direction ‘different’ from that of the first Line, it will meet it if prolonged indefinitely?

Nie. That is our humble petition.

Min. Will you be satisfied if I grant you that *some* Lines, so drawn, will meet the first Line? *That* I would grant you with pleasure. I could draw millions of Lines which would fulfil the conditions, by simply taking points at random on the given Line, and joining them to the given point. Every Line, so constructed, would have a direction ‘different’ from that of the given Line, and would also meet it.

Nie. We will *not* be satisfied, even with millions! We ask you to grant that *every* Line, drawn through the given point with a direction ‘different’ from that of the given Line, will meet the given Line: and we ask you to grant this independently of, and antecedently to, any other information about the Lines except the fact that they have ‘different’ directions.

Min. But what meaning am I to attach to the phrase ‘different directions,’ independently of, and antecedently to, the fact that they have a common point?

Nie. (after a long silence) I fear we can suggest none.

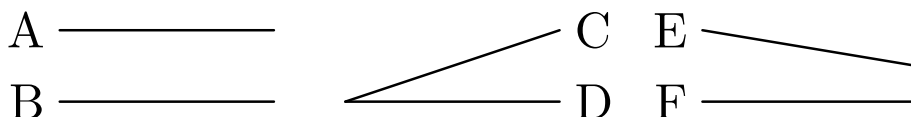
Min. Then I must decline to accept the Axiom.

Nie. And yet this Axiom is the converse of the preceding, which you granted so readily.

Min. The *technical* converse, my good sir, not the *logical*! I will not suspect you of so gross a logical blunder as the attempt to convert a universal affirmative *simpliciter* instead of *per accidens*. The only converse, as you are no doubt aware, to which you have any *logical* right, is ‘*Some* Lines, which have “different directions,” would meet if produced’; and *that* I grant you. It is true of intersectional Lines, and I would limit the Proposition *to* such Lines, so that

it would be equivalent to ‘Lines, which would meet if produced, would meet if produced’—an indisputable truth, but *not* remarkable for novelty! You may proceed.

Nie. I beg to hand in this diagram, and will read you our explanation of it:—



‘Thus *A* and *B* in the figure have the same direction; and *C* and *D*, which meet, have different directions; and *E* and *F*, which have different directions, would meet if produced far enough.’

Min. I grant the assertion about *C* and *D*; but I am wholly unable to guess on what grounds you expect me to grant that *A* and *B* ‘have the same direction,’ and that *E* and *F* ‘have different directions.’ Do you expect me to judge by eye? How if the lines were several yards apart? Is *this* what Geometry is coming to? Proceed.

NIEMAND reads.

Def. 19. ‘Straight Lines, which are not parts of the same straight Line, but have the same direction, are called *Parallels*.’

Min. A *Definition* is of course unobjectionable, since it does not assert the *existence* of the thing defined: in fact, it *asserts* nothing except the meaning which you intend to attach to the word ‘parallel.’ But, as this word is used in different senses, I will thank you to substitute for it, in what you have yet to say about this matter, the phrase ‘having a separate point, but the same direction,’ which you may condense into one compound word, if you like:—‘sepuncto-codirectional.’

Nie. (*sighing*) A terrible word! And I shall have to use it so often!

Min. I will try to abridge it for you. Let us take ‘sep-’ and ‘cod-’ from the beginnings of the two words, and ‘-al’ for a termination. That will give us ‘sepcodal.’

Nie. That sounds a little harsh.

Min. ‘What? Is it harder, Sirs, than Gordon,
Colkitto or Macdonald, or Galasp?’

Quoted from *Sonnet 11* by John Milton

Nie. (*doubtfully*) I *think* I prefer it to Colkitto. But it is from you Moderns I have learned to be so sensitive about long words. How I would have liked to take you to an Egyptian restaurant I used to frequent, centuries ago, in a phantasmic sort of way, if only to hear the names of some of the dishes! Why, one thought nothing of seeing a gentleman rush in, carpet-bag in hand, and shout out ‘ὦ ἄτερ!’ (that was the way we addressed the attendant in those days) ‘A plate of λεπαδοτεμαχοσελαχογαλεοκρανυολειψανοδριμυποτριμματοσιλφιοπαραομελιτοκατακεχυμενοκιχλεπικισσυφοφαττοπεριστεραλεκτρυονοπτεγεφαλοκιγκλοπελειολαγωσοσφραιοβαφητραγανοπτερύγων, and look sharp about it! I’m in a hurry!’

Min. If the gentleman wanted to catch his train—by the way, *had* they trains in Egypt in ancient days?

Nie. Certainly. Read your ‘Antony and Cleopatra,’ Act I, Scene 1. ‘*Exeunt*

Quoted from *Antony and Cleopatra* by William Shakespeare

Antony and Cleopatra with their train.'

Min. In that case, wouldn't it be enough to say 'A plate of λεπαδο'?

Nie. Most certainly *not*—at least not in a *fashionable* restaurant. But this is a digression. I am willing to adopt the word 'sepcodal.'

Min. Now, before you read any more, let us get a clear idea of your Definition. We know of two real classes of Pairs of Lines, 'coincidental' and 'intersectional'; and to these we may (if we credit you with a Corollary to Euc. I. 27, 'It is possible for two Lines to have no common point') add a third class, which we may call 'separational.'

We also know that if a Pair of Lines has a common point, and no separate point, it belongs to the first class; if a common point, and a separate point, to the second. Hence all Pairs of Lines, having a common point, must belong to one or other of these classes. And since a Pair, which has *no* common point, belongs to the third class, we see that *every* conceivable Pair of Lines must belong to one of these three classes.

We also know that—

Nie. (*sighing deeply*) You are heaving the lead again!

Min. I am: but we shall be in calmer water soon.

We also know that the 'Coincidental' class possesses two properties—they are coincidental and have identical directions; and that the 'Intersectional' class also possesses two properties—they are intersectional and have different directions.

Now if you choose to frame a Definition by denying one property of each of these two classes, any Pair of Lines, so defined, is excluded from both of these classes, and must, *if it exist at all*, belong to the 'Separational' class. Remember, however, that you *may* have so framed your Definition as to exclude your Pair of Lines from *existence*. For instance, if you choose to combine two contradictory conditions of direction, and to say that Lines, which have identical *and* intersectional directions, are to be called so-and-so, you are simply describing a nonentity.

Nie. That is all quite clear.

Min. Your Definition, then, amounts to this:—Lines, which are not coincidental, but which have identical directions, are said to be 'sepcodal.'

Nie. It does.

Min. Well, here is another Definition for Parallels, which will answer your purpose just as well:—'Lines, which are *not* intersectional, but which have different directions.'

Nie. But I think I can prove to you that you have now done the very thing you cautioned me against: you have annihilated your Pair of Lines.

Min. That is a matter which we need not consider at present. Proceed.

NIEMAND *reads.*

P. 11. 'From this Definition, and the Axioms above given, the following results are immediately deduced:

(1) That parallel—I beg your pardon—that 'sepcodal' Lines would not meet however far they were produced. For if they met—'

Min. You need not trouble yourself to prove it. I grant that, *if* such Lines existed, they would not meet. Your assertion is simply the Contranominal of Ax. 7 (p. 763), and therefore is necessarily true if the subject be real.

But remember that, though I have granted to you that, if we are given a Line and a point not on it, we can draw, through the point, *a certain* Line separational from the given Line, we do not yet know that it is *the only* such Line. *That* would take us into Table II. With our present knowledge, we must allow for the possibility of drawing any number of Lines through the given point, all separational from the given Line: and all I grant you is, that your ideal ‘sepcodal’ Line will, *if it exist at all*, be one of this group.

NIEMAND *reads*.

(2) ‘That Lines which are sepcodal with the same Line are sepcodal with each other. For——’

Min. Wait a moment. I observe that you say that such Lines are sepcodal with each other. Might they not be ‘*compuncto-codirectional*’?

Nie. Certainly they might: but we do not wish to include that case in our predicate.

Min. Then you must limit your subject, and say ‘*different* Lines.’

Nie. Very well.

Reads.

‘That different Lines, which are sepcodal with the same Line, are sepcodal with each other. For they each have the same direction as that Line, and therefore the same direction as the other.’

Min. I am willing to grant you, without any proof, that, *if* such Lines existed, they would have the same direction with regard to each other. The phrase ‘*they each have*’ is not remarkably good English. However, you may proceed.

NIEMAND *reads*.

P. 12. Ax. 9. ‘An angle may be conceived as transferred from one position to another, the direction of its arms remaining the same.’

Min. Let us first consider the right arm by itself. You assert that it may be transferred to a new position, its direction remaining the same?

Nie. We do.

Min. You might, in fact, have here inserted an Axiom ‘A Line may be conceived as transferred from one position to another, its direction remaining the same’?

Nie. That would express our meaning.

Min. And this is virtually identical with your Axiom ‘Two different Lines may have the same direction’?

Nie. Certainly. They embody the same truth. But the one contemplates a single Line in two positions, and the other contemplates two Lines: the difference is very slight.

Min. Exactly so. Now let me ask you, do you mean, by the word ‘angle,’ a constant or a variable angle?

Nie. I do not quite understand your question.

Min. I will put it more fully. Do you mean that the arms of the angle are rigidly connected, so that it cannot change its magnitude, or that they are merely hinged loosely together, as it were, so that it depends entirely on the

relative motions of the two arms whether the angle changes its magnitude or not?

Nie. Why are we bound to settle the question at all?

Min. I will tell you why. Suppose we say that the arms are merely hinged together: in that case all you assert is that each arm may be transferred, its direction remaining the same; that is, you merely assert your 6th Axiom twice over, once for the right arm and once for the left arm; and you do *not* assert that the angle will retain its magnitude. But in the Theorem which follows, you clearly regard it as a constant angle, for you say 'the angle AOD would coincide with the angle EKH . Therefore the angle $AOD = EKH$.' But the 'therefore' would have no force if AOD could change its magnitude. Thus you would be deducing, from an Axiom where 'angle' is used in a peculiar sense, a conclusion in which it bears its ordinary sense. You have heard of the fallacy '*A dicto secundum Quid ad dictum Simpliciter*'?

Nie. (*hastily*) We are not going to commit ourselves to *that*. You may assume that we mean, by 'angle,' a rigid angle, which cannot change its magnitude.

Min. In that case you assert that, when a pair of Lines, terminated at a point, is transferred so that its vertex has a new position, these three conditions can be simultaneously fulfilled:—

- (1) the right arm has 'the same direction' as before;
- (2) the left arm has 'the same direction' as before;
- (3) the magnitude of the angle is unchanged.

Nie. We do not dispute it.

Min. But any *two* of these conditions are sufficient, without the third, to determine the new state of things. For instance, taking (1) and (3), if we fix the position of the right arm, by giving it 'the same direction' as before, and also keep the magnitude of the angle unchanged, is not that enough to fix the position of the left arm, without mentioning (2)?

Nie. It certainly is.

Min. Your Axiom asserts, then, that any two of these conditions lead to the third as a necessary result?

Nie. It does.

Min. Your Axiom then contains *two* distinct assertions: the data of the first being (1) and (3) [or (2) and (3), which lead to a similar result], the data of the second being (1) and (2). These I will state as two separate Axioms:—

9 (α). If a Pair of Lines, terminated at a point, be transferred to a new position, so that the direction of one of the Lines, and the magnitude of the included angle, remain the same; the direction of the other Line will remain the same.

9 (β). If a Pair of Lines, terminated at a point, be transferred to a new position, so that their directions remain the same; the magnitude of the included angle will remain the same.

Have I represented your meaning correctly?

Nie. We have no objection to make.

Min. We will return to this subject directly. I must now ask you to read the enunciation of Th. 4, omitting, for simplicity's sake, all about supplementary angles, and assuming the Lines to be taken 'the same way.'

NIEMAND reads.

P. 12. Th. 4. 'If two Lines are respectively sepcodal with two other Lines, the angle made by the first Pair will be equal to the angle made by the second Pair.'

Min. The 'sep' is of course superfluous, for if the Lines are 'compuncto-codirectional,' it is equally true. May I re-word it thus?—

'If two Pairs of Lines, each terminated at a point, be such that the directions of one Pair are respectively the same as those of the other; the included angles are equal.'

Nie. Yes, if you like.

Min. But surely the only difference, between Ax. 9 (β) and this, is that in the Axiom we contemplated a single Pair of Lines transferred, while *here* we contemplate two Pairs?

Nie. That is the only difference, we admit.

Min. Then I must say that it is anything but good logic to take two Propositions, distinguished only by a trivial difference in form, and to call one an Axiom and the other a Theorem deduced from it! A very gross case of '*Petitio Principii*,' I fear!

Nie. (*after a long pause*) Well! We admit that it is *not* exactly a Theorem: it is only a new form of the Axiom.

Min. Quite so: and as it is a more convenient form for my purpose, I will with your permission adopt it as a substitute for the Axiom. Now as to the corollary of this Theorem: *that*, I think, is merely a particular case of Ax. 9 (β), one of the arms being slid along the infinite Line of which it forms a part, and thus of course having 'the same direction' as before?

Nie. It is so.

Min. And, as this is a more convenient form still, I will restate your assertions, limiting them to this particular case:—

Ax. 9 (α). Lines, which make equal corresponding angles with a certain transversal, have the same direction.

Ax. 9 (β). Lines, which have the same direction, make equal corresponding angles with any transversal.

Am I right in saying that these two assertions are virtually involved in your Axiom?

Nie. We cannot deny it.

Min. Now in 9 (α) you ask me to believe that Lines possessing a certain geometrical property, which can be defined, constructed, and tested, possess also a property which, in the case of different Lines, we can neither define, nor construct, nor test. There is nothing axiomatic in this. It is much more like a Definition of 'codirectional' when asserted of different Lines, for which we have as yet no Definition at all. Will you not permit me to insert it, as a Definition, before Ax. 6 (p. 759)? We might word it thus:—

'If two different Lines make equal angles with a certain transversal, they are said to have the same direction: if unequal, different directions.'

This interpolation would have the advantage of making Ax. 6 (which I have hitherto declined to grant) indisputably true.

Nie. (*after a pause*) No. We cannot adopt it as a Definition so early in the subject.

Min. You are right. You probably saw the pitfall which I had ready for you, that this same Definition would make your 8th Axiom (p. 763) exactly equivalent to Euclid's 12th! From this catastrophe you have hitherto been saved solely by

the absence of geometrical meaning in your phrase ‘the same direction,’ when applied to different Lines. Once define it, and you are lost!

Nie. We are aware of that, and prefer all the inconvenience which results from the absence of a Definition.

Min. The ‘inconvenience,’ so far, has consisted of the ruin of Ax. 6 and Ax. 8. Let us now return to Ax. 9.

As to 9 (β), it is of course obviously true with regard to *coincidental* Lines: with regard to *different* ‘Lines, which have the same direction,’ I grant you that, *if* such Lines existed, they *would* make equal corresponding angles with any transversal; for they would then have a relationship of direction identical with that which belongs to coincidental Lines. But all this rests on an ‘if’—*if* they existed.

Now let us combine 9 (β) with Axiom 6, and see what it is you ask me to grant. It is as follows:—

‘There can be a Pair of different Lines that make equal angles with *any* transversal.’

I am not misrepresenting you, I think, if I say that you propound this as axiomatic truth—which, I need hardly remark, is a corollary deducible from the fourth Proposition in Table II. (see p. 725).

Nie. We accept the responsibility of the two Axioms separately, but not of a logical deduction from the two.

Min. There are certainly *some* logical deductions from Axioms (Contra-nominals for instance) that are not so axiomatic as the Axioms from which they come: but surely if you tell me ‘it is axiomatic that X is Y ’ and ‘it is axiomatic that Y is Z ,’ it is much the same as saying ‘it is axiomatic that X is Z ’?

Nie. It is very like it, we admit.

Min. Now take one more combination. Take 9 (α) and 9 (β). We thus eliminate the mysterious property altogether, and get a Proposition whose subject and predicate are perfectly definite geometrical conceptions—a Proposition which you assert to be, if not perfectly axiomatic, yet so nearly so as to be easily deducible from two Axioms—a Proposition which again lands us in Table II, and which, I will venture to say, is less axiomatic than any Proposition in that Table that has yet been proposed as an Axiom. We get *this*:—

‘Lines which make equal corresponding angles with a certain transversal do so with *any* transversal,’ which is Tab. II. 4 (see p. 725).

Here we have, condensed into one appalling sentence, the whole substance of Euclid I. 27, 28, and 29 (for the fact that the lines are ‘separational’ may be regarded as merely a go-between). Here we have the whole difficulty of Parallels swallowed at one gulp. Why, Euclid’s much-abused 12th Axiom is nothing to it! If we had (what I fear has yet to be discovered) a unit of ‘axiomaticity,’ I should expect to find that Euclid’s 12th Axiom (which you call in your Preface, at p. xiii, ‘not axiomatic’) was twenty or thirty times as axiomatic as this! I need not ask you for any further proof of Euc. I. 32. This wondrous Axiom, or quasi-Axiom, is quite sufficient machinery for your purpose, along with Euc. I. 13, which of course we grant you. Have you thought it necessary to provide any other machinery?

Nie. No.

Min. Euclid requires, besides I. 13, the following machinery:—Props. 4, 5, 7, 8, 15, 16, Ax. 12, Props. 27, 28, and 29. And for all this you offer, as a sufficient substitute, one single Axiom!

Nie. *Two*, if you please. You are forgetting Ax. 6.

Min. No, I repeat it—one single Axiom. Ax. 6 is contained in Ax. 9 (α): when the subject is known to be real, the Proposition necessarily asserts the reality of the predicate.

Nie. That we must admit to be true.

Min. I need hardly say that I must decline to grant this so-called ‘Axiom,’ even though its collapse should involve that of your entire system of ‘Parallels.’ And now that we have fully discussed the subject of direction, I wish to ask you one question which will, I think, sum up the whole difficulty in a few words. It is, in fact, *the* crucial test as to whether ‘direction’ is, or is not, a logical method of proving the properties of Parallels.

You assert, as axiomatic, that different Lines exist, whose relationship of direction is identical with that which exists between coincidental Lines.

Nie. Yes.

Min. Now, does the phrase ‘the same direction,’ when used of two Lines not known to have a common point, convey to your mind a clear geometrical conception?

Nie. Yes, we can form a clear idea of it, though we cannot define it.

Min. And is that idea (this is the crucial question) *independent of all subsequent knowledge of the properties of Parallels?*

Nie. We believe so.

Min. Let us make sure that there is no self-deception in this. You feel certain you are not unconsciously picturing the Lines to yourself as being equidistant, for instance?

Nie. No, they suggest no such idea to us. We introduce the idea of equidistance later on in the book, but we do not feel that our first conception of ‘the same direction’ includes it at all.

Min. I think you are right, though Mr. Cuthbertson, in his ‘Euclidian Geometry,’ says (Pref. p. vi.) ‘the conception of a parallelogram is not that of a figure whose opposite sides will never meet . . . , but rather that of a figure whose opposite sides are equidistant.’ But do you feel equally certain that you are not unconsciously using your subsequent knowledge that Lines exist which make equal angles with all transversals?

Nie. We are not so clear about *that*. It is, of course, extremely difficult to divest one’s mind of all later knowledge, and to place oneself in the mental attitude of one who is totally ignorant of the subject.

Min. Very difficult, no doubt, but absolutely essential, if you mean to write a book adapted to the use of beginners. My own belief as to the course of thought needed to grasp the theory of ‘direction’ is this:—first you grasp the idea of ‘the same direction’ as regards Lines which have a common point; next, you convince yourself, by some *other* means, that different Lines exist which make equal angles with all transversals; thirdly, you go back, armed with this new piece of knowledge, and use it unconsciously, in forming an idea of ‘the same direction’ as regards different Lines. And I believe that the course of thought in the mind of a beginner is simply this:—he grasps, easily enough, the idea of ‘the same direction’ as regards Lines which have a common point; but when you put before him the idea of *different* Lines, and ask him to realise the meaning of the phrase, when applied to such Lines, he, finding that the former geometrical conception of ‘coincidence’ is not applicable in this case, and knowing nothing of the idea, which is latent in *your* mind, of Lines which make equal angles with

all transversals, simply fails to attach any idea at all to the phrase, and accepts it blindly, from faith in his teacher, and is from that moment, until he reaches the Theorem about transversals, walking in the dark.

Nie. If this be true, of course the theory of 'direction,' however beautiful in itself, is not adapted for purposes of teaching.

Min. That is my own firm conviction. But I fear I may have wearied you by discussing this matter at such great length. Let us turn to another subject. What is your practical test for knowing whether two finite Lines will meet if produced?

Nie. You have already heard our 8th Axiom (p. 11). 'Two straight lines which have different directions would meet if produced.'

Min. But, even if that were axiomatic (which I deny), it would be no *practical* test, for you have admitted that you have no means of knowing whether two Lines, not known to have a common point have or have not different directions.

Nie. We must refer you to p. 14. Th. 5. Cor. 2, where we prove that Lines, which make equal angles with a certain transversal, have the same direction.

Min. Which you had already asserted, if you remember, in Ax. 9.

Nie. Well then, we refer you to Ax. 9 as containing the same truth.

Min. And having got that truth, whether lawfully or not, what do you do with it?

Nie. Why, surely it is almost the same as saying that, if they make *unequal* angles, they have *different* directions.

Min. And what then?

Nie. Then, combining this with the Axiom you refused to grant, namely, that Lines having different directions will meet, we get a practical test, such as you were asking for.

Min. (*dreamily*) I see! You get rid of the 'different directions' altogether, and the result is that 'Lines, which make unequal angles with a certain transversal, will meet if produced,' which is Tab. II. 2 (see p. 725). And this you assert as axiomatic truth?

Nie. (*uneasily*) Yes.

Min. Surely I have read something like it before? Could it have been Euclid's 12th Axiom? And have I not somewhere read words like these:—'Euclid's treatment of parallels distinctly breaks down in Logic. It rests on an Axiom which is not axiomatic'?

Nie. We have nowhere *stated* this Axiom which you put into our mouth.

Min. No? Then how, may I ask, do you prove that particular Lines *will* meet? You *must* have to prove it sometimes, you know.

Nie. We have not had to prove it anywhere, that we are aware of.

Min. Then there must be some gaps in your arguments. Let us see. Please to turn to p. 46. Prob. 7. Here you make, at the ends of a Line CD , angles equal to two given angles (which, as you tell us below, 'must be together less than two right angles'), and you then say 'let their sides meet in O .' How do you know that they *will* meet?

Nie. You have found *one* hiatus, we grant. Can you point out another in the whole book?

Min. I can. At p. 70 I find the words 'Join QG , and produce it to meet FH produced in S .' And again at p. 88. 'Hence the centre must be at O , the point of intersection of these perpendiculars.' In both these cases I would ask, as before, how do you know that the Lines in question *will* meet?

Nie. We had not observed the omissions before, and we must admit that they constitute a serious hiatus.

Min. A most serious one. A student, who had been taught such proofs as these, would be almost sure to try the plan in cases where the Lines would *not* really meet, and his assumption would lead him to results more remarkable for novelty than truth.

Let us now take a general survey of your book. And First, as to the Propositions of Euclid which you omit—

Nie. You are alluding to Prop. 7, I suppose. Surely its only use is to prove Prop. 8, which we have done very well without it.

Min. That is quite a venial omission. The others that I miss are 27, 28, 29, 30, 33, 34, 35, 36, 37, 38, 39, 40, 41, and 43: rather a formidable list.

Nie. You are much mistaken! Nearly all of those are in our book, or could be deduced in a moment from theorems in it.

Min. Let us take I. 34 as an instance.

Nie. *That* we give you, almost in the words of Euclid, at p. 37.

Reads.

Th. 22. ‘The opposite angles and sides of a Parallelogram will be equal, and the diagonal, or the Line which joins its opposite angles, will bisect it.’

Min. Well, but *your* Parallelogram is not what Euclid contemplates. *He* means by the word that the opposite sides are separational—a property whose reality he has demonstrated in I. 27; whereas *you* mean that they have the same direction—a property whose reality, when asserted of different Lines, has nowhere been satisfactorily proved.

Nie. We have proved it at p. 14. Th. 5. Cor. 2.

Min. Which, if traced back, will be seen to depend ultimately on your 6th Axiom, where you *assume* the reality of such Lines. But, even if your Theorem *had* been shown to refer to a real figure, how would that prove Euc. I. 34?

Nie. You only need the link that separational Lines have the same direction.

Min. Have you supplied that link?

Nie. No: but the reader can easily make it for himself. It is the ‘Contranominal’ (as you call it) of our 8th Axiom, ‘two straight Lines which have different directions would meet if prolonged indefinitely.’

Min. Your pupils must be remarkably clever at drawing deductions and filling up gaps in an argument, if they usually supply that link, as well as the proof that separational Lines exist at all, for themselves. But, as *you* do not supply these things, it seems fair to say that your book omits all the Propositions which I have enumerated.

I will now take a general survey of your book, and select a few points which seem to call for remark.

MINOS *reads.*

P. 14. Th. 5. Cor. 1. ‘Hence if two straight Lines which are not parallel are intersected by a third, the alternate angles will be not equal, and the interior angles on the same side of the intersecting Line will be not supplementary.’ Excuse the apparent incivility of the remark, but this Corollary is false.

Nie. You amaze me!

Min. You have simply to take, as an instance, a Pair of *coincidental* Lines, which most certainly answer to your description of ‘not parallel.’

Nie. It is an oversight.

Min. So I suppose: it is a species of literary phenomenon in which your Manual is rich.

Your proof of Cor. 2. is a delicious collection of negatives.

Reads.

‘Cor. 2. Hence also if the corresponding angles are equal, or the alternate angles equal, or the interior angles supplementary, the Lines will be parallel.

‘For they cannot be *not* parallel, for then the corresponding and alternate angles would be *unequal* by Cor. 1.’

Should I be justified in calling this a somewhat *knotty* passage?

Nie. You have no right to make such a remark. It is a mere jest!

Min. Well, we will be serious again.

At p. 9, you stated *more* than the data authorised: we now come to a set-off against this, since we shall find you asserting *less* than you ought to do. I will read the passage:—

P. 26. Th. 15. ‘If two Triangles are equiangular to one another and have a side of the one equal to the corresponding side of the other, the Triangles will be equal in all respects.’

This contains a superfluous *datum*: it would have been enough to say ‘if two Triangles have two angles of the one equal to two angles of the other &c.’

Nie. Well, it is at worst a superfluity: the enunciation is really identical with Euclid’s.

Min. By no means. The logical effect of a superfluous *datum* is to *limit* the extent of a Proposition: and, if the Proposition be ‘universal,’ it reduces it to ‘particular’; i. e. it changes ‘all *A* is *B*’ into ‘some *A* is *B*.’ For suppose we take the Proposition ‘all *A* is *B*,’ and substitute for it ‘all that is both *A* and *X* is *B*,’ we may be *accidentally* making an assertion of the same extent as before, for it may happen that the whole class ‘*A*’ possesses the property ‘*X*’; but, so far as logical *form* is concerned, we have reduced the Proposition to ‘*some* things that are *A* (viz. those which are also *X*) are *B*.’

I turn now to p. 27, where I observe a new proof for Euc. I. 24.

Nie. New and, we hope, neat and short.

Min. Charmingly neat and short, *as it stands*: but this method really requires the discussion of *five* cases, each with its own figure.

Nie. How do you make that out?

Min. The five cases are:—

(1) Vertical angles together less than two right angles, and adjacent base angles acute (the case you give).

(2) Adjacent base-angles right.

(3) Adjacent base-angles obtuse.

These two cases are proved along with the first.

(4) Vertical angles together equal to two right angles.

This requires a new proof, as we must substitute for the words ‘the bisector of the angle *FAC*,’ the words ‘the perpendicular to *FC* drawn through *A*.’

(5) Vertical angles together greater than two right angles.

This also requires a new proof, as we must insert, after the words ‘the bisector of the angle FAC ,’ the words ‘produced through A ,’ and must then prove (by your Th. 1) that the angles OAC , OAF , are equal.

On the whole, I take this to be the most cumbrous proof yet suggested for this Theorem.

We now come to what is probably the most extraordinary Corollary ever yet propounded in a geometrical treatise. Turn to pages 30 and 31.

Th. 20. ‘If two triangles have two sides of the one equal to two sides of the other, and the angle opposite that which is not the less of the two sides of the one equal to the corresponding angle of the other, the triangles shall be equal in all respects.

‘Cor. 1. If the side opposite the given angle were less than the side adjacent, there would be two triangles, as in the figure; and the proof given above is inapplicable.

‘This is called *the ambiguous case*.’

The whole Proposition is a grand specimen of obscure writing and bad English, ‘is’ and ‘are,’ ‘could,’ and ‘would,’ alternating throughout with the most charming impartiality: but what impresses me most is the probable effect of this wondrous Corollary on the brain of a simple reader, coming breathless and exhausted from a death-struggle with the preceding theorem. I can imagine him saying wildly to himself ‘If two Triangles fulfil such and such conditions, such and such things follow: but, if one of the conditions were to fail, *there would be two Triangles!* I must be dreaming! Let me dip my head in cold water, and read it all again. If two Triangles . . . there *would* be two Triangles. Oh, my poor brains!’

Nie. You are pleased to be satirical: it *is* rather obscure writing, we confess.

Min. It is indeed! You do well in calling it *the ambiguous case*.

At p. 33, I see the heading ‘Theorems of equality’: but you only give *two* of them, the second being ‘the bisectors of the three angles of a triangle meet in one point,’ which, as a specimen of ‘Theorems of equality,’ is probably unique in the literature of Geometry. I cannot wonder at your not attempting to extend the collection.

At p. 40 I read, ‘It is assumed here that if a circle has one point inside another circle, the circumferences will intersect one another.’ This I believe to be the boldest assumption yet made in Modern Geometry.

At pp. 40, 42 you assume a length ‘greater than half’ a given Line, without having shewn how to bisect Lines. Two cases of ‘*Petitio Principii*.’ (See p. 58.)

P. 69. Here we have a Problem (which you call ‘the quadrature of a rectilineal area’) occupying three pages and a half. It is ‘approached’ by four ‘stages,’ which is a euphemism for saying that this fearful Proposition contains *four* of Euclid’s Problems, viz. I. 42, 44, 45, and II. 14.

P. 73. 2. ‘Find a point equally distant from three given straight lines.’ Is it fair to give this without any limitation? What if the given lines were parallel?

P. 84. ‘If A, B, C . . . as conditions involve D as a result, and the failure of C involves a failure of D ; then A, B, D . . . as conditions involve C as a result.’ If not- C proves not- D , then D proves C . A and B are irrelevant and obscure the statement. I observe, in passing, the subtle distinction which you suggest between ‘*the failure of C* ’ and ‘*a failure of D* .’ D is a habitual bankrupt, who has often passed through the court, and is well used to failures: but, when C fails, his collapse is final, and ‘leaves not a wrack behind’!

P. 90. ‘Given a curve, to ascertain whether it is an arc of a circle or not.’ What does ‘given a curve’ mean? If it means a line drawn with ink on paper, we may safely say at once ‘it is *not* a circle.’

P. 96. Def. 15. ‘When one of the points in which a secant cuts a circle is made to move up to, and ultimately coincide with, the other, the ultimate position of the secant is called *the tangent* at that point.’ (The idea of *the position of a Line* being itself a Line is queer enough: I suppose you would say ‘*the ultimate position* of Whittington was the Lord Mayor of London.’ But this is by the way: of course you mean ‘the secant in its ultimate position.’) Now let us take three points on a circle, the middle one fixed, the others movable; and through the middle one let us draw two secants, each passing through one of the other points; and then let us make the other points ‘move up to, and ultimately coincide with,’ the middle one. We have no ground for saying that these two secants, in their ultimate positions, will coincide. Hence the phrase ‘*the tangent*’ assumes, without proof, Th. 7. Cor. 1, viz. ‘there can be only one tangent to a circle at a given point.’ This is a ‘*Petitio Principii*.’

P. 97. Th. 6. The secant consists of two portions, each terminated at the fixed point. All that you prove here is that the portion which has hitherto cut the circle is ultimately outside: and you jump, without a shadow of proof, to the conclusion that the same thing is true of the *other* portion! Why should not the second portion begin to cut the circle at the precise moment when the first ceases to do so? This is another ‘*Petitio Principii*.’

P. 129, line 3 from end. ‘Abstract quantities are the means that we use to express the concrete.’ Excluding such physical ‘means’ as pen and ink or the human voice (to which you do not seem to allude), I presume that the ‘means’ referred to in this mysterious sentence are ‘pure numbers.’ At any rate the only instances given are ‘seven, five, three.’ Now take P. 130, l. 5, ‘*Abstract quantities* and *ratios* are precisely the same things.’ Hence all ratios are numbers. But in the middle of the same page we read that ‘all numbers are ratios, but all ratios are *not* numbers.’ I leave this without further remark.

I will now sum up the conclusions I have come to with respect to your Manual.

(1) As to ‘straight Lines’ you suggest a useful extension of Euclid’s Axiom.

(2) As to angles and right angles, your extension of the limit of size is, in my opinion, objectionable. In other respects your language, though hazy, agrees on the whole with Euclid.

(3) As to ‘Parallels,’ there is a good deal to be said, and that not very flattering, I fear.

In Ax. 6, you assert the reality of different Lines having the same direction—a property you can neither define, nor construct, nor test.

You also assert (by implication) the reality of separational Lines, which Euclid *proves*.

You also assert the reality of Lines, not known to have a common point, but having different directions—a property you can neither define, nor construct, nor test.

In Ax. 8, you assert that the undefined Lines last mentioned would meet if produced.

These Axioms, therefore, are not axiomatic.

In proving result (2), you are guilty of the fallacy ‘*Petitio Principii*.’

In Ax. 9 and Th. 4 taken together, if the word ‘angle’ in Ax. 9 means ‘variable angle,’ you are guilty of the fallacy ‘*A dicto secundum Quid ad dictum Simpliciter*’; if ‘constant angle,’ of the fallacy ‘*Petitio Principii*.’

In Ax. 9 (α), you assert that Lines possessing a certain real geometrical property, viz. making equal angles with a certain transversal, possess also the before-mentioned undefined property. This is not axiomatic.

In Ax. 9 (β) combined with Ax. 6, you assert the reality of Lines which make equal angles with all transversals. This is not more axiomatic than Euc. Ax. 12.

In Ax. 9 (α) combined with Ax. 9 (β), you assert that Lines, which make equal angles with a certain transversal, do so with all transversals. This I believe to be the most unaxiomatic Axiom ever yet proposed.

(4) You furnish no practical test for the meeting of finite Lines, and consequently you never prove (however necessary for the matter in hand) that any particular Lines *will* meet. And when we come to examine what practical test can possibly be extracted from your Axioms, the only result is an imperfect edition of Euclid’s 12th Axiom!

The sum total of the chief defects which I have noticed is as follows:—
fourteen of Euclid’s Theorems in Book I. omitted;
seven unaxiomatic Axioms;
six instances of ‘*Petitio Principii*.’

The abundant specimens of logical inaccuracy, and of loose writing generally, which I have here collected would, I feel sure, in a mere popular treatise be discreditable—in a scientific treatise, however modestly put forth, deplorable—but in a treatise avowedly put forth as a model of logical precision, and *intended to supersede Euclid*, they are simply monstrous.

My ultimate conclusion on your Manual is that it has *no claim whatever* to be adopted as *the* Manual for purposes of teaching and examination.

§ 2. PIERCE.

*‘dum brevis esse laboro,
Obscurus fio.’*

Quoted from Horace

Nie. I lay before you ‘*An Elementary Treatise on Plane and Solid Geometry*’ by BENJAMIN PIERCE, A.M., Perkins Professor of Astronomy and Mathematics in Harvard University, published in 1872.

Min. As I have already considered, at great length, the subject of direction as treated by Mr. Wilson, I need not trouble you as to any matters where Mr. Pierce’s treatment does not materially differ from his. Is there any material difference in the treatment of a straight line?

Nie. He has a Definition of direction which will, I think, be new to you:—

Reads.

P. 5. § 11, Def. ‘The *Direction of a Line* in any part is the direction of a point at that part from the next preceding point of the Line.’

Min. That sounds mysterious. Which way along a Line are ‘preceding’ points to be found?

Nie. *Both* ways. He adds, directly afterwards, ‘a Line has two different directions,’ etc.

Min. So your Definition needs a postscript? That is rather clumsy writing. But there is yet another difficulty. How far from a point is the 'next' point?

Nie. At an infinitely small distance, of course. You will find the matter fully discussed in any work on the Infinitesimal Calculus.

Min. A most satisfactory answer for a teacher to make to a pupil just beginning Geometry! I see nothing else to remark on in your treatment of the Line, except that you state, as an Axiom, that 'a straight Line is the shortest way from one point to another.' I have already given, in my review of M. Legendre, my reasons for thinking that this is not a fair Axiom, and ought to be a Theorem (see p. 736).

There is nothing particular to notice in your treatment of angles and right angles. Let us go on to Parallels. How do you prove Euc. I. 32?

NIEMAND reads.

P. 9. § 27, Def. '*Parallell* Lines are straight Lines which have the same Direction.'

Min. I presume you do not mean to include coincidental Lines?

Nie. Certainly not. We see the omission. Allow us to insert the word 'different.'

Min. Very well. Then your Definition combines the two properties 'different' and 'having the same direction.' Bear in mind that you have yet to prove the *reality* of such Lines. And may I request you in future to call such Lines 'sepcodal'? But if you wish to assert any thing of them which is also true of coincidental Lines, you had better drop the 'sep-' and simply call them 'Lines which have the same direction,' so as to include both classes.

Nie. Very well.

NIEMAND reads.

P. 9. § 28. Th. 'Sepcodal Lines cannot meet, however far they are produced.'

Min. Or rather '*could* not meet, if they existed.' Proceed.

NIEMAND reads.

P. 9. § 29. Th. 'Two angles are equal, when their sides have the same direction.'

Min. How do you define 'same direction' for different Lines?

Nie. We cannot define it.

Min. Then I cannot admit that such Lines exist. But even if I *did* admit their reality, why should the angles be equal?

Nie. Because 'the difference of direction' is the same in each case.

Min. But how would that prove the angles equal? Do you define 'angle' as the 'difference of direction' of two lines?

Nie. Not exactly. We have stated (p. 6, § 19) 'The *magnitude* of the angle depends solely upon the *difference of direction* of its sides at the vertex.'

Min. But the difference of direction also possesses 'magnitude.' Is that magnitude a wholly *independent* entity? Or does it, in its turn, depend to some extent upon the *angle*? Seriously, all these subtleties must be very trying to a beginner. But we had better proceed to the next Theorem. I am anxious to see

where, in this system, these creatures of the imagination, these sepcodal Lines, are to appear as actually existent.

Nie. We next prove (p. 9. § 30) that Lines, which have the same direction, make equal angles with all transversals.

Min. That is merely a particular case of your last Theorem.

Nie. And then that two Lines, which make equal angles with a transversal, have the same direction.

Min. Ah, *that* would bring them into existence at once! Let us hear the proof of that.

Nie. The proof is that if, through the point where the first Line is cut by the transversal, a Line be drawn having the same direction as the second, it makes equal angles with the transversal, and therefore coincides with the first Line.

Min. You assume, then, that a Line *can* be drawn through that point, having the same direction as the second Line?

Nie. Yes.

Min. That is, you assume, without proof, that different Lines can have the same direction. On the whole, then, though Mr. Pierce's system differs slightly from Mr. Wilson's, both rest on the same vicious Axiom, that different Lines *can* exist, which possess a property called 'the same direction'—a phrase which is intelligible enough when used of two Lines which have a common point, but which, when applied to two Lines *not* known to have a common point, can neither be defined, nor constructed. We need not pursue the subject further. Have you provided any test for knowing whether two given finite Lines will meet if produced?

Nie. We have not thought it necessary.

Min. Then the only other remark I have to make on this singularly compendious treatise is that, of the 35 Theorems which Euclid gives us in his First Book, it reproduces just sixteen: the omissions being 16, 17, 25, 26 (2), 27 and 28, 29, 30, 33, 34, 35, 36, 37, 38, 39, 40, 41, 43, 47, and 48.

Nie. Most of those are in the book. For example, § 30 answers to Euc. I. 29.

Min. Only by proving that separational Lines have the same direction: which you have not done.

Nie. At any rate we have Euc. I. 47 in our § 256.

Min. Oh, no doubt! Long after going through ratios, which necessarily include incommensurables; and long after the Axiom (§ 99) 'Infinitely small quantities may be neglected'! No, no: so far as *beginners* are concerned, there is no Euc. I. 47 in *this* book!

My conclusion is that, however useful this Manual may be to an advanced student, it is *not* adapted to the wants of a beginner.

§ 3. WILLOCK

'This work . . . no doubt, has its faults.'

WILLOCK, *Pref.* p. 1.

Nie. I lay before you '*The Elementary Geometry of the Right Line and Circle*' by W. A. WILLOCK, D.D., formerly Fellow of Trinity College, Dublin, published in 1875.

Min. I have gone through the subject of 'direction' so minutely in reviewing Mr. Wilson's book, that I need not discuss with you any points in which your

client essentially agrees with him. We may, I think, pass over the subject of the Right Line altogether?

Nie. Yes.

Min. And as to Angles and Right Angles, I see no novelty in Dr. Willock's book, except that he defines an Angle as 'the divergence of two directions,' which is virtually the same as Euclid's Definition.

Nie. That I think is all.

Min. Then we can proceed at once to the subject of Parallels. Will you kindly give me your proof of Euc. I. 32 from the beginning?

NIEMAND *reads.*

P. 10. Th. 1. '*Two Directives can intersect in only one point.*'

Min. By 'Directive' you mean an 'infinite Line'?

Nie. Yes.

Min. Well, I need hardly trouble you to prove it as a Theorem, being quite willing to grant it as an Axiom. What is the next Theorem?

NIEMAND *reads.*

P. 11. Th. 5. '*Parallel Directives cannot meet.*'

Min. We will call them 'sepcodal,' if you please. I grant it, provisionally. *If* such Lines exist, they cannot meet.

NIEMAND *reads.*

P. 11. Th. 7. '*Only one Line, sepcodal to a Directive, can be drawn through a point.*'

Min. Does that assert that one *can* be drawn? Or does it simply deny the possibility of drawing *two*?

Nie. The *proof* only applies to the denial: but the assertion is certainly involved in the enunciation. At all events, if not assumed here, it *is* assumed later on.

Min. Then I will at this point credit you with *one* unwarrantable Axiom, namely, that different Lines can have the same direction. The Theorem itself I grant.

NIEMAND *reads.*

P. 12. Th. 8. '*The angles of intersection of a Transversal with two sepcodal Directives are equal.*'

Min. Do you prove that by Mr. Wilson's method?

Nie. Not quite. *He* does it by transferring an angle: *we* do it by divergence of directions.

Min. I prefer *your* method. All it needs to make it complete is the proof of the reality of such Lines: but *that* is unattainable, and its absence is fatal to the whole system. Nay, more: the fact, that the reality of such Lines leads by a logical necessity to the reality of Lines which make equal angles with *any* transversal, reacts upon that unfortunate Axiom, and destroys the little hope it ever had of being granted without proof. In point of fact, in asking to have the Axiom granted, you were virtually asking to have this other reality granted as axiomatic—but all this I have already explained (p. 769).

NIEMAND reads.

P. 13. Th. 10. ‘*If a Transversal cut two Directives and make the angles of intersection with them equal, the Directives are sepcodal.*’

Min. The subject of your Proposition is indisputably real. If then you can prove this Theorem, you will thereby prove the reality of sepcodal Lines. But I fear you have assumed it already in Th. 7. There is still, however, a gleam of hope: perhaps you do not need Th. 7 in proving this?

Nie. We do not: but I fear that will not mend matters, as we assume, in the course of this Theorem, that a Line can be drawn through a given point, so as to have the same direction as a given Line.

Min. Then we need not examine it further: it must perish with the faulty Axiom on which it rests. What is your next Theorem?

Nie. It answers to Euc. I. 16, 17, and is proved by the Theorem you have just rejected.

Min. Then I must reject its *proof*, but I will grant you the Theorem itself, if you like, as we know it *can* be proved from undisputed Axioms. What comes next?

NIEMAND reads.

P. 14. Th. 13. ‘*If a Transversal meet two Directives, and make angles with them, the External greater than the Internal, or the sum of the two Internal angles less than two right angles, the two directives must meet.*’

Min. A proof for Euclid’s Axiom? That is interesting.

NIEMAND reads.

‘For, suppose they do not meet. Then, they should be sepcodal——’

Min. (*interrupting*) ‘Should be sepcodal?’ Does that mean that they *are* sepcodal?

Nie. Yes, I think so.

Min. That is, you assume that separational Lines have the same direction?

Nie. We do.

Min. A fearful assumption! (*A long silence*) Well?

Nie. I am waiting to know whether you grant it.

Min. Unquestionably not! I must mark it against you as an Axiom of the most monstrous character! Mr. Wilson himself does not assume this, though he *does* assume its Contranominal, that Lines having different directions will meet (see p. 763). And what I said then I say now—unaxiomatic! But supposing it granted, how would you prove the Theorem?

NIEMAND reads.

‘Then, they should be sepcodal; and the external angle should be equal (Th. 8) to the internal; which is contrary to the supposition.’

Min. Quite so. But Th. 8, which you quote, itself depends on the reality of sepcodal Lines. Your Theorem rests on two legs, and *both*, I fear, are rotten!

Nie. The next Theorem is equivalent to Euc. I. 32. Do you wish to hear it?

Min. It is unnecessary: it follows easily from Th. 8.

And I need not ask you what practical test you provide for the meeting of two Lines, seeing that you have Euclid’s 12th Axiom itself.

Nie. Proved as a Theorem.

Min. *Attempted* to be proved as a Theorem. I will now take a hasty general survey of your client's book.

The first point calling for remark is the arrangement. You begin by dragging the unfortunate beginner straight into the most difficult part of the subject. Your first chapter positively bristles with difficulties about 'direction.' Then comes a long chapter on circles, including some very complicated figures, and a theory of tangents which depends upon moving lines and vanishing chords—all most disheartening to a beginner. What do you suppose he is likely to make of such a sentence as 'the direction of the motion of the generating point of any curve is that of the tangent to the curve at that point'? (p. 29.) Or this again, 'it is also evident that, the circle being a simple curve, there can be only *one* tangent to it at any point'? (p. 29.) What *is* 'a simple curve'?

Nie. I do not know.

Min. Then comes a chapter of Problems, and *then*—when your pupil has succeeded in mastering thirty-four pages of your book, and has become tolerably familiar with tangents and segments, with diametral lines and reëntrant angles, with 'oval forms' and 'forms semi-convex, semi-concave,'—you at last confront him with that abstruse and much dreaded Theorem, Euc. I. 4! True, he has the 'Asses' Bridge' to help him in proving it, that in its turn being proved, apparently, by properties of the circle; but, even with all these assistances, it is an arduous task!

Nie. You are hard on my client.

Min. Well, jesting apart, let me say in all seriousness that I think it would require very great ingenuity to make a worse arrangement of the subject of Geometry, for purposes of teaching, than is to be found in this little book.

I do not think it necessary to criticise the book throughout: but I will mention one or two passages which have caught my eye in glancing through it.

Here, for instance, is something about 'Directives,' which seem to be a curious kind of Loci—quite different from Right Lines, I should say.

Nie. Oh no! They are exactly the same thing!

Min. Well, I find, at p. 4, 'Directives are either divergent or parallel': and again, at p. 11, 'Parallel Directives cannot meet.' Clearly, then, Directives can never by any possibility *coincide*: but ordinary Right Lines occasionally do so, do they not?

Nie. It is a curious *lapsus pennae*.

Min. At p. 7, I observe an article headed 'The principle of double conversion,' which I will quote entire.

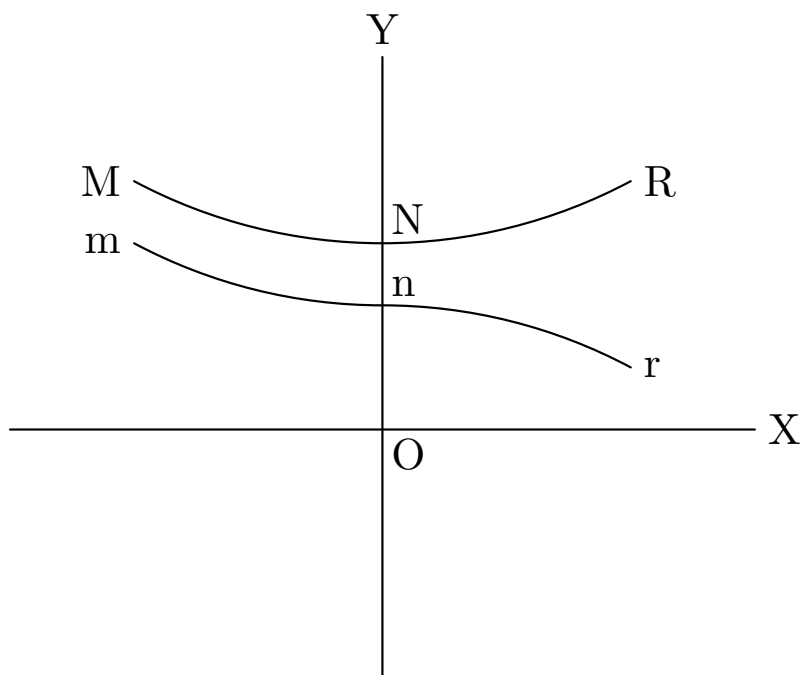
Reads.

'If four magnitudes, a, b, A, B , are so related, that when a is greater than b , A is greater than B ; and when a is equal to b , A is equal to B : then, *conversely*, when A is greater than B , a is greater than b ; and, when A is equal to B , a is equal to b .

'The truth of this principle, which extends to every kind of magnitude, is thus made evident:—If, when A is greater than B , a is not greater than b , it must be either less than or equal to b . But it cannot be less; for, if it were, A should, by the antecedent part of the proposition, be less than B , which is contrary to the supposition made. Nor can it be equal to b ; for, in that case, A

should be equal to B , also contrary to supposition. Since, therefore, a is neither less than nor equal to b , it remains that it must be greater than b .'

Now let a and A be variables and represent the ordinates to two curves, mnr and MNR , for the same abscissa; and let b and B be constants and represent their intercepts on the Y -axis; i. e. let $On = b$, and $ON = B$.



Does not this diagram fairly represent the *data* of the proposition? You see, when we take a negative abscissa, so as to make a greater than b , we are on the left-hand branch of the curve, and A is also greater than B ; and again, when a is equal to b , we are crossing the Y -axis, where A is also equal to B .

Nie. It seems fair enough.

Min. But the conclusion does not follow? With a positive abscissa, A is greater than B , but a less than b .

Nie. We cannot deny it.

Min. What then do you suppose would be the effect on a simple-minded student who should wrestle with this terrible theorem, firm in the conviction that, being in a printed book, it must *somehow* be true?

Nie. (*gravely*) *Insomnia*, certainly; followed by acute *Cephalalgia*; and, in all probability, *Epistaxis*.

Min. Ah, those terrible names! Who would suppose that a man could have all those three maladies, and survive? And yet the thing is possible!

Let me now read you a statement (at p. 112) about incommensurables:—

‘When one of the magnitudes can be represented only by an interminable decimal, while the other is a finite whole number, or finite decimal, no finite common submultiple can exist; for, though a unit be selected in the last place of the whole number or finite decimal, yet the decimal represented by all the figures which follow the corresponding place in the interminable decimal, being

less than that unit in that place and unknown in quantity, cannot be a common measure of the two magnitudes, and is only a remainder.'

Now can you lay your hand upon your heart and declare, on the word of an honest man, that you understand this sentence—beginning at the words 'yet the decimal'?

Nie. (*vehemently*) I cannot!

Min. Of the two reasons which are mentioned, to explain why it 'cannot be a common measure of the two magnitudes,' does the first—that it is 'less than that unit in that place'—carry conviction to your mind? And does the second—that it is 'unknown in quantity' ripen that conviction into certainty?

Nie. (*wildly*) Not in the least!

Min. Well, I will not 'slay the slain' any longer. You may consider Dr. Willock's book as rejected. And I think we may say that the whole theory of 'direction' has collapsed under our examination.

Nie. I greatly fear so.

Act III.

Scene I.

§ 1. The other Modern Rivals.

*'But mice, and rats, and such small deer,
Have been Tom's food for seven long year.'*

Quoted from *King
Lear* by William
Shakespeare

Min. I consider the question, as to whether Euclid's system and numeration should be abandoned or retained, to be now set at rest: the subject of Parallels being disposed of, no minor points of difference can possibly justify the abandonment of our old friend in favour of any Modern Rival. Still it will be worth while to examine the other writers, whose works you have brought with you, as they may furnish some valuable suggestions for the improvement of Euclid's Manual.

Nie. The other writers are CHAUVENET, LOOMIS, MORELL, REYNOLDS, and WRIGHT.

Min. There are a few matters, as to which we may consider them all at once. How do they define a straight Line?

Nie. All but Mr. Reynolds define it as the shortest distance between two points, or more accurately, to use the words of Mr. Chauvenet, 'a Line of which every portion is the shortest Line between the points limiting that portion.'

Min. We discussed that Definition in M. Legendre's book. How does Mr. Reynolds define it?

Nie. Not at all.

Min. Very cautious. What of angles?

Nie. Some of them allow larger limits than Euclid does. Mr. Wright talks about 'angles of continuation' and 'angles of rotation.'

Min. Good for Trigonometry: not so suitable to early Geometry. How do they define Parallels?

Nie. As in Euclid, all of them.

Min. And which Proposition of Tab. II. do they assume?

Nie. Playfair's, or else its equivalent, 'only one Line can be drawn, parallel to a given Line, through a given point outside it.'

Min. Now let us take them one by one.

§ 2. CHAUVENET.

*'Where Washington hath left
His awful memory
A light for after times!'*

Quoted from Robert Southey

Nie. I lay before you '*A Treatise on Elementary Geometry*,' by W. CHAUVENET, LL.D., Professor of Mathematics and Astronomy in Washington University, published in 1876.

Min. I read in the Preface (p. 4) 'I have endeavoured to set forth the elements with all the rigour and completeness demanded by the present state of the general science, *without seriously departing from the established order of the Propositions.*' So there would be little difficulty, I fancy, in introducing into Euclid's own Manual all the improvements which Mr. Chauvenet can suggest.

P. 14. Pr. I, and p. 18. Pr. v, taken together, tell us that only one perpendicular can be drawn to a Line from a point. And various additions, about obliques, are made in subsequent Propositions. All these may well be embodied in a new Proposition, which we might interpolate as Euc. I. 12. B.

P. 26. Pr. xv; asserts the equidistance of Parallels. This might be interpolated as Euc. I. 34. B.

Another new Theorem, that angles whose sides are parallel, each to each, are equal (which I observe is a great favourite with the Modern Rivals), seems to me a rather clumsy and uninteresting extension of Euc. I. 29.

I see several Propositions which might well be inserted as *exercises* on Euclid (*e. g.* Pr. XXXIX, 'Every point in the bisector of an angle is equally distant from the sides'), but which are hardly of sufficient importance to be included as Propositions: and others (*e. g.* Pr. XL, 'The bisectors of the three angles of a Triangle meet in the same point') which seem to belong more properly to Euc. III or IV. I have no other remarks to make on this book, which seems well and clearly written.

§ 3. LOOMIS.

'Like—but oh! how different!'

Quoted from *The Mountain Echo* by William Wordsworth

Nie. I lay before you '*Elements of Geometry*,' by ELIAS LOOMIS, LL.D., Professor of Natural Philosophy and Astronomy in Yale College, a revised edition, 1876.

Min. I read in the Preface (p. 10) 'The present volume follows substantially the order of Blanchet's Legendre, while the form of the demonstrations is modeled after the more logical method of Euclid,' He has not, however, adopted the method of infinite series, which constitutes the crucial distinction between that writer and Euclid.

The Propositions are pretty nearly in Euclid's order: with a few changes in order and numeration, the book would be a modernised Euclid, the only important differences being the adoption of Playfair's Axiom and the omission of the diagonals in Euc. II. I have no hostile criticisms to offer. Our American cousins set us an excellent example in the art of brief, and yet lucid, mathematical writing.

§ 4. MORELL.

*‘Quis custodiet ipsos custodes?
Quis inspiciet ipsos inspectores?’*

Quoted from *Satire*
VI by Juvenal

Nie. I lay before you ‘*Euclid Simplified, compiled from the most important French works, approved by the University of Paris and the Minister of Public Instruction,*’ by Mr. J. R. MORELL, formerly H. M. Inspector of Schools, published in 1875.

Min. What have you about Lines, to begin with?

Nie. Here is a Definition. ‘The place where two surfaces meet is called a Line.’

Min. Really! Let us take two touching spheres, for instance?

Nie. Ahem! We abandon the Definition.

Min. Perhaps we shall be more fortunate with the Definition of a *straight* Line.

Nie. It is ‘an indefinite Line, which is the shortest between any two of its points.’

Min. An ‘*indefinite*’ Line! What in the world do you mean? Is a curved Line more definite than a straight Line?

Nie. I don’t know.

Min. Nor I. The rest of the sentence is slightly elliptical. Of course you mean ‘the shortest which can be drawn’?

Nie. (*eagerly*) Yes, yes!

Min. Well, we have discussed that matter already. Go on.

Nie. Next we have an Axiom, ‘that from one point to another only one straight Line can be drawn, and that if two portions of a straight Line coincide, these Lines coincide throughout their whole extent.’

Min. You bewilder me. How can one portion of a straight Line coincide with another?

Nie. (*after a pause*) It can’t, of course, *in situ*: but why not take up one portion and lay it on another?

Min. By all means, if you like. Let us take a certain straight Line, cut out an inch of it, and lay it along another inch of the Line. What follows?

Nie. Then ‘these Lines coincide throughout their whole extent.’

Min. Do they indeed? And pray who *are* ‘these Lines’? The two inches?

Nie. (*gloomily*) I suppose so.

Min. Then the Axiom is simple tautology.

Nie. Well then, we mean the whole straight Line and—and—

Min. And what else? You can’t talk of ‘one straight Line’ as ‘these Lines,’ you know.

Nie. We abandon the Axiom.

Min. Better luck next time! Try another Definition.

Nie. ‘A broken Line is a Line composed of straight Lines.’

Min. But a *straight* Line also is ‘a Line composed of straight Lines,’ isn’t it?

Nie. Well, we abandon the Definition.

Min. This is quite a new process in our navigation. Instead of heaving the lead, we seem to be throwing over-board the whole of our cargo! Let us hear something about Angles.

Nie. ‘The figure formed by two Lines that intersect is called an Angle.’

Min. What do you mean by ‘figure’? Do you define it anywhere?
Nie. Yes. ‘The name of figure is given to volumes, surfaces, and lines.’
Min. Under which category do you put ‘Angle’?
Nie. I don’t know.
Min. Anything new about the Definition, or equality, of right angles?
Nie. No, except that we *prove* that all right angles are equal.
Min. That we have discussed already (see p. 737). Let us go on to Pairs of Lines, and your proof of Euc. I. 29, 32.

NIEMAND *reads.*

‘Th. 19. Two Lines perpendicular to the same Line are parallel.’
Min. Do you mean ‘separational’?
Nie. Yes.
Min. Have you defined ‘parallel’ anywhere?
Nie. (*after a search*) I can’t find it.
Min. A careless omission. Moreover, your assertion isn’t always true. Suppose your two Lines were drawn from the same point?
Nie. We beg to correct the sentence. ‘Two *different* Lines.’
Min. Very well. Then you assert Table I. 6. (See p. 722.) I grant it.

NIEMAND *reads.*

‘Th. 20. Through a point situated outside a straight Line a Parallel, and only one, can be drawn to that Line.’
Min. ‘A Parallel,’ I grant at once: it is Table I. 9. But ‘*only one*’! That takes us into Table II. What axiom do you assume?
Nie. ‘It may be admitted that only one Parallel can be drawn to it.’
Min. That is Table II. 15 (*b*)—a contranominal of Playfair’s Axiom. We need not pursue the subject: all is easy after that. Now hand *me* the book, if you please: I wish to make a general survey of style, &c.
 At p. 4 I read:—‘Two Theorems are reciprocal when the hypothesis and the conclusion of one are the conclusion and the hypothesis of the other.’ (They are usually called ‘converse’—the *technical*, not the *logical*, converse, as was mentioned some time ago (p. 732); but let that pass.) ‘Thus the Theorem—*if two angles are right angles, they are equal*—has for its reciprocal—*if two angles are equal, they are right angles.*’
 (This, by the way, is a capital instance of the distinction between ‘technical’ and ‘logical.’ Here the *technical* converse is wild nonsense, while the *logical* converse is of course as true as the Theorem itself: it is ‘*some cases of two angles being equal are cases of their being right.*’)
 ‘All Propositions are direct, reciprocal, or contrary—all so closely connected that either of the two latter’ (I presume he means ‘the latter two’) ‘is a consequence of the other two.’
 A ‘consequence’! Can he mean a *logical* consequence? Would he let us make a syllogism of the three, using the ‘direct’ and ‘reciprocal’ (for instance) as premisses, and the ‘contrary’ as the conclusion?
 However, let us first see what he means by a ‘contrary’ Proposition.
 ‘It is a direct Proposition to prove that all points in a circle enjoy a certain property, *e. g.* the same distance from the centre.’

(This notion of sentient points, by the way, is very charming. I like to think of all the points in a circle really feeling a placid satisfaction in the thought that they are equidistant from the centre! They are infinite in number, and so can well afford to despise the arrogance of a point within, and to ignore the envious murmurs of a point without!)

‘The contrary Proposition shows that all points taken outside or inside the figure do not enjoy this property.’

So then this is his trio:—

1. Direct. ‘All X are Y .’
2. Reciprocal. ‘All Y are X .’
3. Contrary. ‘All not- X are not- Y .’

Here of course No. 2 and No. 3, being Contranominals, are logically deducible from each other, No. 1 having no logical connection with either of them.

And yet he calls the three ‘so closely connected that either of the two latter is a consequence of the other two’! Shade of Aldrich! Have we come to this? You say nothing, mein Herr?

Nie. I say that, if you grant what you call the ‘premisses,’ you cannot deny the conclusion.

Min. True. It reminds me of an answer given some years ago in the Schools at Oxford, when the Examiner asked for an example of a syllogism. After much patient thought, the candidate handed in

‘All men are dogs;
All dogs are men:
Therefore, All men are dogs.’

This certainly has the *form* of a syllogism. Also it avoids, with marked success, the dangerous fallacy of ‘four terms.’ And it has the great merit of Mr. Morell’s syllogism, that, if you grant the premisses, you cannot deny the conclusion. Nevertheless I feel bound to add that it was *not* commended by the Examiner.

Nie. I can well believe it.

Min. I proceed. ‘The direct and the reciprocal proofs are generally the simpler, and do not require a fresh construction.’ Why ‘fresh’? The ‘direct’ comes *first*, apparently; so that, if it requires a construction at all, it must be a ‘fresh’ one.

Nie. Be not hypercritical.

Min. Well, it *is* rather ‘small deer,’ I confess: let us change the subject.

Here is a pretty proof in Th. 4.

‘Then $m + o = m + x$.
But $m = m$.
Therefore $o = x$.’

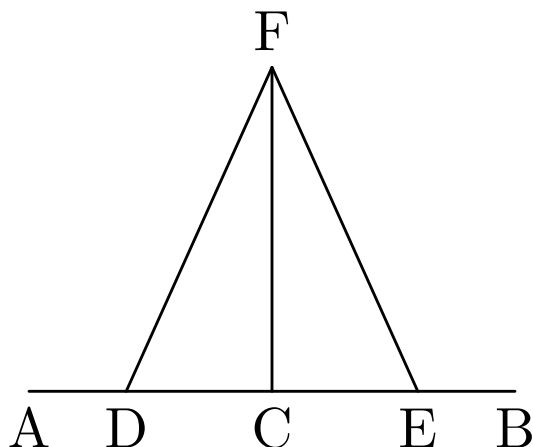
Isn’t that ‘but $m = m$ ’ a delightfully cautious parenthesis? Your client seems to be nearly as much at home in Algebra as in Logic, which is saying a great deal!

At p. 9, I read ‘The base of an isosceles Triangle is the unequal side.’

‘*The unequal side*’! Is an equilateral Triangle isosceles, or is it not? Answer, mein Herr!

Nie. Proceed.

Min. At p. 17, I read ‘From one and the same point three equal straight Lines cannot be drawn to another straight Line; for if that were the case, *there would be on the same side of a perpendicular two equal obliques*, which is impossible.’



Kindly prove the italicised assertion on this diagram, in which I assume FD , FC , FE , to be equal Lines, and have made the *middle* one of the three a perpendicular to the ‘other straight Line.’

Nie. (*furiously*) I will not!

Min. Look at p. 36. ‘A circumference is generally described in language by one of its radii.’ Let us hope that the language is complimentary—at least if the circumference is within hearing! Can’t you imagine the radius gracefully rising to his feet, rubbing his lips with his table-napkin? ‘Gentlemen! The toast I have the honour to propose is &c. &c. Gentlemen, I give you *the Circumference!*’ And then the chorus of excited Lines, ‘For he’s a jolly good felloe!’

Nie. (*rapturously*) Ha, ha! (*checking himself*) You are insulting my client.

Min. Only filling in his suggestive outlines. Try p. 48. ‘Th. 13. If two circumferences are interior,’ &c. Can your imagination, or mine, grasp the idea of two circumferences, each of them inside the other? No! *We* are mere prosaic mortals: it is beyond us!

In p. 49 I see some strange remarks about ratios. First look at Def. 44. ‘When a magnitude is contained an exact number of times in two magnitudes of its kind, it is said to be their common measure.’ (The wording is awkward, and suggests the idea of their having only *one* ‘common measure’; but let that pass.) ‘The ratio of two magnitudes of the same kind is the number which would express the measure of the first, if the second were taken as unity.’

‘*The measure of the first!*’ Do you understand that? Is it a ‘measure’ such as you have just defined? or some other kind?

Nie. Some other kind, I *think*. But there is a slight obscurity somewhere.

Min. Perhaps this next enunciation will clear it up. ‘If two magnitudes of the same kind, A and B , are mutually commensurable’ (by the way, ‘mutually’ is tautology), ‘their ratio is a whole or fractional number, which is obtained by dividing the two numbers one by the other, and which expresses how many times these magnitudes contain their common measure M .’ Do you understand *that?*

Nie. Well, no!

Min. Let us take an instance—£3 and 10s. A shilling is a common measure of these two sums: will you accept it as ‘*their* common measure’?

Nie. We will do it, provisionally.

Min. Now the number, ‘obtained by dividing the two numbers’ (I presume you mean ‘the two magnitudes’) ‘one by the other,’ is ‘6,’ is it not?

Nie. It would seem so.

Min. Well, does this number ‘express how many times these magnitudes contain their common measure,’ viz. a shilling?

Nie. Hardly.

Min. Did you ever meet with any *one* number that could ‘express’ *two* distinct facts?

Nie. We would rather change the subject.

Min. Very well, though there is plenty more about it, and the obscurity deepens as you go on. We will ‘vary the verse’ with a little bit of classical criticism. Look at p. 81. ‘Homologous, from the Greek ὁμοιος, like or similar, λόγος, word or reason.’ Do you think this school-inspector ever heard of the great Church controversy, where all turned on the difference between ὅμοιος and ὁμοιος?

Nie. (*uneasily*) I think not. But this is not a *mathematical* slip, you know.

Min. You are right. *Revenons à nos moutons.* Turn to p. 145, art. 65. ‘To measure areas, it is usual to take a square as unity.’ To me, who have always been accustomed to regard ‘a square’ as a concrete magnitude and ‘unity’ as a pure number, the assertion comes rather as a shock. But I acquit the author of any intentional roughness. Nothing could surpass the delicacy of the next few words:—‘It has been already stated that surfaces are measured indirectly’! Lines, of course, may be measured anyhow: *they* have no sensibilities to wound; but there is an open-handedness—a breadth of feeling—about a surface, which tells of noble birth—‘every (square) inch a King!’—and so we measure it with averted eyes, and whisper its area with bated breath!

Nie. Return to other muttons.

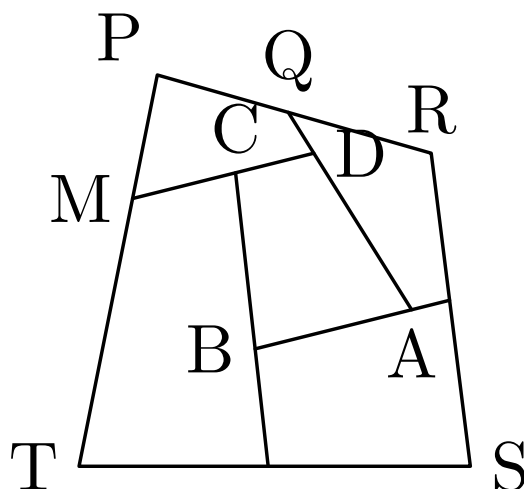
Min. Well, take p. 156. Here is a ‘scholium’ on a theorem about the area of a sector of a circle. The ‘scholium’ begins thus:—‘If α is the number of degrees in the arc of a sector, we shall have to find the length of this arc——.’ I pause to ask ‘If β were the number, should we have to find it *then*?’

Nie. (*solemnly*) We should!

Min. ‘For the two Lines which are multiplied in all rules for the measuring of areas must be referred to the same linear unity.’ *That*, I take it, is fairly obscure: but it is luminous when compared with the note which follows it. ‘If the linear unit and angular unit are left arbitrary, any angle has for measure the ratio of the numbers of linear units contained in the arcs which the angle in question and the irregular unit intercept in any circumference described from their summit as common centres.’ Is not that a useful note? ‘The irregular unit’! Linear, or angular, I wonder? And then ‘common centres’! How many centres does a circumference usually require? I will only trouble you with one more extract, as a *bonne bouche* to wind up with.

‘Th. 9. (P. 126.) *Every convex closed Line ABCD enveloped by any other closed Line PQRST is less than it.*

Quoted from *King Lear* by William Shakespeare



‘All the infinite Lines $ABCD$, $PQRST$, &c.’—by the way, these are curious instances of ‘infinite Lines’?

Nie. (*hastily*) We mean ‘infinite’ in *number*, not in *length*.

Min. Well, you express yourself oddly, at any rate ‘—which enclose the plane surface $ABCD$, cannot be equal. For drawing the straight Line MD , which does not cut $ABCD$, MD will be less than $MPQD$; and adding to both members the part $MTSRQD$, the result will be $MDQRSTM$ less than $MPQRSTM$.’ Is that result proved?

Nie. No.

Min. Is it true?

Nie. Not necessarily so.

Min. Perhaps it is a *lapsus pennæ*. Try to amend it.

Nie. If we add to MD the part $MTSRQD$, we do get $MDQRSTM$, it is true: but, if we add it to $MPQD$, we get QD twice over; that is, we get $MPQRSTM$ together with twice QD .

Min. How does that addition suit the rest of the proof?

Nie. It ruins it: all depends on our proving the perimeter $MDQRSTM$ less than the perimeter $MPQRSTM$, which this method has failed to do—as of course all methods must, the thing not being capable of proof.

Min. Then the whole proof breaks down entirely?

Nie. We cannot deny it.

Min. Let us turn to the next author.

§ 5. REYNOLDS.

‘*Though this be madness, yet there’s method in’t.*’

Quoted from *Hamlet*
by William
Shakespeare

Nie. I lay before you ‘*Modern Methods in Elementary Geometry*,’ by E. M. REYNOLDS, M.A., Mathematical Master in Clifton College, Modern Side; published in 1868.

Min. The first remark I have to make on it is, that the Definitions and Axioms are scattered through the book, instead of being placed together at the beginning, and that there is no index to them, so that the reader only comes on them by chance: it is quite impossible to refer to them.

Nie. I cannot defend the innovation.

Min. In Th. I (p. 3), I read ‘the angles CDA , CDB are together equal to two right angles. *For they fill exactly the same space.*’ Do you mean finite or infinite space? If ‘finite,’ we increase the angle by lengthening its sides: if ‘infinite,’ the idea is unsuited for elementary teaching. You had better abandon the idea of an angle ‘filling space,’ which is no improvement on Euclid’s method.

P. 61. Th. II (of Book III) it is stated that Parallelograms, on equal bases and between the same Parallels, ‘may always be placed so that their equal bases coincide,’ and it is clearly assumed that they will still be ‘between the same Parallels.’ And again, in p. 63, the altitude of a Parallelogram is defined as ‘*the perpendicular distance of the opposite side from the base,*’ clearly assuming that there is only *one* such distance. In both these passages the Theorem is assumed ‘Parallels are equidistant from each other,’ of which no proof has been given, though of course it might have been easily deduced from Th. XVI (p. 19).

The Theorems in Euc. II are here proved algebraically, which I hold to be emphatically a change for the worse, chiefly because it brings in the difficult subject of incommensurable magnitudes, which should certainly be avoided in a book meant for beginners.

I have little else to remark on in this book. Several of the new Theorems in it seem to me to be premature, e. g. Th. XIX, &c. on ‘Loci’: but the sins of *omission* are more serious. He actually leaves out Euc. I. 7, 17, 21 (2nd part), 24, 25, 26 (2nd part), 48, and II. 1, 2, 3, 8, 9, 10, 12, 13. Moreover he separates Problems and Theorems, which I hold to be a mistake. I will not trouble you with any further remarks.

§ 6. WRIGHT.

‘Defects of execution unquestionably exist.’

WRIGHT, *Pref.* p. 10

Nie. I lay before you ‘*The Elements of Plane Geometry,*’ by R. P. WRIGHT, Teacher of Mathematics in University College School, London; the second edition, 1871.

Min. Some of the changes in Euclid’s method, made in this book, are defended in the Preface.

First, he claims credit for having more Axioms than Euclid, whom he blames for having demonstrated ‘much that is obvious.’ I need hardly pause to remind you that ‘obviousness’ is not an invariable property: to a *perfect* intellect the whole of Euclid, to the end of Book XII, would be ‘obvious’ as soon as the Definitions had been mastered: but Geometricians must write for *imperfect* intellects, and it cannot be settled on general principles where Axioms should end and Theorems begin. Let us look at a few of these new Axioms. In p. viii of the Preface, I read ‘with the conception of straightness in a Line we naturally associate that of the utmost possible shortness of path between any two of its points; allow this to be assumed, &c.’ This I consider a most objectionable Axiom, obliging us, as it does, to contemplate the lengths of *curved* lines. This matter I have already discussed with M. Legendre (p. 736).

Secondly, for the host of new Axioms with which we are threatened in the Preface, I have searched the book in vain: possibly I have overlooked some, as he never uses the heading ‘Axiom,’ but really I can only find one new one, at p. 5. ‘Every angle has one, and only one bisector,’ which is hardly worth stating.

Perhaps the writer means that his proofs are not so full as those in Euclid, but take more for granted. I do not think this any improvement in a book meant for beginners.

Another change, claimed in the Preface as an improvement, is the more constant use of superposition. I have considered that point already (p. 47) and have come to the conclusion that Euclid's method of constructing a new figure has all the advantages, without the obscurity, of the method of superposition.

I see little to remark on in the general style of the book. At p. 21 I read 'the straight Line AI satisfies the four following conditions: it passes through the vertex A , through the middle point I of the base, is a perpendicular on that base, and is the bisector of the vertical angle. Now, two of these four conditions suffice to determine the straight Line AI , ... Hence a straight Line fulfilling any two of these four conditions necessarily fulfils the other two.' All this is strangely inaccurate: the fourth condition is sufficient by itself to determine the line AI .

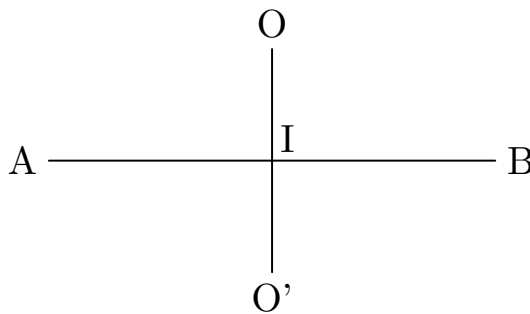
At p. 40 I notice the startling announcement that 'the simplest of all Polygons is the *Triangle*!' This is surely a new use for 'many'? I wonder if the writer is prepared to accept the statement that '*many* people have swum across the Bosphorus' on the strength of Byron's

'As once (a feat on which ourselves we prided)
Leander, Mr. Ekenhead, and I did.'

Quoted from *Don Juan* by Lord Byron

As a specimen of the wordy and unscientific style of the writer, take the following:—

'From any point O , one, and only one, perpendicular can be drawn to a given straight Line AB .



'Let O' be the point on which O would fall if, the paper being folded along AB , the upper portion of the figure were turned down upon the lower portion. If from the points O , O' straight Lines be drawn to any point whatever I on the line AB , the adjacent angles OIB , $O'IB$ will be equal; for folding the paper again along AB and turning the upper portion down upon the lower, O falls on O' , I remains fixed, and the angle OIB exactly coincides with $O'IB$. Now in order that the Line OI may be perpendicular to AB , or, in other words, that OIB may be a right angle, the sum of the two adjacent angles OIB , $O'IB$ must be equal to two right angles, and consequently their sides IO , IO' in the same straight Line. But since we can always draw one, and only one, straight Line

between two points O and O' , it follows that from a point O we can always draw one, and only one, perpendicular to the line AB .'

Do you think you could make a more awkward or more obscure proof of this almost axiomatic Theorem?

Nie. (*cautiously*) I would not undertake it.

Min. All that about folding and re-folding the paper is more like a child's book of puzzles than a scientific treatise. I should be very sorry to be the school-boy who is expected to *learn* this precious demonstration! In such a case, I could not better express my feelings than by quoting three words of this very Theorem:—'*I remains fixed*'!

In conclusion, I may say as to all five of these authors, that they do not seem to me to contain any desirable novelty which could not easily be introduced into an amended edition of Euclid.

Nie. It is a position I cannot dispute.

Scene II.

§ 1. SYLLABUS OF THE ASSOCIATION FOR THE IMPROVEMENT OF GEOMETRICAL TEACHING. 1878.

'Nos numerus sumus.'

Quoted from *Epistles*
by Horace

Nie. The last book to be examined is Mr. Wilson's new Manual, founded on the Syllabus of the Geometrical Association.

Min. We had better begin by examining the Syllabus itself. I own that I could have wished to do this in the presence of some member of the Committee, who might have supplied a few details for what is at present little more than a skeleton, but that I fear is out of the question.

Nie. Nay, you shall not have far to seek. I am a member of the Committee.

Min. (*astonished*) You! A German professor! No such member is included in the final list of the Committee, which a friend showed me the other day.

Nie. The final list, was it? Well, ask your friend whether, since the drawing up of that list, any addition has been made: he will say 'Nobody has been added.'

Min. Quite so.

Nie. You do not understand. *Nobody*—*Niemand*—see you not?

Min. What? You mean—

Nie. (*solemnly*) I do, my friend. I have been added to it!

Min. (*bowing*) The Committee are highly honoured, I am sure.

Nie. So they ought to be, considering that I am a more distinguished mathematician than Newton himself, and that *my* Manual is better known than Euclid's! Excuse my self-glorification, but any moralist will tell you that I—I alone among men—*ought* to praise myself.

Min. (*thoughtfully*) True, true. But all this is word-juggling—a most misleading analogy. However, as you now appear in a new character, you must at least have a new name!

Nie. (*proudly*) Call me *Nostradamus*!

[*Even as he utters the mystic name, the air grows dense around him, and gradually crystallizes into living forms. Enter a phantasmic procession, grouped about a banner, on which is emblazoned in letters of gold the title 'ASSOCIATION FOR THE IMPROVEMENT OF THINGS IN GENERAL.'* Foremost in the line

marches NERO, carrying his unfinished ‘Scheme for lighting and warming Rome’; while among the crowd which follow him may be noticed—GUY FAWKES, President of the ‘Association for raising the position of Members of Parliament’—THE MARCHIONESS DE BRINVILLIERS, Inventress of the ‘Application of Alteratives to the Digestive Faculty’—and THE REV. F. GUSTRELL (the being who cut down Shakspeare’s mulberry-tree), leader of the ‘Association for the Refinement of Literary Taste.’ Afterwards enter, on the other side, Sir Isaac Newton’s little dog ‘DIAMOND,’ carrying in his mouth a half-burnt roll of manuscript. He pointedly avoids the procession and the banner, and marches past alone, serene in the consciousness that he, single-pawed, conceived and carried out his great ‘Scheme for throwing fresh light on Mathematical Research,’ without the aid of any Association whatever.]

Min. *Nostra*, the plural of *nostrum*, ‘a quack remedy’; and *damus*, ‘we give.’ It is a suggestive name.

Nos. And, trust me, it is a suggestive book that I now lay before you. ‘*Syllabus*—’.

Min. (interrupting) You mean ‘a Syllabus’, or ‘the Syllabus’?

Nos. No, no! In this railroad-age, we have no time for superfluous words! ‘*Syllabus of Plane Geometry, prepared by the Association for the Improvement of Geometrical Teaching.*’ Fourth Edition, 1877.

Min. How do you define a Right Line?

NOSTRADAMUS reads.

P. 7. Def. 5. ‘A straight line is such that any part will, however placed, lie wholly on any other part, if its extremities are made to fall on that other part.’

Min. That looks more like a *property* of a Right Line than its *essence*. Euclid makes an Axiom of that property. Of course you omit his Axiom?

Nos. No. We have the Axiom (p. 10, Ax. 2) ‘Two straight lines that have two points in common lie wholly in the same straight line.’

Min. Well! That is certainly the strangest Axiom I ever heard of! The idea of asserting, as an Axiom, that Right Lines answer to their Definition!

Nos. (bashfully) Well, you see there were several of us at work drawing up this Syllabus: and we’ve got it a little mixed: we don’t quite know which are Definitions and which are Axioms.

Min. So it appears: not that it matters much: the practical test is the only thing of importance. Do you adopt Euc. I. 14?

Nos. Yes.

Min. Then we may go on to the next subject. Be good enough to define ‘Angle.’

NOSTRADAMUS reads.

P. 8. Def. 11. ‘When two straight lines are drawn from the same point, they are said to contain, or to make with each other, a *plane angle*.’

Min. Humph! You are very particular about drawing them *from* a point. Suppose they were drawn *to* the same point, what would they make then?

Nos. An angle, undoubtedly.

Min. Then why omit that case? However, it matters little. You say ‘a plane angle,’ I observe. You limit an angle, then, to a magnitude less than the sum of two right angles.

Nos. No, I can't say we do. A little further down we assert that 'two angles are formed by two straight lines drawn from a point.'

Min. Why, these are like Falstaff's 'rogues in buckram suits'! Are there more coming?

Nos. No, we do not go beyond the sum of four right angles. These two we call *conjugate* angles. 'The greater of the two is called the *major conjugate*, and the smaller the *minor conjugate*, angle.'

Min. These Definitions are wondrous! This is the first time I ever heard 'major' and 'minor' defined. One feels inclined to say, like that Judge in the story, when a certain barrister, talking against time, insisted on quoting authorities for the most elementary principles of law, 'Really, brother, there are *some* things the Court may be assumed to know!' Any more definitions?

Nos. We define 'a straight angle.'

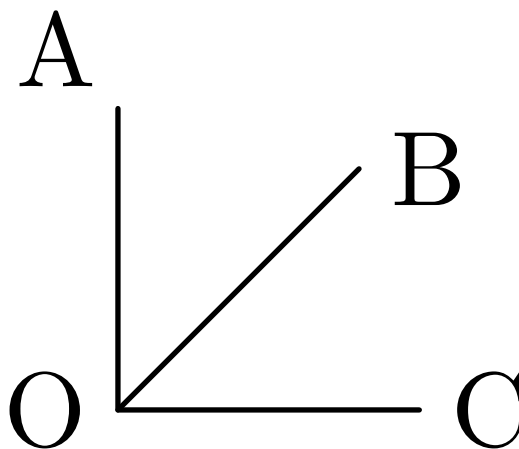
Min. That I have discussed already (see p. 757).

Nos. But *this*, I think, is new:—

Reads.

P. 9. Def. 12. 'When three straight Lines are drawn from a point, if one of them be regarded as lying between the other two, the angles which this one (the mean) makes with the other two (the extremes) are said to be *adjacent* angles.'

Min. That is new indeed. Let us try a figure:—



Now let us regard *OA* 'as lying between the other two.' Which are 'the angles which it makes with the other two'? For this line *OA* (which you rightly call 'the mean'—lying is always mean) makes, be pleased to observe, *four* angles altogether—two with *OB*, and two with *OC*.

Nos. I cannot answer your question. You confuse me.

Min. I need not have troubled you. I see that I can obtain an answer from the Syllabus itself. It says (at the end of Def. 11) 'when *the angle contained by two lines* is spoken of without qualification, the *minor conjugate* angle is to be understood.' Here we have a case in point, as *these* angles are spoken of 'without qualification.' So that the angles alluded to are both of them 'minor conjugate' angles, and lie on the same side of *OA*. And these we are told to call 'adjacent' angles!

Quoted from *Henry IV, Part 1* by William Shakespeare

How do you define a Right Angle?

Nos. As in Euclid.

Min. Let me hear it, if you please. You know Euclid has no major or minor conjugate angles.

NOSTRADAMUS *reads.*

P. 9. Def. 14. ‘When one straight line stands upon another straight line and makes the adjacent angles equal, each of the angles is called a *right angle*.’

Min. Allow me to present you with a figure, as I see the Syllabus does not supply one.



Here *AB* ‘stands upon’ *BC* and makes the adjacent angles equal. How do you like these ‘right angles’?

Nos. Not at all.

Min. These same ‘conjugate angles’ will get you into many difficulties.

Have you Euclid’s Axiom ‘all right angles are equal’?

Nos. Yes; only *we* propose to prove it as a Theorem.

Min. I have no objection to that: nor do I think that your treatment of angles, as a whole, is actually *illogical*. What I chiefly object to is the general ‘slipshoddity’ (if I may coin a word) of the language of your Syllabus.

Does your proof of Euc. I. 32 differ from his?

Nos. No, except that we propose Playfair’s Axiom, ‘two straight Lines that intersect one another cannot both be parallel to the same straight Line,’ as a substitute for Euc. Ax. 12.

Min. Is this your only test for the meeting of two Lines, or do you provide any other?

Nos. This is the only one.

Min. But there are cases where this is of no use. For instance, if you wish to make a Triangle, having, as *data*, a side and the two adjacent angles. Have you such a Problem?

Nos. Yes, it is Pr. 10, at p. 19.

Min. And how do you prove that the Lines will meet?

Nos. (*smiling*) We *don’t* prove it: that is the reader’s business: we only provide enunciations.

Min. You are like the *gourmand* who would eat so many oysters at supper that at last his friend could not help saying ‘They are sure to disagree with you in the night.’ ‘That is *their* affair,’ the other gaily replied. ‘*I* shall be asleep!’

Your Syllabus has the same hiatus as the other writers who have rejected Euclid’s 12th Axiom. If you will not have it as an Axiom, you ought to prove it as a Theorem. Your treatise is incomplete without it.

The Theorems contained in the first 26 Propositions of Euclid are thus re-arranged in the Syllabus. The only advantage that I can see in the new arrangement is that it places first the three which relate to Lines, thus getting all

those which relate to Triangles into a consecutive series. All the other changes seem to be for the worse, and specially the separation of Theorems from their converses, *e. g.* Props. 5, 6, and 24, 25.

13–15
4, 5
26 α
6
16
18–24
8
25
26 β
17

The third part of Prop. 29 is put after Prop. 32: and Props. 33, 34 are transposed. I can see no reason for either change.

Prop. 47 is put next before Prop. 12 in Book II. This would be a good arrangement (if it were ever proved to be worth while to abandon Euclid's order), as the Theorems are so similar; and the placing Prop. 48 next after II. 13 is a necessary result.

In Book II, Props. 9, 10 are placed after Props. 12, 13. I see no reason for it.

It does not appear to me that the new arrangements, for the sake of which it is proposed to abandon the numeration of Euclid, have anything worth mentioning to offer as an advantage.

I will now go through a few pages of 'this many-headed monster,' and make some general remarks on its *style*.

P. 4. 'A *Theorem* is the formal statement of a Proposition that may be demonstrated from known Propositions. These known Propositions may themselves be Theorems or Axioms.'

This is a truly delightful jumble. Clearly, 'a Proposition that may be demonstrated from known Propositions' is itself a Theorem. Hence a Theorem is 'the formal statement' of a Theorem. The question now arises—of itself, or of some other Theorem? That a Theorem should be 'the formal statement' of *itself*, has a comfortable domestic sound, something like 'every man his own washer-woman,' but at the same time it involves a fearful metaphysical subtlety. That one Theorem should be 'the formal statement' of *another* Theorem, is, I think, degrading to the former, unless the second will consent to act on the 'claw me, claw thee' principle, and to be 'the formal statement' of the first.

Nos. You bewilder me.

Min. Perhaps, however, it is intended that the teacher who uses this Manual should, on reaching the words 'a Proposition that may be demonstrated,' recognise the fact that this is itself 'a Theorem,' and at once go back to the beginning of the sentence. He will thus obtain a Definition closely resembling a Continued Fraction, and may go on repeating, as long as his breath holds out, or until his pupil declares himself satisfied, 'a *Theorem* is the formal statement of the formal statement of the formal statement of the——'

Nos. (*wildly*) Say no more! My brain reels!

Min. I spare you. Let us go on to p. 5, where I find the following:—

'*Rule of Conversion.* If of the hypotheses of a group of demonstrated Theorems it can be said that one must be true, and of the conclusions that no two can be true at the same time, then the converse of every Theorem of the group will necessarily be true.'

Let us take an instance:—

If $5 > 4$, then $5 > 3$.

If $5 < 2$, then $5 < 3$.

Those will do for 'demonstrated Theorems,' I suppose?

Nos. I suppose so.

Quoted from *History of the Civil War* by Samuel Daniel

Min. And the ‘hypothesis’ of the first ‘must be true,’ simply because it *is* true.

Nos. It would seem so.

Min. And it is quite clear that ‘of the conclusions no two can be true at the same time,’ for they contradict each other.

Nos. Clearly.

Min. Then it ought to follow that ‘the converse of every Theorem of the group will necessarily be true.’ Take the converse of the second, i. e.

If $5 < 3$, then $5 < 2$.

Is this ‘necessarily true’? Is every thing which is less than 3 necessarily less than 2?

Nos. Certainly not. I think you have misinterpreted the phrase ‘it can be said that one must be true,’ when used of the hypotheses. It does not mean ‘it can be said, from a knowledge of the subject-matter of some *one* hypothesis, that it *is*, and therefore must be, true,’ but ‘it can be said, from a knowledge of the mutual logical relation of *all* the hypotheses, as a question of *form* alone, and without any knowledge of their subject-matter, that one must be true, though we do not know which it is.’

Min. Your power of uttering long sentences is one that does equal honour to your head and your—lungs. And most sincerely do I pity the unfortunate learner who has to make out all that for himself! Let us proceed.

P. 9. Def. 13. ‘The *bisector* of an angle is the straight Line that divides it into two equal angles.’

This assumes that ‘an angle has one and only one bisector,’ which appears as Ax. 4, at the foot of p. 10.

P. 10. Def. 21. ‘The opposite angles made by two straight Lines that intersect &c.’

This seems to imply that ‘two Lines that intersect’ always *do* make ‘opposite angles.’

Nos. Surely they do?

Min. By no means. Look at p. 12, Def. 32, where, in speaking of a Triangle, you say ‘the intersection of the other two sides is called the vertex.’

Nos. A slip, I confess.

Min. One of many.

P. 12, Def. 31. ‘All other Triangles are called acute-angled Triangles.’ What? If a Triangle had two right angles, for instance?

Nos. But there *is* no such Triangle.

Min. *That* is a point you do not prove till we come to Th. 18, Cor. 1, two pages further on. The same remark applies to your Def. 33, in the same page. ‘The side . . . which is opposite to *the* right angle,’ where you clearly assume that it cannot have more than one.

P. 12, Def. 32. ‘When two of the sides have been mentioned, the remaining side is often called the base.’ Well, but how if two of the sides have *not* been mentioned?

Nos. In that case we do not use the word.

Min. Do you not? Turn to p. 22, Th. 2, Cor. 1, ‘Triangles on the same or equal bases and of equal altitude are equal.’

Nos. We abandon the point.

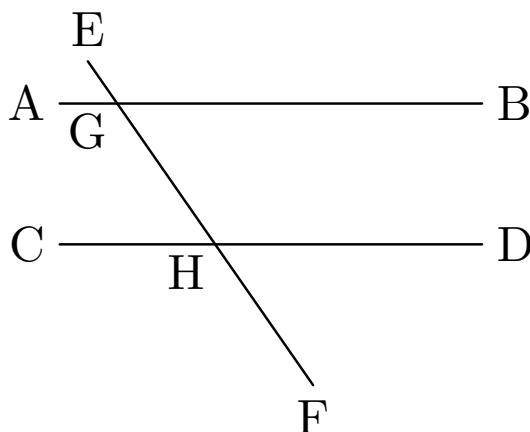
Min. You had better abandon the Definition.

P. 12, Def. 34. Is not 'identically equal' tautology? Things that are 'identical' must surely be 'equal' also. Again, 'every part of one being equal,' &c. What do you mean by 'every part' of a rectilinear figure?

Nos. Its sides and angles, of course.

Min. Then what do you mean by *Ax (b)* in p. 3. 'The whole is equal to the sum of its parts'? This time, I think I need not 'pause for a reply'!

P. 15, Def. 38. 'When a straight Line intersects two other straight Lines it makes with them eight angles etc.'

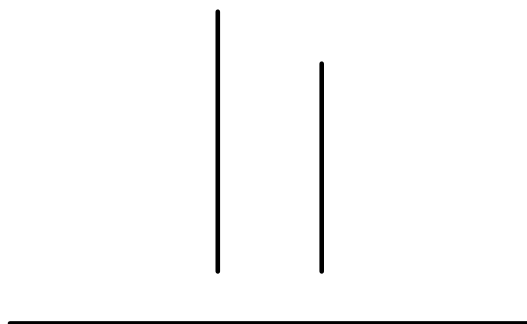


Let us count the angles at *G*. They are, the 'major' and 'minor' angles which bear the name *EGA*; do. for *EGB*; do. for *AGH*; and do. for *BGH*. That is, eight angles at *G* alone. There are sixteen altogether.

P. 17, Th. 30. 'If a quadrilateral has two opposite sides equal and parallel, it is a Parallelogram.'

This re-asserts part of its own data.

P. 17, Th. 31. 'Straight Lines that are equal and parallel have equal projections on any other straight Line; conversely, parallel straight Lines that have equal projections on another straight Line are equal.'



The first clause omits the case of Lines that are equal and in one and the same straight Line. The second clause is not true: if the parallel Lines are

at right angles to the other Line, their projections are equal, both being zero, whether the Lines are equal or not.

P. 18, Th. 32. 'If there are three parallel straight Lines, and the intercepts made by them on any straight Line that cuts them are equal, then etc.'

The subject of this Proposition is inconceivable: there are *three* intercepts, and by no possibility can these three be equal.

P. 25, Prob. 5. 'To construct a rectilinear Figure equal to a given rectilinear Figure and having the number of its sides one less than that of the given Figure.'

May I ask you to furnish me with the solution of this Problem, taking, as your 'given rectilinear Figure,' a Triangle?

Nos. (*indignantly*) I decline to attempt it!

Min. I will now sum up the conclusions I have come to with respect to your Syllabus.

In the subjects of Lines, Angles, and Parallels, the changes you propose are as follows:—

You give a very unsatisfactory Definition of a 'Right Line,' and then most illogically re-state it as an Axiom.

You extend the Definition of Angle—a most disastrous innovation.

Your Definition of 'Right Angle' is a failure.

You substitute Playfair's axiom for Euclid's 12th.

All these things are very poor compensation indeed for the vital changes you propose—the separation of Problems and Theorems, and the abandonment of Euclid's order and numeration. Restore the Problems (which are also Theorems) to their proper places, keep to Euclid's numbering (interpolating your new Propositions where you please), and your Syllabus may yet prove to be a valuable addition to the literature of Elementary Geometry.

§ 2. WILSON'S 'SYLLABUS'-MANUAL.

'No followers allowed.'

Times' advertisement-sheet, passim.

Nie. I lay before you '*Elementary Geometry, following the Syllabus prepared by the Geometrical Association,*' by J. M. WILSON, M.A., 1878.

Min. In what respects is this book a 'Rival' of Euclid?

Nie. Well, it separates Problems from Theorems—

Min. Already discussed (see p. 717).

Nie. It adopts Playfair's Axiom—

Min. Discussed (see p. 728).

Nie. It abandons diagonals in Book II—

Min. Discussed (see p. 733).

Nie. And it adopts a new sequence and numeration.

Min. *That*, of course, prevents us from taking" it as merely a new edition of Euclid. It will need very strong evidence indeed to justify its claim to set aside the sequence and numeration of our old friend. We must now examine the book *seriatim*. When we come to matters that have been already condemned, either in Mr. Wilson's book, or in the 'Syllabus,' I shall simply note the fact. We need have no new discussion, except as to new matter.

Nie. Quite so.

Min. In the 'Introduction,' at p. 2, I read '*A Theorem is the formal statement of a Proposition,*' &c. Discussed at p. 797.

At p. 3 we have the 'Rule of Conversion,' which I have already endeavoured to understand (see p. 797).

At p. 6 is a really remarkable assertion. '*Every Theorem may be shewn to be a means of indirectly measuring some magnitude.*' Kindly illustrate this on Euc. I. 14.

Nie. (*hastily*) Oh, if you pick out one single accidental excep—

Min. Well, then, take 16, if you like: or 17, or 18—

Nie. Enough, enough!

Min. (*raising his voice*)—or 19, or 20, or 21, or 24, or 25, or 27, or 28, or 30!

Nie. We abandon '*every.*'

Min. Good. At p. 8 we have the Definitions of '*major conjugate*' and '*minor conjugate*' (discussed at p. 795).

At p. 9 is our old friend the '*straight angle*' (see p. 757).

In the same page we have that wonderful triad of Lines, one of which is '*regarded as lying between the other two*' (see p. 795).

And also the extraordinary result that follows when one straight Line '*stands upon another*' (see p. 796).

At p. 27, Theorem 14, is a new proof of Euc. I. 24, apparently an amended version of Mr. Wilson's five-case proof, which I discussed at p. 773. He has now reduced it to three cases, but I still think the '*bisector of the angle*' a superfluity.

At p. 37 we have those curious specimens of '*Theorems of Equality,*' which I discussed at p. 774.

At p. 53 is the Theorem which asserts, in its conclusion, part of its own *data* (see p. 799).

At p. 54 we are told that '*parallel Lines, which have equal projections on another Line, are equal*' (see p. 800).

At p. 55 we have the inconceivable triad of '*equal intercepts*' made by a Line cutting three Parallels (see p. 800).

At p. 161 I am surprised to see him fall into a trap in which I have often seen unwary students caught, while trying to say Euc. III. 30 ('To bisect a given arc') After proving two chords equal, they at once conclude that *certain* arcs, cut off by them, are equal; forgetting to prove that the arcs in question are both *minor* arcs.

But I must go no further: I have already wandered beyond the limits of Euc. I, II. The one great merit of this book—

Nie. You have mentioned all the *faults*, then?

Min. By no means. You are too impatient. The one great merit, as I was saying, of Mr. Wilson's new book (and a most blessed change it is!) is that it ignores the whole theory of '*direction.*' That he has finally abandoned that night-mare of Elementary Geometry, I dare not hope: so all I have said about it had better stand, lest in some future fit of inspiration he should bring out a yet more agonising version of it.

But it has the usual hiatus of a system which replaces Euclid's Axiom by Playfair's: it provides no means of proving that the Lines contemplated by Euclid will meet if produced. (This I have discussed at p. 796.)

Its proposed changes in the *sequence* of Euclid I have discussed at p. 797.

It has a few other faults, which I have already discussed in Mr. Wilson's own book, and a few peculiar to the Syllabus; but I spare you such minute criticisms.

But what I have now to ask you is simply this. What possible pretext have you left for suggesting that Euclid's Manual, and specially his sequence and numeration, should be abandoned in favour of this far from satisfactory infant?

Nie. There are some new Theorems——

Min. Those constitute no reason: you might easily interpolate them.

Nie. I fear there are no other grounds to urge. But I should like to consult the *doppelgänger* of the Association before I throw up my brief.

Min. By all means.

[For a minute or two there is heard a rustling and a whispering, as of ghosts. Then NIEMAND speaks again.]

Nie. They think that, considering that this book is but just published, and that it is definitely put forward as *the* Manual to supersede Euclid, it ought to be examined more in detail, with reference to what is *new* in it—that is, new proofs of Euclid's Propositions, and new Propositions.

Min. (with a weary sigh) Very well. It will perhaps be more satisfactory to do this, if only to ascertain exactly how much this new Manual contains that is really new and really worthy of adoption. But I shall limit my examination to the subject-matter of Euc. I, II.

Nie. That is all we ask.

Min. We begin, then, at p. 12.

Theorem 1. 'All right angles are equal.' This is proved by their being halves of a 'straight angle,' a phrase which I have already criticised. There is a rather important omission in the proof, no distinction being drawn between the 'straight angle' on one side of a Line, and the other (of course named by the same letters) which lies on the other side and completes the four right angles. This Theorem, if proved without 'straight angles,' might be worth adding to a new edition of Euclid.

Th. 2 (p. 13) is Euc. I. 13, proved as in Euclid.

Th. 3 (p. 14) is Euc. I. 14, where, unfortunately, a new proof is attempted, which involves a fallacy. It is deduced from an 'Observation' in p. 9, that 'a straight Line makes with its continuation at any point an angle of two right angles,' which deduction can be effected only by the process of converting a universal affirmative '*simpliciter*' instead of '*per accidens*.'

Th. 4 (p. 14) is Euc. I. 15, proved as in Euclid.

At p. 17 I find a 'Question.' 'State the fact that "all geese have two legs" in the form of a Theorem.' This I would not mind attempting; but, when I read the additional request, to 'write down its converse theorem,' it is so powerfully borne in upon me that the writer of the Question is probably himself a biped, that I feel I must, however reluctantly, decline the task.

Th. 5 (p. 18) is Euc. I. 4, proved as in Euclid.

Th. 6 (p. 20) is Euc. I. 5, proved by supposing the vertical angle to be bisected, thus introducing a 'hypothetical construction' (see p. 718).

Th. 7 (p. 21) is Euc. I. 26 (1st part), proved by superposition. Euclid's proof, by making a new Triangle, is quite as good, I think. The areas are here proved to be equal, a point omitted by Euclid: I think it a desirable addition to the Theorem.

Th. 8 (p. 22) is Euc. I. 5, proved by reversing the Triangle and then placing it *on itself* (or on the trace it has left behind), a most objectionable method (see p. 732).

Theorems 9 to 13 (pp. 22 to 26) are Euc. I. 16, 18, 19, 20, 21, with Euclid's proofs.

Th. 14 (p. 27) is Euc. I. 24, proved by supposing an angle to be bisected: another 'hypothetical construction.'

Th. 15 (p. 28) is Euc. I. 8, for which two proofs are offered:—one by Euc. I. 24 (which seems to be reversing the natural order)—the other by an application of Euc. I. 5, a method involving *three* cases, of which only one is given. All this is to save the introduction of Euc. I. 7, a Theorem which I think should by no means be omitted. (See p. 811.) Here, as in Th. 7, the equality of the areas is, I think, a desirable addition to Euclid's Theorem.

Th. 16 (p. 29) is Euc. I. 25, with old proof.

Th. 17 (p. 30) is Euc. I. 26 (2nd part) proved by superposition instead of Euclid's method (which I prefer) of constructing a new Triangle.

Th. 18 (p. 32) is Euc. I. 17, with old proof.

Th. 19 (p. 33) is new. '*Of all the straight Lines that can be drawn from a given point to meet a given straight Line, the perpendicular is the shortest; and of the others, those making equal angles with the perpendicular are equal; and that which makes a greater angle with the perpendicular is greater than that which makes a less.*' This I think deserves to be interpolated.

Th. 20 (p. 34) is new. '*If two Triangles have two sides of the one equal to two sides of the other, each to each, and the angles opposite to two equal sides equal, the angles opposite to the other two equal sides are either equal or supplementary, and in the former case the Triangles are equal in all respects.*' I do not think it worth while to trouble a beginner with this rather obscure Theorem, which is of no practical use till he enters on Trigonometry.

Th. 21 (p. 43) is Euc. I. 27: old proof.

Th. 22 (p. 44) is Euc. I. 29 (1st part), proved by Euc. I. 27 and Playfair's Axiom (see p. 728).

Th. 23 (p. 45) is new. '*If a straight Line intersects two other straight Lines and makes either a pair of alternate angles equal, or a pair of corresponding angles equal, or a pair of interior angles on the same side supplementary; then, in each case, the two pairs of alternate angles are equal, and the four pairs of corresponding angles are equal, and the two pairs of interior angles on the same side are supplementary.*' This most formidable enunciation melts down into the mildest proportions when superfluities are omitted, and only so much of it proved as is really necessary to include the whole. Euclid proves all that is valuable in it in the course of I. 29, and I do not see any sufficient reason for stating and proving it as a separate Theorem.

Th. 23, Cor. (p. 46) is the rest of Euc. I. 29: old proof.

Th. 24 (p. 46) is Euc. I. 30, proved as a Contranomial of Playfair's Axiom.

Th. 25, 26, and Cor. (pp. 47, 48) are Euc. I. 32 and Corollaries: old proof.

Th. 27, 1st part (p. 50), is a needless repetition of part of the Corollary to Th. 23.

Th. 27, 2nd part (p. 50), is part of Euc. I. 34: old proof.

Th. 28 (p. 51) is the rest of Euc. I. 34, proved as in Euclid.

Th. 29 (p. 52) is new. '*If two Parallelograms have two adjacent sides of the one respectively equal to two adjacent sides of the other, and likewise an angle of*

the one equal to an angle of the other; the Parallelograms are identically equal.' This might be a useful *exercise* to set; but really it does not seem of sufficient importance to be selected for a Manual.

Th. 30 (p. 53) is Euc. I. 33: old proof.

Th. 31 (p. 54) is new. '*Straight Lines which are equal and parallel have equal projections on any other straight Line; conversely, parallel straight Lines which have equal projections on another straight Line are equal; and equal straight Lines, which have equal projections on another straight Line, are equally inclined to that Line.*' The first and third clauses might be interpolated, though I think their value doubtful. The second is false. (See p. 800.)

Th. 32 (p. 55) is new. '*If there are three parallel straight Lines, and the intercepts made by them on any straight Line that cuts them are equal, then the intercepts on any other straight Line that cuts them are equal.*' This is awkwardly worded (in fact, as it stands, its subject, as I pointed out in p. 800, is inconceivable), and does not seem at all worth stating as a Theorem.

At p. 57 I see an 'Exercise' (No. 5). '*Shew that the angles of an equiangular Triangle are equal to two-thirds of a right angle.*' In this attempt I feel sure I should fail. In early life I was taught to believe them equal to *two right angles*—an antiquated prejudice, no doubt; but it is difficult to eradicate these childish instincts.

Problem 1 (p. 61) is Euc. I. 9: old proof. It provides no means of finding a radius 'greater than half AB ,' which would seem to require the previous bisection of AB . Thus the proof involves the fallacy '*Petitio Principii.*'

Pr. 2 (p. 62) is Euc. I. 11, proved nearly as in Euclid.

Pr. 3 (p. 62) is Euc. I. 12, proved nearly as in Euclid. It omits to say how a 'sufficient radius' can be secured, a point not neglected by Euclid.

Pr. 4 (p. 63) is Euc. I. 10, proved nearly as in Euclid. This also, like Pr. 1, involves the fallacy '*Petitio Principii.*'

Pr. 5 (p. 64) is Euc. I. 32, proved nearly as in Euclid, but claims to use compasses to transfer distances, a Postulate which Euclid has (properly, I think) treated as a Problem. (See p. 808.)

Pr. 6, 7 (pp. 65, 66) are Euc. I. 23, 31: old proofs.

Problems 8 to 11 (pp. 66 to 69) are new. Their object is to construct Triangles with various *data*: viz. A, B , and c ; A, B , and a ; a, b , and C ; a, b , and A . They are good exercises, I think, but hardly worth interpolating as Theorems. The first of them is remarkable as one of the instances where Mr. Wilson assumes Euc. Ax. 12, without giving, or even suggesting, any proof. If he intends to assume it as an *Axiom*, he makes Playfair's *Axiom* superfluous. No Manual ought to assume *both* of them.

Theorem 1 (p. 82) is Euc. I. 35, proved as in Euclid, but incompletely, as it only treats of one out of three possible cases.

Th. 2 (p. 83) is new. '*The area of a Triangle is half the area of a rectangle whose base and altitude are equal to those of the Triangle.*' This is merely a particular case of Euc. I. 41, and may fairly be reserved till we enter on Trigonometry, where it first begins to have any practical value.

Th. 2, Cor. 1 (p. 84) is Euc. I. 37, 38: old proofs.

Th. 2, Cor. 2 (p. 84) is new. '*Equal Triangles on the same or equal bases have equal altitudes.*' No proof is offered. It is an easy deduction, of questionable value.

Th. 2, Cor. 3 (p. 84) is Euc. I. 39, 40. No proof given.

Th. 3 (p. 84) is new. ‘*The area of a trapezium [by which Mr. Wilson means ‘a quadrilateral that has only one pair of opposite sides parallel’] is equal to the area of a rectangle whose base is half the sum of the two parallel sides, and whose altitude is the perpendicular distance between them.*’ I have no hesitation in pronouncing this to be a mere ‘fancy’ Proposition, of no practical value whatever.

Th. 4 (p. 86) is Euc. I. 43: old proof.

Th. 5 (p. 87) is Euc. II. 1: old proof.

Th. 6, 7, 8 (p. 88, &c.) are Euc. II. 4, 7, 5. The sequence of Euc. II. 5, and its Corollary, is here inverted. Also the diagonals are omitted, and nearly every detail is left unproved, thus attaining a charming brevity—of *appearance!*

Th. 9 (p. 91) is Euc. I. 47: old proof.

Th. 10, 11 (pp. 94, 95) are Euc. 12, 13: old proof.

Th. 12 (p. 95) is new. ‘*The sum of the squares on two sides of a Triangle is double the sum of the squares on half the base and on the line joining the vertex to the middle point of the base.*’ This, Mr. Wilson tells us, is ‘Apollonius’ Theorem’: but, even with that mighty name to recommend it, I cannot help thinking it rather more curious than useful.

Th. 13 (p. 96) is Euc. II. 9, 10. Proved algebraically, and thus degraded from the position of a (fairly useful) geometrical Theorem to a mere addition-sum, of no more value than millions of others like it.

In the next proposition we suddenly transfer our allegiance, for no obvious reason, from Arabic to Latin numerals.

Problem I (p. 99) is Euc. I. 42: old proof.

Pr. II. (p. 100) is Euc. I. 44: proved nearly as in Euclid, but labours under the same defect as Pr. 8 (p. 66) in that it assumes, without proof, Euc. Ax. 12.

Pr. III (p. 100) is Euc. I. 45: old proof.

Pr. IV (p. 101) is Euc. II. 14: old proof.

Pr. V (p. 103) is new. ‘*To construct a rectilinear Figure equal to a given rectilinear Figure and having the number of its sides one less than that of the given figure; and thence to construct a Triangle equal to a given rectilinear Figure.*’ This I have already noticed (see p. 800). It really is not worth interpolating as a new Proposition. And its concluding clause is, if I may venture on so harsh an expression, childish: it reminds me of nothing so much as the Irish patent process for making cheap shoes—by taking boots and cutting off the tops!

Pr. VI (p. 103) is ‘*To divide a straight Line, either internally or externally, into two segments such that the rectangle contained by the given Line and one of the segments may be equal to the square on the other segment.*’ The case of *internal* division is Euc. II. 11, with the old proof. The other case is new, and worth interpolating.

I have now discussed, with as much care and patience as the lateness of the hour will permit, so much of this new Manual as corresponds to Euc. I, II, and I hope your friends are satisfied.

[*A gentle cooing, as of satisfied ghosts, is heard in the air.*]

I will now give you in a few words the net result of it all, and will show you how miserably small is the basis on which Mr. Wilson and his coadjutors of the ‘Association’ rest their claim to supersede the Manual of Euclid.

[*An angry moaning, as of ghosts suffering from neuralgia, surges round the room, till it dies away in the chimney.*]

By breaking up certain of the Propositions of Euc. I, II, and including some of the Corollaries, we get 73 Propositions in all—57 Theorems and 16 Problems. Of these 73, this Manual omits 14 (10 Theorems and 4 Problems); it proves 43 (32 Theorems and 11 Problems) by methods almost identical with Euclid's; for 10 of them (9 Theorems and a Problem) it offers new proofs, against which I have recorded my protest, one being illogical, 2 (needlessly) employing 'superposition,' 2 deserting Geometry for Algebra, and the remaining 4 omitting the diagonals in Euc. II; and finally it offers 6 new proofs, which I think may fairly be introduced as alternatives for those of Euclid.

In all this, and in all the matters previously discussed, I fail to see one atom of reason for abandoning Euclid. Have you any yet-unconsidered objections to urge against my proposal 'that the sequence and numeration of Euclid be kept unaltered'?

[*Dead silence is the only reply.*]

Carried, *nemine contragemente!* And now, Prisoner at the Bar (I beg your pardon, I should say 'Professor on the Sofa'), have you, and your attendant phantoms, any other reasons to urge for regarding this Manual as in any sense a substitute for Euclid's—as in any sense anything else than a revised edition of Euclid?

Nie. We have nothing more to say.

Min. Then I can but repeat with regard to this newborn 'follower' of the Syllabus, what I said of the Syllabus itself. Restore the Problems (which are also Theorems) to their proper places; keep to Euclid's numbering (interpolating your new Propositions where you please); and your new book may yet prove a valuable addition to the literature of Elementary Geometry.

[*A tremulous movement is seen amid the ghostly throng. They waver fitfully to and fro, and finally drift off in the direction of one corner of the ceiling. When the procession has got well under way, NIEMAND himself becomes hazy, and floats off to join them. The whole procession gradually melts away into vacancy, DIAMOND going last, nibbling at the heels of NERO, for which a pair of gorgeous Roman sandals seem to afford but scanty protection.*]

Act IV.

'*Old friends are best.*'

Quoted from *Table talk* by John Selden

[*Scene as before. Time, the early dawn. MINOS slumbering uneasily, having fallen forwards upon the table, his forehead resting on the inkstand. To him enter EUCLID on tip-toe, followed by the phantasms of ARCHIMEDES, PYTHAGORAS, ARISTOTLE, PLATO, &c., who have come to see fair play.*]

§ 1. Treatment of Pairs of Lines.

Euc. Are all gone?

Min.

Our revels now are ended: these our actors,
As I foretold you, were all spirits, and
Are melted into air, into thin air!

'Be cheerful, sir:

Quoted from *The Tempest* by William Shakespeare

Euc. Good. Let us to business. And first, have you found any method of treating Parallels to supersede mine?

Min. No! A thousand times, no! The infinitesimal method, so gracefully employed by M. Legendre, is unsuited to beginners: the method by transversals, and the method by revolving Lines, have not yet been offered in a logical form: the 'equidistant' method is too cumbrous: and as for the method of 'direction,' it is simply a rope of sand—it breaks to pieces wherever you touch it!

Euc. We may take it as a settled thing, then, that you have found no sufficient cause for abandoning either my sequence of Propositions or their numbering, and that all that now remains to be considered is whether any important modifications of my Manual are desirable?

Min. Most certainly.

Euc. Have you met with any striking novelty on the subject of a practical test for the meeting of Lines?

Min. There is *one* rival to your 12th Axiom which is formidable on account of the number of its advocates—the one usually called 'Playfair's Axiom.'

Euc. We have discussed that matter already (p. 728).

Min. But what have you to say to those who reject Playfair's Axiom as well as yours?

Euc. I simply ask them what practical test, as to the meeting of two given finite Lines, they propose to employ. Not only will they find it necessary to prove, in certain Theorems, that two given finite Lines will meet if produced, but they will even find themselves sometimes obliged to prove it of two Lines, of which the only geometrical fact known is that they possess the very property which forms the subject of my Axiom. I ask them, in short, this question:—'Given two Lines making, with a certain transversal, two interior angles together less than two right angles, how do you propose to prove, without my Axiom, that they will meet if produced?'

Min. The advocates of the 'direction' theory would of course reply, 'We can prove, from the given property, that they have different directions: and then we bring in the Axiom that Lines having different directions will meet if produced.'

Euc. All *that* you have satisfactorily disposed of in your review of Mr. Wilson's Manual.

Min. The only other substitute, that I know of, belongs to the 'equidistant' theory, which replaces your Axiom by three or four new Axioms and six new Theorems. *That* substitute, also, I have seen reason to reject.

My general conclusion is that your method of treatment of all these subjects is the best that has yet been suggested.

Euc. Any noticeable innovations in the treatment of Right Lines and Angles?

Min. Those subjects I should be glad to talk over with you.

Euc. With all my heart. And now how do you propose to conduct this our final interview?

Min. I should wish, in the first place, to lay before you the general charges which have been brought against you: then to discuss your treatment of Lines and Angles, as contrasted with that of your 'Rivals'; and lastly the omissions, alterations, and additions proposed by them.

Euc. Good. Let us begin.

Min. I will take the general charges under three headings:—Construction, Demonstration, and Style. And first as to Construction:—

§ 2. Euclid's Constructions.

I am told that you indulge too much in 'arbitrary restrictions.' Mr. Reynolds says (Pref. p. vi.) 'The arbitrary restrictions of Euclid involve him in various inconsistencies, and exclude his constructions from use. When, for instance, in order to mark off a length upon a straight Line, he requires us to describe five Circles, an equilateral Triangle, one straight line of limited, and two of unlimited length, he condemns his system to a divorce from practice at once and from sound reason.'

Euc. Mr. Reynolds has misunderstood me: I do not require all that construction in Prop. 3. To explain my meaning I must go back to Prop. 2, and I must ask your patience while I make a few general remarks on construction. The machinery I allow consists of a pencil, a ruler, and a pair of compasses to be used for drawing a Circle about a given centre and *passing through a given point* (that is what I mean by 'at any distance'), but *not* to be used for transferring distances from one part of a diagram to another *until it has been shown that such transference can be effected by the machinery already allowed.*

Min. But why not allow such transference without proving that possibility?

Euc. Because it would be introducing as a *Postulate* what is really a *Problem*. And I go on the general principle of never putting a *Problem* among my *Postulates*, nor a *Theorem* among my *Axioms*.

Min. I heartily agree in your general principle, though I need scarcely remind you that it has been frequently charged against you, as a *fault*, that you state as an *Axiom* what is really a *Theorem*.

Euc. That charge has been met (see p. 728). To return to my subject. I merely prove, once for all, in Prop. 2, that a Line *can* be drawn, from a given point, and equal to a given Line, by the original machinery alone, and *without* transferring distances. After that, my reader is welcome to transfer a distance by any method that comes handy, such as a bit of string &c.: and of course he may now transfer his compasses to a new centre. And this is all I expect him to do in Prop. 3.

Min. Then you *don't* expect these five Circles &c. to be drawn whenever we have to cut off, from one Line, a part equal to another?

Euc. *Pas si bête, mon ami.*

Min. Some of your Modern Rivals are, however, a little discontented with the very scanty machinery you allow.

Euc. 'A bad workman always quarrels with his tools.'

Min. Their charge against you is 'the exclusion of hypothetical constructions.' Mr. Wilson says (Pref. p. i.) 'The exclusion of hypothetical constructions may be mentioned as a self-imposed restriction which has made the confused order of his first book necessary, without any compensating advantage.'

Euc. In reply, I cannot do better than refer you to Mr. Todhunter's Essay on Elementary Geometry (p. 186). 'Confused order is rather a contradictory expression,' &c. (see p. 241).

Min. Your reply is satisfactory. Mr. Wilson himself is an instance of the danger of such a method. Three times at least (pp. 46, 70, 88) he produces Lines to meet without attempting to prove that they *will* meet.

§ 3. Euclid's Demonstrations.

Min. The next heading is 'Demonstration.' You are charged with an 'invariably syllogistic form of reasoning.' (Wilson, Pref. p. i.)

Euc. Do you know, I am vain enough to think that a merit rather than a defect? Let me quote what Mr. Cuthbertson says on this point (Pref. p. vii.). 'Euclid's mode of demonstration, in which the conclusion of each step is preceded by reasoning expressed with all the exactness of the minor premiss of a syllogism, of which some previous proposition is the major premiss, has been adopted as offering a good logical training, and also as being peculiarly adapted for teaching large classes, rendering it possible for the teacher to call first upon one, then upon another, and so on, to take up any link in the chain of argument.' Perhaps even Mr. Wilson's own book would not be the worse if the reasoning were a *trifle* more 'syllogistic'!

Min. A fair retort. You are also charged with 'too great length of demonstration.' Mr. Wilson says (Pref. p. i.) 'The real objections to Euclid as a text-book are . . . the length of his demonstrations.' And Mr. Cooley says (Pref. p. 1.) 'The important and fertile theorems, which crown the heights in this field of knowledge, are here all retained, and those only are omitted which seem to be but the steps of a needlessly protracted ascent. The short road thus opened will be found perfectly solid in construction, and at the same time far less tedious and fatiguing than the circuitous one hitherto in vogue.'

Euc. I think Mr. Wilson's Th. 17 (p. 27), with its five figures (all necessary, though he only draws one), and still more his marvellous Problem, 'approached by four stages,' which fills pages 69 to 72, are pretty good instances of lengthy demonstration. And Mr. Cooley's 'short and solid road' contains, if I remember right, a rather break-neck crevasse!

Min. The next charge against you is 'too great *brevity* of demonstration.' Mr. Leslie (a writer whom I have not thought it necessary to review as a 'Modern Rival,' as his book is nearly seventy years old) says (Pref. p. vi.) 'In adapting it' (the Elements of Euclid) 'to the actual state of the science, I have . . . sought to enlarge the basis . . . The numerous additions which are incorporated in the text, so far from retarding will rather facilitate progress, by rendering more continuous the chain of demonstration. To multiply the steps of ascent, is in general the most expeditious mode of gaining a summit.'

Euc. I think you had better refer him to Mr. Wilson and Mr. Cooley: they will answer *him*, and he in his turn will confute *them*!

Min. The last charge relating to demonstration is, in Mr. Wilson's words (Pref. p. viii.) 'the constant reference to general Axioms and general Propositions, which are no clearer in the general statement than they are in the particular instance,' which practice, he says, makes the study of Geometry 'unnecessarily stiff, obscure, tedious and barren.'

Euc. One advantage of making a general statement, and afterwards referring to it instead of repeating it, is that you have to go through the mental process of affirming or proving the truth *once for all*: apparently Mr. Wilson would have you begin *de novo* and think out the truth every time you need it! But the great reason for always referring back to your universal, instead of affirming the particular (Mr. Wilson is merely starting the old logical hare 'Is the syllogism a *Petitio Principii*?'), is that the truth of the particular does not rest on any data peculiar to itself, but on general principles applicable to all similar cases;

and that, *unless those general principles prove the conclusion for all cases, they cannot be warranted to prove it for any one selected case.* If, for instance, I see a hundred men, and am told that some assertion is true of ninety-nine of them, but am *not* told that it is true of *all*, I am not justified in affirming it of any selected man; for he *might* chance to be the excepted one. Now the assertion, that the truth of the particular case under notice depends on general principles, and not on peculiar circumstances, is neither more nor less than the assertion of the *universal* affirmative which Mr. Wilson deprecates.

§ 4. Euclid's Style.

Min. Quite satisfactory. I will now take the third heading, namely 'Style.'

You are charged with Artificiality, Unsuggestiveness, and Want of Simplicity. Mr. Wilson says (Pref. p. i.) 'The real objections to Euclid as a text-book are his artificiality . . . and his unsuggestiveness,' and again, 'he has sacrificed, to a great extent, simplicity and naturalness in his demonstrations, without any corresponding gain in grasp or cogency.'

Euc. Well, really I cannot deal with general charges like these. I prefer to abide by the verdict of my readers during these two thousand years. As to 'unsuggestiveness,' that is a charge which cannot, I admit, be retorted on Mr. Wilson: his book is *very* suggestive—of remarks which, perhaps, would not be *wholly* 'music to his ear'!

§ 5. Euclid's treatment of Lines and Angles.

Min. Let us now take the subjects of Right Lines and Angles; and first, the 'Right Line.'

I see, by reference to the original, that you define it as a Line 'which lies evenly as to points on it.' That of course is only an attempt to give the mind a grasp of the idea. It leads to no geometrical results, I think?

Euc. No: nor does *any* definition of it, that I have yet seen.

Min. I have no rival Definitions to propose. Mr. Wilson's 'which has the same direction at all parts of its length' has perished in the collapse of the 'direction' theory: and M. Legendre's 'the shortest course from one point to another' is not adapted for the use of a beginner. And I do not know that any change has been suggested in your test of a right Line in Prop. 14.

The next subject is 'Angles.'

Your definition would perhaps be improved, if for 'inclination to' we were to read 'declination from,' for, the greater the angle the greater the *declination*, and the less (as it seems to me) the *inclination*.

Euc. I agree with you.

Min. The next point is that you limit the size of an angle to something less than the sum of two right angles.

Euc. What advantage is claimed for the extension of the Definition?

Min. It is a prospective rather than an immediate one. It must be granted you that the larger angles are not needed in the first four Books—

Euc. In the first *six* Books.

Min. Nay, surely you need them in the Sixth Book?

Euc. Where?

Min. In Prop. 33, where you treat of ‘any equimultiples whatever’ of an angle, of an arc, and of a sector. You cannot possibly assume the multiple angle to be always less than two right angles.

Euc. You think, then, that a multiple of an angle must itself be an angle?

Min. Surely.

Euc. Then a multiple of a man must itself be a man. If I contemplate a man as multiplied by the number ten thousand, I must realise the idea of a man ten thousand times the size of the first?

Min. No, you need not do *that*.

Euc. Thanks: it *is* rather a strain on the imaginative faculty.

Min. You mean, then, that the multiple of an angle may be conceived of as so many separate angles, not in contact, nor added together into one?

Euc. Certainly.

Min. But you have to contemplate the case where two such angular magnitudes are equal, and to infer from that, by III. 26, that the subtending arcs are equal. How can you infer this when your angular magnitude is not one angle but many?

Euc. Why, the sum total of the first set of angles is equal to the sum total of the second set. Hence the second set can clearly be broken up and put together again in such amounts as to make a set equal, each to each, to the first set: and then the sum total of the arcs, and likewise of the sectors, will evidently be equal also.

But if you contemplate the multiples of the angles as single angular magnitudes, I do not see how you prove the equality of the subtending arcs: for *my* proof applies only to cases where the angle is less than the sum of two right angles.

Min. That is very true, and you have quite convinced me that we ought to observe that limit, and not contemplate ‘angles of rotation’ till we enter on the subject of Trigonometry.

As to right angles, it has been suggested that your Axiom ‘all right angles are equal to one another’ is capable of proof as a Theorem.

Euc. I do not object to the interpolation of such a Theorem, though there is very little to distinguish so simple a Theorem from an Axiom.

Min. Let us now consider the omissions, alterations, and additions, which have been proposed by your Modern Rivals.

§ 6. Omissions, alterations, and additions, suggested by Modern Rivals.

Euc. Which of my Theorems have my Modern Rivals proposed to omit?

Min. Without dwelling on such extreme cases as that of Mr. Pierce, who omits no less than 19 of the 35 Theorems in your First Book, I may say that the only two, as to which I have found anything like unanimity, are I. 7 and II. 8.

Euc. As to I. 7, I have several reasons to urge in favour of retaining it.

First, it is useful in proving I. 8, which, without it, is necessarily much lengthened, as it then has to include *three* cases: so that its omission effects little or no saving of space.

Secondly, the modern method of proving I. 8 independently leaves I. 7 still unproved.

Min. That reason has no weight unless you can prove I. 7 to be valuable for itself.

Euc. True, but I think I *can* prove it; for, thirdly, it shows that, of all plane Figures that can be made by hingeing rods together, the *three*-sided ones (and these only) are *rigid* (which is another way of stating the fact that there cannot be *two* such figures on the same base). This is analogous to the fact, in relation to solids contained by plane surfaces hinged together, that *any* such solid is rigid, there being no maximum number of sides.

And fourthly, there is a close analogy between I. 7, 8 and III. 23, 24. These analogies give to Geometry much of its beauty, and I think that they ought not to be lost sight of.

Min. You have made out a good case. Allow me to contribute a 'fifthly.' It is one of the very few Propositions that have a direct bearing on practical science. I have often found pupils much interested in learning that the principle of the rigidity of Triangles is of constant use in architecture, and even in so homely a matter as the making of a gate.

The other Theorem which I mentioned, II. 8, is now so constantly ignored in examinations that it is very often omitted, as a matter of course, by students. It is believed to be extremely difficult and entirely useless.

Euc. Its difficulty has, I think, been exaggerated. Have you tried to teach it?

Min. I *have* occasionally found pupils amiable enough to listen to what they felt sure would be of no service in examinations. My experience has been wholly among undergraduates, any one of whom, if of average ability, would, I think, master it in from five to ten minutes.

Euc. No very exorbitant demand on your pupil's time. As to its being 'entirely useless,' I grant you it is of no *immediate* service, but you will find it eminently useful when you come to treat the Parabola geometrically.

Min. That is true.

Euc. Let us now consider the new methods of proof suggested by my Rivals.

Min. Prop. 5 has been much attacked—I may say trampled on—by your Modern Rivals.

Euc. Good. So that is why you call it 'The Asses' Bridge'? Well, how many new methods do they suggest for crossing it?

Min. One is 'hypothetical construction,' M. Legendre bisecting the base, and Mr. Pierce the vertical angle, but without any proof that the thing can be done.

Euc. So long as we agree that beginners in Geometry shall be limited to the use of Lines and Circles, so long will it be unsafe to assume a point as found, or a Line as drawn, merely because we are sure it *exists*. For example, it is axiomatic, of course, that every angle has a bisector: but it is equally obvious that it has two trisectors: and if I may assume the one as drawn, why not the others also? However we have discussed this matter already (p. 718).

Min. A second method is 'superposition,' adopted by Mr. Wilson and Mr. Cuthbertson—a method which here involves the *reversing* of the triangle, before applying it to its former position.

Euc. That also we have discussed (p. 732). What is the method adopted in the new Manual founded on the Syllabus of the Association?

Min. The same as Mr. Pierce's. Mr. Reynolds has a curious method: he treats the sides as obliques 'equally remote from the perpendicular.'

Euc. Curious, indeed.

Min. But perhaps the most curious of all is Mr. Willock's method: *he* treats the sides as radii of a circle, and the base as a chord.

Euc. He had better have made them asymptotes of a hyperbola at once! *C'est magnifique, mais ce n'est pas la—Géométrie.*

Min. Two of your Rivals prove Prop. 8 from Prop. 24.

Euc. 'Putting the cart before the horse,' in my humble opinion.

Min. For a brief proof of Prop. 13, let me commend to your notice Mr. Reynolds'—consisting of the seven words 'For they fill exactly the same space.'

Euc. Why so lengthy? The word 'exactly' is superfluous.

Min. Instead of your chain of Theorems, 18, 19, 20, several writers suggest 20, 19, 18, making 20 axiomatic.

Euc. That has been discussed already (p. 737).

Min. Mr. Cuthbertson's proof of Prop. 24 is, if I may venture to say so, more complete than yours. He constructs his diagram without considering the lengths of the sides, and then proves the 3 possible cases separately.

Euc. I think it an improvement.

Min. There are no other noticeable innovations, that have not been already discussed, except that Mr. Cuthbertson proves a good deal of Book II by a quasi-algebraical method, without exhibiting to the eye the actual Squares and Rectangle: while Mr. Reynolds does it by pure algebra.

Euc. I think the actual Squares, &c. most useful for beginners, making the Theorems more easy to understand and to remember. *Algebraical* proofs of course introduce the difficulty of 'incommensurables.'

Min. We will now take the new Propositions, &c. which have been suggested. Here is an Axiom:—'*Two lines cannot have a common segment.*'

Euc. Good. I have tacitly assumed it, but it may as well be stated.

Min. Several new Theorems have been suggested, but only two of them seem to me worth mentioning. They are:—
'*All right angles are equal.*'

Euc. I have already approved of that (p. 811).

Min. The other is one that is popular with most of your Rivals:—
'*Of all the Lines which can be drawn to a Line from a point without it, the perpendicular is least; and, of the rest, that which is nearer to the perpendicular is less than one more remote; and the lesser is nearer than the greater; and from the same point only two equal Lines can be drawn to the other Line, one on each side of the perpendicular.*'

Euc. I like it on the whole, though so long an enunciation will be alarming to beginners. But it is strictly analogous to III. 7. Introduce it by all means in the revised edition of my Manual. It will be well, however, to lay it down as a general rule, that no Proposition shall be so interpolated, unless it be of such importance and value as to be thought worthy of being quoted as proved, in the same way in which candidates in examinations are now allowed to quote Propositions of mine.

Min. (*with a fearful yawn*) Well! I have no more to say.

§ 7. The summing-up.

Euc. 'The cock doth crow, the day doth daw,' and all respectable ghosts ought to be going home. Let me carry with me the hope that I have convinced you of

Quoted from *The Wife of Usher's Well*

the importance, if not the necessity, of retaining my order and numbering, and my method of treating straight Lines, angles, right angles, and (most especially) Parallels. Leave me these untouched, and I shall look on with great contentment while other changes are made—while my proofs are abridged and improved—while alternative proofs are appended to mine—and while new Problems and Theorems are interpolated.

In all these matters my Manual is capable of almost unlimited improvement.

[*To the sound of slow music, EUCLID and the other ghosts 'heavily vanish,' according to Shakespeare's approved stage-direction. MINOS wakes with a start, and betakes himself to bed, 'a sadder and a wiser man.'*]

Quoted from *The Tempest* by William Shakespeare

Quoted from *The Rime of the Ancient Mariner* by Samuel Taylor Coleridge

Appendix III.

Proof that, if any one Proposition of Table II be granted as an Axiom, the rest can be deduced from it. (See pp. 725, 728.)

"... and so we make it quite a merry-go-rounder." I was obliged to consider a little before I understood what Mr. Peggotty meant by this figure, expressive of a complete circle of intelligence.

Quoted from *David Copperfield* by Charles Dickens

It is to be proved that, if any one of the Propositions of Table II be granted, the rest can be proved.

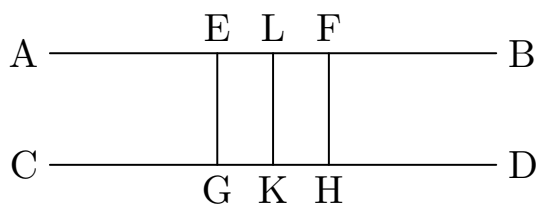
It is assumed that the lesser of two unequal finite magnitudes of the same kind may be multiplied so as to exceed the greater.

Euclid I, 1 to 28, is assumed as proved.

It is assumed that, where two Propositions are Contranominals, so that each can be proved from the other, it is not necessary to include *both* in the series of proofs.

Lemma 1.

A Pair of Lines, of which one contains two points equidistant from the other, have a common perpendicular.



Let AB contain 2 points E, F , equidistant from CD . From E, F , draw $EG, FH, \perp CD$; bisect GH in K , and EF in L , and join KL .

Now $EG = FH$;

[*hyp.*

hence, if the diagram be reversed, and so placed on its former traces that G coincides with H , and H with G , K retaining its position, GE coincides with HF , and HF with GE ;

$\therefore E$ coincides with F , and F with E ;

$\therefore L$ retains its position;

$\therefore \angle GKL$ coincides with $\angle HKL$, and is equal to it;

$\therefore \angle$ s at K are right.

Similarly \angle s at L are right.
Therefore a Pair of Lines, &c.

Q. E. D.

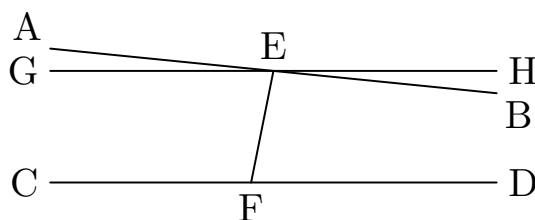
(α). II. 1.

A Pair of separational Lines are equally inclined to any transversal.

[N.B. The Contranomial of this will be proved at the end of the series.]

(β). II. 16 (a).

Two intersecting Lines cannot both be separational from the same Line.



Let AEB, GEH be two intersecting Lines, and CD another Line. It is to be proved that they cannot both be separational from CD .

In CD take any point F ; and join EF .

Now, if possible, let AB, GH both be separational from CD ;

$\therefore \angle$ s AEF, GEF are both equal to $\angle EFD$;

[(α).

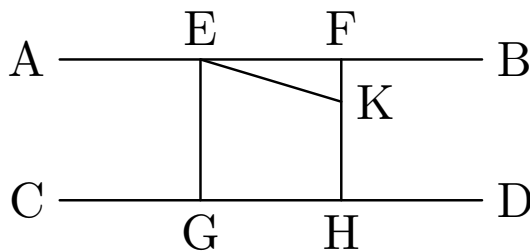
\therefore they are equal to each other; which is absurd.

Therefore two intersecting Lines &c.

Q. E. D.

(γ) II. 6.

A Pair of separational Lines are equidistantial from each other.



Let AB, CD be separational Lines: it shall be proved that they are equidistantial from each other.

In AB take any 2 points E, F ; and draw $EG, FH, \perp CD$.

Now, if $FH > EG$, from it cut off KH equal to EG ; and join EK ;

then, $\therefore EG = KH$,

$\therefore EK, CD$ have a common perpendicular;

[Lemma 1.

$\therefore EK$ is separational from CD ;

[Euc. I. 27.

$\therefore AB, EK$, intersecting Lines, are both separational from CD ; which is absurd;

[(β).

$\therefore FH$ is not $> EG$.

Similarly it may be proved that EG is not $> FH$.

Therefore $EG = FH$.

Similarly it may be proved that any 2 points in AB are equidistant from CD , and that any 2 points in CD are equidistant from AB .

Therefore AB, CD are equidistantial from each other.

Therefore a Pair &c.

Q. E. D.

(δ). II. 11.

A Pair of Lines, which are equally inclined to a certain transversal, are equidistantial from each other.

A Pair of Lines, which are equally inclined to a certain transversal, are separational; [Euc. I. 27.

also a Pair of separational Lines are equidistantial from each other; [(γ).

\therefore a Pair of Lines, &c.

Q. E. D.

(ε) II. 8.

Through a given point, without a given Line, a Line may be drawn such that the two Lines are equidistantial from each other.

For, if through the given point there be drawn a transversal, there can also be drawn through it a Line such that the two Lines make equal \angle s with the transversal; [Euc. I. 23.

and this Line will be such that the two Lines are equidistantial from each other.

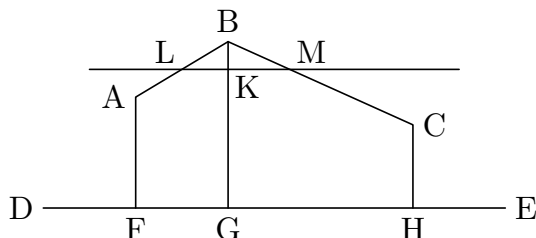
[(δ).

Therefore, &c.

Q. E. D.

(ζ). II. 17.

A Line cannot recede from and then approach another; nor can one approach and then recede from another on the same side of it.



If possible, let ABC first recede from, and then approach, DE ; that is, let the perpendicular BG be $>$ each of the two perpendiculars AF, CH .

From GB cut off $GK >$ each of the two, AF, CH .

Now a Line may be drawn, through K , equidistantial from DE ; [(ε).

and the points A, C will lie on the side of it next to DE , and B on the other side;

\therefore it will cut AB between A and B , and BC between B and C .

Let L, M be the points of intersection; and join LM ;

\therefore the 2 Lines LBM, LKM contain a space; which is absurd.

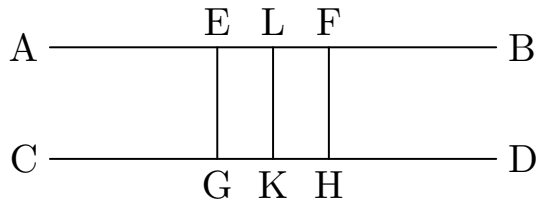
Similarly it may be proved that ABC cannot first approach and then recede from DE on the same side of it.

Therefore a Line &c.

Q. E. D.

(η). II. 13.

A Pair of Lines, of which one has two points on the same side of, and equidistant from, the other, are equidistantial from each other.



Let AB contain two points E, F , equidistant from CD . From E, F , draw $EG, FH, \perp CD$; bisect GH in K , and EF in L , and join KL .

Now $EG = FH$; [hyp.]

hence, if the diagram be reversed, and so placed on its former traces that G coincides with H , and H with G , K retaining its position, GE coincides with HF , and HF with GE ;

$\therefore E$ coincides with F , and F with E ;

$\therefore L$ retains its position;

\therefore , if there be a point in LA whose distance is $< LK$, there is another such point in LB , and the Line AB will first recede from and then approach CD ; which is absurd. [(C)].

Similarly if there be one whose distance is $> LK$.

$\therefore AB$ is equidistant from CD .

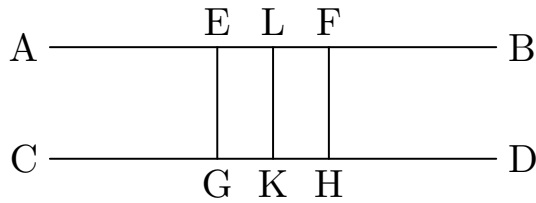
Similarly it may be proved that CD is equidistant from AB .

Therefore a Pair of Lines, &c.

Q. E. D.

Lemma 2.

Through a given point may be drawn a common perpendicular to a given Pair of Lines, of which each is equidistant from the other.



Let AB, CD be the given Pair of Lines.

Through the given point draw a Line perpendicular to AB , and let it meet AB in L . In AB take any 2 points E, F , equidistant from L . From E, F , draw EG, FH , perpendicular to CD . Bisect GH at K ; and join KL .

Now E, F are 2 points, in AB , equidistant from CD ; and GH is bisected in K , and EF in L ;

$\therefore KL$ is a common perpendicular; [Lemma 1.]

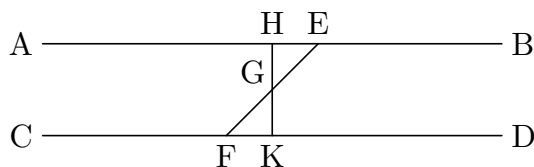
\therefore it coincides with the Line drawn, through the given point, perpendicular to AB , since both meet AB at L ;

$\therefore KL$ is the Line required.

Q. E. F.

(θ). II. 9.

A Pair of Lines, of which one has two points on the same side of, and equidistant from, the other, are equally inclined to any transversal.



Let AB contain two points equidistant from CD , and let EF be a certain transversal: it shall be proved that $\angle AEF = \angle EFD$.

Now AB, CD , are equidistantial from each other. [(η)].

Bisect EF at G ; through G let HGK be drawn a common perpendicular to AB and CD . [Lemma 2.]

Hence, in Triangles GEH, GFK , side GE and $\angle s$ EGH, GHE , are respectively equal to side GF and $\angle s$ FGK, GKF ;

$\therefore \angle GEH = \angle GFK$. [Euc. I. 26.]

Therefore a Pair of Lines, &c. Q. E. D.

(κ). II. 3.

Through a given point, without a given Line, a Line may be drawn such that the two Lines are equally inclined to any transversal.

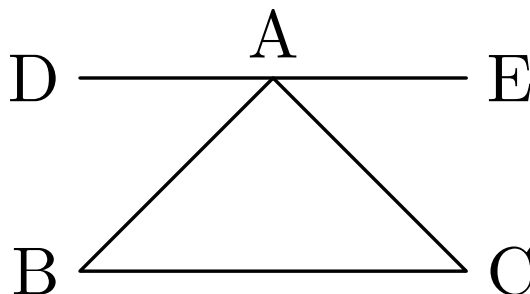
Take a second point, on the same side of the given Line and at the same distance from it; and join the 2 points.

Then the Line, so drawn, and the given Line, are equally inclined to any transversal. [(θ)].

Therefore through a given point, &c. Q. E. D.

(λ). II. 18 (b).

The angles of a Triangle are together equal to two right angles.



Let ABC be a Triangle. It is to be proved that its 3 angles are together equal to 2 right angles.

Through A let DAE be drawn, such that DAE, BC are equally inclined to any transversal. [(κ)].

Then $\angle B = \angle DAB$, and $\angle C = \angle EAC$;

$\therefore \angle s$ $B, C, BAC = \angle s$ DAB, EAC, BAC ;

$= 2$ rt $\angle s$.

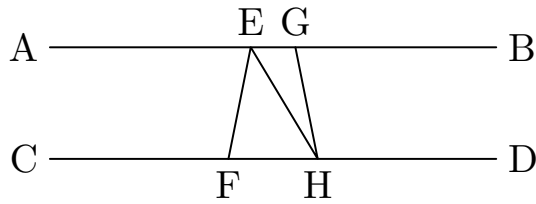
Therefore the angles &c.

[Euc. I. 13.]

Q. E. D.

(μ). II. 4.

A Pair of Lines, which are equally inclined to a certain transversal, are so to any transversal.



Let AB, CD be equally inclined to EF ; and let GH be any other transversal. It shall be proved that they are equally inclined to GH .

Join EH .

Because \angle s of Triangle EFH together = 2 rt \angle s, and likewise those of Triangle EGH , [(λ)].

\therefore angles of Figure FG together = 4 rt angles;

also, by hypothesis, \angle s GEF, EFH together = 2 rt \angle s;

\therefore remaining \angle s EGH, GHF together = 2 rt \angle s;

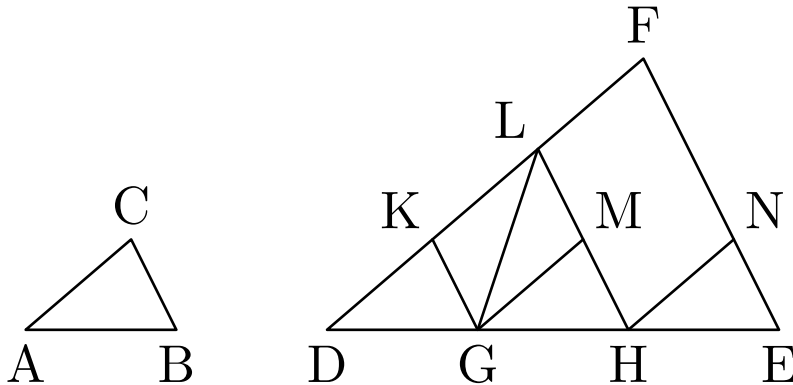
$\therefore AB, CD$ are equally inclined to GH .

Therefore a Pair of Lines, &c.

Q. E. D.

Contranominal of (α). II. 2.

A Pair of Lines, which make with a third Line two interior angles, on one side of it, together less than two right angles, will meet on that side if produced.



Let ABC, DEF be two Triangles such that \angle s, A, D are equal, and DE, DF equimultiples of AB, AC .

From DE cut off successive parts equal to AB ; and let the points of section be G, H . At G, H make \angle s equal to $\angle E$.

Then the Lines, so drawn, are separational from EF and from one another; [Euc. I. 28.

\therefore these Lines meet DF between D and F ; call these points K, L .

At G, H make \angle s equal to $\angle D$.

Then the Lines, so drawn, are separational from DF ;

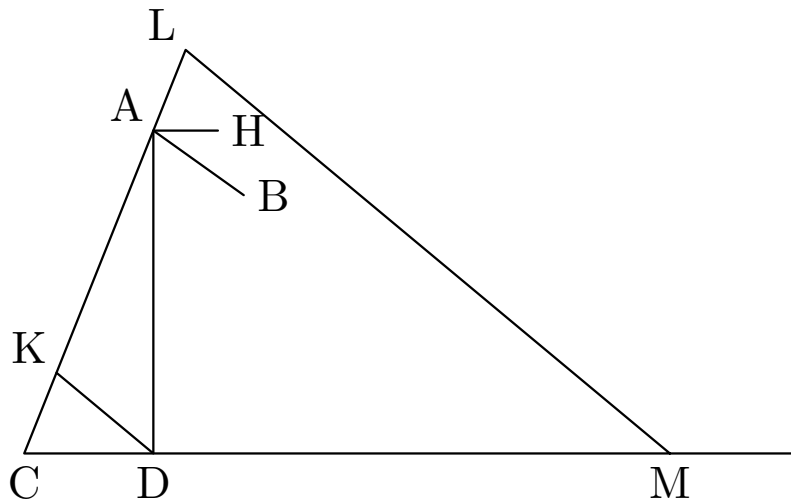
\therefore they respectively meet HL between H and L , and EF between E and F ; call these points M, N .

Because Triangles DGK, GHM, HEN are on equal bases and have their base- \angle s respectively equal,

$\therefore DK, GM, HN$ are equal.

[Euc. I. 26.

Join GL .
 Because DL, GM are equally inclined to DE ,
 \therefore they are equally inclined to GL ; [[(μ)].
 $\therefore \angle s KLG, LGM$ are equal.
 Similarly, $\therefore GK, HL$ are equally inclined to DE ,
 \therefore they are equally inclined to GL ;
 $\therefore \angle s KGL, GLM$ are equal.
 Because Triangles LGK, GLM are on same base LG and have their base- $\angle s$ respectively equal,
 $\therefore KL = GM$, i. e. $= DK$. [I. 26.
 Similarly it may be proved that $LF = HN$, i. e. $= DK$.
 Hence DE, DF are equimultiples of DG, DK , i. e. of AB, DK ;
 but they are also equimultiples of AB, AC ;
 $\therefore DK = AC$.
 Because Triangles ABC, DGK have $\angle s A, D$ equal, and AB, AC respectively equal to DG, DK ,
 $\therefore \angle s B, DGK$ are equal, and likewise $\angle s C, DKG$. [I. 4.
 Because GK, EF are equally inclined to DE ,
 \therefore they are equally inclined to DF ; [[(μ)].
 i. e. $\angle s DKG, DFE$ are equal;
 $\therefore \angle s B, C$ are respectively equal to $\angle s E, F$.
 Hence, two Triangles, which have their vertical angles equal, and the 2 sides of the one respectively equimultiples of those of the other, have their base-angles respectively equal.



Now let AB, CD make with AC two interior $\angle s BAC, ACD$ together < 2 right $\angle s$. It shall be proved that they will meet if produced towards B, D .
 In CD take any point D . Join AD . At A make $\angle DAH$ equal to $\angle CDA$.
 Hence AH, CD are equally inclined to all transversals; [[(μ)].
 $\therefore \angle s HAC, ACD$ together $= 2$ right $\angle s$;
 \therefore they together $> \angle s BAC, ACD$;

$\therefore \angle HAC > \angle BAC$, i. e. $\angle HAD > \angle BAD$;⁵

$\therefore \angle CDA > \angle BAD$.

At D , in Line DA , make an \angle equal to $\angle BAD$;

then the Line, so drawn, will fall within $\angle CDA$, and will meet CA between C and A . Call this point K .

In CA produced take CL a multiple of CK , and $> CA$. And in CD produced take CM the same multiple of CD that CL is of CK . And join LM .

Because Triangles CKD , CLM have a common vertical \angle , and the 2 sides of the one respectively equimultiples of those of the other,

\therefore , by what has been already proved, \angle s CKD , CLM are equal.

Because AB , KD are equally inclined to AD ,

\therefore they are equally inclined to CL ;

$[(\mu)]$.

$\therefore \angle CAB = \angle CKD$ i. e. $= \angle CLM$;

$\therefore AB$ is separational from LM ;

[Euc. I. 28.

\therefore if produced, it will meet CM .

Therefore a Pair of Lines, &c.

Q. E. D.

⁵ $\angle HAD$ added according to Erratum

4.5 Supplement to “Euclid and his Modern Rivals”

Appendix VII.

Source: Supplement to “Euclid and his Modern Rivals”

Note that the references refer to the first edition, and have here been replaced by the respective references to the second edition, so in some cases differences exist between the quoted text and the text here reproduced.

Reviews of ‘Euclid and his Modern Rivals,’ with the Author’s remarks thereon.

From the ‘English Mechanic and World of Science,’ May 2, 1879.

After serving for upwards of two thousand years as essentially the standard text-book, and as an unsurpassable and unsurpassed system of mathematical gymnastics to millions, it has been found or asserted in these latter days that the ‘Elements of Geometry’ of the mighty Alexandrian are deficient in some of the most rudimentary qualifications that they have been heretofore conceived to possess; and that the sooner they are remodelled or superseded altogether the better for the rising generation of mathematicians, and for the cause of education generally. Thus it has come to pass that Legendre among the French; Pierce, Chauvenet, and Loomis among the Americans; and Cooley, Cuthbertson, Morell, Reynolds, Willock, Wilson, and Wright among our own country-men, have each and everyone embodied his own idea of the way in which geometry should be taught, in treatises designed to supplant Euclid’s time-honoured work entirely. Nay, lest the authority of any individual should fail to prevail against that of the great Greek geometer, an Association for the Improvement of Geometrical Teaching has been formed, and, under Mr. Wilson’s editorship, has issued a ‘Syllabus Manual’ of its own.

Now it is to combat the views propounded by the authors whom we have just named, and to show what indifferent substitutes they have provided for the book they attack, that Mr. Dodgson’s remarkable work has been written—a work which takes the astonishing form of a drama in four acts and ten scenes! with six appendices, four of them bristling with formulæ. The argument of the play (if play it can be called) is briefly this: A college examiner, Minos, utterly wearied out by marking papers containing the most heterogeneous and illogical ‘proofs’ of the same theorem, falls asleep over his work; and to him appears the phantasm of Euclid himself. In the course of the conversation which ensues Euclid stoutly defends his own method of treatment and arrangement of propositions. The dramatic interest of this, by the way, is rather marred by the introduction of a somewhat repulsive symbolism (involving perpetual reference to the pages on which it is first explained), the notion of which is obviously taken from one of the common text-books on logic; but, putting this on one side, the ideas intended to be conveyed are clearly and definitely expressed, and Euclid quite holds his own. ‘Audi alteram partem,’ however, and it becomes necessary that Minos should hear what the modern rivals of the great Alexandrian have to say for themselves. But they being still in the flesh, the spirit of a certain German Professor, Niemand, is sent, who produces their works and acts as their

advocate *seriatim*. We cannot, we confess, congratulate those whom we may provisionally call the heterodox party on the strength of this spiritual champion of theirs, whose advocacy strongly suggests to us the old story of the youthful and nervous barrister, who, after stammering out three or four times, 'My lord, my unfortunate client; I say, my lord, my unfortunate client,' was summarily arrested by the exclamation of the judge, 'Go on, Mr. Smith; so far the Court is quite with you.' Herr Niemand being in truth but a kind of straw giant set up by our author merely to be knocked down again. We should really prefer to hear the personal replies of Messrs. Cuthbertson and Wilson to Mr. Dodgson's attack on their principles and methods, rather than those of their ghostly representative. It seems to us that they might one or both take much more formidable objections to certain pieces of hypercriticism on the part of 'Minos' than the spirit of the German professor does on their behalf.

On the whole, though, we regard our author as having triumphantly proved that, so far, no work has been produced which is comparable with Euclid's immortal 'Elements,' as an introduction to geometry for *beginners*. Legendre's proofs, for example, are very beautiful, but he treats of parallels by methods involving infinite series; a method presupposing a kind and amount of knowledge not ordinarily possessed by lads at the age at which they usually begin the study of Euclid. The chief points on which Mr. Dodgson is at issue with the innovators are the separation of problems and theorems; the substitution of Playfair's Axiom for Euclid's XIIth one; the treatment of parallels by (*a*) angles made with transversals; (*b*) by equidistances; and (*c*) by direction, as contradistinguished from the Euclidean method. He further assails the modern treatment of lines and angles; and the attacks on Euclid's style, constructions, and demonstrations. He is particularly severe upon Mr. Wilson for the manner in which he handles the subjects of angles, the direction of lines, and parallels; and there can be no doubt that he does convict that writer both of logical inaccuracy and of loose writing, both defects fatal to a book claiming to supersede the time-honoured 'Elements.' Mr. Cuthbertson, too, by no means comes unscathed out of the fray; while our author points out how Mr. Morell and others have proved 'theorems' by illogical processes which furnish no proofs at all! His chief praise is given to the American books; but these he shows possess the cardinal fault of inapplicability to rudimentary instruction, however elegant and adapted to the advanced student their mode of treatment may be. In two out of his six appendices, he invokes the high authority of Mr. Todhunter and of the late Professor De Morgan, in favour of the views he has been advocating; and the testimony they give is as valuable as it is unhesitating. The remaining appendices call for no especial notice.

We fear that the brief account which we have given of Mr. Dodgson's curious book must convey but an imperfect idea of its contents. This, however, has its origin in the nature of the work itself, which is indescribable, save at a length to which our limited space prevents us from extending this notice. It is essentially a book to be carefully and deliberately read, as it doubtless will be by everyone interested in the teaching of geometry. Here and there the author has his adversaries unmistakably on the hip; in other places, we must repeat our impression that Herr Niemand has scarcely done so much for his clients as they might fairly have been expected to do for themselves. That the writers attacked will, some of them, reply to their assailant may only reasonably be expected; and we shall look forward with no little interest to any response which one

or more of them may make. Meanwhile, we may reiterate our conviction that Mr. Dodgson has shown irrefragably that, whatever merits individual works may possess, there has not as yet appeared one destined to supplant Euclid's 'Elements of Geometry,' as a means of instruction for the beginner; and we hold that *pro tanto* he has rendered good service to the cause of mathematical education, and to that of intellectual discipline generally.

From the 'Saturday Review,' May 10, 1879.

The movement for innovation in the teaching of elementary geometry has gone so far that the discussion is no longer a merely academical one, and Mr. Dodgson has thought it high time for a champion who is prepared to defend Euclid against all comers to arm himself and enter the lists. Mr. Dodgson has brought great knowledge and acuteness to his task, but we must regret the form in which he has cast his book—not on the score of his 'abandoning the dignity of a scientific writer' by putting his argument into dialogues between the ghost of Euclid, an examiner, and an imaginary German Professor—but, because to our mind the effect is to make the argument much harder reading than it would be otherwise. It is chopped up and frittered away, and what Mr. Dodgson has to say on any one point must be pieced out from half-a-dozen scraps of imaginary conversation. Mr. Dodgson's own account of his method is this:—'It is presented in a dramatic form, partly because it seemed a better way of exhibiting in alternation the arguments on the two sides of the question; partly that I might feel myself at liberty to treat it in a rather lighter style than would have suited an essay, and thus to make it a little less tedious and a little more acceptable to unscientific readers.'

We agree that the subject is one which might very fairly be treated by way of dialogue, provided the writer were impartial or versatile enough really to exhibit the arguments on both sides. But this Mr. Dodgson has hardly attempted. His phantasm of Herr Niemand, who brings up for discussion and judgment the various treatises of Euclid's modern rivals, is a very poor ghost indeed—a mere ninepin of a ghost who stands up only just enough to be knocked down. The work is an argument for Euclid all through, and would have been more forcible and intelligible if presented consecutively. As to the 'lighter style' making the book 'less tedious' and 'more acceptable to unscientific readers,' that is a matter of taste; to our own taste few things are more tedious or less acceptable than to have the tenor of a closely reasoned discussion constantly interrupted by small jokes. [*Against this remark of the SATURDAY REVIEW my be set the following from the SPECTATOR: 'We only wish that Mr. Dodgson could have seen his way to putting more jokes into his pleadings than he has.' Similar advice has reached me from private friends—some pleading earnestly for 'more jokes,' others, with equal earnestness, for 'fewer jokes.' It is not easy to express in words how practical and helpful I have found such advice, in preparing my second edition.*] Certainly the little repartees exchanged between Euclid, Minos, and Niemand will not help any one to master the elaborate apparatus of tabular comparisons and symbolic vocabulary by which Mr. Dodgson brings into one view all hitherto imagined ways of treating the vexed doctrine of parallels. This last piece of work, on which Mr. Dodgson must have spent infinite pains and minute attention, is alone sufficient to make reference to his book almost indispensable for whoever treats the subject after him. Whether the symbolic

notation really has a convenience in use proportionate to the author's trouble in inventing it, and the reader's in learning it, is a question on which we hesitate to offer a positive opinion. To some extent Mr. Dodgson seems to have been driven to the adoption of new terms by the ambiguous manner in which the word *parallel* is used by different writers. Of course we cannot follow him through his exhaustive account of the various plans which have been put forward as improvements on Euclid's method in this point. But we must note one rather important omission. A review of Mr. Wilson's book on Elementary Geometry by De Morgan is quoted in an appendix; but there is no reference either to De Morgan's admirable article on Euclid in the *Dictionary of Biography and Mythology*, which is probably less known to mathematical readers than it ought to be, or to his article on 'Parallels' in the *Penny Cyclopædia*. What De Morgan says in the last-mentioned article is so much to the purpose that we make no scruple of repeating it here:—

'Euclid obviously puts the *whole* difficulty into an assumption; which, though the most direct course, is not that which is best calculated to give the highest degree of evidence to geometrical truths. For it is a more obvious proposition that two lines which intersect one another cannot *both* be parallel to a third line, and, this being granted, Euclid's axiom readily follows. If it should be objected that this is merely Euclid's axiom in another form, it is replied that the form is a more easy one, and therefore preferable; just as it would be wiser to assume "Every A is B and every B is A," than the identical but more complicated proposition, "Every A is B, and everything which is not A is not B."

The 'more obvious proposition' thus recommended by De Morgan is Playfair's axiom; and it so happens that the point of his recommendation is not very successfully met by Mr. Dodgson. It is an easy victory to show that the axiom in this form is equivalent to Euclid's; and then Mr. Dodgson proceeds to give reasons why Euclid's should be preferred. He makes out that Euclid's axiom is actually easier, since it puts before the learner 'a Pair of Lines, a transversal, and two angles whose sum is less than two right angles—all clear *positive* conceptions'; while 'Playfair requires him to realize a Pair of Lines which never meet, though produced to infinity—a *negative* conception which does not convey to the mind any clear notion of the relative position of the Lines.' This appears to us to be little more than a play upon words. Positive conceptions are not necessarily easier to grasp than negative ones; and the picture of two parallels, whether on paper or in the mind, is a much simpler object of intuition than that of a pair of straight lines met by a transversal which makes two interior opposite angles less than two right angles. [*When this reviewer talks of 'the picture of two parallels,' he cannot, surely, be using the word in Euclid's sense? Perhaps he means 'equidistant': the picture of two equidistant lines, of (say) six inches long, would be a fairly simple object of apprehension ('intuition' is the apprehension of facts, not of things): but who ever succeeded in forming a picture, whether on paper or in the mind, of two lines produced to infinity? For that is what you must do, to realise Euclid's parallels as 'a picture.' A pair of lines, a million miles long, would be of no use whatever: the fact that they had not met, so far, would be no evidence whatever that they would not meet afterwards—but would have the exactly opposite effect; it would leave a future meeting still possible, whereas, if they had met in the first million miles, they could not possibly do so again.*]

But a more formidable objection is behind, which Mr. Dodgson fully brings

out only when he comes to discuss Mr. Wilson's treatment of the subject in detail. It may be most clearly seen by substituting for Playfair's axiom the equivalent statement:—Through a given point outside a straight line only one parallel can be drawn to it. This at once raises the question, What business have you to assume that *any* parallel can be drawn? in other words, that parallels can and do exist in plane geometry, and that there is no external point through which a parallel cannot be drawn? The assumption, be it observed, is not made by Euclid. And we may further observe that it is not such a small one as it looks, especially in the light of modern geometrical speculations. [*But who in the world wants to make this assumption?*] For it results from the work of Lobatschewsky and others that our actual geometry is not an elucidation of eternal and immutable and unique relations, but is rather in the nature of a purely physical science. That is to say, it is the investigation of properties of space, or of things in so far as they occupy space, which might quite conceivably have been different. A consistent geometry (though of course inapplicable to our real experience) can be, and has been, founded on the categorical denial of Playfair's axiom. Euclid's geometry is the science, not of space absolutely, but of a particular kind of space; and in this view the doctrine of parallels lays down very characteristic and important properties of that kind of space. When we are investigating the properties of anything, our knowledge of them is not thoroughly scientific until it is connected, as far as possible, by proofs. We must know not only that the properties co-exist, but how far one implies the other. Now Euclid does not assume, but proves, the real existence of parallels to be a property of the space he is dealing with; and here he has a great advantage over most of the innovators. They commit precisely the same oversight of making a large tacit assumption which they are ready enough to charge Euclid with on other occasions. [*This is news indeed! 'Most of the innovators,' as this reviewer seems to believe, assume Euc. I. 27!*] The substance of the objection would be the same without appealing to imaginary geometry. But it appears to us (paradoxical as it may sound) that the considerations above suggested give it more reality. For one sees that it is a question, not of logical arrangement, but of real physical explanation. The assumption of Playfair's axiom in the lump is objectionable in precisely the same way that it would be objectionable in physics to assume the conservation of energy as an axiom, and also to assume that a perpetual motion is impossible. Still the objection is not insuperable. [*Oh joyful tidings! We breathe again.*] It is possible to prove the general part of the alternative form of Playfair's axiom—namely, that a parallel can always be drawn to a given straight line through an external point—before assuming the special part, on which depends the peculiar quality of the space we have the happiness to live in, namely that only one parallel can be so drawn. This was done by Mr. Hirst in a course of lectures on elementary geometry given by him several years ago. [*This is perhaps the most extraordinary statement ever made by a writer professing to discuss a mathematical subject. It is as though one were to say 'The all-important fact, that seven times eight is fifty-six, was pointed out by Colenso, in his treatise on Arithmetic!' Mr. Hirst, thus kindly immortalised, may perhaps modestly reply 'but it was done 2000 years before I was born!'*] Whether it is done in the published works of any of the 'modern rivals' whose claims are discussed by Mr. Dodgson is more than we can say. [*Why, of course it is! By every one of them, except Pierce, Willock, and Wilson, who do not need it, as they use another definition of 'parallel.'* Does the reviewer know of any

writer on elementary geometry, who uses Euclid's definition, and has omitted to prove this proposition?]

Mr. R. P. Wright's auxiliary proposition (which Mr. Dodgson takes as a specimen of his treatise, in order to pass on it a rather supercilious criticism, apparently without seeing what it is meant to lead to, and what difficulties are being encountered) is that one, and only one, perpendicular can be drawn to a straight line from an external point. [*My criticism (p. 792) was that the theorem is proved in a 'wordy and unscientific style'—to which statement the questions 'what it is meant to lead to,' and 'what difficulties are being encountered,' are totally irrelevant. Yet I should like, very much, to know what difficulties are being encountered—in proving a proposition which is simply a deduction—of infantine simplicity—from Euc. I. 17! One is almost tempted to think that scientific books are occasionally reviewed by writers who do not entirely understand what they are talking about!*] But he has to prove it by folding over the paper, which is a proceeding of doubtful fairness, and in fact involves assumptions about the nature of space of three dimensions. If such assumptions were made openly from the first; if surfaces and lines were defined and conceived as boundaries; if projections and other modern methods were freely introduced as soon as they could be made useful; if, in short, geometry were frankly treated as a physical science—then we should have before us a scheme of innovation really worth discussing.

From the 'Scotsman,' May 15, 1879.

Mr. Dodgson's book on *Euclid and His Modern Rivals* will, or at least should, command a good deal of attention in academic circles. It is an attempt to demonstrate the inutility and positive mischief of having a large number of text-books for the teaching of elementary geometry. Mr. Dodgson does not take his stand on any narrow principle, or oppose modern attempts to supersede Euclid merely from a dislike to innovation. What he tries, and with very considerable success, to show is, that none of the recent text-books contain anything of importance that is not in Euclid; that the axioms and definitions which have been proposed in addition to, or in substitution for, those laid down by him will not, for the most part, stand the test of close examination; and that in simplicity and logical sequence of method he has the advantage of all his rivals. In order to establish these points, Mr. Dodgson subjects the distinctive features of the modern text-books of geometry to a very close and strongly reasoned criticism and comparison with Euclid; but nevertheless his book has not the solemnity and dryness of tone which might be thought inseparable from the treatment of such a subject. It is cast in dialogue form, and is full of a quaint satiric humour, which does not in the least diminish its scientific value, but which certainly makes it much pleasanter reading than most books on mathematical topics.

From the 'British Quarterly Review,' July, 1880.

The object of the present work, to use the words of the author, 'is to furnish evidence, first, that it is essential, for the purpose of teaching or examining in elementary geometry, to employ one text-book only; secondly, that there are strong *a priori* reasons for retaining, in all its main features, and especially in its sequence and numbering of propositions, and in its treatment of parallels,

the manual of Euclid; and, thirdly, that no sufficient reasons have yet been shown for abandoning it in favour of any one of the modern manuals which have been offered as substitutes.' The evidence is presented in a dramatic form, as affording a better opportunity of marshalling the arguments on both sides of the question, and of a more lively and interesting treatment than the usual essay-form. The main object of the work is the vindication of Euclid's masterpiece, with certain modifications, against its modern rivals. The *dramatis personæ* who uphold this view are borrowed from ancient history, *e. g.*, Minos, Rhadamanthus, Plato, Aristotle, and, of course, Euclid himself, and the views of the modern rivals are represented by Herr Niemand, who is introduced as carrying a pile of books, the works of the following authors: Legendre, Cooley, Cuthbertson, Wilson, Pierce, Willock, Chauvenet, Loomis, Morell, Reynolds, and Wright. The arguments brought forward in favour of geometrical text-books are discussed with great clearness and acuteness, and, what is more, with a good amount of sound common-sense, while ample justice is done to the advantage of substituting different methods of proof from those employed by Euclid himself. The perplexing difficulties which harass examiners and examined alike are vividly described, and very satisfactory reasons are given why the text-book which is adopted as the standard should follow more closely the line of argument pursued in the original masterpiece. For details we must refer our mathematical readers to the work itself, the reading of which will amply repay them on whichever side of the question they may have taken their position. We ourselves agree with Mr. Dodgson, that no modern text-book has as yet made good its claim to the place of the ancient geometrician. A text-book constructed somewhat after the plan suggested by the author would be an unmistakable boon both to teachers and taught.

From the 'Journal of Science,' July, 1879.

The chief points of attack on Euclid's Modern Rivals are Mr. Wilson's two works—'Elementary Geometry' and the 'Manual founded on the Association Syllabus.' The author makes comparatively short work of Legendre's book as unsuited to beginners, though doubtless valuable to advanced students; and of Cooley's, in which a certain theorem breaks down through a faulty definition of parallel lines. [*'A certain theorem'! This is as if a builder were to say 'They actually presumed to condemn the bridge I had built, because a certain stone had given way!' (Said 'certain stone' being the key-stone.)*] But to Mr. Wilson's two Manuals he devotes nearly a third of his volume. Much of the criticism on these, however, is mere cavilling: for instance, at page 804, Minos says, speaking of Wilson's 'Syllabus' Manual:—'At p. 57 I see an Exercise (No. 5). "*Show that the angles of an equiangular triangle are equal to two-thirds of a right angle.*" In this attempt I feel sure I should fail. In early life I was taught to believe them equal to *two right angles*—an antiquated prejudice no doubt; but it is difficult to eradicate these childish instincts.' This is mere straw-splitting; *strictest* accuracy would of course require the insertion of '*each*' before 'equal,' but if the sum of the interior angles had been intended to be understood '*together*' before 'equal' would have been absolutely necessary. [*Thus we never say '2 and 2 are 4.'*]

At page 796 there is a criticism on the definition of a right angle as given by the Association for the Improvement of Geometrical Teaching in their Syllabus.

This is—‘When one straight line stands upon another straight line, and makes the adjacent angles equal, each of the angles is called a right angle.’ Since the Association Syllabus admits of angles equal to or greater than two right angles, this is open to the objection that it does not debar the case in which one line stands on the *end* of the other, making the adjacent angles equal to one another, and to *two* right angles as right angles are generally considered. That is certainly a grave objection, but the same applies equally to Euclid’s definition, or else a proof must be supplied, which is not that in the case mentioned the two lines are in one and the same straight line; and so this interpretation is debarred by Euclid’s limiting clause.’ [*This is beyond my comprehension.*]

In fact, though Mr. Dodgson’s book is interesting and often witty, he fails to prove his point, because he takes a one-sided view of the question, and merely exhibits the blunders of Euclid’s Rivals without balancing them against Euclid’s own. [*The wonderful calmness of this assumption is worthy of all praise. Perhaps the writer will kindly furnish me with a list of ‘Euclid’s blunders’?*] Besides which—though perhaps it is more readable than an essay—a dialogue does not seem to be the clearest form for setting forth arguments and facts. [*Compare with this the remark of the SATURDAY REVIEW (see p. 824): ‘We agree that the subject is one which might very fairly be treated by way of dialogue.’ So hard is it to please everybody.*]

From the ‘Nature,’ July 10, 1879.

By a curious chance these two works reached our hands nearly on the same day, and as Mr. Dodgson devotes a great portion of his space (62 pp.) to the consideration of Mr. Wilson’s Geometries, we have thought it well to notice the two authors at the same time. As however it is patent from the fact of Mr. Wilson’s work having reached a fourth edition, that his method is not unknown to, and, may we add, not unappreciated by, a large section of mathematical teachers, we shall at once pass on to a consideration of Mr. Dodgson’s book, only noticing Mr. Wilson’s book in connection with the criticisms put forward in ‘Euclid and His Modern Rivals.’

A few words by way of introduction. Mr. Dodgson has been a teacher of geometry at Oxford, we believe, for nearly five-and-twenty years, and during that time has had frequent occasion to examine candidates in that subject. For a great part of the above-stated period things went pretty smoothly, and King Euclid held undisputed sway in the ‘Schools;’ but eleven years ago a troubler of the geometrical Israel came upon the scene, and read a paper before the Mathematical Society, entitled ‘Euclid as a Text-Book of Elementary Geometry.’ The agitation thus commenced acquired strength, and at length, in consequence of a correspondence carried on in these columns, the Geometrical Association was formed. A prime mover in this matter was that Mr. Wilson who wrote the paper, and subsequently brought out the geometry cited. Mr. Dodgson is one of the gentlemen opposed to this change, and the moving cause of the present Iliad is the ‘vindication of Euclid’s master-piece.’ Another consequence of the agitation is that many have tried their prentice hands on the production of new geometries—‘rivals,’ our author calls them—‘forty-five were left in my rooms to-day.’ Can we wonder then, that, his soul being stirred within him, he should overhaul a selection of them to see what blots he could ‘spot’ in them? He might well have taken for his motto one once familiar to us—

‘If there’s a hole in a’ your coats,
 I rede ye tent it;
 A chiel’s amang ye takin’ notes,
 An’ faith he’ll prent it!’

Quoted from *On The Late Captain Grose’s Peregrinations Thro’ Scotland: Collecting The Antiquities Of That Kingdom* by Robert Burns

Our author’s criticism takes a peculiar form, but we shall not blame him for this, for he has afforded us much amusement, and we quite hold with the Horatian line he cites in extenuation of his mode of procedure: ‘Ridentem dicere verum quid vetat?’ We believe he has made a good many hits, but at times his wit, we think, has led him too far. We shall not, however, here give any account of his plot—we prefer to refer our readers to the work itself—but confine our notice to the remarks upon Mr. Wilson’s books, and upon Mr. Morell’s ‘Euclid Simplified.’

Quoted from Horace

Mr. Dodgson devotes forty-eight pages to Mr. Wilson’s ‘Elementary Geometry’ (second edition, 1869). We can hardly see why so much space should be devoted to a work which seems tacitly to have been withdrawn by the author, or, at any rate, to have been considered inferior to the work under review. [*I have given my reasons at the foot of p. 801*]. Is it that the ‘scene’ was written some time since, and was considered to be too good to be sacrificed? Happily it is not our business to defend Mr. Wilson’s views on ‘direction’; he is perfectly competent to defend his own views, and no doubt, should he see fit, will do so at the right time.

We pass over many passages we had marked, with saying that in many cases the objections are sound but trivial. Objection is taken to Mr. Wilson’s remark, ‘Every theorem may be shown to be a means of indirectly measuring some magnitude,’ and Niemand abandons ‘every’. We think, however, that Niemand might have made a better fight of it and suggested that what is intended is that, for instance, all the theorems of the first book are directly or indirectly required for the proof of the 47th Proposition, which is surely a proposition concerned with the measurement of magnitude.

A word or two on Morell’s (J. R.) ‘Euclid Simplified.’ It is very easy work to pick this little book to pieces, but we cannot understand a statement of Mr. Dodgson’s on p. 148. Of the proposition ‘Every convex closed line $ABCD$ enveloped by any other closed line $PQRST$ is less than it,’ he says the method used fails, ‘as of course all methods must, the thing not being capable of proof.’ We cannot call to mind any English text-book in which the proposition is proved, but there is what we have thought was a proof in Sannia and D’Ovidio’s ‘Elementi di Geometria,’ p. 32. [*The sentence, from which the above words are quoted, is ‘all depends on our proving the perimeter $MDQRSTM$ less than the perimeter $MPQRSTM$, which this method has failed to do—as of course all methods must, the thing not being capable of proof.’ Surely, according to the ordinary laws of English grammar, the antecedent to ‘which’ is the clause immediately preceding it. Why should the reviewer go a whole page back in search of an antecedent?*]

From ‘The Examiner,’ Oct. 25, 1879.

It is generally known that for some time past dissatisfaction has been felt with Euclid’s Elements as a text-book on Geometry. Professor Sylvester was among the first to suggest that Euclid ought to be banished from our schools; and the

cry has been taken up by a small host of modern rivals, who have gone so far as to publish books intended to supersede the time-honoured work of the Alexandrian geometer. The 'unsuggestiveness,' the 'tediousness,' and the circuitous and cumbrous methods' of Euclid had been tacitly admitted long before any serious attempt had been made to displace the Elements by any other text-book. The *vis inertiae*, or difficulty of change, seemed to render Euclid's position practically secure, and consequently the various attacks to which from time to time his work was exposed remained unchallenged, even by his supporters. The fear of being thought old-fashioned, prejudiced, or indifferent to progress, prevented many, who honestly believed that they owed to the discipline of Euclid their skill and accuracy in reasoning, from undertaking his defence. Moreover, the example of foreign teachers was not without its influence on Englishmen, who found themselves alone in using Euclid as a school text-book.

Thus it came about that attempts were made to introduce into our schools systems of geometry, diverging more or less widely from Euclid's Elements; and such well-known teachers as Wright and Wilson ventured to publish works that were avowedly intended as substitutes for Euclid. The cry for reform became so loud that an Association was formed for the express purpose of improving geometrical teaching, and a 'Syllabus' was issued setting forth the new lines on which geometrical teaching ought to proceed. Euclid's supporters had now, at length, the opportunity of declaring themselves. Their enemies had written books. Mr. Wilson's work was subjected to the cutting criticism of the late Professor De Morgan. Mr. Todhunter, the well-known writer of many text-books, and author of an edition of Euclid free from any modern improvements, published an essay in defence of his master; and now, whilst the battle is still raging hotly, Mr. Dodgson writes a book in which, single-handed, he fights with the most conspicuous of Euclid's rivals, and professes to have slain them all.

Whilst these changes have been under contemplation, and partly adopted, (for some schools have introduced modern methods of teaching this subject,) professional examiners have been sorely troubled. Fear and trembling have taken hold of them. For if candidates are to be permitted to use other works than Euclid's in preparation for their examination, how is it possible for the examiner to test the validity of a proof presented to him? With Euclid for a text-book, examination was rendered easy and satisfactory. Half-a-dozen propositions were set, three or four deductions were added, which were seldom answered, and the candidate's knowledge of geometry was infallibly ascertained. No mechanical appliance for examination could be more satisfactory. But if the order of Euclid's propositions be once changed, if other proofs be substituted for the time-honoured demonstrations of past generations, examinations in this subject must become hopelessly confusing. Examiners would be expected to know every system of geometry which candidates might have studied; and candidates, by disregarding Euclid's established sequence of proofs, would be free to indulge in the fallacy of *petitio principii* without fear of detection. These considerations have helped to rouse Euclid's defenders from their apathy, by showing that the requirements of examinations necessitate the retention of Euclid as a school text-book. The Universities of Oxford and Cambridge have realised this fact; and as they exert, through their local examinations, considerable influence on school-teaching, Euclid's rivals have fared but badly. So decided a corporate feeling exists on this question, that we find in the Report of the Oxford and Cambridge Schools Examination Board for last year the following remark on the

subject:—‘At one or two schools there is some departure from Euclid’s methods. This practice has generally led to confusion and inaccuracy without any compensating advantage in power of working riders.’ This observation cannot be without effect on those schools which have ventured to tread the new paths, and will doubtless drive them back into the beaten track, in which ‘the propositions are generally written out clearly and accurately’ (Report, p. 9). Rebellion against the supremacy of Euclid must be crushed out at all costs! There can be no doubt that Mr. Dodgson deserves well of University examiners; but it is open to question whether the advocates of improved geometrical teaching will give that weight to this form of argument which Mr. Dodgson and his friends attach to it. [*It is in the interests of teachers, rather than of examiners, that I have written.*]

On first opening Mr. Dodgson’s book we must acknowledge to having felt somewhat uncertain whether the defence of Euclid against his rivals was intended as a piece of serious reasoning, or was a mere attempt on the part of the author to give us ‘a glimpse of the comic side of things,’ even in the study of Geometry, as an instance of his versatility of humour. But a glance through the contents of the book showed us that Mr. Dodgson was in grim earnest; and we venture to think that no one who has made himself master of the pages of symbols, of which $st_a \llbracket SX \llbracket T_{e''i''}$ may be taken as a type, will be inclined to regard the book as a ‘mere *jeu d’esprit*.’ No, Mr. Dodgson has come forward to show that the Universities of Oxford and Cambridge have other reasons than the convenience of examiners for advising, if not insisting on, the retention of Euclid in our schools. He desires to silence Euclid’s rivals by force of argument; and to this end he lays down the chief points of difference between Euclid and those who wish to supersede him, and discusses them *seriatim*, showing, it is needless to remark, that in nearly every instance, the advantages are strongly in favour of retaining Euclid.

The plan of the book is original. It is cast into a dramatic mould. In the first Act the ghost of Euclid appears and defends himself with respect to certain contested points, which he agrees to consider as crucial questions between him and his opponents. These having been satisfactorily and rather summarily disposed of, Euclid is made to say: ‘This then concludes our present interview; we will meet again when you have reviewed my modern rivals one by one. If you had any slow music handy, I would vanish to it, as it is ‘—*vanishes without slow music*. In the second and third Acts, an omniscient and ubiquitous German, Herr Niemand, undertakes the introduction and defence of Euclid’s several rivals, including Legendre, Cooley, Wilson, Willock, Wright, the Society’s Syllabus, and others. In Act IV, Euclid comes back triumphant; but before finally returning to his shady home, he generously confesses that so long as the order and numbering of his propositions (presumably for the sake of examiners) are retained, he is content that his proofs should be ‘abridged and improved,’ and that new problems and new theorems should be interpolated—which is rather a wholesale concession. The last words of the book are those in which scientific teachers will perhaps most cordially agree: ‘In all these matters my Manual (Euclid) is capable of almost unlimited improvement.’

In his treatment of the rival systems, Mr. Dodgson cannot be said to reason without a strong bias in favour of Euclid. His objections in most cases amount to little more than verbal quibbles, and we doubt sometimes whether in his client’s cause he has not purposely criticised unimportant differences and passed over

those of greater moment. He is very great on the definitions and axioms of the rival systems. The various definitions of that undefinable thing, 'a straight line,' are successively shown to be inadequate or redundant, or not in strict accordance with the ordinary canons of formal logic. At the same time not a word is said in defence of Euclid's definition, for which these are intended as substitutes. If our author before writing this book had read Henrici's *Geometry*, which appeared in the early part of this year, he would have seen what is probably the only scientific way of treating this part of the subject, and would have learned how comparatively unimportant to the study of geometry are these verbal definitions on the accuracy of which he so vainly insists. [*I now present to the reader a review of 'what is probably the only scientific way of treating this part of the subject'!*] In the matter of axioms, he defends Euclid's 12th axiom, which no schoolboy ever yet regarded as a self-evident proposition, by pointing out that 'it is not axiomatic till Prop. 28, Bk. I. has been proved,' without apparently seeing that this statement reduces the proposition to a corollary to Prop. 28, and takes away from it its axiomatic character altogether. [*The Reviewer is no doubt aware of the essential distinction between an 'axiom' and a 'corollary': but he has got the two ideas so hopelessly mixed in this sentence, that it may be worth while to explain it. An 'axiom,' then, always requests the voluntary assent of the reader to some truth, for which no proof is offered, and which he is not logically compelled to grant: a 'corollary' is logically deduced from what has been already granted, and the reader must accept it, however unwilling he may be to do so. But though he has free choice as to whether he will, or will not, accept any axiom that may be proposed, his willingness to do so largely depends on the amount of truth he has already grasped in connection with it.*]

In answer to the charge that Euclid's proofs are in many cases unnecessarily tedious, Mr. Dodgson admits that alternative proofs might be allowed, although he is very unwilling to grant that the proposed alterations are real improvements. In the same way he suggests that one or two propositions, omitted by Euclid, might be interpolated into the text, without interfering with the order and numbering of the propositions. Mr. Dodgson endeavours to reduce to a minimum the changes and interpolations which are required to make Euclid a serviceable text-book of geometry; and amongst various omissions we may notice that he does not refer to Euclid's improper [!] treatment of the several cases in which two triangles can be proved to coincide. [*I cannot fairly be expected to 'refer to' what I deny to exist!*] To point out the various reasons not mentioned by our author for superseding Euclid by some other text-book, would occupy us far too long. Suffice it to say, that if Euclid were amended according to the notions of modern teachers of geometry, or even according to the suggestions of our author, there would be little left of the original text; and under such circumstances it is difficult to see any reason, save the convenience of examiners, for retaining the order and numbers of the propositions. [*If amended 'according to the suggestions of our author,' there would be, I should think, at least 99-100ths of the original text left without any material change.*]

Mr. Dodgson admits some few imperfections in Euclid; but those of his modern rivals are far more numerous and unpardonable. Of Mr. Wilson's Manual, which he justly considers a formidable rival, he speaks in unmeasured terms of disapproval. 'The abundant specimens of logical inaccuracy, and of loose writing generally, which I have here collected would, I feel sure, in a more popular treatise be discreditable—in a scientific treatise, however modestly put forth,

deplorable—but in a treatise avowedly put forth as a model of logical precision, and *intended to supersede Euclid*, they are simply monstrous.’ Strong language! But Mr. Dodgson is well versed in logic and his statements are not loose utterances. Let us test one of them—the most ‘monstrous’ of the charges brought against Mr. Wilson. In his book we are told there is found one instance of ‘*Illicit process of the Minor*’ (p. 776). We will examine it.

Mr. Dodgson says (p.773):—

‘At p. 9 we have a deduction from a definition, and an axiom which involves the fallacy “*Illicit process of the Minor*.” The passage is as follows:—Def. II. “A straight line is said to be *perpendicular* to another straight line when it makes a right angle with it. Hence there can be only one perpendicular to a given line at a given point, on one side of that line, because only one line can make a right angle with the given line at that point.”

‘Thrown into syllogistic form the argument may be stated thus:—

‘All lines drawn at right angles to a given line at a given point, on one side of it, are coincident; all lines drawn at right angles to a given line, &c., are *perpendiculars* to that line, &c.; therefore, all perpendiculars to a given line, &c., are coincident.’ That is, “All X is Y; all X is Z; therefore all Z is Y.”

Not so at all. The syllogism expressed formally should be stated thus:—

All X is Y,
All X is *all* Z,
∴ All Z is Y;

which is logically sound, involving no illicit process at all.

Has Mr. Dodgson never heard that it is a logical postulate *to state explicitly what is thought implicitly*, or does he suppose that the logic of the Stagirite is sufficient for all reasoning processes? Surely, Sir Wm. Hamilton and the Archbishop of York might have taught him otherwise, not to speak of Mill, Boole, and Jevons! We have quoted this—the most formidable of Mr. Dodgson’s charges—as an instance of the style of reasoning adopted throughout the work. [*I can only say, again, that the Definition in question is of the form ‘all X is Z,’ and is not of the form ‘all X is all Z.’ Let us try it on new subject-matter. ‘A man is said to be honest, when he pays his friend a debt which that friend had forgotten.’ I say this is equivalent to ‘All who pay forgotten debts are honest men.’ My reviewer identifies it with ‘All who pay forgotten debts are all honest men’ (i. e. they are the only honest men alive). Let the reader judge between us. And why should this be called ‘the most formidable’ of my charges? Surely it is not quite so important as (say) the treatment of Parallels, which so entirely collapses in Mr. Wilson’s hands?*]

From the ‘Educational Times,’ March 1, 1880.

[Extract from a Paper read by Mr. Philip Magnus at an Evening Meeting of the College of Preceptors.]

To all foreigners it appears very strange that Geometry should be taught to English school children by aid of a treatise not designed for school purposes, and written more than two thousand years ago. In Germany and France, modern methods of teaching Geometry have for many years been adopted; and, although

it is not a good thing that Englishmen should imitate too readily the educational methods of foreigners, still the fact that we stand alone among European nations in using Euclid's Elements as our school text-book of Geometry requires explanation, and suggests the reflection that we are not wise in doing so. [*At the present moment, we learn from the best authority, namely, the testimony of anti-Euclideans, that both in France and Italy dissatisfaction is felt with the system hitherto used, accompanied with more or less desire to adopt ours.*' *Todhunter's Essay on Elementary Geometry.*] The explanation probably consists in the difficulty and inconvenience of change. There is a manifest advantage in having a fixed and recognised text-book, to which both teachers and examiners can refer; and there is, moreover, the very natural apprehension that, if Euclid is abandoned, a number of different text-books may come into use, which, however much they might improve the teaching of Geometry, would terribly perplex the examiner.

The way of Euclid is not always smooth and easy. The difficulties are not slight which the beginner has to surmount; and those who have practice in teaching well know that the artificiality of Euclid proves a stumbling-block which many pupils never succeed in overcoming. When this is the case, the pupil draws upon his memory for the assistance which his reason ought to afford, and endeavours to deceive his teacher and examiner by learning his propositions by heart. Unfortunately this utter waste of time is not so uncommon as it might be thought. The difficulty of mastering the proposition, together with the necessity of adhering to the exact words of the text, tempt the unhappy pupil to this assumption of knowledge. [*This 'necessity of adhering to the exact words of the text' is, I venture to say, one that could only arise with a thoroughly incompetent examiner. The reasoning may be given correctly, with an almost unlimited variety of language.*] An oral teacher cannot be deceived; he may vary the letters, alter the figure, and adopt a number of other simple devices to test the real knowledge of his pupil. But in written examinations deception is less easily detected. The examiner who finds the propositions 'written out clearly and accurately,' cannot withhold marks from his candidates, although no single rider may have been attempted, and although the work presented to him may be the result of a mere exercise of memory.

I have said that the Conservatives admit that Euclid's proofs may be advantageously modified, and that other changes may be introduced into the 'Elements' without interfering with the Euclidian method. This view is maintained with considerable ability by Mr. Dodgson, Mathematical Lecturer of Christ Church, Oxford, in a work entitled 'Euclid and his Modern Rivals,' which should be read by all persons interested in the question we are now considering. Mr. Dodgson's discussion of the various systems of Geometry that have been put forth as rivals to Euclid, is enlivened by occasional flashes of humour which make the work as amusing as it is profound. Mr. Dodgson's ultimate conclusions seem to be hardly worthy of the efforts he has made to establish them. For, whilst he subjects the definitions and demonstrations of Wilson, Wright, and others to the most searching criticism, and establishes in each case the superiority of Euclid to any modern writer, he ultimately concedes that, so long as Euclid's sequence and numbering of propositions is retained, together with his doctrine of parallels, his proofs may be altered, abridged, and indefinitely improved. 'Leave me [Euclid] these untouched, and I shall look on with great contentment while other changes are made—while my proofs are abridged and

improved—while alternative proofs are appended to mine—and while new problems and theorems are interpolated. In all these matters my Manual is capable of almost unlimited improvement' (p. 814).

The reason for insisting so strongly on the retention of the numbering and sequence of Euclid's propositions can be none other than the convenience of external examiners; for the precautions against assuming propositions subsequent to the one to be proved, cannot be necessary in examinations conducted by the teacher himself, since he would of course know very well how much his own pupils might legitimately take for granted. But it is easily understood that an external examiner who is familiar with no other than Euclid's method of teaching Geometry, would be somewhat bewildered if, for instance, Euclid I. 24 were assumed in the proof of Euclid I. 8. But, surely, it must be admitted that methods of teaching a subject ought not to be considered from the standpoint of examinational requirements. [*If examinations were done away with altogether, there would still be abundant reason for adopting the same logical sequence in all sciences where some logical sequence is essential: otherwise any attempt at communication between one mathematical student and another is merely a revival of the scenes enacted around the Tower of Babel.*]

4.6 Euclid. Books I, II

Source: Euclid. Books I, II, second edition
Currently only introduction

Part I. Addressed to the Teacher.

In preparing this edition of the first Two Books of Euclid, my aim has been to show what Euclid's method really is in itself, when stripped of all accidental verbiage and repetition. With this object, I have held myself free to alter and abridge the language wherever it seemed desirable, so long as I made no real change in his methods of proof, or in his logical sequence.

This logical sequence, which has been for so many centuries familiar to students of Geometry—so that 'The Forty-Seventh Proposition' is as clear a reference as if one were to quote the enunciation in full—it has lately been proposed to supersede: partly from the instinctive passion for novelty which, even if Euclid's system were the best possible, would still desire a change; partly from the tacitly assumed theory that modern lights are necessarily better than ancient ones. I am not now speaking of writers who retain unaltered Euclid's sequence and numbering of propositions, and merely substitute new proofs, or interpolate new deductions, but of those who reject his system altogether, and, taking up the subject *de novo*, attempt to teach Geometry by methods of their own.

Some of these rival systems I have examined with much care (I may specify Chauvenet, Cooley, Cuthbertson, Henrici, Legendre, Loomis, Morell, Pierce, Reynolds, Willock, Wilson, Wright, and the Syllabus put forth by the Association for the Improvement of Geometrical Teaching), and I feel deeply convinced that, for purposes of teaching, no treatise has yet appeared worthy to supersede that of Euclid.

It can never be too constantly, or too distinctly, stated that, for the purpose of teaching *beginners* the subject-matter of Euclid I, II, we do *not* need a complete collection of all known propositions (probably some thousands) which come within that limit, but simply a selection of some of the best of them, in a logically arranged sequence. In both these respects, I hold that Euclid's treatise is, at present, not only unequalled, but unapproached.

For the diagrams used in this book I am indebted to the great kindness of Mr. Todhunter, who has most generously allowed me to make use of the series prepared for his own edition of Euclid.

I will here enumerate, under the three headings of 'Additions,' 'Omissions' and 'Alterations,' the chief points of difference between this and the ordinary editions of Euclid, and will state my reasons for adopting them.

1. Additions.

DEF. &c. § 11. The Axiom 'Two different right Lines cannot have a common segment' (in 3 equivalent forms). This is tacitly assumed by Euclid, all through the two Books (see Note to Prop. 4), and it is so distinctly analogous to his 'two right Lines cannot enclose a Superficies' that it seems desirable to have it formally stated.

DEF. &c. § 20. Here, to Euclid's Postulate 'A Circle can be described about any Centre, and at any distance from it,' I have added the words 'i. e. so that its Circumference shall pass through any given Point.' This I believe to be Euclid's real meaning. Modern critics have attempted to identify this given 'distance' with 'length of a given right Line,' and have then very plausibly pointed to Props. 2, 3, as an instance of unnecessary length of argument. 'Why does he not,' they say, 'solve Prop. 3 by simply drawing a Circle with radius equal to the given Line?' All this involves the tacit assumption that the 'distance' (διάστημα, i. e. 'interval' or 'difference of position') between two Points is equal to the length of the right Line joining them. Now it may be granted that this 'distance' is merely an abbreviation for the phrase 'length of the shortest path by which a Point can pass from one position to the other:' and also that this path is (as any path would be) a *Line*: but that it is a *right* Line is just what Euclid did *not* mean to assume: for this would make Prop. 20 an Axiom. Euclid contemplates the 'distance' between two Points as a magnitude that exists quite independently of any Line being drawn to join them (in Prop. 12 he talks of the 'distance CD ' without joining the points C, D), and, as he has no means of *measuring* this distance, so neither has he any means of *transferring* it, as the critics would suggest. Hence Props. 2, 3, are logically necessary to prove the *possibility*, with the given Postulates, of cutting off a Line equal to a given Line. When once this has been proved, it can be done *practically* in any way that is most convenient.

AXIOMS, § 9. This is quite as axiomatic as the one tacitly assumed by Euclid (in Props. 7, 18, 21, 24), viz. 'If one magnitude be greater than a second, and the second greater than a third: the first is greater than the third.' Mine is shorter, and has also the advantage of saving a step in the argument: e. g. in Prop. 7, Euclid proves that the angle ADC is greater than the angle BCD , a fact that is of no use in itself, and is only needed as a step to another fact: this step I dispense with.

PROP. 8. Here I assert of all *three* angles what Euclid asserts of *one* only. But his Proposition *virtually* contains mine, as it may be proved three times over, with different sets of bases.

PROP. 24. Euclid contents himself with proving the first case, no doubt assuming that the reader can prove the rest for himself. The ordinary way of making the argument complete, viz. to interpolate 'of the two sides DE, DF , let DE be not greater than DF ,' is very unsatisfactory: for, though it is *true* that, on this hypothesis, F will fall outside the Triangle DEG , yet no *proof* of this is given. The Theorem, as here completed, is distinctly analogous to Prop. 7.

BOOK II, DEF. § 4. The introduction of this one word 'projection' enables us to give, in Props. 12, 13, alternative enuntiations which will, I think, be found much more easy to grasp than the existing ones.

BOOK II, PROP. 8. Considering that this Proposition, with the ordinary proof, is now constantly omitted by Students, under the belief that Examiners never set it, I venture to suggest this shorter method of proving it, in hopes of recalling attention to a Theorem which, though not quoted in the Six Books of Euclid, is useful in Conic Sections.

(Another proof of *Eucl. II. 8.*)

[Instead of 'On AD describe' &c, read as follows:—

A C B D

Square of AD is equal to
squares of AB, BD , with twice rectangle of AB, BD ; [II. 4.
i. e. to squares of AB, BC , with twice rectangle of AB, BC ;
i. e. to twice rectangle of AB, BC , with square of AC , [II. 7.
with twice rectangle of AB, BC ;
i. e. to four times rectangle of AB, BC , with square of AC . Q. E. D.]

2. Omissions.

Euclid gives separate Definitions for ‘plane angle’ and ‘plane rectilinear angle.’ I have ignored the existence of any angles other than rectilinear, as I see no reason for mentioning them in a book meant for beginners.

PROP. 11. Here I omit the Corollary (introduced by Simson) ‘Two Lines cannot have a common segment,’ for several reasons. First, it is not Euclid’s: secondly, it is assumed as an Axiom, at least as early as Prop. 4: thirdly, the proof, offered for it, is illogical, since, in order to draw a Line from B at right angles to AB , we must produce AB ; and as this can, *ex hypothesi*, be done in two different ways, we shall have two constructions, and therefore two perpendiculars to deal with.

PROP. 46. Here instead of drawing a Line, at right angles to AB , *longer* than it, and then cutting off a piece equal to it, I have combined the two processes into one, following the example which Euclid himself has set in Prop. 16.

3. Alterations.

DEFINITIONS, &c. § 7. Instead of the usual ‘A straight Line is that which lies evenly between its extreme Points,’ I have expressed it ‘A right Line,’ (‘right’ is more in harmony, than ‘straight,’ with the term ‘rectilinear’) ‘is one that lies evenly as to Points in it.’ This is Euclid’s expression: and it is applicable (which the other is not) to infinite Lines.

PROP. 12. Here I bisect the angle FCG instead of the Line FG : i. e. I use Prop. 9 instead of Prop. 10. The usual construction really uses *both*, for Prop. 10 requires Prop. 9.

PROP. 16. Here, instead of saying that it ‘may be proved, by bisecting BC &c. that the angle BCG is greater than the angle ABC ,’ I simply point out that it *has* been proved—on the principle that, when a Theorem has once been proved for *one* case, it may be taken as proved for all similar cases.

PROP. 30. Here Euclid has contented himself, as he often does, with proving *one* case only. But unfortunately the one he has chosen is the one that least needs proof: for, if it be given that neither of the outside Lines cuts the (infinitely producible) middle Line, it is obvious that they cannot meet each other.

BOOK II, PROP. 14. Here, instead of producing DE to H , I have drawn EH at right angles to BF . This at once supplies us with the fact that GEH is a right angle, without the necessity of tacitly assuming, as Euclid does, that ‘if one of the two adjacent angles, which one Line makes with another, be right, so also is the other.’

Part II. Addressed to the Student.

The student is recommended to read the Two Books in the following order, making sure that he has thoroughly mastered each Section before beginning the next.

BOOK I.	
	PAGE
§ 1. Magnitude.	
Axioms, §§ 1 to 9	7
§ 2. Triangles, &c.	
Definitions, §§ 1 to 20	1
Props. I to X	11
§ 3. Right angles, &c.	
Definitions, &c. §§ 21 to 23	4
Props. XI to XXVI	25
§ 4. Parallel Lines, &c.	
Definitions, § 24	4
Props. XXVII, XXVIII	44
Axioms, § 16	9
Props. XXIX to XXXII	46
§ 5. Parallelograms, &c.	
Definitions, &c. §§ 25 to 27	4
Props. XXXIII to XLV	53
§ 6. Squares, &c.	
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BOOK II.	
§ 1. Rectangles, &c.	
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Props. I to XI	77
§ 2. Triangles, &c.	
Definitions, § 4	75
Axioms, § 2	76
Props. XII to XIV	96

4.7 Euclid's Theory of Parallels

Source: Knowledge, November 7, 1884

[1495]—In your “Chats about Geometrical Measurement,” p. 337, line 5 from end, you say that Euclid's 12th Axiom is “no axiom,” as “the converse is demonstrated in the 17th Proposition.” If this were the *logical* “converse” of the axiom, so as to follow immediately from it, there *would* be some absurdity in making the first statement an axiom and the second a theorem. But this is not so. The two statements are of the form “all X is Y,” and “all Y is X;” and it is so far from being the case that, if one of these be axiomatic, the other is axiomatic, that it may easily happen that one is axiomatic, while the other is not even true.

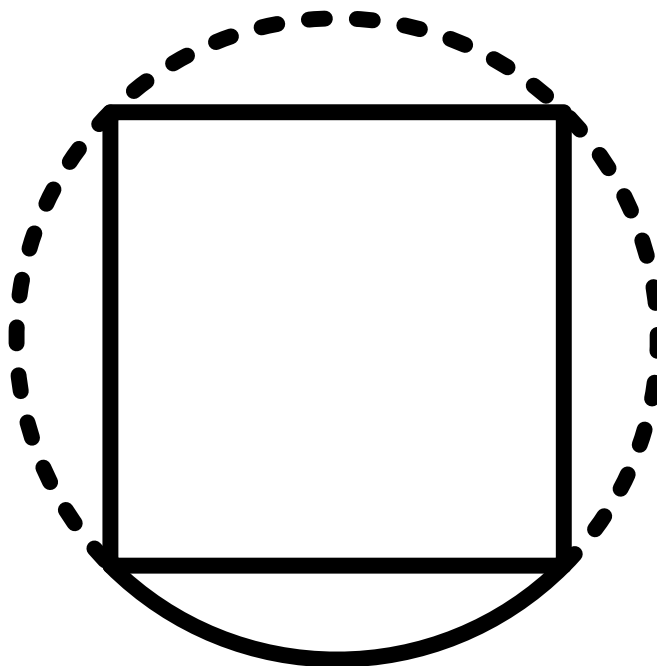
Again, at p. 334, col. 1, last line, you say “it is evident that $KL = CH$.” If this were once granted, you would not need the diagram in col. 2, you need only say “join HK . These triangles have all their sides equal. Therefore angle CKH is equal to angle KHL . Therefore the three angles of the triangle HCK are equal to the three angles KCH , HCK , KHL , *i. e.*, to two right-angles. But *any* given right-angled triangle may be treated like this, and any triangle may be divided into two right-angled triangles. Hence the angles of any triangle are equal to two right-angles.” This proves Euc. I. 32, after which all is easy.

Again, in col. 2, you claim to have *proved* Simson's axiom that two lines through a point cannot both be parallel to a third line. But you have only proved this for “parallels” as you define them, *viz.*, “lines which have a common perpendicular;” and so have not proved *Simson's* axiom at all. This is, I fear, a logical flaw in your argument.

*C. L. Dodgson.
Ch. Ch., Oxford.*

4.8 A New Theory of Parallels (Curiosa Mathematica. Part I)

Source: Curiosa Mathematica. Part I: A New Theory of Parallels, fourth edition (third edition differs only by having “ $2R$ ” instead of “two right angles” and similar in a few places)



In every Circle, the inscribed equilateral Tetragon is greater than any one of the Segments which lie outside it.

Preface to Third Edition

The chief novelty, in the First Edition of this treatise, was the Axiom, by means of which I proved Euc. I. 32 without making use of his 12th Axiom. And the chief novelty, in this Third Edition, is the change I have made in that Axiom, by substituting ‘Tetragon’ for ‘Hexagon’. The new Figure is more simple, and more easily constructed, than its predecessor: while the Axiom is, I hope, as obviously true as ever.

The proof of my “New Theory of Parallels” is, I think, greatly simplified and improved in this new Edition—the Propositions, which do *not* require any disputable Axiom, being placed by themselves in ‘Book I,’ while those, which require the new Axiom for their proof, are placed in ‘Book II.’ At the end of Book II will be found a proof (so far as *finite* magnitudes are concerned) for Euclid’s celebrated 12th Axiom, preceded by, and dependent on, the Axiom tacitly assumed by him in his Book X, Prop. 1, and also assumed, I believe,

by every subsequent writer who has attempted to *prove* his 12th Axiom. My proof is borrowed, with some slight alterations, from Cuthbertson's 'Euclidean Geometry.'

One advantage, in thus separating the Propositions into two classes, is that it calls attention to the very remarkable and interesting fact that the Theorem "There is a Triangle whose angles are together not-greater than two right angles" is actually provable without any disputable Axiom whatever. If only it could be proved, with equal ease, that "there is a Triangle whose angles are together not-less than two right angles"! But alas, *that* is an *ignis fatuus* that has never yet been caught! The man, who first proves *that* Theorem, without using Euclid's 12th Axiom or any substitute for it, will certainly deserve a place among the world's great discoverers.

I take this opportunity of replying to one or two criticisms, which have been published, on the Second Edition—earnestly assuring the writers of those criticisms that, in treating the questions at issue between us from a not-wholly-solemn point of view, I have been actuated by no feeling of disrespect towards them, but simply from the wish to lighten a subject, naturally somewhat too heavy and sombre, and thus to make it a little more palatable to the general Reader.

At p. 12 of the 2nd Edition, the enunciation of Prop. VI (which re-appears, in a modified form, at p. 868 of the 3rd Edition) stood thus:—

"If the vertical angle of a Sector of a Circle be divided by radii into 2^n equal angles, thus forming 2^n equal Sectors; and if the chord of each such Sector be not less than the radius of the Circle: the original Sector is not less than 2^n times the Triangle cut off from it by its chord." My controversy with *Nature*, on this enunciation, will be best given in the form of a dialogue. (Of course I quote *verbatim*.)

Nature. (Dec. 6, 1888.) "How are the figures to be constructed, if n be greater than 2?"

Author. (In the Preface to the 2nd Edition, at p. x.) "Well, suppose n were equal to 4: i. e. we have to divide the vertical angle into 2^n equal parts. Bisect it: that gives halves. Bisect the halves: that gives quarters. Bisect again: that gives eighths. Bisect once more: that give sixteenths. *Voila tout!*"

Nature. (June 13, 1889.) "Shade of Euclid! Who knows not such things? We admitted the same, but stated that our difficulty in the construction was the condition imposed in the enunciation: viz., 'the chord of each such sector not less than the radius of the circle.' Take Mr. Dodgson's illustration of a sixteenth: this would necessitate that the original angle should be at least 960° we . . . have further noted that no one of the chords in Mr. Dodgson's figures is even equal to the radius."

Author. "What you call 'the condition imposed' is introduced with an 'if': it is merely an *hypothesis*: all I undertake to prove is that, *if* certain things were true, certain other things *would* be true. Surely I need not remind you that the *validity* of a Syllogism is quite independent of the *truth* of its Premises! 'I have sent for you, my dear Ducks', said the worthy Mrs. Bond, 'to enquire with what sauce you would like to be eaten?' 'But we don't want to be *killed!*' cried the Ducks. 'You are wandering from the point' was Mrs. Bond's perfectly logical reply. So here. 'I beg you to observe, my dear *Nature*, that, *if* the chord of each Sector were not less than the radius, the logical result would be so-and-so.'

Quoted from *David Copperfield* by Charles Dickens

‘But the chord is less than the radius!’ you cry. All I need say, in reply, is ‘*You are wandering from the point.*’”

“But I will be generous, and will say more. I take exception to *two* assertions of yours. Remember our logical stand-point. We may use Euclid’s Axioms, all but the last; and his Propositions as far as I. 28. Now be good enough to prove to me, with this machinery, first, that my hypothesis ‘necessitates that the original angle should be at least 960° ’; secondly, that ‘no one of the chords’ in my Figure ‘is even equal to the radius.’ Your logical position is, I fear, this. You dispute the *validity* of a certain argument, on the ground that its *premisses* are false. My reply is, first, that you cannot *prove* them false; and secondly, that, even if you *could*, it wouldn’t affect the question!”

At p. 19 of the 2nd Edition, the new Axiom, on which my Theory rests, (which re-appears, in a modified form, at p. 857 of the 3rd Edition), stood thus:—“In every Circle, the inscribed equilateral Hexagon is greater than any one of the Segments which lie outside it.” My controversy with the *Athenæum*, on this Axiom, shall also be given in the form of a dialogue.

Athenæum. (Oct. 27, 1888.) “... a stronger objection, in our opinion, is the implied assumption of the *possibility* of the inscribed equilateral Hexagon, a possibility which is not demonstrated till we reach the fifteenth Proposition of Euclid’s fourth book.

Author. (In the Preface to the 2nd Edition, at p. xi). “But does it *need* demonstrating? May we not *assume* (1) that the Magnitude ‘four right angles’ contains 6-6ths of itself; (2) that it is *theoretically* possible to draw radii dividing it into these 6-6ths? Once grant me this, and I ask no more. I have then the logical *right* to join the ends of these radii, and to prove (by Euc. I. 4) that the chords are equal.”

Athenæum. (Oct. 5, 1889.) “We objected that it was not consistent with the spirit or practice of Euclid’s reasoning to assume the ‘theoretical possibility’ of a regular Hexagon inscribed in a Circle, without first proving that such a figure could be actually constructed from his three postulates. Euclid’s restrictions may be arbitrary, unnecessary, cramping, vexatious, absurd—indeed, we think they deserve these and many other epithets—but there they are, and, if Mr. Dodgson accepts them, he is bound to keep his assumptions within the boundaries which they prescribe.”

Author. “You’re particular to a shade (as Scrooge said to Marley’s ghost): however, I’ll do what I can to oblige you. I presume you will be satisfied if I can, without using more of Euclid than his first 28 Propositions, construct an angle which shall be 1-6th of 4 right angles? Very good. First, then, with the help of his arbitrary Prop. I, I construct an equilateral Triangle. Next, by his unnecessary Prop. IX, I draw the bisectors of 2 of its angles. Next, by his cramping Post. 1, I join their point of intersection to the third vertex. Next, by his vexatious Prop. IV, I prove the 3 angles, whose common vertex is this point, to be equal. From which I draw the absurd conclusion that each of them is 1-3rd (and that therefore its half is 1-6th) of 4 right angles. How does that strike *you*?”

Another objection, to this same Axiom, appeared in the *Academy* for Feb. 9, 1889, viz. “What the Axiom practically assumes is the existence of similar figures.” Permit me to reply, to this Reviewer, as follows:—“In what sense do you use the word ‘similar’? In *Euclid’s*, no doubt. That is to say, you charge me

Quoted from *A Christmas Carol* by Charles Dickens

with assuming that, if the Circle and its inscribed Hexagon were supposed to expand, the magnitude of each angle and the ratio subsisting between the sides which contain it, would remain constant? The ‘ratio’ part of the question we may set aside at once: there is no doubt that, since the figure continues to be equilateral, the ratio continues to be a ratio of *unity*: hence, if I needed this assumption (which I don’t), I should have a perfect right to make it. All that remains for discussion, is the assumption, which you say I have made, that each *angle* of the expanding Hexagon remains constant in magnitude. Will you, then, be kind enough to point out, first, where the *need* for any such assumption arises; secondly, where I have *made* any such assumption? For myself, I cannot in the least see why, in estimating the *area* of the Hexagon, I should trouble myself about the size of its *angles*.”

Let me take this opportunity of pointing out, once more, that *not one Proposition in this Treatise depends, in the slightest degree, on the speculations about Infinities, &c., which occur in the Appendices.*

The one merit, the one novelty, of my Theory (if it *has* any merit, or any novelty) is that, while *every* other Theory (that I have seen), which attempts to supersede Euclid’s 12th Axiom, introduces the ideas of Infinities and Infinitesimals, *mine* dispenses *wholly* with their aid, and deals with nothing but what is, by universal consent, absolutely *within* the field of Human Reason.

C. L. D.
Ch. Ch., Oxford.
August, 1890.

Introduction

It may well be doubted whether, in all the range of Science, there is any field so fascinating to the explorer—so rich in hidden treasures—so fruitful in delightful surprises—as that of Pure Mathematics. The charm lies chiefly, I think, in the absolute *certainty* of its results: for that is what, beyond almost all mental treasures, the human intellect craves for. Let us only be sure of *something*! More light, more light! Ἐν δὲ φάει καὶ ἀλέσσον. ‘And, if our lot be death, give light and let us die!’ This is the cry that, through all the ages, is going up from perplexed Humanity, and Science has little else to offer, that will really meet the demands of its votaries, than the conclusions of Pure Mathematics. Most other Sciences are in a state of constant flux—the precious truths of one generation being smiled at as paradoxes by the second generation, and contemptuously swept away as childish nonsense by the third. If you would see a specimen of the rapidity of this process of decomposition, take Biology for a sample: quote, to any distinguished Biologist you happen to meet, some book published thirty years ago, and observe his pitying smile!

But neither thirty years, nor thirty centuries, affect the clearness, or the charm, of Geometrical truths. Such a theorem as ‘the square of the hypotenuse of a right-angled triangle is equal to the sum of the squares of the sides’ is as dazzlingly beautiful now as it was in the day when Pythagoras first discovered it, and celebrated its advent, it is said, by sacrificing a hecatomb of oxen—a method of doing honour to Science that has always seemed to me *slightly* exaggerated and uncalled-for. One can imagine oneself, even in these degenerate days, marking the epoch of some brilliant scientific discovery by inviting a convivial friend or two, to join one in a beefsteak and a bottle of wine. But a

Quoted from *Iliad* by
Homer

hecatomb of oxen! It would produce a quite inconvenient supply of beef.

Now this field of Mathematical research, with all its wealth of hidden treasure, is all too apt to yield nothing to our research: for it is haunted by certain *ignes fatui*—delusive phantoms, that float before us, and seem so fair, and are *all but* in our grasp, so nearly that it never seems to need more than *one* step further, and the prize shall be ours! Alas for him who has been turned aside from real research by one of these spectres—who has found a music in its mocking laughter—and who wastes his life and energy in the desperate chase!

One of these—the chief one, I think—is the old old problem of ‘Squaring the Circle,’ which has certainly wasted many a human life. Whether it has actually driven any one mad, I know not—most of its victims were, I fancy, partly crazed before they entered on the quest—but it clearly has the powder of demolishing such slender reasoning powers as they may ever have chanced to possess.

With two of these misguided visionaries I have myself corresponded.

The first who addressed me filled me with a great ambition—to do a feat I had never yet heard of as accomplished by man, namely, to convince a ‘Circle-Squarer’ of his error! The value my friend had selected for ‘ π ’ was *not* an original one—being 3·2: but the enormous error, beginning as early as the *first* decimal place, tempted one with the idea that it could be easily demonstrated to *be* an error. I should think more than a score of letters were interchanged before I became sadly convinced that I had no chance. What man could still hope on, after receiving such a rebuff as the following? “You persuade yourself,” so my friend wrote, “that you have made your circumscribed polygon equal to the circle, *which you know cannot be*, and have thereby pushed the quadrant beyond 90°, valuing the circumference at 360°.” I meekly begged to be referred to the actual words in which I had advanced this startling assertion: but I never succeeded in getting the quotation verified.

My second ‘Circle-Squarer’ went to work in quite another fashion. His object was not so much to obtain an *arithmetical* value for ‘ π ,’ as to construct a geometrical straight Line which, given the radius, should exhibit to the eye the actual length of the circumference. His diagram was a most imposing one—Triangles and Parallels were interlaced in bewildering profusion—and it used up no less than 23 letters of the alphabet. Some of the Lines had arithmetical values assigned to them: and there was one value, ‘1·8879020478639098461 &c.’, which for a long time baffled all my endeavours to guess how in the world he had invented it. Of course one *might* have taken exception to such a construction at the very outset, and have said “I will admit the possibility of constructing a Line, which shall bear to the unit-line any arithmetical ratio you like, so long as you express it as an *exact* decimal: but what *can* I do with your ‘&c.’?” But his was not the kind of mind to which the geometrical construction of an ‘&c.’ presents any difficulty. At length, after many failures, I chanced on the discovery that this portentous number was $\frac{40}{3}$ of the decimal part of ‘ π ’! After this it was no wonder, considering that, in the course of construction, he had taken $\frac{3}{4}$ of this Line, and afterwards divided by 10, that the resulting Line, added to 3 times the unit-Line, was triumphantly proved to represent ‘ π ’! I ventured to ask if this was the way he had obtained the long decimal quoted above, namely, by multiplying the decimal part of ‘ π ’ by $\frac{40}{3}$, and received the courteous reply “your suggestion is perfectly correct”!

Another *ignis fatuus*—though not numbering so many victims as the ‘Quadrature of the Circle’—is ‘the Trisection of an Angle’ (that is, its trisection by

Euclid's machinery).

And yet another *ignis fatuus*—the one with which the following treatise is concerned—is the attempt to dispense with Euclid's celebrated 12th Axiom.

I may as well state briefly what the feat actually is, which Mathematicians have been vainly trying, since Euclid's day, to perform.

In I. 27, 28, he proves (so far, without invoking the aid of any doubtful Axiom) that “two Lines, which are equally inclined to a certain transversal (whether by making a pair of alternate angles equal, or an exterior equal to its interior opposite angle, or two interior, on the same side of the transversal, together equal to two right angles), will never meet.”

Next, in logical order, comes his 12th Axiom, viz. that “two Lines, which are unequally inclined to a certain transversal (he only *names* the case where they make two interior angles together less than two right angles, but he might fairly have included the others), *will* meet.” This Axiom, as I hope to prove in Appendix III, is only *partially*, and not *universally*, true.

Next, in I. 29, he proves (with the aid of this Axiom, of which it is what De Morgan calls the ‘contranominal’) the partially-true Theorem that “two Lines, which never meet, are equally inclined to any transversal.”

And from this, in I. 32, he proves that “the three angles of a Triangle are together equal to two right angles.”

These are only specimens of a set of Theorems which can be proved when once Axiom 12 is granted (e. g. there are several about ‘equidistantial Lines,’ which Euclid has altogether ignored): but they are all so connected as to follow easily from these.

Now the great difficulty, which besets this subject, is that Euclid's Axiom (this, I think, is universally admitted) is *not* axiomatic—the intellect has not yet occurred, among that species of Vertebrates which may be defined as ‘bimanous bipeds,’ which accepts it as a genuine Axiom—and the great question to be answered is “can a better Axiom be found?”

In Appendix IV, I will mention some of the substitutes that have been suggested, and will give some account of the ‘outlook’ in the direction of the new Axiom I have chanced on. In this place it will suffice, first, to explain what the task is that the long-desiderated Axiom has to perform, and secondly, to state the grounds on which I claim acceptance for my Axiom.

First, then, what is ‘the coming Axiom’ expected to do for us?

It will be convenient to divide the whole class, of Theorems needing proof, into two sub-classes—one including those which are *universally* true: the other those which are only *partially* true—the error, if any, being *infinitesimal* when compared with the Magnitudes with which the Theorem is concerned.

Euc. I. 32 is a specimen of the one kind, and Euc. I. 29 of the other.

In proving the *latter* class, no substitute for Euclid's Axiom has yet been suggested, that I know of, which does not suffer from the same defect as Euclid's Axiom—the being only *partially*, and not *universally*, true—and which does not, if we attempt to modify the language so as to remedy this defect, in *some* way lead us into the bewildering region of Infinities and Infinitesimals.

But the *former* class can, as I believe, be more easily proved. This is what I attempt in the following treatise—which owes its inspiration to a sudden thought (it occurred to me some two months ago) that it *might* be possible to prove Euc. I. 32 without getting mixed up with those spectral Infinities.

Moreover, it is quite possible to bring into this class all that is valuable in Euc. I. 29. Regarding the ‘separateness’ of the Lines merely as a link between Props. 27, 28, and 29, we may combine the three into one grand Theorem, thus:—“Two Lines, which are equally inclined to a certain transversal, are so to every transversal.” This Theorem, as well as Euc. I. 32, I prove in the following treatise. But the feat of proving them, without assuming any new Axiom *at all*, is at present beyond my grasp. Like the goblin ‘Puck,’ it has led me “up and down, up and down,” through many a wakeful night: but always, just as I thought I had it, some unforeseen fallacy was sure to trip me up, and the tricky sprite would “leap out, laughing ho, ho, ho!”

And now, to come to the real gist of this over-long Preface—however, nobody ever reads a Preface, so really it does not matter—am I not right in thinking that, on mere inspection of this diagram, any sane intellect will be ready to grant that “in any Circle, the inscribed Tetragon is greater than any one of the Segments that lie outside it”?

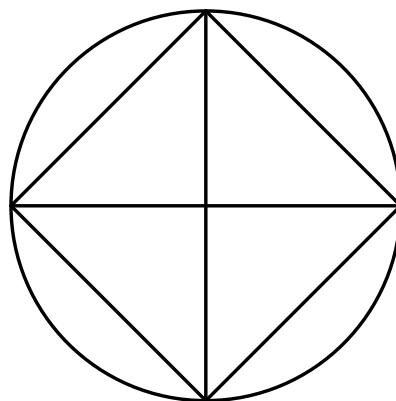
I shall be told, no doubt, that this is too *bizarre* and unprecedented an Axiom—that it is an appeal to the *eye*, and not to the reason. That it is somewhat *bizarre* I am willing to admit—and am by no means sure that this is not rather a *merit* than a defect. But, as to its being an appeal to the *eye*, what is “two straight Lines cannot enclose a space” but an appeal to the *eye*? What is “all right angles are equal” but an appeal to the *eye*?

In all Axioms, where an appeal is made to the eye on a question of *magnitude*, we shall find, I think, that the whole region of certainty and probability may be roughly mapped out into three districts—an out-lying district of certainty in *one* direction, a similar one of certainty in the *opposite* direction, and a middle district of probability—the boundaries being shadowy and liable to be shifted hither and thither according to the fancies or prejudices of each individual mind.

Permit me to illustrate this by an example taken from ordinary life.

You enter a room, where there is a book-case containing (say) five shelves, and your eye wanders carelessly along a shelf, making a rough estimate of the number of books in it. Now shut your eyes, and try to guess how many books there are altogether. Your hasty reckoning of one shelf gave a total (say) of 19 or 20, you are not sure which: so you feel safe in saying “I think there are *about* a hundred.” “Are you *certain*,” I ask, “that there are more than fifty?” “*Quite* certain,” you reply. “And also certain that there are less than a hundred and fifty?” “*Quite* certain,” you repeat. Here, then, are the three districts. The numbers up to 50 are *certainly* too small; the numbers over 150 are *certainly* too great; the intermediate numbers contain some doubtful ones—the most doubtful being very near 100—and this doubt shades off into certainty as we approach either of the outlying districts. You would not risk five shillings on the chance of the true number being *under* 100, or on the chance of its being *over* 100, but you would feel quite at your ease, if told that you would forfeit a thousand pounds, in case the number turned out to be under 50, or over 150.

Another objection, that has already been raised to my Axiom, and so will



Quoted from *A Midsummer Night's Dream* by William Shakespeare

Quoted from *The merry Pranks of Robin Goodfellow*

probably be raised again, and which I may as well meet here by anticipation, is that, on the supposition of Euclid I. 32 *not* being true, it may be proved that this relationship of magnitude, between the Tetragon and the Segment, changes as the Circle increases, until, with an infinitely great Circle, the Tetragon may actually be proved to be *less* than the Segment! This phenomenon, however, does not appal me so much as might be expected: for I have often observed it to occur that, when Theorem α logically leads to Theorem β , then, on the supposition of Theorem β *not* being true, it may be proved that Theorem α also is not true. (The second sequence is, in fact, what De Morgan calls the ‘contranominal’ of the first.) Hence this objection, if worth anything, *proves too much*: to dispute the validity of an argument, on the ground that, if it were valid, its contranominal would also be valid, is to upset the whole edifice of Logic itself: and, if you tell me, on such grounds as these, that I cannot prove what I assert, I may fairly retort upon you, that *you* cannot prove anything *at all!* You have destroyed the only machinery available for the purpose, and must henceforth dispense with all Logical methods, and console yourself with the cynical American adage “There’s nothing true: and there’s nothing new: and it don’t signify!”

To return to our Tetragon. It really contains the area of the Segment a little over 7 times. Hence anybody, I should suppose, would be ready to say “I am *certain* it contains the Segment more than twice: and I am equally certain it does *not* contain it twelve times.” In guessing the *actual* number, observers would greatly differ: some might guess 4, others 10: but *all* would agree in putting it above 2. And now see how modest is the demand of my Axiom! Merely that you will find room in the Tetragon for one single Segment! If *that* is not a matter of certainty, is *anything* certain in this world of ours?

I have yet one more arrow in my quiver: let me shoot it, and have done. If the gentle reader feels any the smallest demur to granting me that *once* this Tetragon is greater than the Segment lying below it, will he grant me that *twice* it will suffice? Or four times it? Or eight times it? He may go on doubling as long as he likes, and, so long as he keeps among finite numbers, he will have granted me all I need for a logical proof (which will be found in Appendix I) of Euc. I. 32. Surely he will not need to go into the Infinities? And may I add, in conclusion, that, if any gentle reader be found, who cannot *quite* bring himself to believe it impossible to squeeze 512 of these Tetragons into the Segment, but is willing to allow that no amount of skilful packing will dispose of 1024 of them—it will give me *real* satisfaction to be supplied with that gentle reader’s name and address?

C. L. D.
Ch. Ch., Oxford.
July, 1888.

Book I.

Certain universally-true Propositions, provable from genuine Axioms.

Definitions

1.

The sum of the angles of a Triangle is called its '**amount.**'

2.

Any angular magnitude is called a '**possible amount,**' if there be a Triangle whose 'amount' is equal to it: but, if there be no such Triangle, it is called an '**impossible amount.**'

3.

If any such angular magnitude vary continuously: whenever it changes from a 'possible amount' to an 'impossible amount,' it is said to pass from a '**possible region,**' to an '**impossible region:**' and *vice versâ.*

4.

If there be two fixed angular magnitudes such that the varying magnitude, while it continues between them, is always a 'possible amount,' but becomes an 'impossible amount' when it passes beyond them: they are called the '**superior limit,**' and the '**inferior limit,**' of the 'possible region' which lies between them.

Axioms

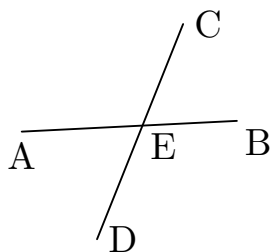
1.

If a Magnitude change from one value to another; and if, in doing so, it vary continuously; and if a certain value, intermediate to its first and last values, be selected: the Magnitude must, at some moment during the process of change, have that selected value.

2.

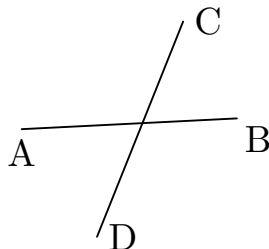
If two or more Magnitudes be such that, whenever any one of them varies, it varies continuously: then, whenever their sum varies, it varies continuously.

3.



If AB , CD , be two Lines intersecting at E ; and if CD be turned about E , AB remaining stationary: each of the angles at E varies continuously.

4.



If AB , CD , be two intersecting Lines; and if CD be turned about C , AB remaining stationary: then, so long as the Lines continue to intersect, each of the 4 angles at the Point of intersection varies continuously.

Propositions

Prop. I. Theorem.

If a Pair of Lines make, with a certain transversal, either (1) a pair of alternate angles equal, or (2) an exterior angle equal to its interior opposite angle on the same side of the transversal, or (3) a pair of interior angles on the same side of the transversal supplementary: they will make, with that transversal, (4), each pair of alternate angles equals and (5) each of the four exterior angles equal to its interior opposite angle on the same side of the transversal, and (6) each pair of interior angles on the same side of the transversal supplementary.

This Proposition is easily deduced from Euc. I. 13, 15.

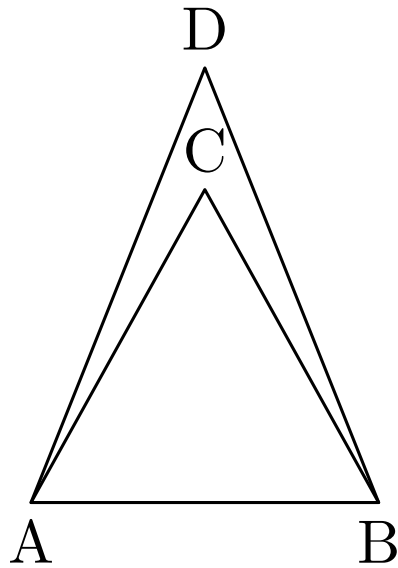
Definitions (continued)

5.

Such a Pair of Lines may be said to be '**equally inclined**' to that transversal.

Prop. II. Theorem.

If two isosceles Triangles have equal bases but unequal sides: that Triangle, which has the greater sides, has the greater area.



Let the Triangles be set on the same base, and call them ABC , ABD . And let AD , DB , be respectively greater than AC , CB .

Now D cannot fall within the Triangle ACB , or upon either of its sides; for then AD , DB would be less than AC , CB ; [Euc. I. 21.

neither can it fall on C ; for then AD , DB would be equal to AC , CB ;

neither can AD intersect CB , nor AC intersect DB ; for, in either case, if CD were joined, there would be two Triangles, on the same base CD , having their coterminous sides equal; which is impossible; [Euc. I. 7.

$\therefore AB$, DB fall outside the Triangle ACB ;

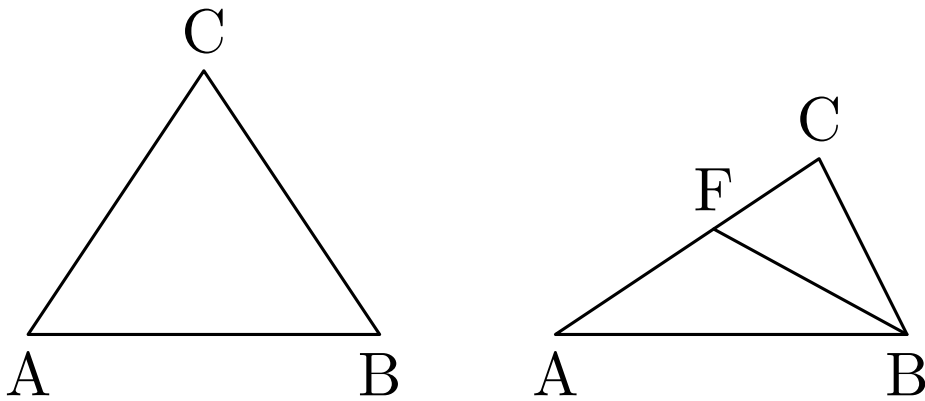
\therefore Triangle ADB is greater than Triangle ACB .

Therefore, if two isosceles Triangles &c.

Q. E. D.

Prop. III. Problem.

Given a certain angle; and given that any isosceles Triangle, whose vertical angle is not-greater than the given angle, has its base not-greater than either of its sides: to describe, on a given base, an isosceles Triangle having each base-angle equal to the given angle.



Let AB be given base.

At A , in Line AB , make angle BAC equal to given angle, making $AC = AB$; and join BC .

Then, by hypothesis, BC is not-greater than AC : i. e. it is either equal to it, or less than it.

First let BC be equal to AC . (Fig. 1.)

Then Triangle ABC is equilateral: i. e. it is an isosceles Triangle, on given base AB , and having each base-angle equal to given angle.

Q. E. F.

Secondly, let BC be less than AC . (Fig. 2.)

Then angle BAC is less than angle ABC . [Euc. I. 18.]

At B make angle ABF equal to angle BAC . [Euc. I. 23.]

Then Triangle ABF is isosceles, and is on given base AB , and has each base-angle equal to given angle.

Q. E. F.

Corollary *The isosceles Triangle, so described, has its vertical angle not-less than either of its base-angles.*

For, in Fig. 1, $AB = AC$;

\therefore angle $ACB =$ angle ABC .

Q. E. D.

Again, in Fig. 2, $AB = AC$;

\therefore angle $ACB =$ angle ABC .

But angle AFB is greater than angle ACB ; [Euc. I. 16.]

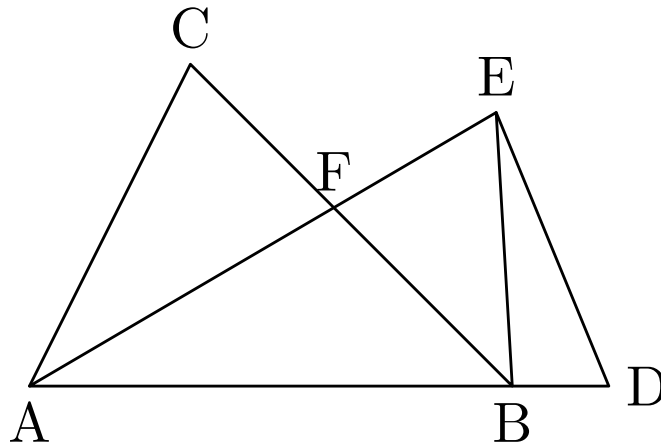
and angle ABF is less than angle ABC ;

\therefore angle AFB is greater than angle ABF .

Q. E. D.

Prop. IV. Theorem.

Either all Triangles have the same 'amount'; or else, if α , β , be two 'possible amounts,' that is, 'amounts' belonging to existing Triangles, then any 'amount' intermediate to α and β , in also 'possible.'



If all Triangles have the same amount, the Proposition is true. If not, let ABC , ADE be two Triangles whose amounts are different. Call their ‘amounts’ ‘ α , β .’ And let the two Triangles be placed so as to have a common vertex at A , and their bases in the same straight Line.

Now Triangle ABC may be converted into Triangle ABF by making the point, where AC intersects BC , move from C to F , BC remaining stationary.

And, during this process, the angle at A will vary continuously, [Ax. 4.]

and the angle, at the point where the revolving Line intersects BC , will vary continuously; [Ax. 5.]

\therefore the sum of these angles will, if it vary at all, vary continuously. [Ax. 3.]

Similarly, Triangle ABF may be converted, first, into Triangle ABE , by making the point, where BF intersects AE , move from F to E , AE remaining stationary, and then into Triangle ADE , by making the point, where EB intersects AD , move from B to D , AD remaining stationary.

And, during the whole process, the ‘amount’ of the changing Triangle will, if it vary at all, vary continuously.

Hence, in changing from the value α to the value β , it must pass through all intermediate ‘amounts’: i. e. all intermediate ‘amounts’ are ‘possible.’ [Ax. 2.]

Therefore either all Triangles have &c.

Q. E. D.

Corollaries.

1. *Among angular magnitudes there is one, and only one, ‘possible region.’*

2. *This ‘possible region’ either consists of one single angular magnitude, such that it, and it alone, is a ‘possible amount’; or it consists of a continuous series of angular magnitudes, lying between 2 ‘limits,’ which 2 limits are such that any magnitude, lying between them, is a ‘possible amount,’ and any magnitude, lying outside them, is an ‘impossible amount.’*

Prop. V. Theorem.

The angles of any Triangle are together less than three right angles.

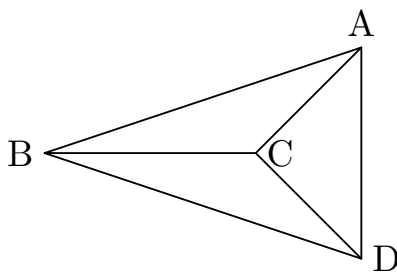
Let a right angle be represented by ' R .'
 Now any 2 of the angles of a Triangle are together less than $2R$; [Euc. I. 17.
 \therefore , adding together the 3 pairs which may be taken, the 3 angles of a Triangle,
 taken twice over, are together less than $6R$;
 \therefore , taken once only, they are together less than $3R$.
 Therefore the angles of any Triangle &c.

Q. E. D.

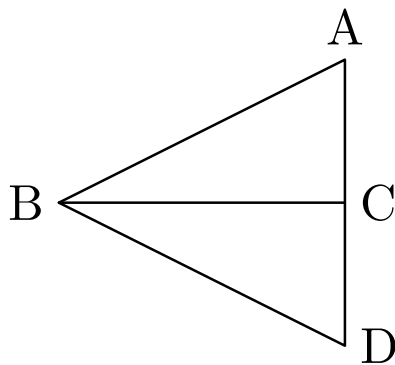
Prop. VI. Theorem.

There is a Triangle whose angles are together not-greater than two right angles.

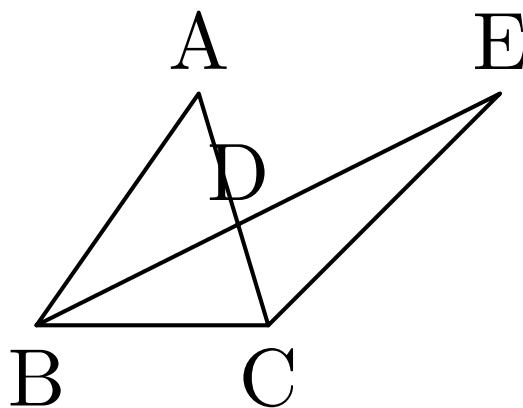
If we deny this, we must assert that any 'amount' is greater than $2R$.
 Let this be our First Hypothesis.
 Now any 'amount' is less than $3R$. [Prop. 5.
 Hence the 'possible region' lies below $3R$; i. e. it has a 'superior limit.'
 Now let a 'possible amount' be selected, more than halfway from $2R$ to the
 'superior limit' of this region; and call it ' $(2R + \alpha)$.' Then it is evident that
 ' $(2R + 2\alpha)$ ' will lie *above* this limit, and will therefore be an 'impossible amount.'
 Now any Triangle, whose 'amount' is $(2R + \alpha)$, must be either obtuse-angled,
 or right-angled, or acute-angled.
 Hence we must assert that there is either an obtuse-angled Triangle, or a
 right-angled Triangle, or an acute-angled Triangle, whose 'amount' is $(2R + \alpha)$.
 Let these be our Second, our Third, and our Fourth Hypothesis.
 Call the Triangle ' ABC .'



First, let it be obtuse-angled; and let C be the obtuse angle.
 At Point C , in Line BC , make angle BCB equal to angle BCA , making CD
 equal to CA ; and join BD and AD .
 Then Triangle BCD is equal, in all respects, to Triangle BCA ; [Euc. I. 4.
 \therefore its 'amount' = $(2R + \alpha)$;
 also 'amount' of Triangle ACD is, by our First Hypothesis, greater than $2R$;
 \therefore 'amounts' of the 3 Triangles are together greater than $(6R + 2\alpha)$.
 But these make up 'amount' of Triangle ABD , plus angles about C , which
 = $4R$; [Euc. I. 13. Cor.
 \therefore 'amount' of Triangle ABD , plus $4R$, is greater than $(6R + 2\alpha)$;
 \therefore this 'amount,' alone, is greater than $(2R + 2\alpha)$; which is absurd, since the
 latter lies above the 'superior limit,' and is therefore an 'impossible amount.'
 Hence our Second Hypothesis is false; i. e. no obtuse-angled Triangle can
 have the amount $(2R + \alpha)$.



Secondly, let it be right-angled; and let C be the right angle.
 At Point C , in Line BC , make angle BCB equal to angle BCA , i. e. equal to R ; and make $CD = CA$; and join BD ,
 Then AC, CD , are in one straight Line. [Euc. I. 14.
 Also Triangle BCD is equal, in all respects, to Triangle BCA ; [Euc. I. 4.
 \therefore its 'amount' = $(2R + \alpha)$;
 \therefore 'amounts' of the 2 Triangles together = $(4R + 2\alpha)$.
 But these make up 'amount' of Triangle ABD , plus angles at C , which = $2R$;
 \therefore 'amount' of Triangle ABD , plus $2R$, = $(4R + 2\alpha)$; \therefore this 'amount,' alone, = $(2R + 2\alpha)$; which is absurd.
 Hence our Third Hypothesis is false; i. e. no right-angled Triangle can have the amount $(2R + \alpha)$.



Thirdly, let it be acute-angled.
 Bisect AC at D ; join BD , and produce it to E , making $DE = BD$; and join CE .
 Now angles ADB, CDE , are equal, being vertical; [Euc. I. 15.
 \therefore Triangles ADB, CDE , are equal in all respects; [Euc. I. 4.
 \therefore angle $BCE =$ angle A ; and angle $CEB =$ angle ABD ;
 \therefore 'amount' of Triangle $BCE =$ that of Triangle ABC .
 Again, \therefore angle $CED =$ angle ABD ;

\therefore angles CED, CBD together = angle ABC ;
 \therefore they are together less than R ;
 \therefore angle BCE is, by our First Hypothesis, greater than R ;
 i. e. Triangle BCE is obtuse-angled;
 \therefore its 'amount' cannot be $(2R + \alpha)$;
 \therefore 'amount' of Triangle ABC cannot be $(2R + \alpha)$.
 Hence our Fourth Hypothesis is false; i. e. no acute-angled Triangle can have the 'amount' $(2R + \alpha)$.
 Hence, no Triangle can have this amount.
 Hence our First Hypothesis, that any 'amount' is greater than $2R$, is false.
 Therefore there is a Triangle &c.

Q. E. D.

Corollary *The 'possible region' does not lie wholly above two right angles.*

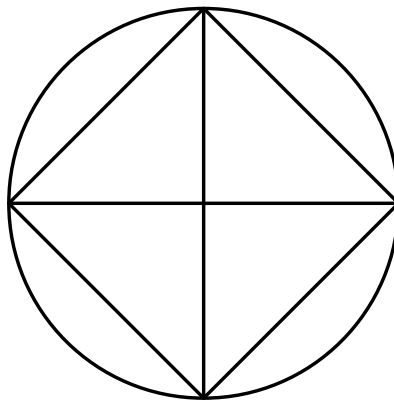
Book II.

Certain universally true Propositions, not provable from genuine Axioms, but provable if the following Axiom be accepted.

[N.B. This Axiom cannot claim to be more than a 'Quasi-Axiom,' i. e. one whose *self-evident* character is disputable.]

Axioms

1.

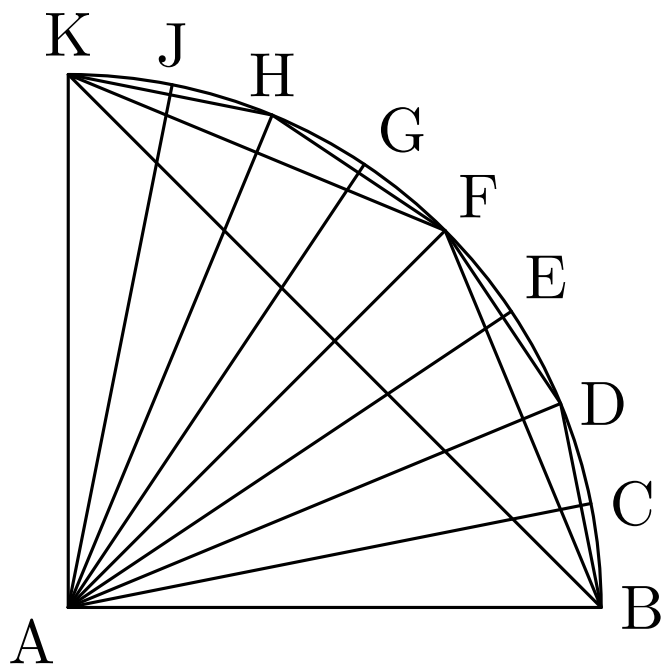


In any Circle, the inscribed equilateral Tetragon is greater than any one of the Segments which lie outside it.

Note.—If, in any Circle, 2 Diameters be drawn at right angles to each other, and their extremities joined, the joining Lines will, by Euc. I. 4 be equal to each other. Hence the Figure, thus formed, will be an inscribed equilateral Tetragon. (It will also be *equiangular*; but that is of no importance for our present purpose.)

Prop. I. Theorem.

An isosceles Triangle, whose vertical angle is one-eighth of a right angle, has its base less than either of its sides.



Let ABC be an isosceles Triangle, whose vertical angle at A is one-eighth of a right angle.

It shall be proved that BC is less than AB .

If we deny this, we must assert that BC is not-less than AB .

Let this be our Hypothesis.

Construct 7 more Triangles ACD , &c., equal to ABC . With centre A , and distance AB , describe quadrant passing through C , D , &c. (See Note.) And join BK , BF , FK , BD , DF , FH , HK .

Then Triangle ABK is one-fourth of an equilateral Tetragon inscribed in the Circle.

Hence, 4 times this Triangle is greater than Segment BCK . [II. Ax. 1.

Because angle BCD is greater than angle ACD , and that angle BDC is less than angle ADC ;

\therefore angle BCD is greater than angle BDC ;

\therefore BD is greater than BC .

[Euc. I. 19.

Similarly, BF is greater than BC .

Hence, on our Hypothesis, BD and BF are both of them greater than AB .

Also, \therefore BF is greater than AB ;

\therefore Triangle BFK is greater than Triangle ABK ;

[I. Prop. 2.

to each of these add Triangle ABK ;

\therefore Figure $ABFK$ is greater than twice Triangle ABK .

Note.—The Reader is requested to imagine chords drawn to the arcs BC , CD , &c.

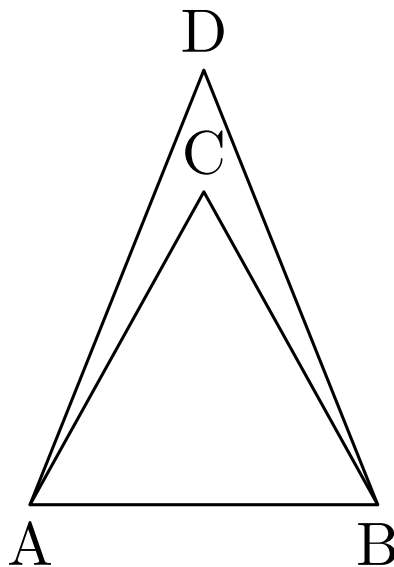
Again, \because BD is greater than AB ;
 \therefore Triangle BDF is greater than Triangle ABF ; [I. Prop. 2.
 \therefore Triangles BDF, FHK are together greater than Figure $ABFK$;
to each of these add Figure $ABFK$;
 \therefore Figure $ABDFHK$ is greater than twice Figure $ABFK$, i. e. greater than
4 times Triangle ABK ,
Again, \because BC is not-less than AB ;
 \therefore Triangle BCD is not-less than Triangle ABD ; [I. Prop. 2.
 \therefore Triangles BCD, DEF, FGH, HJK are together not-less than Figure
 $ABDFHK$; i. e. they are together greater than 4 times Triangle ABK ;
 \therefore , *a fortiori*, Segment BCK is greater than 4 times Triangle ABK .
But this is absurd, since it has been already proved less than 4 times this
Triangle.
Hence our Hypothesis, that BC is not-less than AB , is false; i. e. BC is less
than AB .
Therefore an isosceles Triangle &c.

Q. E. D.

Corollary Hence, by Book I, Prop. III, it is possible to describe, on a given
base, an isosceles Triangle having each base-angle equal to one-eighth of a right
angle.

Prop. II. Theorem.

The angles of any Triangle are together not-less than one-eighth of a right angle.
Let one-eighth of a right angle be represented by ' θ .'



Let ABC be a Triangle; it shall be proved that its 'amount' is not-less than
 θ .
If we deny this, we must assert that its 'amount' is less than θ .
Let this be our Hypothesis.

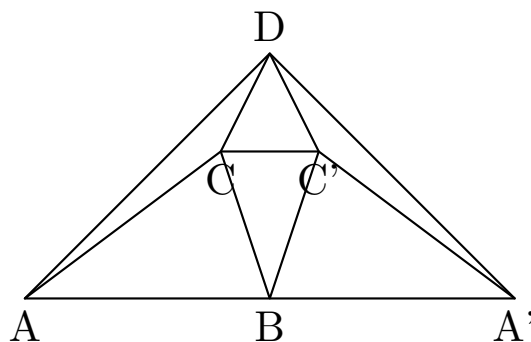
Hence each of its angles is less than θ .
 On AB describe an isosceles Triangle ABD having each base-angle equal to θ ; [II. Prop. 1. Cor.]
 hence AC, BC , must lie within this Triangle;
 i. e. Triangle ABC must lie within it;
 \therefore angle ADB is less than angle ACB ; [Euc. I. 21.]
 i. e. less than θ ;
 but angle ADB is not-less than angle DAB ; [I. Prop. 8. Cor.]
 i. e. not-less than θ ; which is absurd.
 Hence our Hypothesis, that ‘amount’ of Triangle ABC is less than θ , is false;
 i. e. it is not less than θ .
 Therefore the angles of any Triangle &c. Q. E. D.

Corollary. *The ‘possible region’ does not extend below one-eighth of a right angle.*

Prop. III. Theorem.

There is a Triangle whose angles are together not-less than two right angles.

If we deny this, we must assert that any ‘amount’ is less than $2R$.
 Let this be our First Hypothesis.
 It shall be proved that, if we assert this, we must also assert that any ‘amount’ is not-less-than 2θ , where ‘ θ ’ represents one-eighth of a right angle.
 If we deny this, we must assert that there is an ‘amount’ less than 2θ .
 Let this be our Second Hypothesis.
 Now we know that the ‘possible region’ does not extend below θ ; [II. Prop. 2. Cor.]
 i. e. it has an ‘inferior limit.’
 Let a ‘possible amount’ be selected, more than half-way from 2θ to this ‘inferior limit,’ and call it ‘ $(2\theta - \alpha)$.’ Then it is evident that $(2\theta - 2\alpha)$ will lie below the ‘inferior limit,’ and will therefore be an ‘impossible amount.’
 Let a Triangle be taken, whose ‘amount’ is $(2\theta - \alpha)$;
 \therefore any one of its angles, which is not-greater than either of the others, is not-greater than $\frac{2\theta - \alpha}{3}$; i. e. is less than θ .
 Call this angle ‘ A .’
 Now one, at least, of the remaining angles must be acute. [Euc. I. 17.]
 Call this ‘ B ’; and call the third angle C .
 Let 2 such Triangles, ABC and $A'B'C'$, be taken; and let them be so placed that their B -vertices coincide and their BA -sides lie in one straight line; and join CC' .



On AA' describe an isosceles Triangle $AA'D$, having each base-angle equal to θ . [II. Prop. 1. Cor.]

Now each of the angles $BAC, BA'C'$, is less than θ .

\therefore Lines $AC, A'C'$, will fall within angles $BAD, BA'D$;

i. e. Figure $AA'C'C$ will fall within Triangle $AA'D$.

Join DC, DC' .

Now 'amounts' of Triangles $ABC, A'BC'$, together = $2(2\theta - \alpha)$, and those of the other 4 Triangles are, by our First Hypothesis, together less than $8R$;

\therefore 'amounts' of all 6 Triangles are together less than $(8R + 4\theta - 2\alpha)$;

but these make up 'amount' of Triangle $AA'D$, plus angles at B, C, C' , which together = $10R$;

\therefore 'amount' of Triangle $AA'D$, plus $10R$, is less than $(8R + 4\theta - 2\alpha)$.

Now we know that 2θ is not-greater than $2R$;

\therefore , adding these inequalities, 'amount' of Triangle $AA'D$, plus $(10R + 2\theta)$, is less than $(10R + 4\theta - 2\alpha)$;

\therefore , this 'amount,' alone, is less than $(2\theta - 2\alpha)$; which is absurd, since the latter lies below the 'inferior limit,' and is therefore an 'impossible amount';

\therefore one of our two Hypotheses must be false;

i. e. either there is an 'amount' not-less than $2R$, or else any 'amount' is not-less than 2θ .

Suppose we maintain our First Hypothesis: then we must abandon our Second; i. e. we must admit that any 'amount' is not-less than 2θ .

It shall be proved that, in this case, we must also admit that any 'amount' is not-less than 4θ .

For, if we deny this, we must assert that there is an 'amount' less than 4θ .

Let this be our Third Hypothesis.

Then, in the above proof, θ and 2θ may be replaced by 2θ and 4θ , and a similar absurdity will follow.

Hence either our First or our Third Hypothesis must be false;

i. e. either there is an 'amount' not-less than $2R$, or else any amount is not-less than 4θ .

A similar proof, will hold for 8θ ; and then for 16θ .

Hence, either there is an 'amount' not-less than $2R$, or else any amount is not-less than 16θ .

But $16\theta = 2R$.

Hence the second clause of this alternative contains the first.

Hence the first clause must be true.

That is, there is a Triangle &c.

Q. E. D.

Corollary. *The 'possible region' does not lie wholly below two right angles.*

Prop. IV. Theorem.

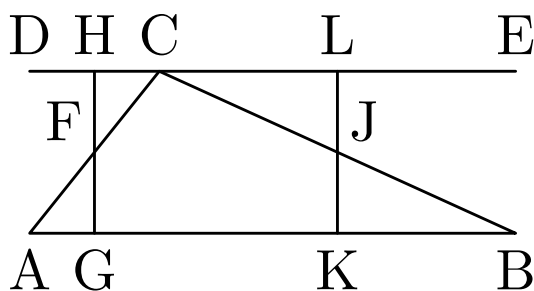
There is a Triangle whose angles are together equal to two right angles.

For the 'possible region' does not lie wholly above $2R$; [I. Prop. 6. Cor.
 neither does it lie wholly below $2R$; [II. Prop. 3. Cor.
 \therefore it includes $2R$. [I. 4. Cor. 2.
 That is, there is a Triangle &c.

Q. E. D.

Prop. V. Theorem.

There is a quadrilateral Figure which is 'rectangular,' that is, which has all its angles right angles.



Let ABC be a Triangle whose 'amount' = $2R$. [II. Prop. 4.
 At C make angle ACD equal to angle CAB , and angle BCE equal to angle CBA ;
 hence angles ACD , ACB , BCE , together = $2R$;
 $\therefore DC, CE$, are in a straight Line. [Euc. I. 14.
 Bisect AC at F ; from F draw

FG perpendicular to AB ; from CD cut off CH equal to AG ; and join FH .
 \therefore in Triangles FAG, FCH , FA, AG , are respectively equal to FC, CH , and angle A to angle FCH , [Euc. I. 4.
 \therefore the Triangles are equal in all respects;
 \therefore angle FHC is a right angle;
 and angle $AFG =$ angle CFH ;
 \therefore angles AFG, AFH , together = angles CFH, AFH ; i. e. together = $2R$;
 $\therefore GF, FH$ are in a straight line; [Euc. I. 14.
 $\therefore GH$ is a common perpendicular to Lines AB, DE ,
 Similarly, by bisecting BC at J , it may be proved that KL is a common perpendicular.
 Hence Figure HK is rectangular.
 Therefore there is a quadrilateral Figure &c.

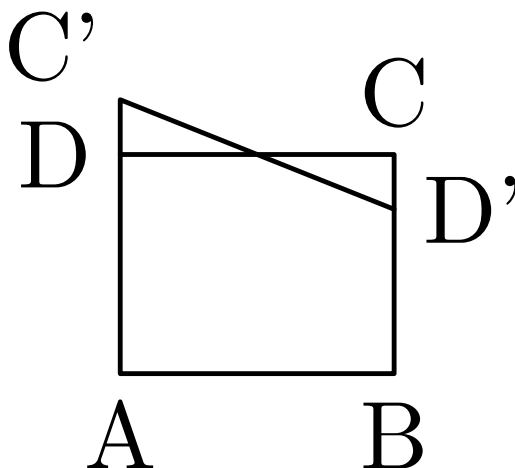
Q. E. D.

Definition.

A rectangular quadrilateral Figure may be called a '**Rectangle.**'

Prop. VI. Theorem.

The opposite sides of a Rectangle are equal.



Let $ABCD$ be a Rectangle; and let it be reversed so that A, B , may change places.

Then AB will lie along BC , and BC along AD .

Now, if AD were not equal to BC , D, C , would not change places, but would take new positions, as $D'C'$;

hence exterior angle ADC would be greater than interior opposite angle $AC'D'$; [Euc. I. 18.

but they are also equal, being right angles; which is absurd;

$\therefore AD = BC$.

Similarly it may be proved that $AB = DC$.

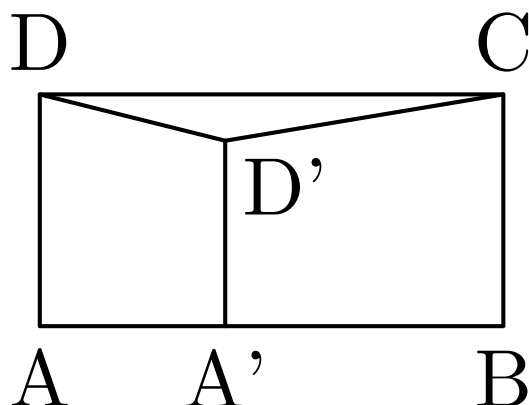
Therefore the opposite sides &c.

Q. E. D.

Prop. VII. Theorem.

There is a Pair of Lines, each of which is 'equidistant' from the other, that is, is such that all Points on it are equally distant from the other Line.

Let $ABCD$ be a Rectangle; and let a vertical Line be supposed, first to coincide with AD and then to move along AB , continuing always at right angles to it, till it reaches some intermediate position $A'D'$.



Now, if its top be not now on DC , it must have either dropped below it or risen above it.

First, let it be supposed to have dropped below it: and join DD' , $D'C$.

Then, if the Figure $AA'D'D$ be reversed, and applied to the same base, it is evident that D and D' will exchange places;

\therefore angle $A'D'D =$ angle ADD' , i. e. it is less than R ;

Similarly angle $A'D'C$ is less than R ;

but angle $DD'C$ is less than $2R$.

\therefore angles at D' are together less than $4R$; which is absurd; [Euc. I. 13. Cor.]

\therefore top of vertical Line has not dropped below DC .

Similarly it may be proved that it has not risen above DC .

Hence it moves along DC ; i. e. it describes a straight Line, and will evidently continue to do so, however far the vertical Line move, either way, along AB .

Therefore there is a Pair of Lines &c.

Q. E. D.

Corollaries.

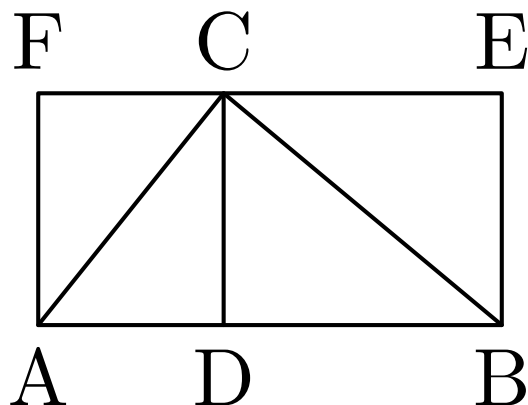
1. *If a Pair of Lines have a common perpendicular: each of them is equidistant from the other.*

Corollary 2. *It is possible to form a Rectangle of any given width and height.*

For, in the above Pair of horizontal equidistant Lines, 2 common perpendiculars may be drawn, at a given width apart; and the Figure, so formed, will be a Rectangle; and its sides will be a Pair of vertical equidistant Lines, which may be treated in the same way.

Prop. VIII. Theorem.

The angles of any Triangle are together equal to two right angles.



Let ABC be a Triangle, so placed that each base-angle is acute; from C draw CD perpendicular to AB ; and make Rectangles $ADCF$, $BDCE$. [II. Prop. 7. Cor. 2.]

$\therefore FD$ has its opposite sides equal, [II. Prop. 6.]

\therefore , in Triangles ADC , CFA , the sides of the one are respectively equal to the sides of the other;

\therefore angle $CAD =$ angle ACF [Euc. I. 8.]

Similarly angle $CBD =$ angle BCE ;

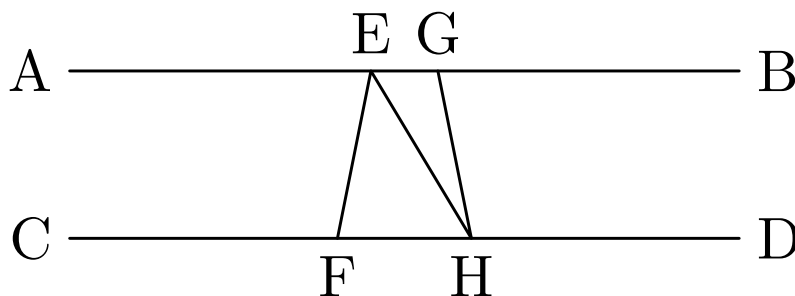
\therefore the angles of the Triangle ABC together = the angles FCA , ACB , BCE ;
i. e. together = $2R$.

Therefore the angles of any Triangle &c.

Q. E. D.

Prop. IX. Theorem.

A Pair of Lines, which are equally inclined to a certain transversal, are so to any transversal.



Let AB , CD , be equally inclined to transversal EF ; and let GH be any other transversal.

Join EH .

Now 'amounts' of Triangles EFH , EGH , together = $4R$. [II. Prop. 8.]

But these make up angles of Figure FG ;

\therefore angles of Figure FG together = $4R$;

but angles GEF , EFH together = $2R$; [I. Prop. 1.]

\therefore angles EGH, GHF , together = $2R$;
 $\therefore AB, CD$, are equally inclined to GH .
 Therefore a Pair of Lines &c.

[I. Prop. 1.]

Q. E. D.

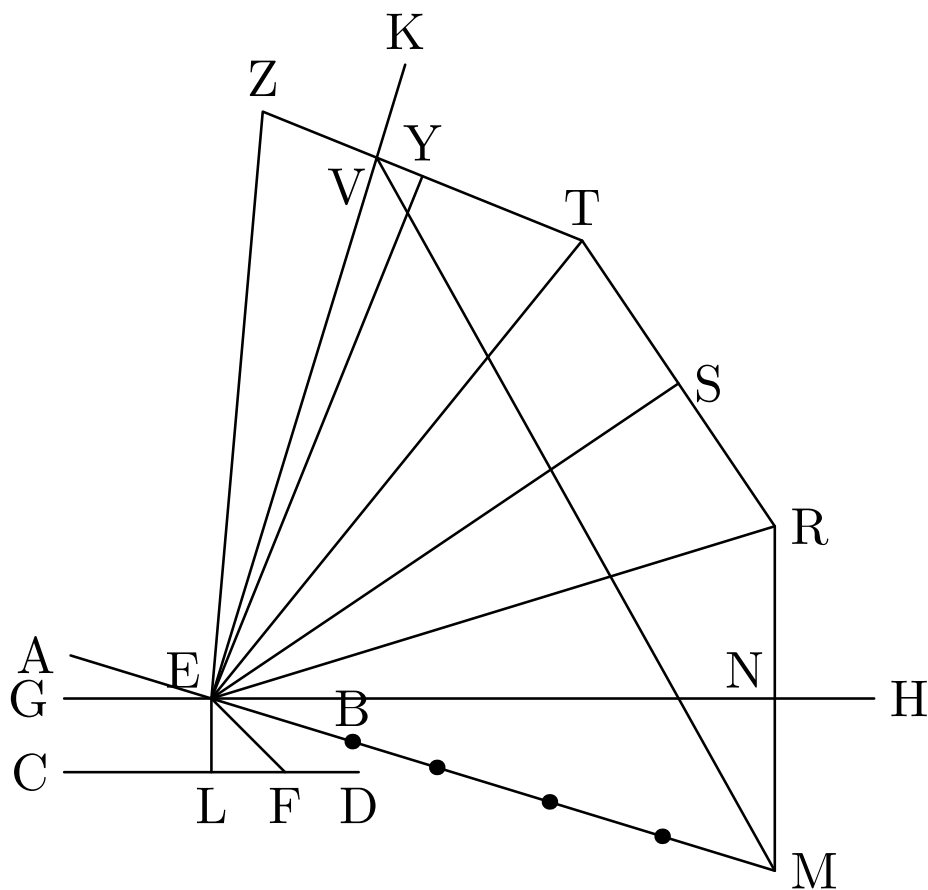
Axioms (continued).

2.

If two homogeneous magnitudes be both of them finite: the lesser may be so multiplied, by a finite number, as to exceed the greater.

Prop. X. Theorem.

If a Pair of Lines make, with a certain transversal, two interior angles, on the same side of it, which are together less than two right angles, the defect being a finite angle: these Lines are intersectional on that side of the transversal.



Let AB, CD make with EF the interior angles BEF, EFD together less than $2R$.

Make angle FEG equal to angle EFD ; produce GE to H ; from E draw EK at right angles to AB , and EL at right angles to CD .

Hence EL is also at right angles to GH ; [II. Prop. 9.

i. e. CD, GH have a common perpendicular;

\therefore each is equidistant from the other; [II. Prop. 7, Cor. 1.

also $EL =$ the common distance between them.

Now angle BEH is the defect, from $2R$ of the sum of the 2 interior angles BEF, EFD ;

hence, by hypothesis, it is finite;

\therefore it may be so multiplied, by a finite number, as to exceed angle BEK .

[II. Ax. 2.

Call this finite number ' n .'

In EB , produced if necessary, take EM n -times EL ; from M draw MN at right angles to EH ; turn Triangle ENM about EN into position ENR ; then, about ER , into position ERS , and so on, till there are n such Triangles altogether; and let its final portion be EYZ .

Then angle MEZ is n -times angle MEH ; i. e. it is greater than angle MEK .

Let EK cut broken-Line $MRTZ$ at V ; and join MV .

Then $MRTZ$ is greater than $MRTV$, which is greater than MV , which is greater than EM ; [Euc. I. 20, 17, 19.

\therefore $MRTZ$ is greater than EM ;

but MN is the same fraction of $MRTZ$ which EL is of EM :

\therefore MN is greater than EL ; i. e. the distance of M , from GH , is greater than the common distance between CD and GH .

\therefore AB, CD are intersectional towards B, D .

Therefore, if a Pair of Lines &c,

Q. E. D.

Appendix I.

Containing an alternative Axiom, which may be substituted for Axiom 1 at p. 857.

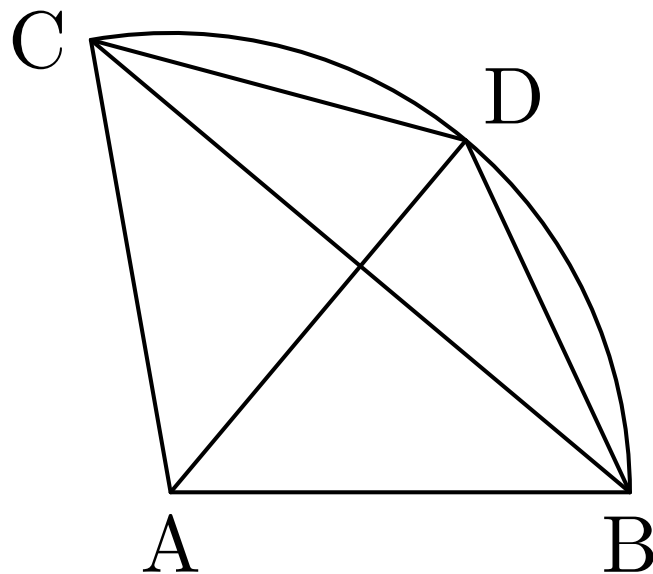
Definition

The Segment, cut off, from any Sector of a Circle, by its Chord, may be called its '**outer Segment**'; and the Triangle, contained by its Chord and its two Radii, may be called its '**central Triangle**.' And, if its Arc be bisected and the point of bisection joined to the ends of its Chord, the isosceles Triangle, so formed, may be called its '**inscribed isosceles Triangle**.'

Propositions

Prop. A. Theorem.

If, in any Sector of a Circle, its Chord be not-less than its Radius: then, in a Sector whose vertical angle is twice as great, its outer Segment is greater than its central Triangle.



Let ABD be a Sector whose Chord BD is not-less than its Radius AB . Make angle DAC equal to angle BAD ; and join BC, CD .

Then vertical angle of Sector $ABDC$ is twice as great as that of Sector ABD .

It shall be proved that its outer Segment BDC is greater than its central Triangle ABC .

Because BD is not-less than AB ;

\therefore Triangle BDC is not-less than Triangle ABC ;

[I. Prop. 2.

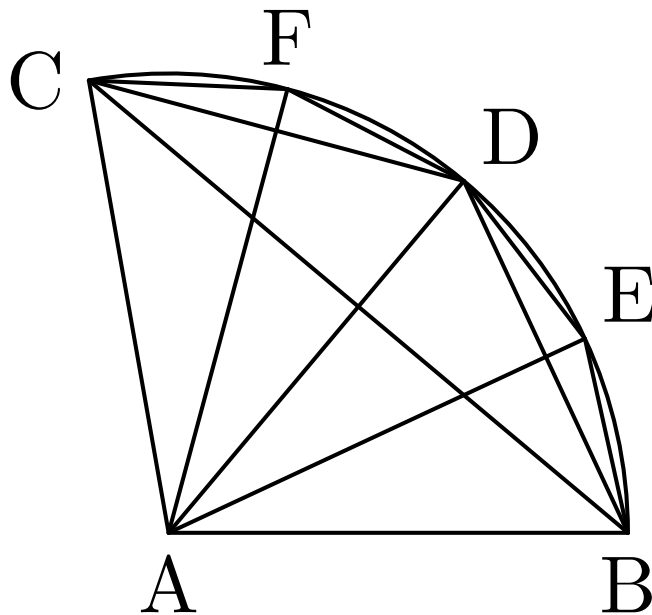
\therefore , *a fortiori*, Segment BDC is greater than Triangle ABC .

Hence if, in any Sector &c.

Q. E. D.

Prop. B. Theorem.

If, in any Sector of a Circle, each of the equal Sides of its inscribed isosceles Triangle be not-less than its Radius; and if its outer Segment be greater than a certain multiple of its central Triangle: then, in a Sector, whose vertical angle is twice as great, its outer Segment is greater than twice that multiple of its central Triangle.



Let $ABED$ be a Sector such that each of the equal sides of its inscribed isosceles Triangle BED is not-less than its Radius AB , and such that its outer Segment BED is greater than m times its central Triangle ABD . Make angle DAC equal to angle BAD ; bisect angles BAD , DAC by Lines AE , AF ; and join BC , CD , CF , FD .

Then vertical angle of Sector $ABDC$ is twice as great as that of Sector $ABED$.

It shall be proved that its outer Segment BDC is greater than $2m$ times its central Triangle ABC .

Because angle BED is greater than angle AED , and that angle BDE is less than angle ADE ;

\therefore angle BED is greater than angle BDE ;

\therefore BD is greater than BE ;

[Euc. I. 25.]

but BE is not-less than AB ;

\therefore BD is greater than AB ;

\therefore Triangle BDC is greater than Triangle ABC ;

[I. Prop. 2.]

to each of these add Triangle ABC ;

\therefore Figure $ABDC$ is greater than twice Triangle ABC .

Again, \because Segment BED is given to be greater than m times Triangle ABD ;

\therefore Segments BED , DFC are together greater than m times Figure $ABDC$;

i. e. are together greater than $2m$ times Triangle ABC ;

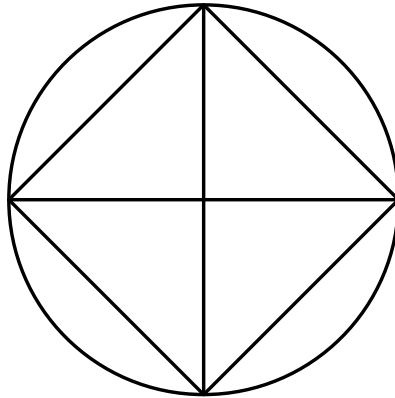
\therefore , *a fortiori*, Segment BDC is greater than $2m$ times Triangle ABC .

Hence if, in any Sector &c.

Q. E. D.

Axiom.

[An alternative Axiom, to be substituted for Axiom I, at p. 857, if the Reader feel any difficulty in granting that Axiom. In this case, certain portions of the foregoing Propositions will also need to be replaced by new matter, which is hereto appended.]

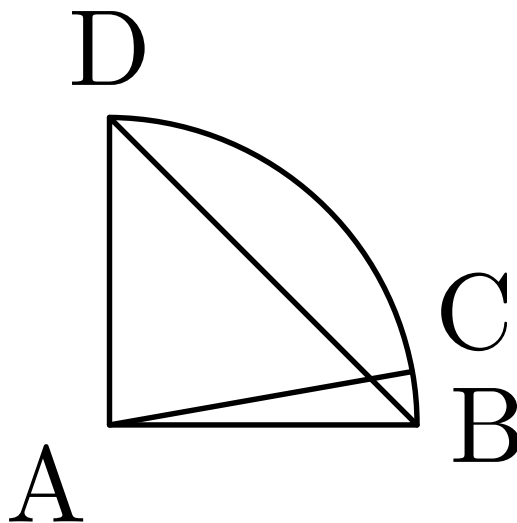


In every Circle, the inscribed equilateral Tetragon, multiplied by 2^a (' a ' being a certain selected finite number), is greater than any one of the Segments which lie outside it.

Prop. C. Theorem.

[To be substituted for Prop. I, at p. 858.]

An isosceles Triangle, whose vertical angle is $\frac{1}{2^{a+3}}$ of a right angle, has its base less than either of its sides.



Let $\frac{1}{2^{a+3}}$ of a right angle be represented by ' ϕ .'
 Let ABC be an isosceles Triangle, whose vertical angle at A is ϕ .
 It shall be proved that BC is less than AB .
 Draw AD at right angles to AB , and, with centre A , and distance AB , describe Quadrant. (See Note.) And join BD .

Note.—The reader can assign to ' a ' any finite value which he finds large enough to induce him to accept this Axiom. For example, if he be willing to grant that 1024 times the Tetragon is greater than the Segment, he can assign to it the value '10.'

Note.—The Reader is requested to imagine a chord drawn to the arc BC .

Then Triangle ABD is one-fourth of an equilateral Tetragon inscribed in the Circle.

Hence 2^{a+2} times this Triangle is greater than Segment BCD , [Alternative Axiom.]

Now, if we deny that BC is less than AB , we must assert that BC is not-less than AB .

Let this be our Hypothesis.

Hence it may be proved, as in Book II, Prop. I, that any Chord, drawn from B to any Point on the Arc CD , is greater than BC , and therefore not-less than AB .

Now, on our Hypothesis, ABC is a Sector whose Chord is not-less than its Radius;

\therefore , in a Sector whose vertical angle is 2ϕ , its outer Segment is greater than its central Triangle; [Prop. A.]

i. e., in a Sector whose vertical angle is 2ϕ , each of the equal sides of its inscribed isosceles Triangle is not-less than its Radius, and its outer Segment is greater than once its central Triangle;

\therefore , in a Sector, whose vertical angle is 4ϕ , its outer Segment is greater than twice its central Triangle; [Prop. B.]

\therefore , similarly, in a Sector, whose vertical angle is 8ϕ , its outer Segment is greater than 4 times its central Triangle;

and so on;

\therefore , ultimately, in a Sector, whose vertical angle is $2^{a+3}\phi$, its outer Segment is greater than 2^{a+2} times its central Triangle;

but $2^{a+3}\phi = R$;

\therefore , in Sector $ABCD$, Segment BCD is greater than 2^{a+2} times Triangle ABD .

But this is absurd, since it has been already proved less than 2^{a+2} times this Triangle.

Hence our Hypothesis, that BC is not-less than AB , is false; i. e. BC is less than AB .

Therefore an isosceles Triangle &c.

Q. E. D.

Corollary to Prop. C. Hence, by Book I, Prop. III, it is possible to describe, on a given base, an isosceles Triangle having each base-angle equal to $\frac{1}{2^{a+3}}$ of a right angle.

[N.B. If the Reader be willing to grant, as axiomatic, that 1024 times the Tetragon is greater than the Segment, he must now admit, as logically proved, that an isosceles Triangle, whose vertical angle is $\frac{1}{8192}$ of a right angle, has its base less than either of its sides. If such a Triangle were actually drawn, having each side 140 yards long, its base would be found to be less than an inch!]

Prop. D. Theorem.

[To be substituted for Prop. II, at p. 859.]

The angles of any Triangle are together not-less than $\frac{1}{2^{a+3}}$ of a right angle.

[The proof of Prop. II will serve here, without any change, except the substitution of ' ϕ ' for ' θ '.]

[N.B. If the Reader be willing to grant, as axiomatic, that 1024 times the Tetragon is greater than the Segment, he must now admit, as logically proved, that the angles of any Triangle are together not-less than $\frac{1}{8192}$ of a right angle.]

Prop. E. Theorem.

[To be substituted for Prop. III, at p. 860.]

There is a Triangle whose angles are together not-less than two right angles.

[The proof of Prop. III will serve here, without any change, except the substitution of ‘ ϕ ’ for ‘ θ ,’ and ‘ $\frac{1}{2^{a+3}}$ ’ for ‘one-eighth,’ down to the words ‘A similar proof &c.’ at foot of p. 861; for which the following is to be substituted.]

A similar proof will hold for 8ϕ , 16ϕ , and so on; and ultimately for $2^{a+4}\phi$. Hence, either there is an ‘amount’ not-less than $2R$, or else every ‘amount’ is not-less than $2^{a+4}\phi$.

But $2^{a+4}\phi = 2R$.

Hence the second clause of this alternative contains the first.

Hence the first clause must be true.

That is, there is a Triangle &c.

Q. E. D.

Appendix II.

Is Euclid’s Axiom true?

§ 1. Infinite and Finite Magnitudes

The answer I propose to give to this alarming question is that, though true for Finite Magnitudes—the sense in which, as I believe, Euclid *meant it to be taken*—it is *not* universally true.

Will the gentle Reader be so kind as to join me in contemplating, for a few minutes, the Infinite Space which surrounds our tiny planet? We believe—those of us, at least, who answer *fully* to the ancient definition of Man, ‘*animal rationale*’—that it is infinite. And that, not because we profess to have grasped the conception of Infinity, but because the *contrary* hypothesis *contradicts* Reason: and what contradicts Reason we feel ourselves authorised to deny. *Both* conceptions—that Space has a limit, and that it has none—are *beyond* our Reason: but the former is also *against* our Reason: for we may fairly say “When we have reached the limit, what then? What do we come to? There *must* be either Something, or Nothing. If Something, it is *full* Space, ‘*plenum*’: if Nothing, it is *empty* Space, ‘*vacuum*.’ That there should be *neither* of these is a logical impossibility. Such an hypothesis would be—in the words of Master Constable Dogberry—‘most tolerable and not to be endured.’”

I propose to show, by certain considerations which begin with Infinite Space, but will speedily condescend to Finite Magnitudes, that it is possible for two homogeneous Magnitudes to be so related to each other that *no* multiple of the lesser will exceed the greater. (It is of course assumed that a ‘multiple’ of a Magnitude is the result produced by the use of a ‘multiplier,’ and that a ‘multiplier’ is a *nameable*—and therefore a *finite*—number.)

Quoted from *Much Ado About Nothing* by William Shakespeare

“Yet surely,” the gentle Reader will protest, “Euclid has assumed the exact *contrary* of this? Does he not, in Book X, Prop. 1, tacitly assume the Axiom that the lesser of two Magnitudes may be so multiplied as to exceed the greater?”

Gentle Reader, he *does!* But *my* contention is that, in so doing, he excludes from his view both Infinities and Infinitesimals, and is contemplating *Finite Magnitudes only*.

For consider Euclid’s Definitions of the word ‘Ratio’ and of the phrase ‘to have a Ratio to.’ (Book V. Def. 3, 4.)

(3) λόγος ἐστὶ δύο μεγεθῶν ὁμογενῶν ἢ κατὰ πελικότητα πρὸς ἄλληλα ποιά σχέσις.

(4) λόγον ἔχειν πρὸς ἄλληλα μεγέθη λέγεται, ἃ δύναται πολλαπλασιαζόμενα ἀλλήλων ὑπερέχειν.

Quite literally, these are:—

(3) “Ratio is a certain relationship, as to size, of two homogeneous Magnitudes, each to the other.”

(4) “Magnitudes, which can, (on) being multiplied, exceed each the other, are said to have a Ratio, each to the other.”

But they become more intelligible when less literally translated:—

(3) “Ratio is a certain relationship, as to size, borne, by a Magnitude, to another Magnitude homogeneous with it.”

(4) “A Magnitude is said ‘to bear a Ratio to’ another Magnitude, homogeneous with it, when either of them, that is not greater than the other, can be made so by multiplication.”

Some translators introduce the word ‘mutual’ into No. (3), and tell us that Ratio is ‘a *mutual* relation of two Magnitudes’: but this seems to me incorrect, as seeming to imply that the Ratio, borne by *A* to *B*, is *identical* with that borne by *B* to *A*. But, if *A* were 3-4ths of *B*, *B* would not be 3-4ths, but 4-3ds, of *A*: and the Ratio ‘4-3ds,’ though of the same *nature* as the Ratio ‘3-4ths,’ is not *identical* with it.

Now it seems to me clear that Euclid does not mean to imply that *any* two homogeneous Magnitudes bear ‘Ratios’ to each other: for in No. (4) he gives us a test, by which to know in what cases two such Magnitudes *do*, and in what cases they do *not*, bear ‘Ratios’ to each other. This test would be wholly superfluous if it were true, of any two homogeneous Magnitudes, that one could be said ‘to bear a Ratio to’ the other.

What cases then, does Euclid mean to *exclude* by this test? My answer is “all cases in which one of the Magnitudes is *infinitely greater than the other*.” Take, as an example, these two Magnitudes—a Cubic Inch, and Infinite Space. It is *not* possible, by multiplying a Cubic Inch by any finite number, however great, to make it exceed, or even equal, Infinite Space: hence Euclid’s test *fails* in this case, and Euclid would, no doubt, *decline* to say that either of these Magnitudes, though they are strictly *homogeneous*, bears a ‘Ratio’ to the other.

My conclusion, then, is that, in Book X. Prop. 1, Euclid is limiting his view to the case of two homogeneous Magnitudes *which are such that neither of them is infinitely greater than the other*: nay, more—for such a limitation would not exclude the case of two Infinities of the same order—that he is contemplating *Finite Magnitudes only*.

§ 2. Infinitesimal Lines and Strips.

We have already seen that, in the case of two homogeneous Magnitudes, one Finite and the other Infinite, *no* multiple of the lesser will exceed the greater: and I now propose to show that it is possible for the same thing to happen in the case of two homogeneous Magnitudes, *neither of them being Infinite*.

Let us imagine an Infinite Plane, placed upright, and facing us—as if we were standing in front of a waU, which extended to infinity, upwards, downwards, to the right-hand, and to the left. If we divide this Plane by a single horizontal straight line, extended to infinity to the right-hand and to the left, we get *half* of the whole Plane *above* the Line, and *half below* it, wherever we choose to place the Line. This may be deduced from the logical principle that we have no reason for believing *either* to be greater than the other; or we may adopt M. Bertrand's Axiom, "Two spaces, whether finite or infinite, are equal, when one can be placed upon the other so that any point whatsoever of either coincides with a point of the other"—a condition which seems, theoretically, readily attainable, by making one portion of the Plane revolve round the boundary-line, as a hinge, till it coincides with the other portion. Each portion is, of course, an Infinity of the *same* order as the whole Plane.

Now let us imagine *two* such infinite horizontal straight Lines, 'separational' from each other (i. e. never intersecting), placed at a finite distance apart, and therefore having between them a Strip, finite in width, infinite in length, and therefore infinite in area.

Now it clearly is *not* possible, by multiplying this Infinite Strip by any finite number, however great, to make it exceed, or even equal, the whole Infinite-Plane. Here again, then, Euclid's test fails, and neither of these Magnitudes, though they are *homogeneous*, can be said to have a 'Ratio' to the other. In fact, the Infinite-Strip is an Infinity *of a lower order* than the Infinite-Plane.

Comparing this Strip with a single square-inch, you will, I fancy, be willing to grant at once that *no* multiple of the latter can possibly reach—much less exceed—the former. We have, in fact, established the existence of *three* kinds of Area, viz. Finite Areas (e. g. a square inch). Infinities of the first order (e. g. the Infinite-Strip we have been considering), and Infinities of the second order (e. g. the upper half of the whole Infinite-Plane).

Now let us go a step further. Let the two sides of this Strip be supposed to gradually approach each other—still maintaining their 'separational' character—and let us consider the effect of this process on the intervening area.

When the width of the Strip has been reduced to half-an-inch, you will grant, I suppose, that the area is exactly half what it was at first—since *two* such Strips, laid side by side, evidently make up the original Strip. And so, by reducing the width to a quarter-inch, &c., we obtain a number of different areas, all Infinite alike, and yet having finite ratios to one another: in fact, so long as the width continues to be a *finite fraction* (i. e. a fraction with a finite numerator and denominator) of an inch, the area continues to be an Infinity *of the same order* as the original Strip. (It seems obvious that Infinities *of the same order* have finite ratios to one another, and that any one of them can be so multiplied, by a finite number, as to exceed any other.)

But this narrowing process may be continued until the two Lines absolutely *coincide*: and what *then* becomes of the area? It cannot be denied that it is then *Zero*.

Now I have ventured (see p. 850) to lay it down, as an Axiom, that, when a Magnitude varies *continuously*, and has changed from a certain value to a certain other value, it must have passed through *every intermediate value*. And what intermediate values do we find between an Infinite Area and Zero? Surely every *Finite* Area, that can be named, lies between them? The Reader can, if he likes, part company with me at this point: but to my Reason it seems absolutely clear—first, that the Strip does diminish *continuously*, and not ‘*per saltum*’; and secondly, that its area has, at some time or other during the process, every conceivable *finite* value. At one time, for instance, it contains a square-mile: and, rather later in its career, it is reduced to a single *square-inch*.

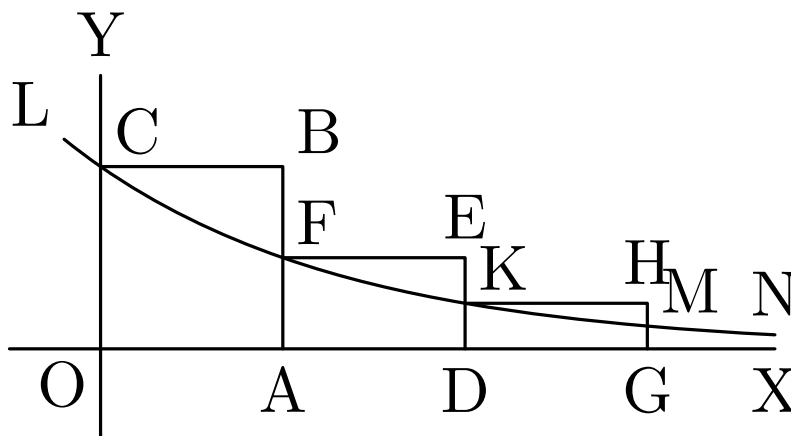
Let us contemplate it in this last-named condition. Its length? As Infinite, clearly, as it was at first. Its Area? One square-inch, undoubtedly. *And what is its width?*

Can you, oh gentle Reader, find any reasonable answer to this question, except the following? “Its width is *infinitely small*—having, in fact, exactly the same relation to a linear inch which that linear inch has to an infinite Line.”

If this be so (and I see no way out of it), we have found two Magnitudes, both linear, neither of them infinite, and yet *such that no multiple of the lesser can possibly exceed the greater*. They are, in fact, *not of the same order*; one of them being Finite, and the other an Infinitesimal of the first order.

But is not the gentle Reader saying to himself, all this time, “I *cannot* believe in the existence of a Strip, Infinite in length, and yet Finite in Area! No doubt, if such a Strip *could* exist, its width must be what you call ‘Infinitesimal’; since a Finite width must give an Infinite area. But I don’t believe in the existence of an Infinitesimal width! My belief is that, if you make the edges of the Infinite-Strip gradually approach till they coincide, its width will continue *Finite* till the last moment, and will then suddenly become Zero; and that its area will continue an *Infinity of the first order* till the last moment, and will then suddenly become Zero.”

Very good. My gentle Reader has formulated his views, very clearly and definitely. Permit me now to offer to his consideration a Strip, which I will *prove* to be at once Infinite in length and Finite in area.



Let OX , OY , be rectangular Axes of Reference; and let us trace the Curve $y = 2^{-x}$, where $OC = OA = AD = DG =$ unit-line. Hence, when $x = 0$, $y = 1$;

when $x = 1, y = \frac{1}{2}$; when $x = 2, y = \frac{1}{4}$; when $x = 3, y = \frac{1}{8}$; and so on. Hence the Curve is *LCFKMN*. Also, however large x becomes, y can *never* be Zero; i. e. the Strip, intercepted between the Curve and the x -Axis, and bounded at the left-hand end by CO , is Infinite in length. And now let us estimate its area. Its first portion, $COAF$, is less than the rectangle OB ; its second portion is less than AE ; and so on. Hence its area is less than $(OB + AE + \&c. \text{ for ever})$; i. e., is less than $(1 + \frac{1}{2} + \frac{1}{4} + \&c. \text{ for ever})$; therefore, *a fortiori*, it is less than 2.

Now an area, which is less than '2,' is surely *Finite*? Does the gentle Reader see any escape from admitting this? And, if he admits this, does he *still* maintain that the *width* of this Infinite-Strip (which obviously dwindles, as you go along the Strip, but never becomes Zero) *never ceases to be Finite*? Yet surely a Strip, Infinite in *length*, and *nowhere less than Finite in width*, must be *Infinite* in area?

In brief, I place before my gentle Reader that savouriest of Logical dishes, a *Trilemmia*! Either he must assert that a Strip, Infinite in length, and nowhere less than Finite in width, is only Finite in area; or he must assert that the *length* of this Strip is *Finite*, i. e. he must assert that *the Curve meets the x-Axis*; or else he must admit that its *width* ceases to be Finite without becoming Zero, i. e. he must admit that its width becomes *Infinitesimal*! Let him take his choice, and help himself. 'May good digestion wait on appetite, And health on both!'

Now let us cut off, from the infinitely-long Strip named in p. 875, whose area is a square-inch, a piece just an inch long. What will its area be? It is evident that no multiple of this short Strip can ever make up the infinitely-long Strip; that is, no multiple of its area can make up a square-inch. Hence its area must be an Infinitesimal of the first order.

But this Infinitesimal area, inconceivably small as it is, is nevertheless *greater than Zero*. Hence our continuously-diminishing Strip is bound, before reaching Zero, to pass through this singularly unassuming value. And, at that moment, *what will be its width*? Its length will be Infinite, as usual: its area will be an Infinitesimal of the first order: but its width cannot be an Infinitesimal of the same order as the previous width; for *that* would yield a finite area, as we have seen. What else, then, can it be but *an Infinitesimal of the second order*? A Line of such stupendous brevity that no finite multiple of it can even make up an Infinitesimal of the first order. Evidently we might repeat this process *ad libitum*, and so get Infinitesimals of the third order, the fourth order, and so on.

To sum up our results, so far. We see that a Line may be either Finite, or may extend to an Infinity of the first order, or may dwindle to an Infinitesimal of the first, second, or any order we choose: and that an Area may be either Finite, or may extend to an Infinity of the first order (an Infinite-Strip), or of the second order (e. g. the whole Infinite-Plane), or may dwindle to an Infinitesimal of any order we choose.

Now we may reasonably expect to find that all, that has been here said, is equally applicable to *any* kind of Magnitude that is capable of *continuous* increase and decrease. Let us consider, then, whether it is possible to have Infinitesimal *Angles* of the various orders.

§ 3. Infinitesimal Angles and Sectors.

For this purpose, let us return to our upright Infinite-Plane, and, taking some Point at random as a centre, let us imagine two Lines radiating from it (say at an angle of 45°), and both of them extended to infinity, and therefore having between them a Sector, finite in angular magnitude, infinite in length, and therefore infinite in area.

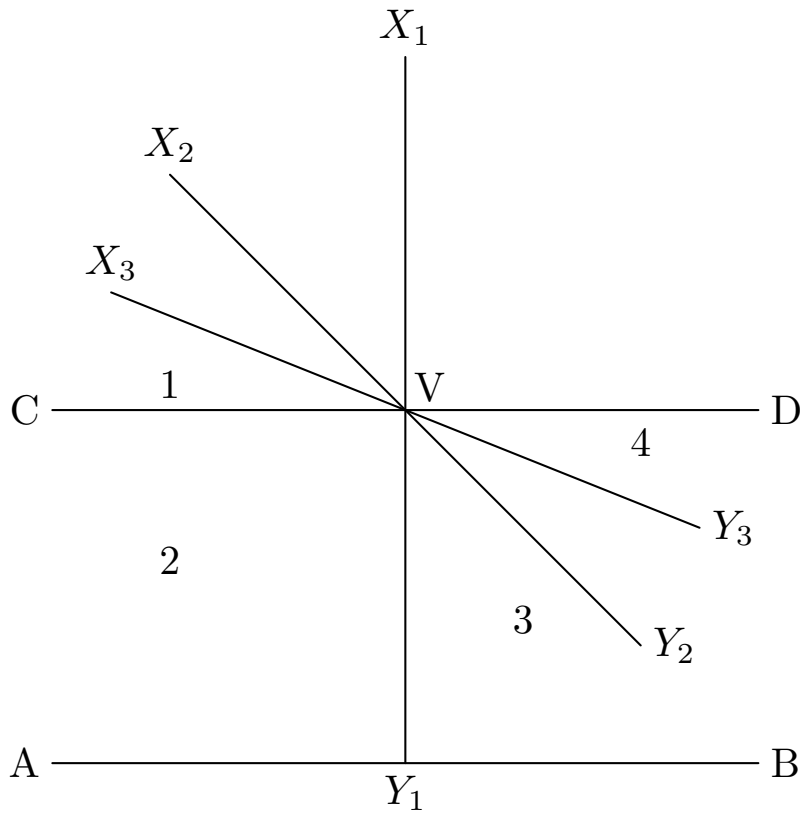
I named 45° as my specimen-angle, because it is the *one single angle*, other than a right angle, with which Society is acquainted. Enquire of some chatty traveller, who is relating his experiences of an Alpine Pass, what *slope* it was that he had to climb. "The ground sloped at an angle of forty-five," he is sure to reply. Nay, I once met a gentleman who, on hearing it mentioned that the 'dip' of a certain river-bed was, in one place, "one in forty-five," cautiously remarked "I suppose that means an angle of forty-five degrees?" Imagine a *river* sloping at that angle! And then imagine the labour of rowing *up* it, and the headlong, wild delight of rowing *down* it! But this is a digression.

Now it clearly *is* possible, this time, by multiplying this Infinite-Sector by a certain finite number, namely '8,' to make it equal to the whole Infinite-Plane. Hence this Infinite-Sector is an Infinity *of the same order* as the whole Infinite-Plane; i. e. it is of the *second* order.

Now let us suppose that the two sides of this Infinite Sector gradually approach each other until they coincide. It cannot be denied that the area then becomes Zero. It has dwindled, then, from an Infinity of the second order (when its angular magnitude was *finite*), down to absolute Zero. And there seems no room to doubt that it has done this *continuously*, and not 'per saltum.' What values, then, has it gone through on the way? Can we reasonably doubt that it has gone through, first, all Infinities of the *first* order (during which process its angular magnitude would be an Infinitesimal of the *first* order), secondly, all *Finite* values (its angular magnitude being an Infinitesimal of the *second* order), thirdly, all Infinitesimals of the *first* order (its angular magnitude being an Infinitesimal of the *third* order), and so on—the angular magnitude being always *two* degrees ahead of the area, in this long and fatiguing competition in the Dwindling-Race.

§ 4. Pairs of Lines.

We are now in a position to examine the phenomena of intersection, or non-intersection, with regard to a Pair of Lines, by imagining one of them to revolve about a fixed Point.



Let AB be one of the 2 Lines: and let X_1VY_1 be, at first, at right angles to it: and let it then revolve, about V , so as to take the successive positions X_2VY_2 , X_3VY_3 , CVD , its final position being at right angles to its first position, and therefore parallel to AB .

Let us further suppose that the angle, contained between CV and the upper part of the revolving Line, dwindles, from a right angle, through all possible *finite* lesser values, while its upper edge revolves from VX_1 to VX_2 ; that, the moment the upper edge goes *below* VX_2 , this angle becomes an *Infinitesimal of the first degree*, and so dwindles, through all such values, while its upper edge revolves from VX_2 to VX_3 ; that, the moment the upper edge goes *below* VX_3 , this angle becomes an *Infinitesimal of the second degree*; and so on.

Now let us suppose all the Lines in the diagram produced to infinity both ways: and let us call the Infinite-Sector, intercepted between VC -produced and the upper part of the revolving-Line, 'No. 1'; the semi-Infinite-Strip (I mean, by 'semi-Infinite,' that it is terminated at *one* end), intercepted between the Lines VC -produced and Y_1A -produced, and bounded at the right-hand end by VY_1 , 'No. 2'; the surface, intercepted between the Line Y_1B -produced and the lower part of the revolving-Line, and bounded at the left-hand end by VY_1 , (which will be a Triangle, so long as Y_1B -produced and the lower part of the revolving-Line continue, to intersect, and will become a semi-Infinite-Strip when they cease to intersect,) 'No. 3'; and, with regard to the Infinite-Sector intercepted between the Line VD -produced and the lower part of the revolving-Line, let us call that portion of it, which lies *above* Y_1B -produced (which portion will be a semi-

Infinite-Strip, so long as Y_1B -produced and the lower part of the revolving-Line continue to intersect, and will become the whole Infinite-Sector if they should cease to intersect before the revolving-Line reaches the position VD), ‘No. 4’; and that portion of it, which lies *below* Y_1B -produced (which portion will cease to exist as soon as these Lines cease to intersect) ‘No. 5.’

Let us now investigate the changes, in the *areas* of these 5 surfaces, caused by the changes in the position of the revolving-Line.

First as to No. 1. This is clearly, throughout its history, an Infinite-Sector, whose vertical-angle is at first a right angle, and ultimately Zero. Also its area is at first one-quarter of the whole Infinite-Plane, and ultimately Zero. Also, so long as the upper part of the revolving-Line ranges between VX_1 and VX_2 , the area continues to be an Infinity of the second order; and, as the revolving-Line crosses the position VX_2 , the area changes, from a very small (!) *Infinity of the second order*, to a very large *Infinity of the first order*. Similarly, as the revolving-Line crosses the position VX_3 , the area changes, from a very small *Infinity of the first order*, to a very large *Finite value*.

A little further on, it will of course become an *Infinitesimal of the first order*; and so on, through the other orders, till it finally reaches the value *Zero*.

Next, as to No. 2. This is clearly, throughout its history, one-half of the Infinite-Strip contained between AB and CD , and is therefore an *Infinity of the first order*. Its area is a constant quantity, being unaffected by the revolving-Line.

Next, as to Nos. 4, 5. (I take these next, because they will help us to investigate the properties of No. 3.) It is evident that, so long as No. 5 continues to exist, the two together constitute—and that, when No. 5 has ceased to exist. No. 4 by itself constitutes—an Infinite-Sector, which is the exact counterpart of No. 1—the two having what Euclid calls ‘opposite vertical angles.’ Hence, while the lower part of the revolving-Line ranges between VY_1 and VY_2 , the area of No. 4 continues to be an Infinity of the second order, and entirely declines to be ‘cribb’d, cabin’d, and confined’ within such narrow limits as our Infinite-Strip! Hence the revolving-Line continues, all this time, to intersect Y_1B -produced. (N.B. Here we have a proof of the truth of Euclid’s Axiom, when amended, as I have done at p. 866, by inserting the words ‘the defect being a finite angle.’)

Quoted from *Macbeth*
by William
Shakespeare

Let us now, reserving for future consideration the phenomena of the period while the upper part of the revolving-Line is crossing from VX_2 to VX_3 suppose it to have passed VX_3 , so that the angle, which it makes with VC , has become an Infinitesimal of the *second* order. Will its lower part continue to intersect VD -produced? It may easily be shown, by a *reductio ad absurdum*, that it will *not*: for, if it did, Nos. 1, 2, 3 would then make up an Infinite-Sector, whose vertical angle would be an Infinitesimal of the *second* order, and whose area would therefore be *finite*. But the area of No. 2 is always an *Infinity* of the first order. Which is absurd. Hence, after the upper part of the revolving-Line has passed VX_3 , its lower part does *not* intersect Y_1B -produced.

We have now to answer a far more puzzling question, namely, what happens while the upper part of the revolving-Line is crossing from VX_2 to VX_3 ? Does its lower part intersect Y_1B -produced, all the while? Or does it fall clear of it, all the while? Or does it at first intersect it, and afterwards cease to do so?

First, suppose it to intersect Y_1B -produced. In this case No. 3 is clearly a closed Triangle, whose vertical-angle is an Infinitesimal of the first order. This looks as if its *area* must also be an Infinitesimal of the first order: but this, we

know, *cannot* be, since it contains within it the finite area possessed by No. 3 while the upper part of the revolving-Line was passing from VX_1 to VX_2 , Hence its area must be, at least, *finite*. The only way I can see out of this difficulty is to assume that the *sides* of this Triangle have become *infinite*; i. e. that the revolving-Line intersects Y_1B -produced at *an infinite distance*.

Next, suppose it to fall clear of Y_1B -produced, In this case No. 3 is a semi-Infinite-Strip, but we cannot be certain that its *area* is, like such Strips when of a uniform width, *infinite*; for its width dwindles so much towards the right-hand that it may possibly be, in the early part of the period, *finite*. I see no way of settling this question; but, luckily, it is not relevant to the question of *intersection*.

My own inclination is to believe that, during this second period of revolution, the lower part of the revolving-Line at first intersects Y_1B -produced, at an infinite distance, and then ceases to intersect it.

After the revolving-Line has once ceased to intersect Y_1B -produced, No. 4 is of course equal to No. 1. That is to say, the surface, contained between the whole revolving-Line and AB , is, from that moment until the revolving-Line coincides with CD , of a constant area, since it is the sum-total of Nos. 1, 2, 3, which is equal to the sum-total of Nos. 2, 3, 4, i. e. to the whole Infinite-Strip. And this will continue true, while No. 1 and No. 4 dwindle down, through all finite and infinitesimal values, till they finally reach Zero.

The results we have arrived at will perhaps be more easily understood by examining the following Table of values. The symbols used in it are as follows:—

Symbols.	Meanings.
R	a right angle.
F	a large finite magnitude.
f	a small „ „
M	a large Infinitesimals of 1st order.
M^2	„ „ 2nd „
J	a large Infinity of 1st order.
S	area of the semi-Infinite-Strip No. 2. [an Infinity of 1st order.]
P	area of one-fourth of the Infinite-Plane. [an Infinity of 2nd order.]

Position of upper part of revolving-Line	Vertical angle of Space No. 1.	Areas of Spaces.				
		No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
X_1V	R	P	S	Zero	S	P
	F	J^2	„	f	„	J^2
	f	j^2	„	F	„	j^2
X_2V	M	J	„	?	?	?
	m	j	„			
X_3V	M^2	F	„	S	F	does not exist
	m^2	f	„	„	f	
	M^3	M	„	„	M	„
	m^3	m	„	„	m	„
CV	&c.	&c.	„	„	&c.	„
	Zero.	Zero.	„	„	Zero.	„

The sum of the whole matter appears to be this. If a Pair of Lines make, with a certain transversal, two interior angles on the same side of it together less than two right angles, then, so long as the defect is *finite*, there is no doubt that the Lines intersect: also, if the theory be true, that the area of an Infinite-Sector, whose vertical-angle is finite, and whose area is therefore undoubtedly an Infinity of the second order, passes, as its vertical angle dwindles to Zero, through infinite values of the first order, and then through finite values, its vertical angle meanwhile passing through infinitesimal values of the first and second order—if all this be true, it follows that, when the ‘defect from two right angles’ becomes an Infinitesimal of the *first* order, the Lines may possibly intersect, but can only do so at an infinite distance; and that, when the defect has become an Infinitesimal of the *second* order, the Lines have ceased to intersect.

The theory, here discussed, may be bewildering; but it is at least consistent with itself: and it seems to me to be *quite* as credible as the theory that ‘Infinitesimals’ are mythical, and that a Finite Magnitude, dwindling down to Zero, continues Finite to its last gasp.

Another process—a *negative* one—has occurred to me, for disproving the *absolute* truth of Euclid’s Axiom. It is a very simple process, and has the great recommendation of not requiring any belief in the existence of Infinitesimals.

On an upright Infinite-Plane let us suppose 2 horizontal Infinite-Lines, having a common perpendicular, and therefore of course never intersecting. Let us call them ‘No. 1’ and ‘No. 2,’ No. 1 being above No. 2: and let us suppose the common perpendicular to be an inch long, so that the 2 Lines are the edges of an Infinite-Strip, whose uniform width is an inch.

Now let us suppose Line No. 1 to begin to revolve about the upper end of the common perpendicular. The believer in the *absolute* truth of Euclid’s Axiom is bound to believe that, *in the very act of beginning to revolve*, it also begins to intersect No. 2: he cannot allow the one process any such *start* of the other as might enable him to say “No. 1 has begun to revolve, but has *not* yet begun to intersect No. 2”: such a state of things *must* be, in *his* view, *absolutely* impossible. ‘And what’s impossible ca’n’t be. And never never comes to pass!’

Very good. The actual process of *beginning* to intersect No. 2 is a deep mystery, no doubt: but that the thing *happens* is quite undeniable. We are able to say “Now it *isn't* intersecting No. 2—and now it is!” So, though we cannot conceive *how* it managed to begin, it has certainly *done* it.

Now let us suppose *another* horizontal Line, ‘No. 3,’ lying an inch below No. 2. The believer in Euclid’s Axiom is bound to assert, as to No. 3, *exactly* what he asserted as to No. 2. Has he, then, any logical escape from the conclusion that the revolving Line begins to intersect Nos. 2 and 3 *together*? I see none, myself. And yet how can it get at No. 3, without *first* going through No. 2? *Any* point on No. 1 (I am careful not to say ‘every’: I know how gleefully the logical Reader would swoop down upon me with the crushing sarcasm “What does ‘every’ mean, when there is no limit to the number of points?”: but ‘any’ is a safe epithet) is amenable to the simple rule of “First come, first served. Cross No. 2 first: and *afterwards* (not by any means *simultaneously*) you have our gracious permission to cross No. 3.” Now, what is true of *any* point on the Infinite-Line No. 1 is surely true of that Infinite-Line itself? To say “No. 1 intersects No. 3” is tantamount to saying “A certain *point* of No. 1 has reached No. 3.” And *how did that Point get below No. 2*?

Of two things, one. Either *some* point of No. 1 has crossed Nos. 2 and 3 *at the same moment*: or else *no* point of No. 1 has crossed No. 3 until *after* it had crossed No. 2. That is a logical Dilemma. Which of its two horns does the Reader prefer?

The choice of the *first* horn involves the Reader’s acceptance of *ubiquitous points*! In the event of his choosing the *second* horn, he seems logically bound to admit it as a *possible* state of things, that No. 1 should have *begun* to revolve, and yet should *not* have begun to intersect No. 3—which is a surrender of his belief in the *universal* truth of Euclid’s Axiom.

My final answer, then, to the question “*Is Euclid’s Axiom true?*” is as follows:—

“If the defect, from the sum of two right angles, be *finite*, the Lines *certainly meet*; if it be an Infinitesimal of the *first* order, they may meet, or not, according to circumstances: if it be an Infinitesimal of the *second*, third, or any higher order, they *certainly do not meet*.”

The question, with which this Appendix is headed, was sufficiently startling: but a more startling one remains to be answered. “If Euclid’s Axiom be not *universally* true, what becomes of all the Propositions which he has made to depend upon it, such as I. 29? Has he done no more than prove them to be *partially* true?”

To this disheartening question I will give as re-assuring an answer as the case seems to admit of. It must be admitted that Euc. I. 29 requires—if we would make it *strictly* true—the same limitation as the Axiom: it should run as follows:—“Two Lines, which do not meet, make, with all transversals, angles which are equal *so far as finite differences are concerned*” (i. e. angles so nearly equal that the difference, if any, is *infinitesimal*). And of course Euc. I. 32, as proved from Euc. I. 29, would need a similar qualification. It seems to me very doubtful whether Euclid ever noticed this defect in his Axiom. If he did, it is possible that he may have thought fit to ignore it, on the ground that, when Finite Magnitudes differ only by an Infinitesimal, they are, for all *practical* purposes, equal.

But I feel bound to admit that, for the purpose of proving Euc. I. 32 to be, as it really is, *universally* true, neither Euclid's Axiom, nor any other that deals with *intersection* of Lines, will suffice: and that some Axiom, not involving that principle, must be substituted for it.

Let me say in conclusion that, though I assert the *absolute* truth of Euclid's Axiom—with the limiting clause I have introduced, '*the defect being a finite angle*'—it still remains, in my opinion, a 'disputable' Axiom; i. e. it is not properly admissible as an *Axiom*, but ought to be, if possible, proved as a *Theorem*.

Appendix III.

How should Parallels be defined?

We know that, if a, Pair of Lines has either of the following properties

- (1) they are equally inclined to a certain transversal,
- (2) one of them contains 2 Points on the same side of, and equidistant from, the other,

it has all the following properties

- (3) they are equally inclined to all transversals,
- (4) any 2 Points, on either of them, are on the same side of, and equidistant from, the other,
- (5) they do not meet, however far produced.

Any one of these properties may be used as a Definition. Let us take them one by one.

No. (1). This has the advantage that we need not begin by proving that such Lines *exist*, but may assume it as axiomatic. It has been used as a Definition by Varignon, Bezout, Cooley, &c.: at least, they say "which make equal angles with a transversal," leaving it uncertain whether they mean "a *certain* transversal" or "*any* transversal": if the latter, it is of course No. (3) they are proposing to use. From No. 1 we can prove No. (5) without using any disputable Axiom (see Euc. I. 27, 28), but not No. 3 or No. 4.

No. (2). This has the same advantage as No. (1). It has been used as a Definition by D'Alembert. From *it*, also, we can prove No. (5) without using any disputable Axiom; and it, also, fails to prove No. 3 or No. 4.

No. (3). This cannot be used, as a Definition, till we have proved that such Lines *exist*—which has not yet been done without employing some disputable Axiom. If Varignon, &c. mean *this* to be their Definition, they are assuming the *existence* of such Lines,—a *very* un-axiomatic Axiom. But, when once their *existence* has been granted, or proved, No. 4 can be deduced.

No. (4). This cannot be used, as a Definition, till we have proved that such Lines *exist*—which has not yet been done without employing some disputable axiom. When once their *existence* has been granted, or proved, No. 3 can be deduced. No. 4 has been used as a Definition by Wolf, Boscovich, T. Simpson, and Bonycastle.

No. (5). This has the advantage that it is easy to prove (as in Euc. I. 27, 28) that such Lines *exist*. It has been used as a Definition by Euclid and a host of other geometers. It has, however, the enormous *disadvantage* that, whereas

Nos. (3), (4), give us a *unique* Pair of Lines (e. g. given a Line and a Point not on it, we can prove that only *one* Line can be drawn, through the Point, such that the Pair shall have property No. (3)), No. (5) does *not*: on the contrary, given a Line and a Point not on it, a whole ‘pencil’ of Lines may be drawn, through the Point, and not meeting the given Line: all we need to do is to take care, after drawing *one* such Line, that the others shall make with it angles which are *Infinitesimals of the second order with regard to a right angle*.

We see, then, that the word “Parallels” has been already used with *four*, and possibly with *five*, different meanings: so that any fresh writer, who uses the word, is liable to be misunderstood unless he first defines it. The derivation of the word would seem to suggest No. (4) as its Definition; but Euclid’s adoption of No. (5) has led to that being the popular meaning attached to the word.

It is easy, however, to avoid all this ambiguity by the use of new terms. Rejecting Nos. (1) and (2), as useless for the purpose of definition, we may call a Pair of Lines, which possesses

No. (3), “equiangular”;

No. (4), “equidistantial”;

No. (5), “separational”;

and thus avoid the dangerous word “parallel” altogether.

My own belief is that No. (3) is, on the whole, the property best adapted for practical use as a Definition.

Appendix IV.

How the Question stands to-day.

I will first enumerate certain Theorems connected with Pairs of Lines.

I will then notice three other methods which have been suggested for superseding Euclid’s Axiom.

And, in conclusion, I will indicate what seem to me the most hopeful directions for future efforts at exploring this fascinating, but very obscure, region of mathematical research.

§ 1. Certain universally-true Theorems, provable from genuine Axioms (i. e. from Axioms whose self-evident character is indisputable).

(1) A Pair of Lines, which are equally inclined to a certain transversal, are separational (i. e. never intersect, however far produced). [Euc. I. 27, 28.]

(2) [*contranominal of (1)*] A Pair of intersectional Lines (i. e. which either intersect or would do so if produced) are unequally inclined to any transversal. [Euc. I. 16, 17.]

(3) A Pair of Lines, such that two Points on one of them are on the same side of, and equidistant from, the other, are separational.

(4) [*contranominal of (3)*] A Pair of intersectional Lines are non-equidistantial (i. e. are such that any two Points on either of them, which are on the same side of the other, are non-equidistant from it, that which is further from the Point of intersection being also further from the other Line).

(5) If there be a Triangle whose angles are together equal to two right angles: the angles of any Triangle are together equal to two right angles.

(6) There is a Triangle whose angles are together not-greater than two right angles.

§ 2. Certain universally-true Theorems, not provable from genuine Axioms, but provable if any one of them be accepted as an Axiom.

[N.B. These will be hereafter referred to as the ‘Nine Quasi-Axioms,’ their self-evident character being disputable.]

(1) Through a given Point, outside a given Line, a Line may be drawn, such that the Pair shall be equally inclined to any transversal.

(2) A Pair of Lines, which are equally inclined to a certain transversal, are so to any transversal. [Deducible from Euc. I. 27, 28, 29.]

(3) [*contranominal of (2)*] A pair of Lines, which are unequally inclined to a certain transversal, are so to any transversal.

(4) If a Point move so as to be at a constant distance from a given Line, its path shall be a straight Line.

* (5) Through a given Point, outside a given Line, a Line may be drawn equidistant from the given Line (i. e. such that any two Points on it shall be equidistant from the given Line).

(6) A Pair of Lines, such that two Points on one of them are on the same side of, and equidistant from, the other, are equidistant (i. e. are such that any two Points on either of them are equidistant from the other).

(7) [*contranominal of (6)*] A Pair of Lines, such that two Points on one of them are non-equidistant from the other, are non-equidistant (i. e. are such that any two Points on either of them, which are on the same side of the other, are non-equidistant from the other).

* (8) A Line cannot recede from and then approach another; nor can it approach and then recede from another while on the same side of it.

* (9) In any Circle, the inscribed equilateral Tetragon is greater than any one of the Segments which lie outside it.

If any one of these 9 Theorems be granted as an Axiom, the rest can be proved from it. But only 3 of them, so far as I know, have been used as Axioms—No. 5 by Clavius, No. 8 by Dr. R. Simson, and No. 9 by myself. Clavius’ Axiom requires us to assure ourselves that it will continue true when the Lines are produced *without limit*; and the strain on the imagination, caused by the effort of following them into Infinite Space, is one to be, if possible, avoided. Dr. R. Simson’s Axiom gains a certain plausibility from the fact that, for *intersecting* Lines, it admits of actual *proof* (see § 1. (4)): where, however, the Lines are *not* known to intersect, it is an appeal to the eye, of *very* doubtful force.

§ 3. Certain universally-true Theorems, not provable from genuine Axioms, but provable if any one of the ‘Nine Quasi-Axioms’ be accepted.

(1) There is a finite angular magnitude such that the angles of any Triangle are together not-less than it.

(2) There is a Triangle whose angles are together not-less than two right angles.

(3) There is a Triangle whose angles are together equal to two right angles.

(4) The angles of any Triangle are together equal to two right angles. [Euc. I. 32.]

§ 4. Certain partially-true Theorems, not provable from any universally-true Axioms, whether genuine or ‘quasi,’ but provable if any one of themselves be accepted as an Axiom.

[N.B. By ‘partially-true’ is meant ‘true for *finite* magnitudes.’ They become universally-true, if ‘magnitude’ be taken to mean ‘*finite* magnitude’; ‘equal’ to mean ‘not differing by a *finite* difference’; ‘unequal’ to mean ‘differing by a *finite* difference’; ‘multiplied’ to mean ‘multiplied by a *finite* number’; and ‘intersectional’ to mean ‘intersectional at a *finite* angle.’

These Theorems will be hereafter referred to as the ‘Nine Pseudo-Axioms,’ the name being chosen to indicate that they are not even universally *true*—far less *self-evident*.]

(1) The lesser of two homogeneous Magnitudes may be so multiplied as to exceed the greater.

(2) A Pair of Lines, which are unequally inclined to a certain transversal, are intersectional. [Euclid’s Axiom.]

(3) [*contranominal of (2)*] A Pair of separational Lines are equally inclined to any transversal. [Euc. I. 29.]

(4) A Pair of Lines, such that two Points on one of them are non-equidistant from the other, are intersectional.

(5) [*contranominal of (4)*] A Pair of separational Lines are equidistantial.

(6) On either of two intersectional Lines a Point may be found, whose distance from the other Line shall exceed any assigned length.

(7) On either of two intersectional Lines a Point may be found, such that the distance, from its projection on the other Line to the point of intersection of the two Lines, shall exceed any assigned length.

(8) A Pair of intersectional Lines cannot be, both of them, separational from a third Line.

(9) [*contranominal of (8)*] A Pair of Lines, which are, both of them, separational from a third Line, are not intersectional.

Six of these have been used as Axioms, viz. (2), which is Euclid’s celebrated Axiom; (4), by T. Simpson; (6), by Proclus; (7), by Franceschini; (8), by Ludlam, Playfair, &c.; (1), by Legendre, in the 12th Volume of the ‘Memoirs of the Institute,’ being his “latest attempt” (I quote from De Morgan’s article on Parallels in Knight’s Cyclopaedia) “at the solution of the problem.” He only succeeds, however, in proving Prop. 6 at p. 10 of this book, and in proving that Prop. 8, at p. 26, follows logically from Prop. 4, at p. 22. In order to prove Euc. I. 32, he introduces the principle of Limits and Vanishing Quantities, which takes us at once into the region of Infinities and Infinitesimals. But a greater success than this has, I understand, rewarded some recent investigations made by Professor J. Cook Wilson, of Oriel College, Oxford, who has deduced Euclid’s 12th Axiom from No. (1) of this Section.

In all these systems, however, including Euclid’s, the deductions, from the proposed Axiom, labour under the same defect as the Axiom itself, that is, they are only *partially*, and not *universally*, true.

§ 5. Other methods of treatment.

Three other methods of treating this subject call for notice.

Playfair and (more recently) Wilson have tried to deduce the properties of Parallels (and thence Euc. I. 32) from the idea of *sameness of direction*, as predicated of two non-coincidental Lines (i. e. which do not lie in one and the same straight Line).

The foundation-stones of this Theory—without which it has no *raison d'être* whatever—are the two Axioms, which must necessarily be *somewhere* assumed, whether expressly or tacitly, first, that it is possible for non-coincident Lines to have ‘the same direction’; and secondly, that Lines, which have the same direction, make equal angles with all transversals.

Before discussing the first of these two Axioms, permit me to remind the Reader that the question before us is not “is it *true*?” but “is it *axiomatic*?”, that is, ‘does the average human intellect *accept* it as true, *without proof*?’ It is a question in Mental Physiology rather than in Geometry. The 47th Proposition of Euclid is quite as *true* as the Axiom ‘things that are equal to the same are equal to one another’; but the average human intellect, while accepting the latter without proof, does most certainly demand a good deal of proof before it will accept the former. Intellectual beings may conceivably exist, to whom Euc. I. 47 is axiomatic; but our books are not written for *them*.

Now there is one preliminary step, that is absolutely indispensable before the human intellect can accept any Axiom whatever: and that is, it must attach some *meaning* to it. We cannot, rationally, either assent to, or deny, any Proposition the words of which convey to us no idea.

AVE have, then, *two* questions to answer: first, “what *idea* is conveyed to the average human intellect by the phrase ‘*in the same direction*,’ when applied to non-coincident Lines?”, secondly, “in accepting the Axiom, that ‘Lines, which have the same direction, make equal angles with all transversals,’ to what other assertions are we committing ourselves?”

If we contemplate a fixed Point in a Plane, and imagine one or more Lines passing through it, it is not difficult to grasp the following ideas—that the ‘direction’ of any such Line is that property of it which determines its *position*, now that one Point in it is already fixed—that any *two* such Lines form 4 angles, whose common vertex is the fixed Point—that, if one of those 4 angles be zero, the 2 Lines *coincide*; if not, they *intersect*—that, in the first case, they have *the same direction*, in the second, *different directions*—and that the difference of the directions of such Lines is measured by *the angle between them*.

But these ideas are of little use to us, when confronted with a given Line and a given Point *outside* it, and when told to imagine a new Line drawn, through the given Point, and ‘*in the same direction*’ as the given Line, the 2 Lines having no common Point. For the directions of the Lines are no longer *directly comparable*. There is no use in asking “do they contain a zero-angle?” when they contain no angle *whatever*. An angle cannot exist without a *vertex*: and *where is the vertex*?

What idea, then, is conveyed to the mind by the phrase “these Lines have *the same direction*”? If they were finite Lines, and the question concerned sameness of *length*, the process, of grasping this idea, would be a very simple one. We could either imagine one of the 2 Lines laid upon the other, and then apply the Axiom ‘magnitudes which coincide are equal’: or we could imagine a movable third Line, first applied to one of the 2 Lines and ascertained to have ‘*the same length*’ with it, and then carried across the intervening space and applied to the other Line; and, on finding it to have ‘the same length’ with *that* also, we

should pronounce the 2 Lines to have ‘the same length,’ in full confidence that our movable Line had preserved its length *unchanged during the journey*.

Can we, then, use a similar process in grasping the idea of sameness of *direction*? That is, can we imagine a movable third Line, first applied to one of the 2 Lines and ascertained to have ‘*the same direction*’ with it, and then carried across the intervening space and applied to the second Line, to see if it has ‘*the same direction*’ with *it* also? But this process would convey to the mind no idea of ‘*sameness of direction*,’ unless we had some guarantee that the movable Line had preserved its direction *unchanged during the journey*. The only process, for securing this, that presents itself to my mind, is to imagine a *transversal*, cutting the 2 Lines, and thus bridging over the intervening space, and then to imagine the movable Line shifted along it, so as always to cut it *at a constant angle*.

I have thought this matter out very carefully, and I feel convinced that *this* is the mental process by which we grasp the idea of ‘*sameness of direction*,’ when predicated of Lines that have no common Point, and therefore cannot be said to contain a zero-angle.

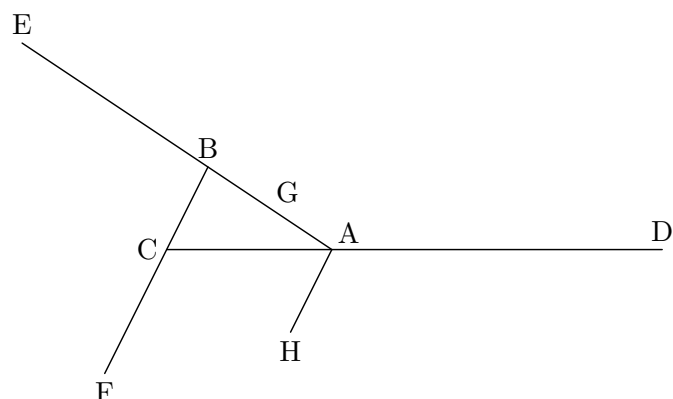
Now this ‘constant angle’ is of course the angle at which the transversal cuts the first Line. Hence, the mental picture of a Line moving away from another, and yet maintaining ‘*sameness of direction*’ with it, is the picture of its so moving as that a certain transversal shall cut the two Lines *at the same angle*. And this is my answer to our *first* question, namely, “what idea is conveyed to the average human intellect by the phrase ‘*in the same direction*,’ when applied to non-coincident Lines?”

If this be granted, our *second* question, “in accepting the Axiom that ‘Lines, which have the same direction, make equal angles with all transversals,’ to what other assertions are we committing ourselves?”, must be answered “we are consciously committing ourselves to the assertion that Lines, which make equal angles with a certain transversal, *make equal angles with all transversals*.”

We see, then, that, if this be so, the advocates of the Direction-Theory have not escaped the necessity of assuming, as axiomatic, the second Theorem enunciated in § 2. (See p. 63.)

I must ask the Reader’s pardon for this long digression: but the fallacy, which (as I believe) lies at the root of the Direction-Theory, is a very subtle one, and has cost me a great many hours of hard thinking to un-earth it.

Yet another process has been invented—quite fascinating in its brevity and its elegance—which, though involving the same fallacy as the Direction-Theory, proves Euc. I. 32 without even mentioning the dangerous word ‘Direction.’



We are told to take any Triangle ABC ; to produce CA to D ; to make part of CD , viz. AD , revolve, about A , into the position ABE ; then to make part of this Line, viz. BE , revolve, about B , into the position BCF ; and lastly to make part of this Line, viz. CF , revolve, about C , till it lies along CD , of which it originally formed a part. We are then assured that it must have revolved through 4 right angles: from which it easily follows that the interior angles of the Triangle are together equal to 2 right angles.

The disproof of this fallacy is almost as brief and elegant as the fallacy itself. We first quote the general principle that we cannot reasonably be told to make a Line fulfil *two* conditions, either of which is enough by itself to fix its position: e. g. given 3 Points, X, Y, Z , we cannot reasonably be told to draw a Line, from X , which shall pass through Y and Z : we can make it pass through Y , but it must then take its chance of passing through Z ; and *vice versa*.

Now let us suppose that, while one part of AE , viz. BE , revolves into the position BF , another little bit of it, viz. AG , revolves, through an equal angle, into the position AH ; and that, while CF revolves into the position of lying along CD , AH revolves—and here comes the fallacy. You must not say “revolves, through an equal angle, into the position of lying along AD ,” for this would be to make AH fulfil *two conditions at once*. If you say that the one condition involves the other, you are virtually asserting that the Lines CF, AH are equally inclined to CD —and this in *consequence* of AH having been so drawn that these same Lines are equally inclined to AE , That is, you are asserting § 2. (2). (See p. 885.)

One other proof—a very beautiful one, though largely dealing with Infinities and Infinitesimals—may here be mentioned, that of M. Bertrand. It rests on the principle that an infinite *Sector* (with a vertical angle which has a finite ratio to a right angle) is an Infinity of the *same* order as an infinite Plane, whereas an infinite *Strip* (i. e. the area contained between 2 ‘separational’ Lines) is an Infinity of a *lower* order. Hence he concludes that no such Sector, however small its vertical angle, will lie wholly between 2 such ‘separational’ Lines, however far apart: hence, if a Line intersect one of 2 ‘separational’ Lines, it must, if produced, intersect the other. He thus proves the Theorem numbered (8) in § 4: but his results are, of course, only *partially*, and not *absolutely*, true.

As a rather interesting example of the ease with which an unwary explorer may tumble into a pit-fall, I may refer to a “Note on Euclid’s 12th Axiom” by a Mr. W. Hanna, which will be found at p. 27 of Vol. XIII of “Mathematical

Questions" reprinted from the "Educational Times." Mr. Hanna takes two Lines, situated as in Euclid's Axiom, and drops a perpendicular, from a point on one, upon the other: from the foot of this he drops a second perpendicular back upon the first line: and so on, backwards and forwards, till the diagram slightly resembles the side of a laced-up boot. He then easily proves that these perpendiculars continually decrease in length. From this he infers that "the perpendicular will ultimately become less than any assignable line"! The fallacy is really too obvious to be worth pointing out.

Another writer in the "Educational Times" (Mr. J. Walmsley, B.A.: his article will be found at p. 103 of Vol. XVII of the Reprint) has fallen into a rather less obvious trap. He endeavours to prove that "any straight line, perpendicular to one of two parallel straight lines, will meet the other." (This, if it could be proved without assuming any disputable Axiom, would indeed be a splendid success! Mr. J. Walmsley has hardly realised, as yet, the *fearful* difficulty of persuading two Lines, under any conceivable circumstances, to do such a thing as "meet." Whether, at the outset of geometrical discovery, Lines were not properly introduced to each other—or whether some mischief-making Point has been insinuating that one of til em went and intersected another when it was looking the other way—certain it is, that Lines will do almost *anything* you like to propose, rather than "meet" one another!) Mr. Walmsley assumes, as axiomatic, that when one Line lies between two others (whatever "between" may mean), those two others lie on *opposite* sides of it. Now let Mr. Walmsley (or any other champion of his theory) draw three Lines diverging from a Point at equal angles (of 120° each), and thus dividing the infinite Plane into three equal Sectors. In each of these Sectors let him draw a branch of a Hyperbola, having the sides of the Sector as its Asymptotes. Now, each of these Hyperbolæ lies (in a way) "between" the other two: and yet no two can be said to lie on opposite sides of the other one! "But," says Mr. Walmsley (or the champion aforesaid) "these are *Curves*, not *straight Lines*!" Most true: but how are you to know that straight Lines will not behave just like Hyperbolæ, if only they are put far enough apart? Produce those three radiating Lines, that we began with, until each is a million miles long (paper, pen, and ink, provided regardless of expense): then, across their extremities, draw three Lines perpendicular to them. Why shouldn't these three Lines (of course shunning a "meeting," as all Lines do) perpetually face inwards, so that no one of them ever commits the discourtesy of turning its back upon either of the other two? "It cannot be," say Messrs. Walmsley and Co.: "these Lines *must* intersect, if produced far enough." What? In consequence of their relative situation? That relative situation being, for each pair of them, that they make with a certain transversal two interior angles together less than two right angles? In assuming *this*, I very much fear that Messrs. Walmsley and Co. are performing the not-wholly-unprecedented feat of assuming Euclid's 12th Axiom!

§ 6. The Outlook.

In conclusion let me address myself to the young and eager explorer who, Alpine-staff in hand, and duly furnished with all the necessaries for his perilous quest—pick-axe, theodolite, paper-collars, Brown's Sticking-Plaster, Jones's Cough-Pills, and Robinson's Insect-Powder, "the only known remedy for Phlebitis"—is preparing to sally forth, to do or die!

To him let me address myself, as being, perchance, an older and a more experienced traveller—one who has wandered much, and pondered long, and who can best describe himself in the words of a lady well-known in the literary world (I am glad to have this opportunity of recording them, as they have never been printed. They were written “for music,” for which purpose, I imagine, the amount of sense required is not excessive).

*“I have wandered,
I have pondered,
I have squandered
Many a boon:
In the sadness,
In the gladness,
In the madness
Of the moon.

“Seek thy pillow
By the billow,
Where the willow
Doth not weep:
Few will wonder
Who lies under,
Hearing thunder,
Fast asleep!”*

Quoted from *The Fate of Genius* in *Punch's Pocket Book for 1861*

Poetry like this speaks for itself: vain were it to hope that any poor words of mine could serve to illuminate, or even elucidate, its almost ethereal beauty!

To what point of the compass, then, should this young and eager explorer be advised to direct his steps?

I think his *best* chance—and that only a slender one—is to find some elementary proof for my Axiom, or for one of the many Theorems which will serve the same purpose, a few of which I will enumerate. In the first place, *any* Polygon will do, and *any* ratio, between it and the out-lying Segment, so long as it is a *finite* ratio. What I want it for is to prove that there is *some* isosceles Triangle, with a definite vertical angle (i. e. some named fraction of a right angle), whose base is less than one of its sides. And that, again, is wanted in order to prove it possible to draw, on a given base, an isosceles Triangle, whose base-angles shall have some nameable value. And that, again, is wanted in order to prove that there is *some* finite minimum value for the sum of the angles of a Triangle. And that, again, is wanted in order to prove Prop. 3, at p. 860. So, if any one of these propositions could be either assumed as an Axiom or granted as a Theorem, it would suffice for the proof of Euc. I. 32 and Co.

If, for example, you will grant me, as an Axiom, that there is *some* finite minimum value for the sum of the angles of a Triangle, no matter how small you make it, all is easy at once: grant me, for instance, that no Triangle can possibly have the sum of its angles less than a millionth of a right angle, and I am happy!

Finally, I am inclined to believe that, if ever Euc. I. 32 is proved without a new Axiom, it will be by some new and ampler definition of *the Right Line*—some definition which shall connote that peculiar and mysterious property, which it must somehow possess, which causes Euc. I. 32 to be true. Try

that track, my gentle Reader! It is not much trodden as yet. And may success attend your search!

Part 5

Texts about Voting

Most texts about voting deal with mathematical aspects, which is why this chapter is among the other mathematical chapters. See also *The Proposed Procuratorial Cycle* (→ 12.22, p. 1810) and following texts.

5.1 A Discussion of the Various Methods of Procedure in Conducting Elections

Source: A Discussion of the Various Methods of Procedure in Conducting Elections

The following paper has been written and printed in great haste, as it was only on the night of Friday the 12th that it occurred to me to investigate the subject, which proved to be much more complicated than I had expected. Still I hope that I have given sufficient thought to it to escape the commission of any serious mistake.

I commence by considering certain known Methods of Procedure, in the case where *some* candidate *must* be elected, proving that each Method is liable, under certain circumstances, to fail in giving the proper result.

I then consider the question of ‘Election or no Election?’ proving that the two ordinary Methods of deciding it are unsound.

And I conclude by describing a Method of Procedure (whether new or not I cannot say) which seems to me not liable to the same objections as have been proved to exist in other cases.

C. L. D.
Ch. Ch., Dec. 18, 1873.

Chapter I. On the failure of certain Methods of Procedure, in the case where an Election is *necessary*.

§ 1. The Method of a Simple Majority.

In this Method, each elector names the *one* candidate he prefers, and he who gets the greatest number of votes is taken as the winner. The extraordinary injustice of this Method may easily be demonstrated. Let us suppose that there are eleven electors, and four candidates, *a*, *b*, *c*, *d*; and that each elector has

arranged in a column the names of the candidates, in the order of his preference; and that the eleven columns stand thus:—

Case (α)

<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>d</i>
<i>c</i>	<i>c</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>c</i>
<i>b</i>	<i>b</i>	<i>b</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>

Here *a* is considered best by *three* of the electors, and second by all the rest. It seems clear that he ought to be elected; and yet, by the above method, *b* would be the winner—a candidate who is considered *worst* by *seven* of the electors!

§ 2. The Method of an Absolute Majority.

In this Method, each elector names the *one* candidate he prefers; and if there be an absolute majority for any one candidate, he is taken as the winner.

Case (β)

<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>d</i>	<i>d</i>
<i>c</i>	<i>c</i>	<i>c</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>c</i>	<i>c</i>
<i>d</i>	<i>d</i>	<i>d</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>

Here *a* is considered best by nearly half the electors (one more vote would give him an absolute majority), and never put lower than second by any; while *b* is put last by *five* of the electors, and *c* and *d* by three each. There seems to be no doubt that *a* ought to be elected; and yet, by the above Method, *b* would win.

§ 3. The Method of Elimination, where the names are voted on by two at a time.

In this Method, two names are chosen at random and proposed for voting; the loser is struck out from further competition, and the winner taken along with some other candidate, and so on, till there is only one candidate left.

Case (γ)

<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>d</i>	<i>d</i>
<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>d</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>
<i>b</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
<i>d</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>c</i>	<i>c</i>	<i>c</i>

Here it seems clear that *a* ought to be the winner, as he is considered best by nearly half the electors, and never put lower than third; while *b* and *d* are each put last by *four* electors, and *c* by *three*. Nevertheless, by the above Method, if (*a*, *b*) were put up first for voting, *a* would be rejected, and ultimately *c* would be elected. Again, if (*a*, *c*) were put up first, *c* would be rejected, and if (*a*, *b*) were put up next, *d* would be elected—but if (*a*, *d*), *b* would be elected.

Such preposterous results, making the Election turn on the mere accident of *which* couple is put up first, seem to me to prove *this* Method to be entirely untrustworthy.

§ 4. The Method of Elimination, where the names are voted on all at once.

In this Method, each elector names the *one* candidate he prefers: the one who gets fewest votes is excluded from further competition, and the process is repeated.

Case (δ)

<i>b</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>a</i>	<i>a</i>
<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>c</i>
<i>d</i>	<i>c</i>	<i>d</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>b</i>	<i>d</i>	<i>d</i>
<i>c</i>	<i>d</i>	<i>c</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>b</i>

Here, while *b* is put last by *three* of the electors, and *c* and *d* by *four* each, *a* is not put lower than second by any. There seems to be no doubt that *a*'s election would be the most generally acceptable: and yet, by the above rule, he would be excluded at once, and ultimately *c* would be elected.

§ 5. The Method of Marks.

In this Method, a certain number of marks is fixed, which each candidate shall have at his disposal; he may assign them all to one candidate, or divide them among several candidates, in proportion to their eligibility; and the candidate who gets the greatest total of marks is the winner.

This Method would, I think, be absolutely perfect, if only each elector wished to do all in his power to secure the election of *that candidate who should be the most generally acceptable*, even if that candidate should *not* be the one of his own choice: in this case he would be careful to make the marks exactly represent his estimate of the relative eligibility of *all* the candidates, even of those he *least* desired to see elected; and the desired result would be served.

But we are not sufficiently unselfish and public-spirited to give any hope of this result being attained. Each elector would feel that it was *possible* for each other elector to assign the entire number of marks to his favorite candidate, giving to all the other candidates zero: and he would conclude that, in order to give his *own* favorite candidate any chance of success, he must do the same for him.

This Method is therefore liable, in practice, to coincide with 'the Method of a Simple Majority,' which has been already discussed, and, as I think, provided to be unsound.

§ 6. The Method of Nomination.

In this Method, some one candidate is proposed, seconded, and the votes taken for and against. This Method is fair for those electors *only* who prefer that candidate to *any* other, or else *any* other to him. But any other elector might say 'I do not know whether to vote for or against *a* till I know *who* would come in if he failed. If I were sure *b* would come in, I would vote against *a*: otherwise, I vote *for a*.'

If this Method leads to a *majority* of votes being obtained for the proposed candidate, it is identical with 'the Method of an absolute Majority,' which was discussed in § 2. If a *minority* only is obtained, it may be thus represented:—

<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>d</i>	<i>d</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>d</i>
<i>c</i>	<i>c</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>b</i>	<i>b</i>	<i>b</i>
<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>c</i>	<i>c</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>c</i>

Here there seems no doubt that *a* ought to be elected; and yet, by the above Method, he would be rejected at once, and, *whichever* candidate came in, *nine* of the electors would say ‘We would rather have had *a*.’

Chapter II. On the failure of certain Methods of Procedure, in the case where it is *allowable* to have ‘no Election.’

§ 1. The Method of *commencing* with a vote on the question ‘Election or no Election?’

This Method has the strong recommendation that if ‘no Election’ be carried, it saves all further trouble, and it *might* be a just method to adopt, provided the electors were of two kinds only—one, which prefers ‘no Election’ to *any* candidate, even the best; the other, which prefers *any* candidate, even the worst, to ‘no Election.’ But it would seldom happen that *all* the electors could be so classed: and any elector who preferred certain candidates to ‘no Election,’ but preferred ‘no Election’ to certain other candidates, would not be fairly treated by such a procedure. He might say ‘It is premature to ask me to vote on this question. If I knew that *a* or *b* would be elected, I would vote to *have* an election; but if neither *a* nor *b* can get in, I vote for having none.’

Let us, however, test this Method by a case—representing ‘no Election’ by the symbol ‘o.’

Case (ϵ)

<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	o	o	o	o	o
o	o	o	o	o	o	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>c</i>
<i>c</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>d</i>	<i>d</i>	<i>c</i>	<i>c</i>	<i>b</i>
<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>b</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>a</i>
<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>c</i>	<i>b</i>	<i>d</i>	<i>d</i>	<i>d</i>

Here there seems no doubt that ‘no election’ would be the most satisfactory result: and yet, by the above Method, an Election would take place, and in all probability *b* would be elected—a candidate regarding whom *nine* of the electors would say ‘I would rather have had no Election.’

§ 2. The Method of *concluding* with a vote on the question ‘Shall *x* (the successful candidate) be elected, or shall there be no Election?’

Here again a voter who preferred certain candidates to ‘no Election,’ but preferred ‘no Election’ to certain other candidates, would not be fairly treated. He might say ‘If you had taken *a* or *b*, I would have been content, but as you have taken *c*, I vote for no Election,’ and his vote might decide the point: while the other electors might say ‘If we had only known how it would end, we would willingly have taken *a* instead of *c*.’

But let us test this Method also by a case.

Case (ζ)

<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	○	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	○	○	○	○	○
<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>
<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>
○	○	○	○	○	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>

Here there seems to be no doubt that the election of *a* would be much more satisfactory than having no Election: and yet, by the above Method, *b* would first be selected from all the candidates, and ultimately rejected on the question of ‘*b* or no Election?’ while *ten* of the electors would say ‘We would rather have taken *a* than have no Election at all.’

The conclusion I come to is that, where ‘no Election’ is allowable, the phrase should be treated exactly as if it were the name of a candidate.

Chapter III. On a proposed Method of Procedure.

The Method now to be proposed is, *in principle*, a modification of No. 5, viz. ‘The Method of Marks,’ since it assigns to each candidate a mark for every vote given to him, when taken in competition with any other candidate.

Suppose that, in the opinion of a certain elector, the candidates stand in the order *a, b, c, d*: then his votes may be represented by giving *a* the number 3, *b* 2, *c* 1, and *d* 0.

Hence all that is necessary is that each elector should make out a list of the candidates, arranging them in order of merit.

If ‘no Election’ is allowable, this phrase should be placed somewhere in the list.

If the elector cannot arrange all in secession, but places two or more in a bracket, a question arises as to how the bracketed names should be marked. The tendency of many electors being, as explained in Chap. I. § 5, to give to the favorite candidate the maximum mark, and bracket all the rest, in order to reduce their chances as much as possible, it is proposed, in order to counteract this tendency, to give to each bracketed candidate the same mark that the *highest* would have if the bracket were removed. This plan will furnish a strong inducement to avoid brackets as far as possible.

In order to illustrate this process, let us apply it to the various ‘Cases’ already considered.

	α	β	γ	δ	ϵ	ζ
<i>a</i>	25	27	23	24	21	37
<i>b</i>	12	18	15	15	21	33
<i>c</i>	20	11	14	14	20	16
<i>d</i>	9	10	14	13	10	5
○					38	19

It will be seen that in each case the candidate, whose election is obviously most to be desired, obtains the greatest number of marks.

Chapter IV. Summary of Rules.

1. Let each elector make out a list of the candidates, (treating ‘no Election’ as if it were the name of a candidate), arranging them as far as possible in the order

of merit, and bracketing those whom he regards as equal.

2. Let the names on each list be marked with the numbers 0, 1, 2, &c., beginning at the last.

3. Whenever two or more names are bracketed, each must have the mark which would belong to the highest, if there were no bracket.

4. Add up the numbers assigned to each candidate.

The *first* Rule is all with which the electors need trouble themselves. Rules 2, 3, 4 can all be carried out by one person, as it is merely a matter of counting.

5.2 Suggestions As to the Best Method of Taking Votes

Source: printed 1874

Where More Than Two Issues Are to Be Voted On

In the immediate prospect of a meeting of the Governing Body, where matters may be debated of very great importance, on which various and conflicting opinions are known to be held, I venture to offer a few suggestions as to the mode of taking votes. On this subject I printed a paper some little time ago, but have since seen reason to modify some of the views therein expressed. Especially, I do not now advocate the method, there proposed, as a good one to *begin* with. When other means have failed, it may prove useful, but that is not likely to happen often, and, when the difficulty does arise, the question what should next be done may fairly be debated on its own merits.

C. L. D.
Ch. Ch., June 13, 1874.

§ 1. Votes to be taken in writing.

The method here suggested is to divide a sheet of paper into as many columns as there are issues to be voted on, and place the name of each at the head of a column. The paper is then passed round, each voter placing his name in the column he prefers.

The only objection to this method, that I can think of, is that it takes rather more time than voting *vivâ voce*; and even *this* is not always the case, as it is by no means unusual for a doubt to arise as to the result of a *vivâ voce* vote, which makes it necessary to take the votes over again.

Its advantages are, that it enables the division-list to be put on record, which I think should always be done when an important matter is voted on, except in elections of Students, in which case there are obvious objections to the names of the voters being recorded.

At the end of a meeting, it should be settled which of the division-lists, if any, are to be entered on the minutes; and the other lists might then be destroyed.

§ 2. A list to be made of all the issues to be voted on.

This should be done before *any* vote is taken at all. The list should contain every issue which is proposed, and seconded, for entry on it. The *general negative* issue ('that there be no election,' or, 'that nothing be done') should, I think, find a place on this list (provided of course that it be proposed and seconded), and should not be voted on separately—a course sometimes adopted, but which I think I have shown, in a former paper on this subject, to be unsound.

§ 3. The first vote to be taken on all the issues collectively.

This course is suggested in the hope that it may give an absolute majority (or such a majority as may be previously declared to be binding), so as to settle the question at once.

§ 4. Failing a settlement by this method, the issues to be then voted on two at a time.

This course is suggested in the hope that by it some one issue may be discovered, which is preferred by a majority to every other taken separately. For this purpose, any two may be put up to begin with, then the winning issue along with some other, and so on. But no issue can be considered as the absolute winner, unless it has been put up along with *every* other.

§ 5. Failing a settlement by this method also, further proceedings may be then debated on.

If no settlement has been arrived at by § 3 or § 4, it will at least prove that the matter is one on which the meeting is *very evenly divided in opinion*. Such a state of things is of course very difficult to deal with, but the difficulty, though possibly not diminished, will certainly not have been increased by adopting the process I have here suggested.

5.3 A Method of Taking Votes on More Than Two Issues

Source: unpublished proof written 1876

§ 1. Proposed Rules for Conducting an Election.

I.

Each elector shall write down the issue he desires ('no Election' being reckoned as an issue) and hand in the paper folded, with his name written outside: and the Chairman, or some one appointed by him, having before him a list of the electors, shall enter these issues against their names.

II.

If the Chairman find any issue having an absolute majority of votes, he shall communicate the list to the meeting. This issue shall then be formally moved, and, if none object, the Chairman shall declare it carried.

III.

If the Chairman shall find no issue having an absolute majority of votes, he shall communicate to the meeting the list of issues only, without stating who vote for each, and shall return the papers, that each elector may add the other issues, arranged in his order of preference. The Chairman shall enter these on his list, and then communicate the whole to the meeting.

IV.

If an issue be found which has a majority over every other taken separately, it shall be formally moved as in Rule II: but if none be found, the majorities being 'cyclical', opportunity shall be given for further debate. In ascertaining which of any pair of issues is preferred to the other, any elector whose paper contains one only of the two shall be reckoned as preferring that one, and any whose paper contains neither shall be considered as not voting.

V.

If the issues cannot be all arranged in one cycle, but form a cycle and a set of issues each of which is separately beaten by each of the cycle, it shall be formally moved that this cycle be retained and all other issues struck out, and, if none object, this shall be done.

VI.

If, a formal motion having been made that a certain issue be adopted, or that a certain cycle be retained and all other issues struck out, any one object, he may move as an amendment that a division be taken between the issue he desires and the issue so to be adopted, or any one of the cycle so to be retained. If

every such amendment be lost on a division, the Chairman shall declare the original motion carried: but, if any such amendment be carried, by some voting contrary to their written papers, they shall be required to amend their papers, and the process shall begin again.

VII.

When the issues to be further debated consist of, or have been reduced to, a single cycle, the Chairman shall inform the meeting how many alternations of votes each issue requires to give it a majority over every other separately.

VIII.

If, when the majorities are found to be cyclical, any elector wish to alter his paper, he may do so: and if the cyclical majorities be thereby done away with, the voting shall proceed by former Rules: but if, when none will make any further alteration, the majorities continue cyclical, there shall be no election.

§ 2. The Legal Conditions.

In any election, when there are only *two* issues to vote on—for instance (there being only one candidate), ‘shall *A* be elected or not?’ or again (there being only two candidates, and it being understood that there is to be an election) ‘shall *A* or *B* be elected?’—and when the Chairman is able to give a casting vote, it is clear that there *must* be a majority for one or other issue, and in this case open voting is the obvious course.

But wherever there are three or more issues to vote on, any one of the following three cases may exist in the minds of the electors:—

(α) *There may be one issue desired by an absolute majority of the electors.*

(β) *There may be one issue which, when paired against every other issue separately, is preferred by a majority of electors.*

(γ) *The majorities may be ‘cyclical,’ e. g. there may be a majority for *A* over *B*, for *B* over *C*, and for *C* over *A*.*

The words of the Ordinance are **“That Candidate for whom the greatest number of votes shall have been given shall be deemed elected.”**

It seems to me that this may be complied with by either of two modes of election:—

In case (α) *If a candidate be declared elected who, when all are voted on at once, has an absolute majority of votes.*

In case (β) *If a candidate be declared elected who, when paired with every other separately, is preferred by the majority of those voting.*

But that is *not* complied with by the following mode:—

In case (γ) *If a candidate be declared elected, though it is known that there is another who, when paired with him, is preferred by the majority of those voting.*

Mode (α) needs no discussion. Failing this, it seems clear that mode (β) would be a satisfactory result, as any one who preferred some other candidate might be allowed to take a division between the two.

If modes (α) and (β) both fail, it shows that the majorities on the separate pairs are ‘cyclical,’ and if, after all possible discussion, this continues to be so, any election that may be arrived at *must* introduce mode (γ). My own opinion

is that, under these circumstances, there ought to be ‘no Election’: two other courses might be suggested, which I will now consider.

§ 3. Courses that have been suggested for the case of ‘Cyclical Majorities.’

(1) *That all candidates should be voted on at once, and the one who has the greatest number of votes should be elected.*

This might be thought to fulfil the *letter* of the law, if after the words ‘shall have been given’ we supply the words ‘in the final voting.’

Let us suppose that there are 11 electors, and 4 candidates, a, b, c, d ; and that each elector has arranged in a column the names of the candidates, in the order of his preference; and that the 11 columns stand thus:—

Fig. 1

a	a	a	b	b	b	b	c	c	c	d
d	d	b	b	c	c	d	b	b	b	c^*
c	c	d	d	a	a	c	d	d	d	d^*
b	b	c	c	d	d	a	a	a	a	a

Here the majorities are cyclical, in the order $a d c b a$, each beating the one next following.

Moreover, if we make a table of majorities in the separate pairs, in which the numerator of each fraction represents the number voting for the issue which stands at the top of that column and the denominator the number voting for the issue which stands at the end of that row, and in which every division, where the issue at the top of the column is beaten, is distinguished by placing the fraction in a parenthesis, we have

Fig. 2

	a	b	c	d
a		$\frac{7}{4}$	$\frac{7}{4}$	$\left(\frac{5}{6}\right)$
b	$\left(\frac{4}{7}\right)$		$\frac{4}{5}$	$\left(\frac{3}{8}\right)$
c	$\left(\frac{4}{7}\right)$	$\left(\frac{5}{6}\right)$		$\left(\frac{3}{8}\right)$
d	$\frac{6}{5}$	$\frac{8}{3}$	$\left(\frac{5}{6}\right)$	

Here a and d each need 4 changes of votes to win, but b and c each need one only: for instance, the interchange of the two issues which are marked * would make b win. It seems clear that a has much less claim to be elected than either b or c (observe that he is put *last* by nearly half the electors, and only needs *one* interchange of votes to cause him to be beaten by *every* other candidate separately), and yet by the above course he would win.

Again, let there be 13 electors and 4 candidates.

Fig. 3

a	a	a	a	b	b	b	c	c	c	d	d	d
b	b	b	b	d	d	d	d	a	a	b	b	b
c	c	c	c	c	c	c	a^*	b	b	c	c	c
d	d	d	d	a	a	a	b^*	d	d	a	a	a

Here the majorities are cyclical, in the order $a b c d a$; the table of majorities being:—

Fig. 4

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
<i>a</i>		$\left(\frac{6}{7}\right)$	$\frac{9}{4}$	$\frac{7}{6}$
<i>b</i>	$\frac{7}{6}$		$\left(\frac{3}{10}\right)$	$\left(\frac{4}{9}\right)$
<i>c</i>	$\left(\frac{4}{9}\right)$	$\frac{10}{3}$		$\left(\frac{6}{7}\right)$
<i>d</i>	$\left(\frac{6}{7}\right)$	$\frac{9}{4}$	$\frac{7}{6}$	

Here *a*, *c*, *d* each need 4 changes of votes to win, while *b* needs only one, for instance, the interchange of the two issues marked *. Yet by the above course *a* would win—a candidate whom this single interchange would cause to be beaten by every other candidate separately.

(2) That all candidates should be voted on at once, and the one who has the smallest number of votes should be struck out, and the process repeated till only two are left.

Fig. 5

<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>
<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>b</i>	<i>a</i>	<i>a</i>
<i>c</i>	<i>c</i>	<i>b</i>	<i>b</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>

Here the majorities are cyclical, in the order *a b c a*. Moreover, *a* beates *b* (6 to 5), *b* beats *c* (6 to 5), but *c* beats *a* (7 to 4).

If any one is to be elected, it would seem that *c* has the strongest claim; but by the above method *a* would win—a candidate who is put last by nearly half the electors.

Again, let there be 15 electors and 4 candidates:—

Fig. 6

<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>d</i>	<i>d</i>	<i>d</i>
<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i> *	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>a</i>	<i>a</i>	<i>b</i>
<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i> *	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>
<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>a</i>

Here there is a cyclical majority, in the order *a b c d a*; therefore by above Rule *d* is excluded: we now have—

Fig. 7

<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>b</i>
<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>
<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>a</i>	<i>a</i>	<i>b</i>	<i>b</i>	<i>a</i>

Here there is again a cyclical majority, in the order *a b c a*; therefore *c* is excluded.

The candidates are now reduced to *a* and *b*, and *a* wins by a majority of 8 to 7.

But if we tabulate the majorities thus—

Fig. 8

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
<i>a</i>		$\left(\frac{7}{8}\right)$	$\frac{9}{6}$	$\frac{11}{4}$
<i>b</i>	$\frac{8}{7}$		$\left(\frac{6}{9}\right)$	$\frac{11}{4}$
<i>c</i>	$\left(\frac{6}{9}\right)$	$\frac{9}{6}$		$\left(\frac{4}{7}\right)$
<i>d</i>	$\left(\frac{4}{11}\right)$	$\left(\frac{4}{11}\right)$	$\frac{8}{7}$	

we see that a needs 6 changes of votes to win, b 5, c 2, and d only 1. It seems clear that d ought to win; yet he is the very first to be excluded by the above course.

Lastly, let us take a case in which these two courses bring in different candidates, neither of them being the one that ought to win.

Let there be 23 electors and 4 candidates.

Fig. 9

a	a	a	a	a	a	a	b	b	b	b	b	b	c	c	c	c	c	c	d	d	d	d
b	b	c	c	c	c	d	d	d	d	d	d	d	b	b	b	b	b	b	b	b	c	c^*
d	d	b	b	b	b	b	a	a	a	a	a	a	a	a	a	a	a	a	d	a	a	b
c	c	d	d	d	d	c	c	c	c	c	c	c	d	d	d	d	d	a	c	c	a	a

Here the majorities are cyclical in the order $a d c b a$. The table of majorities is:—

Fig. 10

	a	b	c	d
a		$\frac{16}{7}$	$(\frac{8}{15})$	$(\frac{11}{12})$
b	$(\frac{7}{18})$		$\frac{12}{11}$	$(\frac{5}{13})$
c	$\frac{8}{12}$	$(\frac{11}{18})$		$\frac{13}{10}$
d	$\frac{12}{11}$	$\frac{18}{5}$	$(\frac{10}{13})$	

Now, by course (1) a wins.

By course (2) d is excluded; but we still have a cyclical majority $a c b a$; we then exclude a , and c wins.

But, if we reckon how many changes of votes each needs to win, we find that a needs 5, c needs 6, and d needs 8; whereas b needs only 1—a single interchange, such as the two marked *, would give him a clear victory.

Note also that this single interchange would cause c (who is brought in winner by course (2)) to be beaten by *every* other candidate separately.

The instances I have taken seem to show that neither of these courses can be relied on to give a satisfactory result. But there is a stronger, and as I think a fatal, objection to both; namely, that any elector, who had not consented to this course being adopted, would have a very strong ground of appeal against the election if he were able to say “ A was declared elected, and yet he had not ‘the greatest number of votes’ given for him, since he was beaten when paired against B .”

The conclusion I come to is that, in the case of persistent cyclical majorities, there ought to be ‘no Election.’

I am quite prepared to be told, with regard to the cases I have here proposed, as I have already been told with regard to others, ‘Oh, *that* is an extreme case: it could never really happen!’ Now I have observed that this answer is always given instantly, with perfect confidence, and without any examination of the details of the proposed case. It must therefore rest on some general principle: the mental process being probably something like this—‘I have formed a theory. This case contradicts my theory. *Therefore* this is an extreme case, and would never occur in practice.’

§ 4. Reasons for beginning with a vote on all issues at once.

One reason for this is that it *may* show an absolute majority for some one issue, and so save all further trouble. But another, and a stronger, reason is that, when a division is taken first of all between a certain pair of issues, there will very often be some of the electors who will not know which way to vote. I am not speaking of electors who are willing to vote contrary to their real opinion, but of electors generally.

An example or two will make this clear.

Suppose there are two vacancies, but that it is not necessary to fill both: and that a division is taken first of all on the question ‘Shall both vacancies be filled, or only one?’ An elector might reasonably say ‘I wish to elect *A* alone. If I were sure he would come in, I would vote for electing *one* only: but if *B* is preferred, then, rather than lose *A*, I would vote for electing *two*.’ And another might say ‘I wish to elect *A* and *B*, but I strongly object to *C*. If I were sure *A* and *B* would come in, I would vote for electing *two*: but if that would result in *A* and *C* coming in, then I vote for *one* only.’ How much simpler to allow the one to write down ‘*A* alone,’ and the other ‘*A* and *B*.’

Again, suppose it settled that two are to be elected, and a division to be taken between *B* and *D*. An elector might reasonably say ‘I wish to elect *A* at any rate: the other to be *B* or *C*. I do not care which: but I object to *D*. I would vote for *B*, if I were sure that *A* would be elected as the other. But if I knew that *C* would beat *A* on a division, I should wish to get *C* and *A* elected, and this *might* be effected by voting for *D*. I happen to know that *C* and *A* can each beat *D*, so that he has no real chance. My voting for him would not mean that I wish to bring him *in*, but that I wish to keep *B* *out*, and so to get *C* and *A* elected, instead of *C* and *B*.’ How much simpler to allow him to write ‘*A*, and then *B* or *C*.’

§ 5. Reasons for allowing ‘no Election’ to be reckoned among the other issues.

Evidently an elector who desires ‘no Election’ ought to have *some* opportunity of voting on the question. And if it be not reckoned as an issue, it must be voted on, as a separate question, at the beginning or the end of the proceedings.

(1) *The method of beginning with a vote on the question ‘Election or no Election?’*

This Method has the strong recommendation that if ‘no Election’ be carried, it saves all further trouble, and it *might* be a just method to adopt, provided the electors were of two kinds only—one, which prefers ‘no Election’ to *any* candidate, even the best, the other, which prefers *any* candidate, even the worst, to ‘no Election.’ But it would seldom happen that *all* the electors could be so classed: and any elector who preferred certain candidates to ‘no Election,’ but preferred ‘no Election’ to certain other candidates, would not be fairly treated by such a procedure. He might say ‘It is premature to ask me to vote on this question. If I knew that *A* or *B* would be elected, I would vote to *have* an election; but if neither *A* nor *B* can get in, I vote for having none.’

(2) *The method of ending with a vote on the question ‘Shall *X* be elected, or shall there be no Election?’*

Here again a voter who preferred certain candidates to ‘no Election,’ but preferred ‘no Election’ to certain other candidates, would not be fairly treated. He might say ‘If you had taken *A* or *B*, I would have been content, but as you have taken *C*, I vote for no Election,’ and his vote might decide the point: while the other electors might say ‘If we had only known how it would end, we would willingly have taken *A* instead of *C*.’

The conclusion I come to is that, where ‘no Election’ is allowable, the phrase should be treated exactly as if it were the name of a candidate.

§ 6. Reasons for having a preliminary voting on paper and not open voting.

Suppose *A* to be the candidate whom I wish to elect, and that a division is taken between *B* and *C*; am I bound in honour to vote for the one whom I should *really* prefer, if *A* were not in the field, or may I vote in whatever way I think most favourable to *A*’s chances? Some say ‘the former,’ some ‘the latter.’ I proceed to show that, whenever case α fails to occur, and there are among the electors a certain number who hold the latter course to be allowable, the result *must* be a case of cyclical majorities.

Let there be 3 candidates, *A*, *B*, *C*, each preferred by about one-third of the electors; and suppose that, when a division is taken between *A* and *B*, *A* wins. A division is now taken between *A* and *C*, which of course depends on the votes of the *B*-party; perhaps a majority of them *really* prefer *A*, and if they voted accordingly *A* would win under case β ; it might need only two or three to vote contrary to their real opinion to turn the division in favour of *C*. We have now got ‘*A* beats *B*, *C* beats *A*,’ and of course a division must be taken between *B* and *C*; this depends on the votes of the *A*-party, and, as before, it may only need two or three to vote contrary to their real opinion to prevent *C* winning the election. Thus we get ‘*A* beats *B*, *C* beats *A*, *B* beats *C*.’

This principle of voting makes an election more of a game of skill than a real test of the wishes of the electors, and as my own opinion is that it is better for elections to be decided according to the wish of the majority than of those who happen to have most skill in the game, I think it desirable that all should know the rule by which this game may be won. It is simply this:—‘In any division taken on a pair of issues neither of which you desire, vote against the most popular. There *may* be some one issue which, if all voted according to their real opinion, would beat every other issue when paired against it separately: but, by following this rule, you *may* succeed in getting it beaten *once*, and so prevent its having a clear victory, by introducing a cyclical majority. And this will give, to the issue you desire, a chance it would not otherwise have had.’

Now, it is impossible to prevent such votes being given: and even if a preliminary voting on paper should seem to lead to case α or β , it is impossible, when it comes to the final formal vote, to prevent votes being given contradictory to previous votes.

The advantages of having the preliminary voting taken on paper and not openly are, first, that each elector, not knowing exactly how the others are voting, has less inducement to vote contrary to his real opinion, so that a more trustworthy estimate is arrived at of the real opinion of the body of electors, and cyclical majorities are less likely to occur, than with open voting; and secondly, that if cyclical majorities do *not* occur in this process, they cannot

occur in the formal voting except by some one or more of the electors giving votes inconsistent with their written opinions, and I think it desirable that in such a case the body of electors should know who they are that have so voted—a result which this method would secure.

I do not suppose that any one would be so unwilling to have it known that he has so voted that this publicity would *prevent* an artificial cyclical majority—for I am sure that those who do so believe it to be an honourable course to take, and so have no motive for desiring concealment—but I think it would increase the sense of the responsibility incurred by those who thus exercise their right of voting, and so make its occurrence less likely.

These written lists will also be, in many cases, a great saving of time. An example will best show this. Suppose there are 2 vacancies to be filled and 3 candidates, all recommended on various grounds by the examiners, and that the electors are divided among the following 6 issues, 'A B', 'B A', 'A C', 'C A', 'B C', 'A alone.' These, taken two and two, give 15 pairs: that is, it might require 15 divisions to be taken to get the information which the written lists furnish at once.

5.4 The Purity of Election

Source: St. James's Gazette, May 4, 1881

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—Utopia is a pleasant and a well-ordered country, and enjoys many blessings to which our little island is a stranger. Some of these must, no doubt, be by us eternally despaired of (for example, no one is ever bored at a Utopian dinner-party, or overcharged by a Utopian cab-driver). Others we may hope with fitting effort to make our own; and among these attainable prizes none seems more precious than “purity of election.” Utopian electors (pardon me for mentioning so trite a fact, but we need some definite basis to begin from) are all sufficiently educated to be able to form independent opinions on the political questions of the day; and in accordance with these opinions they vote, without fear or favour. Who dares deny that this is a state of things to be wished for and striven for; and that, even though the jealous Parcæ may withhold its full fruition, still the more nearly we can attain to it the better and happier we shall be? This, then, being our goal, what are the main obstacles that beset our path—the primary well-springs of corrupt voting?

Bribery, I suppose, comes first—that subtle poison which, ever since the fatal day when Jacob sold pottage and Esau sold his birthright, has rankled in the veins of society. But every corrupt influence, which makes an elector vote on any other ground than his own unfettered judgment as to what is best for the nation, is the same in kind, if not in degree, with bribery. I say “corrupt,” for I will not assert that the uneducated elector, who is simply incompetent to form an opinion of his own, is necessarily voting corruptly. It may not be, and in my opinion it is not, for the good of the nation that such a man should vote at all; still, his motives in voting may be pure. For instance, one of the candidates may be personally known to him as an exemplary private character, and though the maxim—that a statesman “can’t be wrong when life is in the right”—may be (logically) weak, it is not (morally) corrupt. Again, he may act under the advice of some wiser friend. These are not exalted motives, and they are distinctly extra-political; but they do not produce the great evil I am now considering—corrupt voting. But there is a bribery that is not to be expressed in terms of *£ s. d.*; and many a man to whom gold might be offered in vain will strain his political convictions in order to go with the stream, and will lend his voice to swell the shout of victory rather than own his allegiance to the vanquished few.

Both forms of bribery were rampant in the days of open elections. The introduction of vote by ballot has, we may hope, largely diminished both: the rogue has less chance of getting a high price for his vote now that he cannot prove that he has earned his money; nor can he certainly, however he may wish it, be on the winning side, since in many elections no one knows till all is over where the victory lies. But, though lessened for the individual voters, this evil influence—the passion for being on the winning side—still flourishes in unabated vigour as regards constituencies; and it is to this form of it that I desire to draw attention.

No thoughtful observer of the general elections of 1874 and 1880 can have failed to be struck by the way in which, when once the stream had taken a

definite direction, it rolled on in ever-gathering volume, and seemed to carry with it, like straws tossed upon a flooded river, the elections of the later days. During the first day or two each little constituency felt itself an independent factor in the general result—it could do something real to swell or stem the stream; but long before the general election was over, the battle was virtually lost and won: the beaten Government was striking its camp; the late Opposition was exulting over the huge majority with which it would take office; and the unfortunate constituencies who returned their members in the last few days found they had a much humbler function to fulfil. The question no longer was “Which policy is best for the nation?” but “Which position is best for us—to swell the tide of victory, or to efface ourselves by adding a unit to a hopelessly beaten minority?”

But this is not all. The evil extends further than to the single constituency thus washed away in the high tide of popular passion: nay, it extends further than to a single general election; it constitutes a feature in our national history; it is darkly ominous for the future of England. So long as general elections are conducted as at present we shall be liable to oscillations of political power like those of 1874 and 1880, but of ever-increasing violence—one Parliament wholly at the mercy of one political party, the next wholly at the mercy of the other—while the Government of the hour, joyfully hastening to undo all that its predecessors have done, will wield a majority so immense that the fate of every question will be foredoomed, and debate will be a farce; in one word, we shall be a nation living from hand to mouth, and with no settled principle—an army whose only marching orders will be “Right about face!”

To those who recognise the existence of this evil, and who admit that it is desirable that every constituency should be as free in its choice of a member as those who elect on the first day of the general election, let me suggest a simple practical remedy. It is that the result of each single election should be kept secret till the general election is over. It surely would involve no real practical difficulty to provide that the boxes of voting-papers should be sealed up by a Government official and placed in such custody as would make it impossible to tamper with them; and that, when the last election had been held, they should be opened, the votes counted, and the results announced? It may be worth while to point out that, as regards the particular evil I am considering—the mischief done by announcing results before all is over—there is an exact parallelism between the single election, as it was before the Ballot Act, and the general election as it still is; “voters” in the one answering to “constituencies” in the other. My proposal is, in fact, that the benefits derived from secret voting, already conferred on single elections, shall be extended to their aggregate.

Let me, in conclusion, say one word to the possible objector to this new application of an accepted principle—who is saying, so far as audible speech goes, “This is indeed a Utopian scheme! These fine sentiments will not stand the rough wear of a practical age!” but whose secret soul is saying “I prefer the high-tide theory of a general election, because I fancy my pet party has more chance than the other party of being washed into power on the top of that tide!” “What I have here written,” I would say to such a man, “is not meant for you. You and I have no common premisses to argue from. Between us all discussion is impossible. I have written for that insignificant and unenlightened section of society who still cling to the antiquated notion that the world we live in is the work of a Personal Being, not of a Blind Force; that from that Being each of us

has received all he has of what men call power, and that to that Being each of us is finally accountable for the use he makes of the power entrusted to him.”—I am, Sir, your obedient servant,

Lewis Carroll.

April 30.

5.5 Proportionate Representation

May 15, 1884

Source: St. James's Gazette, May 15, 1884

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—The system of taking votes advocated by “The Proportionate Representation Society” labours under a very serious defect in its application, to which the attention of all interested in the question should be directed. An instance will make this clear.

The system proposed is that each voter shall have one vote; that he shall hand in a list of candidates numbered 1, 2, 3, etc.; and that it shall be counted as a vote for his No. 1, unless that candidate has already received enough votes to secure his return, in which case it shall be counted for his No. 2. The difficulty is that it will often depend on *which* lists are thus transferred whether the one or the other of two candidates shall be returned. If the lists in which A stands as No. 1 are of two kinds, some having B as No. 2 and some C, and if there are more than enough to return A, it may easily happen that, if the transferred lists are of the first kind, B will be returned, but if of the other kind, C.

Take a town containing 11,999 voters, and returning two members: so that 4,000 votes are enough to return a member. Let there be three candidates, A, B, and C; and let A have 8,000 supporters, 5,000 of whom take B as their No. 2, and the other 3,000 take C. Let B have 1,400 supporters and C 2,599. It does not signify whom these voters put as their No. 2, since A's return is obvious, so that the only transferred lists are those on which he is No. 1.

Now A is returned with 4,000 votes to spare. Hence, if any teller has the opportunity of seeing the lists, he can easily arrange for the 4,000 transferred lists to contain 2,600 favourable to B, thus securing B's return; or else to contain 1,401 favourable to C, thus securing C's return.

But let us suppose all such cheating provided against, and that it is a matter of pure chance which 4,000, of the 8,000 lists headed “A,” are transferred. It is mathematically certain that the most probable event is that they will be divided between A and B in the same proportion—5 to 3—as the whole 8,000; *i. e.*, that they will contain 2,500 lists headed “A B,” and 1,500 headed “A C.” Hence B will get 3,900 votes, and C 4,099; and C will be elected by a majority of nearly 200 over B. But there are 6,400 voters who prefer B to C, and only 5,599 who prefer C to B: so that, as a matter of fact, the unsuccessful candidate B has a majority of 801 over the successful candidate C:—I am, Sir, your obedient servant,

*Charles L. Dodgson.
Ch. Ch., Oxford, May 12.*

May 19, 1884

Source: St. James's Gazette, May 19, 1884

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—Mr. Cohen may rest assured that I should never think of applying the term “absurd” to any method of voting which had his support, though I do think that its practical application may prove in some cases “unfair.” The principle of the society is, in my belief, entirely right. Where the voters are divided into two parties, and where several members are to be returned, I hold that these should be divided, as nearly as possible, in the same proportion as the voters—*e. g.*, if, in a town returning four members, rather more than five-eighths of the voters were Liberals and the rest Conservatives, the Liberals ought to return *three* of the members; if rather less than five-eighths, *two*. But this principle is not applicable where only *two* issues are possible; for then one party or the other must carry the day, and a compromise is no longer possible. And the case I proposed may easily be reduced to one of this sort.

Permit me to re-state the data, adding a new but not inconsistent hypothesis. A town containing 11,999 voters is to return two members, so that 4,000 votes are enough to return a member. There are three candidates—A, B, and C: 5,000 voters say “A B,” 3,000 “A C,” 1,400 “B A,” and 2,599 “C A.” The most probable result, if the Society’s method is adopted, is (as Mr. Cohen admits) to elect “A C.”

But this is a case where, as it appears to me, the society’s method is not fairly applicable; for there are, in fact, only *two* possible issues: the 6,400 voters, though differing as to the order in which they name the candidates, agree in wishing that A and B should be the two members returned; while the other 5,599 similarly wish to return A and C. Surely in this case, where no compromise is possible, the majority ought to have their wish, rather than the minority.

That the theory “A C ought to be elected” should commend itself with exceptional force to Mr. Arthur Cohen is not to be wondered at; but when he proposes to tell the unfortunate 6,400 voters that the reason the minority are allowed to carry all before them, and to return *both* their nominees, is that this is “the fair and proper way of giving effect to the desire of the voters,” and when Mr. Sidgwick adds his assurance that this method only claims “to give the minority their share (!),” I think the disappointed majority may be excused if they show some little coyness in accepting such doubtful consolation.—I am,
Charles L. Dodgson.

Ch. Ch., Oxford, May 17.

P.S.—Mr. Sidgwick must surly have been reading the American Naturalist? “The snakes in this country may be divided into one species—the venomous.” Or else he is inspired by the poet who sang:

I give thee all, I can no more,
 Though small thy share may be:
 Two halves, three thirds, and quarters four,
 Is all I bring to thee!

Parody on *My Heart and Lute* by Thomas Moore

May 27, 1884

Source: St. James’s Gazette, May 27, 1884

To the EDITOR of the ST. JAMES’S GAZETTE

SIR,—Having put before your readers, on the 15th and 19th of May, an instance where Sir John Lubbock’s method of taking votes fails to do justice, I propose now to state the additional rules needed to guard against such a result. Mr. Sidgwick has misunderstood me when he thinks it is my wish that the majority of a constituency shall return all the members, and that I object to giving the minority their share; and I think your readers are likely to misunderstand *him* when he says of me, “he demonstrates that this method will cause candidates to be elected who are not desired by the majority of the electors”: what I had demonstrated was something very different, namely, that it might cause one of two issues to triumph over the other, where (no compromise being possible) it had fewer supporters than the other issue; and *that* result I am sure neither Mr. Sidgwick, nor any other supporter of the method, would desire.

It may sound a paradox to say that this method enables the *minority* to return a fair share of members, and yet always gives the preference, when the question is whether one of two members shall be returned, or one of two issues (no compromise being possible) shall be adopted, to that side which has a *majority* of votes. Yet so it is. An instance will, I hope, make this clear. Take a town containing 29,999 voters, and returning five members. And let the voters be divided into two parties (call them “red” and “blue”). According to the method, 5,000 votes are enough to return a member. The reason is that each voter has only *one* vote, and that the five candidates who get the greatest numbers of votes are returned. Hence, a “red” candidate with 5,000 votes must be among the first five, for there cannot be more than four “blue” candidates who have as many votes as he: five such would require 25,000 votes, and there are only 24,999 to be had. Again, if the “reds” can muster 10,000 votes, they can return two members, by giving them 5,000 each; for there cannot be more than three “blue” candidates who have as many: four such would require 20,000 votes and there are only 19,999 to be had. Observe that, though the “reds,” being the *minority*, return two members, yet each of these has a *majority* of votes, compared with any rejected “blue” candidate.

The rules, required to complete the method, are as follows:—

(1). Divide the number of voters by the number of members to be returned, increased by one: and let n the lowest whole number greater than the quotient.

(2). If there are n lists in favour of A, A is returned: and so for B, or any other candidate.

(3). If there are n lists which suffice to return A, and which, erasing A, are in favour of no other than B; and other n lists which, erasing A, are in favour of B; B is returned: and so for A and C, or any other 2 candidates.

(4). If there are $2n$ lists, which suffice to return A and B and which, erasing A and B, are in favour of no other than C; and other n lists which, erasing A and B, are in favour of C; C is returned: and so for A, B, and D, or any other 3 candidates. Similarly for $3n$ lists, $4n$ lists, etc.

The words “no other than” are used in Rule 3, in order to meet the case of lists being handed in which contain A only. And there can be no doubt that, in thus disposing of the surplus lists, headed A, no such injustice can be done as I showed to be possible—and indeed probable—in the case examined in my former letters: for the lists, used to return A, could not, by being transferred, help any one but B; consequently the surplus lists may fairly be used in his interests.

Each rule must be applied as far as possible before taking the next. When

all are exhausted, if there are still members to be returned, some other principle must be introduced. In the example, given in my former letters, these rules serve to return A, and then cease to be applicable.—I am, Sir, your obedient servant,

Charles L. Dodgson.
Ch. Ch., Oxford, May 23.

June 5, 1884

Source: St. James's Gazette, June 5, 1884

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—In reply to the charge which I brought (on the 15th of May) against the method of voting proposed by the "Society for Proportionate Representation," that it is liable to bring in the wrong man, two pleas have been put forward: one, that the most probable result is also the most equitable; the other, that it can never be a matter of chance which of two candidates shall get in, unless they are *of the same party*.

The following instance will, I think, give the *coup de grâce* to both these pleas.

Take a town of 39,999 electors, returning three members, so that 10,000 votes will suffice to return a member; let there be four Liberal candidates, A, B, C, D, and one Conservative, Z; and let there be 21,840 lists "A B D," 10,160 "A C B," and 7,999 "Z." There can be no shadow of doubt that, as a matter of justice, A, B, C, ought to be returned. Let us see what, under the society's present rules, would be the most probable result.

The 32,000 lists headed "A" are of two kinds, bearing to each other the ratios of the numbers 273,127. Hence the most probable event is that the 10,000 lists, used in returning A, will contain 6,825 "A B D" and 3,175 "A C B." Erasing "A" from the remaining lists, we have now in hand 15,015 "B D," 6,985 "C B," and 7,999 "Z"; so that Z is returned with a majority of more than 1,000 over C. And the Liberals must derive what consolation they can from the reflection that their rejected candidate really had 2,161 more supporters than the successful Conservative!—I am, Sir, your obedient servant,

Charles L. Dodgson.
Ch. Ch., Oxford, June 4.

5.6 Parliamentary Elections

Source: St. James's Gazette, July 5, 1884

The question, how to arrange our Constituencies and conduct our Parliamentary Elections, so as to make the House of Commons, as far as possible, a true index of the state of opinion in the nation it professes to represent, is surely equal in importance to any that the present generation has had to settle. And the leap in the dark, which we seem about to take, in a sudden and vast extension of the Franchise, would be robbed of half its terrors could we feel assured that each political party will be duly represented in the next Parliament, so that every side of a question will get a fair hearing.

The method which, after much thought, I venture to propose, will best be explained by showing how it carries out those general principles which ought to guide us in the matter.

(1) That each Member of Parliament should represent, approximately, the *same* number of Electors is almost an axiom. The monstrous injustice of letting a Member who speaks for a few hundreds cancel the vote of one who speaks for thousands needs no proof. Equal electoral districts, each returning one Member, would seem at first sight to secure this. But they do not really do so, since the Member only represents the *majority* of the district. Suppose the Electors to consist of 5 millions of one party and 3 millions of the other (call them "blue" and "red"). Now, if these 8 millions were scattered broadcast over the land, the *most probable* proportion (*i. e.* the one more probable than any other one), in which they would fall in any district, would be 5 to 3. Such a district would return a "blue" member, as indeed any district would, even with less than 5-8ths "blue," so long as they were more than one-half. Hence a possible result of an Election would be a House—not containing, as it ought to do, 3 "red" for every 5 "blue," but wholly "blue." This extreme case is of course unlikely: but it is mathematically certain that the House would contain much too large a proportion of "blue" to fairly represent the Electors. It seems clear that each district should return several Members, so that Minorities may have a chance of returning some. But, if this be so, there is no reason why the districts should be *equal*, provided only that the number of Members returned be proportioned to the number of Electors in the district.

(2) That the Minority of the two parties into which, broadly speaking, each district may be divided, should be adequately represented, is another axiom. The common plan for electing several persons at once is to give each voter as many votes as there are vacancies to fill—and this fallacy still holds its ground, in spite of the obvious absurdity that it enables a bare majority of the Electors to fill *all* the vacancies. The plan, of giving each voter several votes, but *fewer* than there are vacancies to fill, is only a partial remedy of this injustice: *e. g.*, with 3 Members to return, and each Elector having 2 votes, it is possible for just over 3-5ths of the Electors to fill *all* the vacancies. The plan, of letting a voter give 2 or more votes to one man, simply increases the "specific gravity"—so to speak—of a vote. Give each voter 6 votes, with permission to lump them if he pleases—and in the end you will find most of the votes given in lumps of 6, and the result much the same as if each had had one vote only. So we are brought to the plan advocated by the "Proportionate Representation" Society—quite the best, I believe, that has yet been suggested—to give each Elector *one* vote only,

and to fix, for each district, the “quota” which shall suffice to return a Member. (The rule is easily seen to be to divide the total number of votes by the number of Members to be returned, increased by one, and to take the whole number next greater than the quotient.)

(3) That the waste of votes, caused by accidentally giving one candidate more than he needs, and leaving another of the same party with less than he needs, should be if possible avoided, is much more easily seen than is any practicable method for effecting this. The *packing* of votes—needing the constant supervision of a “caucus,” and also a very docile body of Electors, each willing to vote for *any* man on the “right” side—is a way, but a very clumsy one, for doing this. A much better way would be to let each man vote as he likes, and find some means of utilising surplus-votes, in order to bring in other Members of the same party. But how is this to be done? It is quite the most difficult question we have yet had to face. The P. R. Society says, “let each voter hand in an arranged list, and let his vote, if not required by his No. 1, be transferred to his No. 2, and so on.” But this involves a great difficulty, often pointed out, and never yet successfully grappled with. *Which* of the surplus-votes are we to transfer? The first thing to settle is, *where* the answer is to come from. Are we to leave it to chance? Or is some fixed rule to be made, which shall meet all such cases? Or is it to be settled arbitrarily? I must ask your readers’ patience while I discuss these three questions separately.

(3. a.) Shall we leave it to chance? “Yes,” says the P. R. Society: “and you will find that the surplus lists, headed ‘A,’ will be divided among B, C, &c., in the same proportions as the entire set of such lists; and this is surely what the voters wish, and will give an equitable result.” But this is precisely what I have shown, in my letter of June 5, will in many cases *not* give an equitable result.

(3. b.) Shall we have a fixed rule for transferring the surplus-lists? Yes, if you can find one that will, in *all* cases, work satisfactorily. None such has yet been suggested.

(3. c.) To this course we seem inevitable driven; namely, that *somebody* shall decide how to use the surplus votes. But who? The voter? That is what the P. R. Society wants: and it necessitates the arranged lists, which we have already seen cause to abandon. This power *cannot* be given to the voter: it is impracticable: the only practicable plan seems to be to let him name his one favourite, and leave to other hands the further disposal of his vote, in case it is not used for that candidate. But, what hands? The next idea that suggests itself is, the committee of the candidate. But surely the Electors would not have so much confidence in the committee as in *the man himself*. And to *him* I would refer the question, who is to have the surplus-votes. The Elector should be made to understand that, in giving his vote to A, he gives it him as his absolute property, to treat as he will—either by using it to secure his own return, or to help another candidate of whom he approves, or (if there be none such in the field) by leaving it unused. If he cannot trust the man, for whom he votes, so far as to believe that he will use the vote for the best, how comes it that he can trust him so far as to wish to return him as Member? Your readers may, no doubt, find objections to this scheme: but let them remember that what we are in search of is not a scheme *free* from objections (the quest would be hopeless) but the scheme which has the *fewest*.

(4) That the process of marking a ballot-paper should be reduced to the utmost possible simplicity, to meet the case of voters of the very narrowest

mental calibre, I should have put as an axiom, but that the above-named Society appears to ignore it. No doubt they have found many school-children able to tick off, with great readiness, lists of kings and conquerors in a supposed descending scale of merit—but try it on Hodge, fresh from the plough! Give *him* a list of half-a-dozen of the neighbouring farmers, to be arranged in their order of merit, and see if he will ever be able to make up his mind! “I knows who’s best of *two*,” he might tell you, “but blessed if I can say who’s first, and second, and third, and fourth!” This simplicity of process is secured by my method.

(5) That the process of counting votes should be as simple as possible will be admitted by all who agree (as who does not?) that the sooner the result can be announced, and the less liable it is to be set aside owing to errors of calculation, the better. This also is secured by my method.

I proceed to give a summary of rules for the method I propose. Form districts which shall return 3, 4, or more Members, in proportion to their size. Let each Elector vote for one candidate only. When the poll is closed, divide the total number of votes by the number of Members to be returned *plus* one, and take the next greater integer as “quota.” Let the returning-officer publish the list of candidates, with the votes given for each, and declare as “returned” each that has obtained the quota. If there are still Members to return, let him name a time when all the candidates shall appear before him: and each returned Member may then formally assign his surplus-votes to whomsoever of the other candidates he will; while the other candidates may in like manner assign their votes. If, by this process, any fresh candidate obtains the quota, let him be declared “returned.”

This method would enable each of the two parties in a district to return as many Members as it could muster “quotas,” no matter how the votes were distributed. If, for example, 10,000 were the quota, and the “reds” mustered 30,000 votes, they could return 3 Members: for suppose they had 4 candidates, and that A had 22,000 votes, B 4,000, C 3,000, D 1,000: A would simply have to assign 6,000 votes to B, and 6,000 to C, while D, being hopeless of success, would naturally let C have his 1,000 also. There would be no risk of a seat being left vacant through two candidates of the same party sharing a quota between them: an unwritten law would soon come to be recognised—that the one with fewest votes should give place to the other. And, with candidates of two opposite parties, this difficulty could not arise at all: one or the other could always be returned by the surplus-votes of his party.

C. L. Dodgson.

Ch. Ch. Oxford. July 4, 1884.

5.7 Notes

Source: The St. James's Gazette, August 7, 1884

A correspondent signing himself "Dynamite" sends us the following:—"Those who take the Constitutional side in this great Franchise Agitation are from time to time indebted to their opponents for some energetic expression of the truth, or some happy illustration of the fallacy of the Radical position. Mr. Bright's emphatic denunciation of all Franchise Bills which did not also deal with Redistribution deserves, and will I trust obtain, the widest publicity: the Hyde Park banners emblazoned with 'The Bill, the whole Bill, and nothing but the Bill!' was a capital thought; they ought to be bought up and used at all Conservative meetings: and the Franchise-medal, used at the Birmingham meeting on Monday, inscribed "Our Queen, our country, and our rights; the Constitution in all its fulness for the people of the United Kingdom," is exactly what Conservatives should delight to wear. And now Mr. Chamberlain presents us with a most appropriate metaphor. I quote his exact words as spoken at Birmingham:—

I have read somewhere of a patient who was ordered a shower-bath by his physician. He had never seen one before, and when he was introduced to the startling invention he stoutly declared "I will not enter that machine without an umbrella." (Laughter and cheers.) Now Lord Salisbury insists on an umbrella (laughter): he will not submit the Constitution to a bracing shower of new votes unless he can preserve it from the shock by a carefully manipulated scheme of redistribution.

We ought to be extremely obliged to Mr. Chamberlain for having hunted up a metaphor so exactly suited to the Conservative orators. He has not got the details quite right, but the correction is easily made. The patient discovered that there was only one hole at the top of the shower-bath, through which the whole of the water would have fallen *en masse* upon one shoulder only; and prudently declared 'I will not enter that machine until a proper system of holes are made, so that the water may be fairly distributed.' Every one knows that the bracing effect of a shower-bath wholly depends on this distribution. Let us return thanks to Mr. Chamberlain for so admirably illustrating a great truth."

5.8 Redistribution

October 11, 1884

Source: St. James's Gazette, October 11, 1884

Now that the Government scheme for Redistribution has been made public, it seems a fitting time for calling attention to the general principles on which Redistribution ought to be conducted.

In the article on "Parliamentary Elections,"¹ which you did me the honour to publish on July 5, I explained a method for conducting Elections which (given that the various Districts had had Members assigned to them in proper proportions) would give the most equitable result possible: in the present article I propose to explain a method of Redistribution, by which Members would be equitably assigned to the various Districts. If both parties could agree to accept some such general principles for Redistribution and the conduct of Elections, each would feel secure that, whether it comprised a majority or a minority of the Electors, it would be fairly represented in the House, and there would be no objection, on either side, to passing the Franchise Bill, with the proviso that it should not come into operation till the Redistribution Bill had also been passed.

Assuming for a moment, for the sake of simplicity, that all Electors, whatever the value of their rateable property, and whether they be in town or country, are to have equal political weight, it is plain that an ideally perfect House would be one where each Member represented the same number of Electors, where the proportion between parties in the House was exactly the same as in the whole body of Electors, and where every Elector was represented by the same fraction of a Member. Such a result is however unattainable. The nearest possible approach to it would be to make the whole Kingdom into one gigantic District, and let each Elector give one vote only: in this case, if the House consisted of 600 Members, and if means were used to prevent votes being wasted, each Member would represent 1-601th of the whole body of Electors, the proportion of parties in the House would be almost exactly the same as in the Kingdom, and only 1-601th of the whole body of Electors would be unrepresented: but it would be impossible to conduct an Election on so gigantic a scale. The other extreme would be the scheme of "equal electoral Districts, each returning one Member," which would leave nearly half of the whole body of Electors unrepresented.

Before settling a formula by which, given the number of Electors in a District, it could be calculated how many Members should be assigned to it, it would be necessary to agree what weight, if any, should be given to value of rateable property, and whether any difference should be made between town and country voters. The simplest way of giving effect to whatever were agreed on would be to have formulæ for multiplying the actual number of Electors in a District, and to use the number so obtained, instead of the actual number, in assigning Members to it: *e. g.* suppose it were agreed that the unit of rateable property should be £5 a year, and that the multiplier employed should be the square-root of the average value, then, in a District where the average value was £20 (4 times the unit), the multiplier would be '2'; and, if it were further agreed that town Electors should have 10 p. c. more weight than country Electors, then, in

¹Remark: → 5.6, p. 916

a District containing 20,000 town Electors and 30,000 country Electors, with an average value of £20 a year of rateable property, we should first add 2,000 to the number of town Electors, and then multiply the whole 52,000 by 2: that is, we should consider the District to contain, for the purpose of assigning Members, 104,000 Electors.

The question, how many Districts to make, which is the same thing as to ask how many Members to assign (on an average) to each District, and the question how many votes to allow each Elector to give, will be best considered in connection with the following Tables, which are calculated on the assumption that 6-11ths of the House are 'red' and 5-11ths 'blue.' Table I. gives the percentage, of the whole body of Electors, represented by the 'red' Members, Table II. the percentage represented by the 'blue,' and Table III. the percentage unrepresented:—

Table I.

		Number of votes each Elector can give.									
		10	9	8	7	6	5	4	3	2	1
Number of Members as-signed to each District.	1...	...	...	...	...	...	...	...	...	...	28
	2...	...	...	...	...	...	...	...	...	28	37
	3...	...	...	...	...	...	...	...	28	33	41
	4...	...	...	...	...	...	...	28	31	37	44
	5...	...	...	...	...	...	28	31	34	39	46
	6...	...	...	...	...	28	30	33	37	41	47
	7...	...	...	...	28	30	32	35	38	43	48
	8...	...	...	28	29	31	34	37	40	44	49
	9...	...	28	29	31	33	35	38	41	45	49
	10...	28	29	30	32	34	37	39	42	46	50

Table II.

		Number of votes each Elector can give.									
		10	9	8	7	6	5	4	3	2	1
Number of Members as-signed to each District.	1...	...	...	...	...	...	...	...	...	...	23
	2...	...	...	...	...	...	...	...	...	23	31
	3...	...	...	...	...	...	...	...	23	28	34
	4...	...	...	...	...	...	...	23	26	31	37
	5...	...	...	...	...	...	23	26	29	33	38
	6...	...	...	...	...	23	25	28	31	34	39
	7...	...	...	...	23	25	27	29	32	36	40
	8...	...	...	23	24	26	28	31	33	37	41
	9...	...	23	24	26	28	29	32	34	38	41
	10...	23	24	25	27	28	31	33	35	38	41

Table III.

	Number of votes each Elector can give.									
	10	9	8	7	6	5	4	3	2	1
Number of Members assigned to each District.	1...	...	...	...	...	...	...	...	...	49
	2...	...	...	...	...	...	...	...	49	32
	3...	...	...	...	...	...	...	49	39	25
	4...	...	...	...	...	...	49	43	32	19
	5...	...	...	...	...	49	43	37	28	16
	6...	...	...	...	49	45	39	32	25	14
	7...	...	...	49	45	41	36	30	21	12
	8...	...	49	47	43	38	32	27	19	10
	9...	...	49	47	43	39	36	30	25	17
	10...	49	47	45	41	38	32	28	22	16

By inspecting these Tables we see that, the fewer the Districts (*i. e.* the greater the number of Members assigned to each District) and the smaller the number of votes each Elector can give, the more equitable is the result. With less than 10 Members to a District, or with more than one vote to an Elector, it is always possible that the majority of the Electors should be 'blue,' although 6-11ths of the House are 'red.' For example, if 3 Members be assigned to each District, and each Elector have 2 votes, the 'reds' in the House represent 33 p. c. of the Electors, and the 'blues' 28 p. c., while 39 p. c. are unrepresented. It might easily happen that 25 of these 39 were 'blue' and 14 'red': in which case 53 p. c. of the Electors would be 'blue,' and only 47 p. c. 'red,' and yet the 'reds' would have a large majority in the House!

These Tables have been calculated for equal Districts, but probably the results would be much the same for unequal Districts, so long as very small Districts were as far as possible avoided.

We have now to determine a formula by which, given the number of Electors in a district (that is the *nominal* number, making due allowance for rateable property &c.) it may be calculated how many Members ought to be assigned to it. This formula should be such as to make the "quota," necessary to return a Member, as nearly as possible the same for every District. Now, if ' Q ' be this uniform quota, and if ' e ' be the (nominal) number of Electors in a District, and ' m ' the number of Members assigned to it, and if it be agreed that each Elector is to have one vote only, we know that Q must be just greater than $\frac{e}{m+1}$. Hence we set $m = \frac{e}{Q} - 1$, as the formula required. For example, if the quota were 5,000, a District containing (nominally) 30,000 Electors would have 5 Members assigned to it.

It remains to be seen how to find an equitable value for Q . Let e_1 be the (nominal) number of Electors in District No. 1, and m_1 the number of Members assigned to it, and so on: also let E be the total (nominal) number of Electors, M the total number of Members, and D the number of Districts: then we have

$$\begin{aligned}
 (m_1 + 1).Q &= e_1 \\
 (m_2 + 1).Q &= e_2 \\
 &\&c. \\
 \therefore (M + D).Q &= E; \text{ i. e. } Q = \frac{E}{M + D}.
 \end{aligned}$$

Let me say in conclusion that the object aimed at, in the methods I have

proposed for Redistribution and the conduct of Elections, is fully as much to secure that the *Majority* of the Electors shall be duly represented as that the *Minority* shall be so. The same is true of the method (a less perfect one, as I believe) proposed by “the Proportional Representation Society.” In speaking to friends about this Society, I have had such answers as this:—“I have no interest in their proposal. All I care for is that the Majority of the Electors shall be fully represented in the House: it matters little whether the Minority are represented or not.” Such people seem to think that the existing system secures what they desire. In this they are utterly mistaken: there is ample room, under the existing system, for a large Majority of the Electors to find themselves in a woeful minority in the House. The only change for the worse, that I can think of, would be the method of “equal electoral Districts each returning one Member.” Almost any other change would be a change for the better: but any system which, like the one I have here proposed, secures that the Majority of the Electors shall be duly represented, must necessarily do the same for the Minority.

Charles L. Dodgson.

October 22, 1884

Source: St. James's Gazette, October 22, 1884

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—Mr. G. A. Simcox, in discussing my proposals (of Oct. 11) for Redistribution, asks “how is the average elector to be saved from throwing away his vote on a candidate who is safe without it?” This question does not belong to the subject of “Redistribution,” but to that of “Parliamentary Elections,” under which heading I fully discussed it in my paper of July 5², and there proposed that such votes should be at the absolute disposal of the candidate for whom they were given. I also discussed, but only to reject them, the other methods suggested by Mr. Simcox.

I am embodying both papers in a small pamphlet³, which I hope to publish in a few days, and of which I shall be happy to send Mr. Simcox a copy.—I am,
Sir, your obedient servant,

C. L. Dodgson.

Ch. Ch. Oxford, Oct. 20.

²Remark: → 5.6, p. 916

³Remark: → 5.9, p. 924

5.9 The Principles of Parliamentary Representation

Source: The Principles of Parliamentary Representation, first edition; including Supplement and Postscript to Supplement

Preface

Through all the dust and din of the present controversy, four things, at least, are surly clear to all thinking men:—

First, that it would be an unmitigated evil to have a General Election with the new Franchise, but without a new Distribution of Seats;

Secondly, that there would be no difficulty in avoiding all risk in such a catastrophe, *PROVIDED THAT* a clause were added to the Franchise-Bill, enacting that it “shall not be put into operation until a Redistribution-Bill has also been passed”;

Thirdly, that there would be no difficulty in both parties agreeing to such a clause, *PROVIDED THAT* each felt secure against the other party obtaining an unfair advantage in the Redistribution;

Fourthly, that there would be no difficulty in making this secure, *PROVIDED THAT* some general principles, making it impossible for either side to obtain any such advantage, could be discovered and accepted by both parties.

It is in the profound conviction that such principles exist, and that they can be as clearly formulated, and as fully proved, as the principles of any other Science, that I venture to address these pages to all interested in the matter.

C. L. D.
Ch. Ch., Oxford,
Nov. 5, 1884

Chapter I. Desiderata.

The chief *desiderata* seem to be as follows:—

(1) That each Elector should have the same chance of being represented in the House. (Under *any* system, *some* Electors must be left unrepresented.)

(2) That each Elector, who is represented at all, should be represented by the same fraction of a Member. Or (which is the same thing) that each Member should represent the same number of Electors. Or (which is the same thing) that the number of Electors, needed to secure the return of a Member, should be uniform throughout the Kingdom.

(3) That the number of unrepresented Electors should be as small as possible.

(4) That the proportions of political parties in the House should be, as nearly as possible, the same as in the whole body of Electors.

(5) That the process of voting should be as simple as possible.

(6) That the process of counting the votes, and announcing the result, should be as simple as possible.

(7) That the waste of votes, caused by more votes being given for a Candidate than are needed for his return, should be as far as possible prevented.

(8) That the result of a local Election should depend as much as possible on the wishes of the Electors in that District, and as little as possible on chance.

(9) That the Electors in a District should be, as far as possible, uninfluenced by the results of Elections in other Districts.

Chapter II. Principles to be observed in forming electoral Districts, and in determining, for each District, how many Members it shall return.

§ 1. Number of Members in House.

There seems to be no sufficient reason, *a priori*, for any change in this particular. It would probably be best to take 660 as the number to be generally aimed at, though holding ourselves free to modify this as circumstances might require.

§ 2. Number of electoral Districts; whether to be equal or unequal; &c.

The two extreme cases are (1) to have as many Districts as Members, each to return one Member, in which case the Districts should of course be equal; (2) to form the whole Kingdom into one District.

In the first case (a method that has been much advocated) it is only a bare majority in each District who are represented. For it must not be supposed that all who vote for a Member are duly represented by him. If a District contains 20,001 Electors, so that 10,001 are enough to return a Member, all additional votes are absolutely wasted: hence only 10,001 Electors in that District are represented in Parliament; the other 10,000, whether they vote for the successful Candidate, or for a rival, or even if there be no contest at all, are unrepresented. This method, then, leaves nearly half the whole body of Electors unrepresented.

The injustice of this method may be illustrated from two points of view. Suppose a bare majority of the Electors to be of one party, and the rest of the opposite party; e. g. let 6-11ths be 'red' and 5-11ths 'blue.' Then, as a matter of abstract justice, about 6-11ths of the House ought to be 'red,' and 5-11ths 'blue.' But practically this would have no chance of occurring: if the 'reds' and 'blues' were evenly distributed through the Kingdom, a 'red' would be returned in every District, and the whole House would be of one party! Yet this distribution is, by the Laws of Probability, more likely than any other one distribution, and, the nearer the distribution to the most probable one, the nearer we come to this monstrous injustice.

The other way of looking at it is almost as telling. Suppose the House to have been elected, and that 6-11ths of the Members are 'red,' and 5-11ths 'blue': all we could learn from this, as to the views of the Electors, would be that 6-22ths (about 28 p. c.) are 'red,' and 5-22ths (about 23 p. c.) 'blue': as to the other 49 p. c., we should know absolutely nothing—if they were all 'red' (i. e. if 3-4ths of the Electors were 'red'), or all 'blue' (i. e. 7-10ths of the Electors 'blue'), it would make no difference in the House.

Taking this first extreme, then, as yielding the *maximum* of injustice which can be effected by arrangement of Districts, and observing that, if each District returned 2 Members, only 1-3rd of the Electors (on the assumption that each Elector has only one vote—an arrangement whose justice we shall hereafter prove) would be unrepresented, if 3 Members, only 1-4th, and so on, we see that the fewer and larger the Districts, i. e. the greater the number of Members which,

on an average, each District returns, the fairer the result: till we come to the other extreme, where the whole Kingdom is formed into one District returning 660 Members, in which case only 1-661th of the whole body of Electors would be left unrepresented. A general Election, with so gigantic a District, would of course be impracticable: and probably Districts, returning 6 Members each, would be about as large as could be conveniently dealt with: but very small Districts should be, as far as possible, avoided.

I find, in the *Standard* for October 10, 1884, a very good instance of the injustice done by sub-dividing large electoral Districts. "The Birmingham Conservatives are, a Correspondent telegraphs, keenly discussing the Government Redistribution Scheme. The clause which apportions 6 Members to Birmingham gives much dissatisfaction in Conservative circles. It is contended that, if the borough is to be divided into three electoral Districts, each District to have 2 Members, the Liberals could so manipulate the voters as to be certain of returning the whole of the 6 Members." Now, assuming that each Elector is to have one vote only, the Liberals could only do this by mustering more than two-thirds of the votes in each District; i. e. they must be 67 p. c., or more, of the whole body of Electors in Birmingham. But, if the three Districts were made one, it would need about one-seventh of the whole (i. e. 14 and 2-7ths p. c.) to return one Member. Hence 67 p. c. could only return 4 of the 6 Members: it would require 71 p. c. to return as many as 5; and they could not return all 6, unless they were 86 p. c. of the whole body.

Taking it as proved, then, that single-Member Districts should be in all cases avoided, and that all such should be grouped together, so as to form Districts returning at least 2 Members each, and, wherever it is possible, 4 or 5 or even more, we need only add, as a general remark, that, the more we equalise the Districts, the more we equalise the chance that each Elector has of being one of those represented in the House. Thus, in a District, returning 2 Members, the chance is 2-3ds; with 3 Members, it is 3-4ths; and so on.

§ 3. Formula for determining, for each District, how many Members it shall return.

A preliminary question must here be asked, viz. are we to count population, or Electors only? I do not think it matters much which, as they probably vary nearly together, i. e. a District having twice the population of another would probably have twice as many Electors. The Formula can best be determined for the number of *Electors*: but if, in using it, the number of population be substituted, it will make no important difference in the result.

The formula will of course have to be modified for each case, if it be agreed to give political weight to differences in rateable property, or to the distinction between town and country voters: and for this purpose rules would have to be laid down.

Now, taking 'e' to represent, for any one District, the number of Electors, and 'm' the number of Members to be assigned to that District, and assuming that each Elector has only one vote, we require a formula giving *m* in terms of *e*. This formula must evidently be such as will secure that every Member in the House shall, as far as possible, represent the same number of Electors.

Now, whatever be the quota of recorded votes, which is necessary and sufficient, *before the poll is closed*, to make it certain that 'A' will be returned, that

is the number of Electors whom *A* will represent in the House. He cannot represent *less*, for this number is *necessary*; and he cannot represent *more*, for it is *sufficient*, so that all additional votes are superfluous. Let us call this necessary and sufficient quota '*Q*.'

Now, in order that *Q* may be *sufficient*, it must not be possible for *m* other Candidates to obtain *Q* votes each; i. e. $(m + 1) \cdot Q$ must be greater than *e*; i. e. *Q* must be greater than $\frac{e}{m+1}$. Also, in order that *Q* may be *necessary*, it must be the whole number *next* greater than this fraction. Hence, approximately, $Q = \frac{e}{m+1}$; i. e. $m = \frac{e}{Q} - 1$.

This, then, is the formula required. An example will make it clear. Suppose the universal quota to be 6,000: then a District containing 50,000 Electors would have 7 Members assigned to it.

We have yet to find a formula for determining *Q*. Let '*e*₁' be the number of Electors in District No. 1, '*e*₂' the number in No. 2, and so on; let '*m*₁' be the number of Members assigned to District No. 1, '*m*₂' the number assigned to No. 2, and so on; also let '*E*' be the total number of Electors in the Kingdom, '*M*' the number of Members in the House, and '*D*' the number of Districts. Then we have

$$\begin{aligned} (m_1 + 1) \cdot Q &= e_1, \\ (m_2 + 1) \cdot Q &= e_2, \\ &\&c. \\ \therefore (M + D) \cdot Q &= E; \text{ i. e. } Q = \frac{E}{M + D}; \\ \therefore m &= e \cdot \frac{M + D}{E} - 1. \end{aligned}$$

§ 4. Tables calculated by the preceding Formulæ.

Let us suppose the 2,000,000 new Electors to be already enfranchised, thus making the total Electorate about 5,000,000. Let us further assume the number of electoral Districts to be 180, so that each will return, on an average, 3 and 2-3ds of a Member.

- Let *M* = No. of Members in House = 660.
- D* = No. of Districts = 180.
- e* = No. of Electors in a District.
- E* = total No. of Electors = 5,000,000.
- p* = population in a District.
- P* = total population = 36,000,000.
- Q* = universal quota, to be aimed at.
- m* = No. of Members assigned to a District.

Then $\frac{E}{M+D} = \frac{5,000,000}{840} = \text{about } 6,000;$
 $\therefore m = \frac{e}{6,000} - 1$ (a)

It will be worth while to contrast with this the 'rough and ready' method of assigning Members in proportion to the number of Electors, so that *m* : *e* :: *M* : *E*. This gives us

$m = e \cdot \frac{M}{E} = e \cdot \frac{660}{5,000,000} = \frac{e}{7,600}$ (b)

In the following Table, the second column gives the number of Members to be returned by a District, the first the number of Electors by Formula (a), and the third the same by Formula (b).

Table I.

<i>e</i> , by (<i>a</i>)	<i>m</i>	<i>e</i> , by (<i>b</i>)
9,000		4,000
	1	
15,000		11,000
	2	
21,000		19,000
	3	
27,000		27,000
	4	
33,000		34,000
	5	
39,000		42,000
	6	
45,000		49,000
	7	
51,000		57,000
	8	
57,000		65,000
	9	
63,000		72,000
	10	
69,000		80,000

The numbers, in the first and third columns, have been calculated by giving to *m*, in the preceding Formulæ, the successive values one-half, 3-halves, 5-halves, &c. Hence we see that, by Formula (*a*), a District containing between 9,000 and 15,000 Electors must have between one-half and 3-halves of a Member (i. e. must have *one* Member) assigned to it; and so on. If a District contained almost exactly 15,000, it could not fairly be determined, by this Table, whether it ought to return one Member, or two. In such a case, it would be best to change the boundaries of the District, so as to increase or diminish the number of Electors by 2,000 or so.

Comparing the results of the two Formulæ, we see that, for Districts whose population is about 27,000, it matters very little which Formula we use: but, for small Districts, Formula (*b*) assigns too many Members, and, for large Districts, too few; e. g. 13,000 Electors ought to return only one Member—Formula (*b*) gives them two; 60,000 ought to return 9—Formula (*b*) gives them 8.

We will now examine the effect of counting the population of a District, and not the Electors only.

Here, for $\frac{E}{M+D}$, we must substitute $\frac{P}{M+D}$; i. e. $\frac{36,000,000}{840}$, i. e. about 43,000.

Hence Formula (*a*) becomes

$$m = \frac{e}{43,000} - 1 \dots\dots\dots (c)$$

Also Formula (*b*) becomes

$$m = e \cdot \frac{660}{36,000,000} = \frac{e}{54,500} \dots\dots\dots (d)$$

Table II.

<i>e</i> , by (<i>c</i>)	<i>m</i>	<i>e</i> , by (<i>d</i>)
64,000		27,500
	1	
107,000		82,000
	2	
150,000		136,500
	3	
193,000		191,000
	4	
236,000		245,500
	5	
279,000		300,000
	6	
322,000		354,500
	7	
365,000		409,000
	8	
408,000		463,500
	9	
451,000		518,000
	10	
494,000		572,500

Comparing this with Table I, we see that, provided only it be true that the number of Electors in a District is always about 5-36ths of the population, the substitution of number of population for number of Electors will suffice for all practical purposes; and, seeing that there is evidently a tendency to go by population, and that it is much more easy to take the population of a District than to estimate what will be the number of its Electors when the Franchise-Bill is passed, the first column of Table II. is probably the best to employ.

Chapter III. Principles to be observed in conducting Elections.

§ 1. Number of Votes each Elector may give.

The two extreme cases are (1) to let each Elector give as many votes as there are Members to be returned by the District; (2) to let him give one vote only.

The effect of each of these methods, and of the intermediate methods which lie between them, will be best understood by considering the following Tables of percentages.

We will first find general formulæ for determining what number of Electors, in a given District, is necessary and sufficient to secure the return of one Candidate, of 2, of 3, &c.

- Let e = No. of Electors in the District,
- m = Members assigned to it,
- v = votes each Elector can give,
- s = seats it is desired to fill,
- x = Electors required.

Also let it be assumed that an Elector may not give 2 votes to the same

Candidate. (N.B. 'cumulative' voting is discussed at p. 934.)

Now, in order that x may be *sufficient* to fill s seats, it must be large enough to make it impossible for the other $(e - x)$ Electors to fill $(m + 1 - s)$ seats; since the two events are incompatible, so that, if the latter were possible, the former would be impossible. To effect this, each of the s Candidates must have more votes than it is possible to give to each of $(m + 1 - s)$ rival Candidates.

In order that x may be *necessary*, it must be only *just* large enough for the purpose.

It will be necessary to consider the following 4 cases separately. Observe that $>$ means 'greater than,' $\not>$ means 'not greater than,' and \therefore means 'therefore'.

Case (a) v is $\not>$ s , and also $\not>$ $(m + 1 - s)$;

Case (b) $\dots > s$, but $\not>$ $(m + 1 - s)$;

Case (c) $\dots \not> s$, but $>$ $(m + 1 - s)$;

Case (d) $\dots > s$, and also $>$ $(m + 1 - s)$.

In case (a) the x Electors can give vx votes, which divided among s Candidates, supply them with $\frac{vx}{s}$ votes apiece. Similarly, the $(e - x)$ Electors can give $v.(e - x)$ votes, which, divided among $(m + 1 - s)$ Candidates, supply them with $\frac{v.(e-x)}{m+1-s}$ votes apiece. Hence we must have

$$\frac{vx}{s} > \frac{v.(e-x)}{m+1-s},$$

where v divides out;

$$\therefore x.(m+1-s) > se - sx;$$

$$\therefore x.(m+1) > se,$$

$$\therefore x > \frac{se}{m+1}.$$

In case (b), each of the x Electors can only use s of his v votes, since he can only give *one* to each Candidate: hence the x Electors can only give sx votes, thus supplying s Candidates with x votes apiece. But the $(e - x)$ Electors can, as in case (a), supply $(m + 1 - s)$ Candidates with $\frac{v.(e-x)}{m+1-s}$ votes apiece. Hence we must have

$$x > \frac{v.(e-x)}{m+1-s};$$

$$\therefore x.(m+1-s) > ve - vx;$$

$$\therefore x.(m+1-s+v) > ve;$$

$$\therefore x > \frac{ve}{m+1-s+v}.$$

In case (c), the x Electors can, as in case (a), supply s Candidates with $\frac{vx}{s}$ votes apiece. But each of the $(e - x)$ Electors can only use $(m + 1 - s)$ of his votes: hence the $(e - x)$ Electors can only give $(m + 1 - s).(e - x)$ votes, thus supplying $(m + 1 - s)$ Candidates with $(e - x)$ votes apiece. Hence we must have

$$\frac{vx}{s} > e - x;$$

$$\therefore vx > se - sx;$$

$$\therefore x.(s+v) > se;$$

$$\therefore x > \frac{se}{s+v}.$$

In case (d), the x Electors can, as in case (b), supply s Candidates with x votes apiece. And the $(e - x)$ Electors can, as in case (c), supply $(m + 1 - s)$ Candidates with $(e - x)$ votes apiece. Hence we must have

$$\begin{aligned} x &> e - x; \\ \therefore 2x &> e; \\ \therefore x &> \frac{e}{2}. \end{aligned}$$

Tabulating these results, we have the following formulæ.

	<i>Data.</i>	<i>Formulæ.</i>
(a)	$v \not> s$ $\not> m + 1 - s$	$x > \frac{se}{m+1}$
(b)	$v > s$ $\not> m + 1 - s$	$x > \frac{ve}{m+1-s+v}$
(c)	$v \not> s$ $> m + 1 - s$	$x > \frac{se}{s+v}$
(d)	$v > s$ $> m + 1 - s$	$x > \frac{e}{2}$

By these formulæ the following Table is calculated. It shows, for a given District, what percentage of the Electors is necessary and sufficient to secure the return of *one* Candidate, of 2, of 3, &c.

The 2nd line in the 3d section represents the well-known “three-cornered constituency.” Observe (by comparing it with the next line) that it makes it too hard for a minority to fill *one* seat, and too easy for a majority to fill *all*.

Table III.

No. of Members ret. by District.	No. of votes each Elector can give.	No. of Seats it is desired to fill.					
		1	2	3	4	5	6
1	1	51					
2	2	51	51				
	1	34	67				
3	3	51	51	51			
	2	41	51	61			
	1	26	51	76			
4	4	51	51	51	51		
	3	43	51	51	58		
	2	34	41	61	67		
	1	21	41	61	81		
5	5	51	51	51	51	51	
	4	45	51	51	51	56	
	3	38	43	51	58	63	
	2	29	34	51	67	72	
	1	17	34	51	67	84	
6	6	51	51	51	51	51	51
	5	46	51	51	51	51	55
	4	41	45	51	51	56	61
	3	31	38	43	58	63	67
	2	26	29	43	58	72	76
	1	15	29	43	58	72	86

In examining this Table, we notice, first, the uniformity of the *upper* line in each section (i. e. the percentages required when each Elector can give as many votes as there are seats to fill). Here, in every case, more than half the Electors must agree, in order to fill one single seat: but, when once this number have mustered, they have it in their power to fill *all* the seats! ‘*C’est le premier pas qui coûte.*’

This absurdity diminishes gradually, from line to line, as we look down each section; the lowest line (i. e. the percentages required when each Elector can give one vote only) being always the most reasonable. One of the most startling anomalies is the 4th line of the 6th section. Here we see that, out of 100 Electors, we must muster 34 in order to fill *one* seat: with four more Electors, we can fill the second seat: with five more, the third: but ‘then comes the tug of war’; to win the fourth seat, we actually need *fifteen* more Electors!

Quoted from *The Rivals Queens* by Nathaniel Lee

Lastly, comparing together the lowest lines of the several sections, we notice that they gradually improve as we move down from section to section, requiring a smaller percentage to fill *one* seat, thus giving a minority a better chance of being represented, and a larger percentage to fill *all*, thus leaving a smaller number unrepresented. This last figure (the right-hand end of each lowest row) represents the percentage of the Electors in the Kingdom who would be represented in the House, supposing all the Districts similar to the one under consideration: and this percentage we find to rise, from 51 in the case of single-Member

Districts, to 86 in the case of six-Member Districts.

The obvious conclusion is—let the Districts be as *large* as possible, and let each Elector give *one* vote only.

The effect, on the composition of the House, will be yet more clearly seen by considering the following three Tables, which are calculated on the assumption that, in any District, all proportions, between ‘red’ and ‘blue,’ are equally probable, and that 6-11ths of the House are ‘red’ and 5-11ths ‘blue.’ Table IV. gives the percentage of the whole body of Electors represented by the ‘red’ Members, Table V. the percentage represented by the ‘blue,’ and Table VI. the percentage unrepresented:—

Table IV.

Number of Members assigned to each District.	Number of votes each Elector can give.					
	6.	5.	4.	3.	2.	1.
1.	28
2.	28	37
3.	28	36	42
4.	28	35	40	44
5.	...	28	33	39	43	46
6.	28	32	36	40	44	48

Table V.

Number of Members assigned to each District.	Number of votes each Elector can give.					
	6.	5.	4.	3.	2.	1.
1.	23
2.	23	31
3.	23	30	34
4.	23	29	34	37
5.	...	23	28	32	36	38
6.	23	27	30	34	37	38

Table VI.

Number of Members assigned to each District.	Number of votes each Elector can give.					
	6.	5.	4.	3.	2.	1.
1.	49
2.	49	32
3.	49	34	24
4.	49	36	26	19
5.	...	49	39	29	21	16
6.	49	41	34	26	19	14

By inspecting these Tables, we see two things:—

First, that the fewer and larger the Districts, i. e. the greater the number of Members returned (on an average) by each District, the more equitable the

result. This conclusion we have already arrived at, from general considerations. (See p. 925, line 44.) We observe, further, that the advantage, in fairness of result, increases rapidly at first and more slowly afterwards. For instance, in Table VI, if each Elector be allowed one vote only, the change from single-Member to two-Member Districts changes the percentage of unrepresented Electors from 49 to 32 (i. e. deducts about 1-3rd); whereas the change, from 5-Member to 6-Member Districts, only changes the percentage from 16 to 14 (i. e. deducts only 1-8th). The conclusion is that *the* important point is to have as few single-Member, and even as few 2-Member Districts as possible; but that, when we have got as far as to Districts returning 4 or 5 Members each, it is hardly worth while to go further.

Secondly, we see that the fewer the number of votes (down to the least possible, viz. 'one') that each Elector is allowed to give, the more equitable the result. We observe, further, that the advantage, in fairness of result, increases slowly at first and more rapidly afterwards. For instance, in Table VI, if 6 Members be assigned to a District, the change from 6 votes to 5 only changes the percentage of unrepresented Electors from 49 to 41 (i. e. deducts less than 1-6th); whereas the change from 2 votes to one changes it from 19 to 14 (i. e. deducts more than 1-4th). We observe, further, that the system of allowing each Elector as many votes as there are seats to fill produces, in *every* case, the same result, (the most inequitable that it is possible to produce by any variation in these data,) viz. that it leaves about 49 p. c. of the Electors unrepresented. The system (already discussed at p. 925) of "equal electoral Districts, each returning one Member" is only a particular instance of this general law.

The method of 'cumulative voting' (where an Elector can give two or more votes to the same Candidate) will usually have no other effect than to increase the 'specific gravity'—so to speak—of a vote. Let each Elector have 4 votes, with permission to 'lump' them if he chooses, and in the end you will find most of the votes given in lumps of 4, and the result much the same as if each Elector had had *one* vote only.

The conclusion is that *the* important point is to let each Elector give *one* vote only.

§ 2. Formula for determining, after the poll is closed, the quota of Votes needed to return a Member.

By a process, exactly similar to that employed at p. 927, we may prove that, if '*r*' be the number of recorded votes, and '*m*' the number of Members to be returned, the quota must be just greater than $\frac{r}{m+1}$. For example, if 55,000 votes had been given, and the District had to return 6 Members, the quota needed to return one Member would be just greater than 7,857 and 1-7th: i. e., a Member, having 7,858 votes, would be returned. Similarly, anything just greater than 15,714 and 2-7ths would be enough (if the votes could be reckoned *en masse*) to return 2 Members: i. e., if 2 Members of the same party had 15,715 votes between them, both could be returned. We shall prove, further on, that such reckoning of votes is equitable and ought to be provided for.

This quota must be carefully distinguished from the one discussed at p. 927. If a District, returning one Member, contains 10,001 Electors, the quota needed, *before the poll is closed*, to make it certain that '*A*' will be returned, is 5,001; but, if only 8,001 vote, the quota needed, *after the poll is closed*, to return him,

is only 4,001. For the purpose of *assigning Members to a District*, it is fair to proceed as if *all* the Electors were sure to vote; but, for the purpose of *returning Members*, we can count only the votes that are actually recorded.

§ 3. Method for preventing waste of Votes.

Assuming it to be agreed that each District is to return 2 or more Members, and that each Elector is to give one vote only, we have now to consider what is to be done when 2 or more Candidates of the same party have got, among them, enough votes to be returned, but when some have got more than the quota, and others less. It is obviously not fair that the party should fail in bringing in their rightful number of Members, merely by an accidental disarrangement of votes; but how to make an equitable transfer of the superfluous votes is by no means so obvious.

Various methods have been proposed for this: of which I will consider two:—

(1) “The Proportional Representation Society” proposes to let each Elector hand in a list of Candidates, marked in the order of his preference; and that his vote, if not required for his No. 1, should be transferred to his No. 2, and, if not required for him, then to No. 3, and so on. One great objection to this method is the confusion it would cause in the mind of an ignorant Elector, who, though quite able to name his favourite Candidate, would be utterly puzzled if told to arrange 5 or 6 names in order of merit. But a much stronger objection is the difficulty of deciding to *which* of the remaining Candidates the surplus votes shall go: e. g. if 8,000 be the quota needed to return a Member, and if 6,000 lists be headed ‘*A B*,’ and 4,000 ‘*A C*,’ *which* 2,000 are to be transferred? Mr. J. Parker Smith, in a Pamphlet entitled “Preferential Voting,” says (at p. 2), “The course which is exactly fair to *B* and *C* is that the votes which are transferred should be divided between them in the same proportion as that in which the opinions of the whole number of *A*’s supporters is divided.” (This would require, in the above instance, that 3-5ths of the 2,000, i. e. 1,200, should be taken from the ‘*A B*’ lists, and 2-5ths, i. e. 800, from the ‘*A C*’ lists.) He adds, “This principle avoids all uncertainty, and is indisputably fair.” He then proceeds to show that if, instead of counting and arranging the surplus votes, they be taken “in a random order,” the chances are very great that they will come out nearly in this proportion. And he further adds (at p. 4), that “the element of chance will not be of importance as between the different parties, but only as between different individual Candidates of the same party.” Now all this rests on the assertion that this mode of dividing the surplus votes, whether effected by counting or left to chance, is “indisputably fair:” and this assertion I entirely deny. The following instance will serve the two purposes, of showing that this method may easily lead to gross injustice, and of showing that the difficulty may easily arise between candidates of opposite parties.

Take a town of 39,999 Electors, returning 3 Members, so that 10,000 votes will suffice to return a Member; let there be 4 ‘red’ Candidates, *A*, *B*, *C*, *D*, and one ‘blue,’ *Z*; and let there be 21,840 lists “*A B D*,” 10,160 “*A C B*,” and 7,999 “*Z*.” There can be no shadow of doubt that, as a matter of justice, *A*, *B*, *C* ought to be returned, since there are more than two full quotas who put ‘*A B*’ first, and, over and above these, more than one quota who put ‘*A C*’ first. Let us see what, under the Society’s present rules, would be the most probable result.

The 32,000 lists headed "A" are of two kinds, bearing to each other the ratios of the numbers 273, 127. Hence the certain event, if the lists are divided by rule, and the most probable event, if they are divided at random is that the 10,000 lists, used in returning A, will contain 6,825 "A B D" and 3,175 "A C B." Erasing "A" from the remaining lists, we have now in hand 15,015 "B D," 6,985 "C B," and 7,999 "Z"; so that B is returned. Erasing "B" from the remaining lists, we now have 5,015 "D," 6,985 "C," and 7,999 "Z"; so that Z is returned with a majority of more than 1,000 over C. And the 'reds' must derive what consolation they can from the reflection that their rejected Candidate really had 2,161 more supporters than the successful 'blue'!

While fully agreeing, then, with the Proportional Representation Society as to the propriety of allowing only one vote to each Elector, I think I have sufficiently proved the fallacy of its method for disposing of surplus votes.

(2) A mechanical method of recording votes was suggested, in a letter signed "F. R. C.," in the *St. James' Gazette* for Aug. 1. Each Elector is to pass (unseen) through one of a set of turnstiles, (each Candidate having a separate turnstile), which will mechanically record his vote. The records are to be periodically examined, and the results placarded outside, in order that Electors, on seeing that a Candidate has already got votes enough to secure his return, may cease to vote for him. Several objections, each by itself fatal, may be made to this method. One is that, if the periods were short enough to prevent waste of votes, the inspection would destroy the secrecy of the ballot, as it would be known who had just voted, and the result of his voting would be at once placarded; whereas, if the periods were long enough to avoid this, time would be allowed for large waste of votes. Another is that, as the quota, necessary to return a Candidate, could not be fixed till the poll had closed, it would be impossible to know, during the Election, whether a Candidate had or had not received votes enough to secure his return. Another is that, if part of the machinery went wrong, so as (for instance) to record a total of votes greater than the number of Electors, the mistake could not (as it can with voting-papers) be rectified, but the Election would have to be held over again.

Having proved, then, that the method of arranged lists will not serve fairly to dispose of surplus votes, and yet that we cannot prevent such votes being given, we have now to find, if possible, a fair method for disposing of them. Clearly *somebody* must have authority to dispose of them: it cannot be the Elector (as we have proved); it will never do to refer it to a Committee. There remains *the Candidate himself, for whom the votes have been given*. This seems to solve the whole difficulty. The Elector must understand that, in giving his vote to A, he gives it him as his absolute property, to use for himself, or to transfer to other Candidates, or to leave unused. If he cannot trust the man, for whom he votes, so far as to believe that he will use the vote for the best, how comes it that he can trust him so far as to wish to return him as Member?

§ 4. Method for preventing the Electors in one District from being influenced by the results of Elections in other Districts.

That Electors are liable to such influences may be proved both *a priori* and *a posteriori*. On the one hand, it is a tendency of human nature, too well-known to need proving, to surrender one's own judgment in order to be on the winning side. In the words of the immortal Mr. Pickwick, "it's always best on

Quoted from *The Pickwick Papers* by Charles Dickens

these occasions to do what the mob do." "But suppose there are two mobs?" suggested Mr. Snodgrass. "Shout with the largest," replied Mr. Pickwick. On the other hand, no one, who has ever watched the progress of a General Election, can need to be reminded how obviously the local Elections of the later days have 'followed suit,' under the irresistible influence of those of the earlier days. "The secret of success," it has been well said, "is to succeed:" and there can be little doubt that the party, which fails in carrying a majority of the local Elections at first, is heavily handicapped during the rest of the contest.

Supposing it admitted that such an influence does exist in General Elections as now managed, and that it is an influence to be avoided, the remedy is not far to seek: let the local Elections be so arranged that all, or nearly all, the results may be announced at the same time.

This arrangement would no doubt be unwelcome to certain 'pluralists,' who are now able to vote in several different Districts. Possibly, in such exceptional cases, voting-papers might be allowed. But, even if no remedy could be found, the justice of allowing one Elector to vote as if he were, "like Cerberus, three gentlemen at once," seems so doubtful that the objection hardly deserves serious consideration.

Quoted from *The Rivals* by Richard Brinsley Sheridan

§ 5. Conduct of Elections.

The practical working of the principles, which have now been demonstrated, would be as follows:—When the poll is closed, let the total number of votes recorded be divided by the number of Members to be returned increased by one, and let the returning-officer announce the whole number next greater than the quotient as the quota needed to return *one* Member. Similarly, the whole number next greater than twice the quotient will be the quota needed to return *two*, and so on.

Let him further announce the number of votes given for each Candidate, and also announce as "returned" any Candidate who has received the quota needed to return *one*. If there are still Members to return, let him appoint a time and place for all the Candidates to appear before him; and any two or more Candidates may then formally signify that they wish their votes to be clubbed together, and may nominate so many of themselves as can be returned by the votes so clubbed. They must of course include in their nomination any of themselves who have been already declared to be returned. Let the returning-officer add together the votes of these Candidates, and, if the amount be not less than the necessary quota, let him declare to be duly returned the Candidates so nominated.

As an example, suppose that a District is to return 5 Members, and that there are 4 'red' Candidates, *A*, *B*, *C*, *D*, and 3 'blue,' *X*, *Y*, *Z*. Then the returning-officer might announce as follows:—

Votes given for	
<i>C</i>	15,000
<i>X</i>	9,000
<i>D</i>	8,001
<i>Z</i>	8,000
<i>B</i>	7,500
<i>A</i>	6,500
<i>Y</i>	6,000
	<hr style="width: 100%;"/> 6 | 60,001 | 10,000 and 1-6th.
Quota needed to return	
1 Member ...	10,001
2 Members ..	20,001
3 Members ..	30,001
4 Members ..	40,001
5 Members ..	50,001
I hereby declare <i>C</i> to be duly returned.	
Four vacancies remain to be filled.	
(Signed) _____	

The Candidates might then appear before the returning-officer, and *B*, *C*, *D* might formally declare that they wished to club their votes; and, as the sum total of their votes is 30,501, they would be declared to be “returned”: similarly, *X*, *Y*, *Z* might club their votes, naming *X* and *Z* as the Candidates to be returned; and, as the sum total of their votes is 23,000, *X* and *Z* would be declared to be “returned.”

Such Candidates would have to sign some such paper as the following:—

We, the undersigned, for whom the recorded votes, as stated below, amount to _____, which is not less than _____, the quota announced as needed to return ____ Candidates, hereby declare that we desire the said votes to be clubbed together. And we nominate, as Candidates whom we desire to be returned by the said votes, in addition to _____, who have been already declared to be duly returned,

	<i>Names.</i>	<i>Votes.</i>
Signed,		
	Sum total of votes	

This method would enable each of the parties in a District to return as many Members as it could muster the proper quota for, no matter how the votes were distributed. There would be no risk of a seat being left vacant through rivalry between two Candidates of the same party: an unwritten law

would soon come to be recognised—that the one with fewest votes should give way. With Candidates of two opposite parties, such a difficulty could not arise at all: one or other of them could always be returned by the surplus votes of his own party. The only exception to this would be the occurrence (a very rare one) of an exact balance of votes. This might happen, even in the case of a single-Member constituency, if each of 2 Candidates got exactly half the votes. Of course, in such a case, somebody must give a casting-vote.

Chapter IV. Final Summary.

The main points, which I claim to have made good in this little treatise, are as follows:—

- (1) That electoral Districts should be so large as to return, on an average, 3 or more Members each: and that single-Member Districts should be, as far as possible, done away with.
- (2) That Members should be assigned to the several Districts in such numbers that the quota, needed to return a Member, should be tolerably uniform throughout the Kingdom.
- (3) That each Elector should give one vote only.
- (4) That all votes given should be at the absolute disposal of the Candidate for whom they are given, whether to use for himself, or to transfer to other Candidates, or to leave unused.
- (5) That the Elections in the several Districts should terminate, as nearly as possible, at the same time.

As a practical conclusion to this treatise, I venture to suggest the following ideal Schedule of General Resolutions, such as might fairly be agreed on by all parties, and thus tend to the peaceful termination of this deplorable controversy.

[N.B. The *numbers* here suggested are merely tentative, and capable of being modified *ad libitum*.]

General Resolutions.

1. The House shall consist of 660 Members.
2. There shall be 180 electoral Districts.
3. No District shall contain less than a population of 60,000, or more than 500,000.
4. A District, whose population is between 60,000 and 105,000, shall have one Member assigned to it; between 105,000 and 150,000, two Members; and so on, in accordance with the following Table:—

Population.	Members.
60,000	1
105,000	2
150,000	3
195,000	4
240,000	5
280,000	6
320,000	7
365,000	8
410,000	9
455,000	10
500,000	

5. If the population of a District be very near to one of the above-named numbers, its boundaries shall be altered so as to increase, or diminish, the population, by not less than 10,000.

6. If it be agreed to give political weight to differences in rateable property, or to the difference between town and country voters, this shall be done by modifying the number of Members assigned by the above Table.

7. The procedure at a local Election shall be as follows:—Each Elector shall give one vote only. When the poll is closed, the number of recorded votes shall be divided by the number of Members to be returned increased by one, and the returning-officer shall announce the whole number, next greater than the quotient, as the quota needed to return one Member; the whole number, next greater than twice the quotient, as the quota needed to return two Members; and so on. He shall also announce the number of votes recorded for each Candidate, and shall declare to be duly returned any Candidate who has obtained the quota. If any vacancies remain to be filled, he shall appoint a time when the Candidates shall appear before him, and any two or more of them may then formally signify their desire to club their votes, and may nominate, as Candidates to be returned by those votes, so many of themselves as the votes suffice for: provided always that they include, in such nomination, any of themselves who have been already declared to be returned. And, if the sum total of the votes so clubbed be not less than the quota needed to return the Candidates so nominated, the returning-officer shall declare to be duly returned all of them who have not been already so declared.

8. The local Elections shall be so arranged that their results may be announced, as nearly as possible, at the same time.

Supplement

Now that the public are beginning to realise the justice of the demand for “proportional representation,” the day cannot be far off when they will understand the gross injustice (so clearly proved by Lord Salisbury in the *National Review* for October) of the “single-member” districts, and will recognise as true the main contention of the Society for Proportional Representation, that each district should return several Members, and that each elector should have *one* vote only.

May I, as one who has given much thought to this subject, point out a serious mistake which the Society is making in the details of its method, and which is in my belief greatly damaging its cause?

It is fairly obvious, and by this time pretty generally known, that, to obtain the quota of votes necessary and sufficient to return a candidate, when each elector has one vote only, we must divide the total number of votes by the number of members to be returned plus one, and that the whole number, next above the quotient, is the required quota: e. g. if the district returns 3 members, and 4000 votes are recorded, we divide by 4, and the quota is 1001.

It is also obvious that it will often happen to a candidate to poll more votes than he needs, and the question arises, how are the spare votes to be utilised? The answer of the Society is “Let the voter mark on his paper his second-best man, his third-best, and so on: and, if his first man is already returned, let his vote be used for his second, and so on.” This method is complicated and likely to puzzle voters: but such an objection might well be set aside, if only it were just.

But a second question arises. Suppose that *A* has votes to spare, and that some of the papers, headed *A*, have *B* as second-man, while others have *C*: which papers are we to transfer? To this the Society replies “The absolutely just method would be to count how many papers have *B* as second-man, and how many have *C*, and to maintain this proportion in the transferred votes: e. g. if 3-4ths of the whole set of papers, headed *A*, have *B* as second-man, then *B* ought to have 3-4ths of the transferred votes. But, if the votes are simply shuffled and drawn at random, the probability is that this proportion will be almost exactly secured: so that the above calculation may be dispensed with.”

Thus the Society is in effect making two assertions, both of which are demonstrably incorrect: one, that it is only when an elector’s first-man is already returned that his vote would be used for his second-man; the other, that the Society’s method for transferring spare votes would always secure a just result.

Let a constituency have to return 3 Members, and let 5 candidates stand, 3 Liberals, 1 Independent Liberal, and 1 Conservative.

Let 11999 voting-papers be filled up follows:—

CHAMBERLAIN	4	4	2	1	4	—
GLADSTONE	1	2	1	2	2	—
GOSCHEN	3	3	4	4	1	—
HARTINGTON	2	1	3	3	3	—
NORTHCOTE	—	—	—	—	—	1
Nos. of papers	3030	2980	2020	1100	790	2079

Here the necessary ‘quota’ is 3000, since, if 3 candidates get 3000 each, a fourth can only get 2999.

Also it is clear that, as a matter of justice, Gladstone, Hartington, and

Chamberlain ought to be returned, since there are 6010 electors who put Gladstone and Hartington as their first two favorites, and, over and above these, 3120 who put Gladstone and Chamberlain as their first two.

The First Count would give:—

Gladstone	5050
Hartington	2980
Northcote	2079
Chamberlain	1100
Goschen	790

Thus Gladstone is returned, with 2050 votes to spare, which must be divided between Hartington and Chamberlain in the proportion of 3030 to 2020, i. e. of 3 to 2; i. e. Hartington must have 1230 of them, and Chamberlain 820.

The Second Count would give:—

Gladstone	3000
Hartington	4210
Northcote	2079
Chamberlain	1920
Goschen	790

Thus Hartington is returned, with 1210 votes to spare, the whole of which must go to Goschen.

The Third Count would give:—

Gladstone	3000
Hartington	3000
Northcote	2079
Goschen	2000
Chamberlain	1920

What is to be done now? There is one seat yet to be filled, and no one has the necessary quota. Merely counting votes as they now stand would bring in Northcote, which we know would be unfair. The method of the Society in such a case would be (they tell me) to transfer to Goschen so many of Chamberlain's votes as would give him the necessary quota. But this also would bring in the wrong man.

Thus the Society's method not only excludes Chamberlain, who most undoubtedly ought to be returned; but it actually uses, for the purpose of returning Goschen, the votes of 1000 electors who prefer Chamberlain!

May I, in conclusion, point out that the method advocated in my pamphlet (where each elector names one candidate only, and the candidates themselves can, after the numbers are announced, club their votes, so as to bring in others besides those already announced as returned) would be at once perfectly simple and perfectly equitable in its result?

In the above instance, the returning-officer would announce as follows:—

“Gladstone ..	5050
Hartington .	2980
Northcote ..	2079
Chamberlain	1100
Goschen	790
4	11999
	2999 and 3-4ths ¹ .

Quota needed to return 1 Member is 3000.

26000.

39000.

I hereby declare Mr. Gladstone to be duly returned.

Two seats remain to be filled.”

Gladstone, Hartington, and Chamberlain would then club their votes, making 9130 votes, which would suffice to return all three.

*C. L. Dodgson.
Ch. Ch., Oxford,
Feb. 1885.*

Postscript to Supplement

Objection has been taken to my statement on page 941 (“it is clear that, as a matter of justice, Gladstone, Hartington, and Chamberlain ought to be returned”) on the ground that, of the 9920 Liberal electors, there are 6800 who prefer Goschen to Chamberlain, while there are only 3120 who prefer Chamberlain to Goschen. And it has been pressed upon me that, after all, Goschen is the right man to return, so that the Society’s method does *not* break down in this instance.

Now, first, we might almost on *a priori* considerations reject such a test as manifestly unfair. For does it not involve the using an elector’s voting-power *more than once*? We first let an elector exhaust his full voting-power in helping to return (say) Gladstone; and, after that, we allow his opinion to have weight in deciding between two other candidates. Is not this to abandon the principle, adopted by the Society, that each elector shall have *one* vote only?

But, secondly, this test may be easily proved to be valueless, by a simple *reductio ad absurdum*.

Let the 11999 voting-papers be filled up as follows:—

CHAMBERLAIN	4	4	2	1	4	—
GLADSTONE	1	2	1	2	2	—
GOSCHEN	3	3	4	4	1	—
HARTINGTON	2	1	3	3	3	—
NORTHCOTE	—	—	—	—	—	1
Nos. of papers	1826	1712	1826	1712	1910	3013

The First Count would give:—

Gladstone	3652
Northcote	3013
Goschen	1910
Chamberlain	1712
Hartington	1712

¹Corrected from “1-4th” according to Erratum

Thus Gladstone and Northcote are returned, and Gladstone's 652 spare votes must be equally divided between Chamberlain and Hartington.

The Second Count would give:—

Northcote	3013
Gladstone	3000
Chamberlain	2038
Hartington	2038
Goschen	1910

What is to be done now? There is one seat yet to be filled, and no one has the necessary quota.

Let us try the new test. And first, of course, we apply it to Chamberlain and Hartington. We find that

5448 prefer Chamberlain to Hartington;

3538 prefer Hartington to Chamberlain;

so that Chamberlain is clearly the victor.

Let us next apply it to Chamberlain and Goschen. We find that

3538 prefer Chamberlain to Goschen;

5448 prefer Goschen to Chamberlain;

so that Goschen is clearly the victor, and we might perhaps rest satisfied that he is the right man to be returned.

Let us, however, in order to make assurance doubly sure, apply the test to Goschen and Hartington. We find that

1910 prefer Goschen to Hartington;

7076 prefer Hartington to Goschen!

This lands us in a hopeless circle: and the logical conclusion I believe to be that the proposed test is absolutely valueless.

The statement, thus objected to, may be more fully expressed as follows:—

The 6010 electors, who put Gladstone and Hartington as their first two favorites, have a clear *moral* right to return these two, as they muster more than two full quotas, and it is a mere accident (which they would have avoided had they known how the voting was going on) that they did not divide themselves so as to *secure* this result.

Now suppose them to have exercised this right, and that Gladstone and Hartington are returned. Then the 3120, who put Gladstone and Chamberlain as their first two favorites, would undoubtedly (Gladstone being now safe) all vote for Chamberlain. *He* therefore has also a *moral* right to be returned.

C. L. Dodgson.
Ch. Ch., Oxford,
Feb. 1885.

5.10 Election Gains and Losses

Source: The St. James's Gazette, December 4, 1885

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—Will you allow me to present, to such of your readers as may be suffering from the present epidemic of *febris electoralis*, a simple formula for calculating the relative gains and losses of the several contending parties—a formula which will take account of a rather perplexing item in the *data*, viz. the change in the number of seats assigned to a constituency.

This change will not affect the *relative* gains and losses in any constituency where the seats are shared in the same relative proportions as before: *e. g.* If a town, which returned 4 Liberals and 2 Conservatives to the last Parliament, now returns 2 Liberals and 1 Conservative, there are no relative gains or losses. But if a town, which formerly returned 5 Liberals, 2 Conservatives, and 1 Independent, has lost 2 of its 8 seats, and now returns 4 Liberals, 1 Conservative, and 1 Independent, it might puzzle some of your readers to estimate the relative gains and losses. They might have a vague consciousness that the Independents, who did hold 1 seat in 8, and now hold 1 in 6, are rather better off, but *how much* they might be unable to say.

The formula is this. Let S_1 be the number of seats formerly assigned to the town, and S_2 the new number. Similarly let L_1 be the number of seats formerly held by Liberals, and so on. Then the Liberal gain is $(L_2S_1 - L_1S_2)$ divided by S_1 . If this comes out *negative*, it is really a *loss*.

Thus, in the above example, the old set of numbers, S_1, L_1, C_1, I_1 are 8, 5, 2, 1, and the new set are 6, 4, 1, 1. Hence the Liberal “gain” is $(4 \times 8 - 5 \times 6)$ divided by 8, *i. e.* one-fourth; the Conservative “gain” is $(1 \times 8 - 2 \times 6)$ divided by 8, *i. e.* minus one-half; and the Independent “gain” is $(1 \times 8 - 1 \times 6)$ divided by 8, *i. e.* one-fourth.

Thus the Conservatives have lost half a seat, which has been shared equally between the Liberals and the Independents.—I am, Sir, your obedient servant,

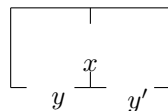
Lewis Carroll.
December 3.

Part 6

Logical Texts

6.1 First Paper on Logic

Source: printed 1886



I. State each of the following in 3 equivalent forms:—

- (1) There are no perfect men.
- (2) Some apples are unripe.
- (3) No pigs can fly.

II. Taking $x =$ 'good riddles,' and $y =$ 'hard,' interpret:—

- (1)

	0
--	---

. (2)

1	0
---	---

.
- (3)

1	1
---	---

. (4)

0	0
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.

III.

Break up each of the following into its 2 component propositions:—

- (1) All judges are just.
- (2) All good children are happy.
- (3) All old and sickly men are fretful and troublesome.

IV.

Taking $x =$ 'cakes,' and $y =$ 'wholesome,' represent, with diagrams like those in Qu. II, the following propositions:—

- (1) Some cakes are unwholesome.
- (2) There are no wholesome cakes.
- (3) There are no cakes in existence.
- (4) All cakes are wholesome.

V.

Taking x = 'diligent students,' and y = 'successful,' represent in like manner:—

- (1) No diligent students are unsuccessful.
- (2) All diligent students are successful.
- (3) There are some diligent students.
- (4) There are some diligent, but unsuccessful, students.

[June, 1886.]

6.2 Fourth Paper on Logic

Source: printed 1886

Examples. Pairs of Premises

1. No exciting books suit feverish patients;
Unexciting books make one drowsy.
2. Some, who deserve the fair, get their deserts;
None but the brave deserve the fair.
3. No children are patient;
No impatient person can sit still.
4. All pigs are fat;
No skeletons are fat.
5. No monkeys are soldiers;
All monkeys are mischievous.
6. None of my cousins are just;
No judges are unjust.
7. Some days are rainy;
Rainy days are tiresome.
8. All medicine is nasty;
Senna is a medicine.
9. Some Jews are rich;
All Kamschatgans are Gentiles.
10. All teetotalers like sugar;
No nightingale drinks wine.
11. No muffins are wholesome;
All buns are unwholesome.
12. No fat creatures run well;
Some greyhounds run well.
13. All soldiers march;
Some youths are not soldiers.
14. Sugar is sweet;
Salt is not sweet.
15. Some eggs are hard-boiled;
No eggs are uncrackable.
16. There are no Jews in the house;
There are no Gentiles in the garden.
17. All battles are noisy;
What makes no noise may escape notice.
18. No Jews are mad;
All Rabbis are Jews.
19. There are no fish that cannot swim;

Other version:
→ 6.3, p. 975

- Some skates are fish.
20. All passionate people are unreasonable;
Some orators are passionate.
21. Pain is wearisome;
No pain is eagerly wished for.
22. No bald person needs a hair-brush;
No lizards have hair.
23. All thoughtless people do mischief;
No thoughtful person forgets a promise.
24. I do not like John;
Some of my friends like John.
25. No potatoes are pine-apples;
All pine-apples are nice.
26. No pins are ambitious;
No needles are pins.
27. All my friends have colds;
No one can sing who has a cold.
28. All these dishes are well-cooked;
Some dishes are unwholesome if not well-cooked.
29. No medicine is nice;
Senna is a medicine.
30. Some oysters are silent;
No silent creatures are amusing.
31. All wise men walk on their feet;
All unwise men walk on their hands.
32. "Mind your own business;
This quarrel is no business of yours."
33. No bridges are made of sugar;
Some bridges are picturesque.
34. No riddles interest me that can be solved;
All these riddles are insoluble.
35. John is industrious;
All industrious people are happy.
36. No frogs write books;
Some people use ink in writing books.
37. No poker are soft;
All pillows are soft.
38. No antelope is ungraceful;
Graceful animals delight the eye.
39. Some uncles are ungenerous;
All merchants are generous.
40. No unhappy people chuckle;
No happy people groan.

Other version:
→ 6.3, p. 990

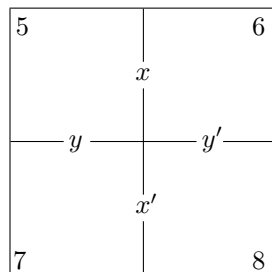
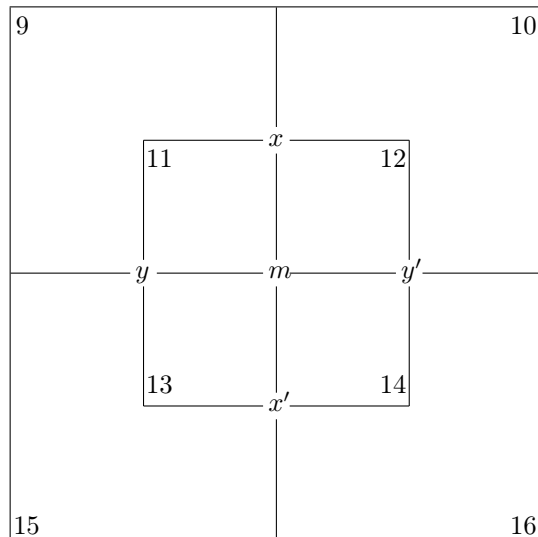
41. Audible music causes vibration in the air;
Inaudible music is not worth paying for.
42. He gave me five pounds;
I was delighted.
43. No old Jews are fat millers;
All my friends are old millers.
44. Flour is good for food;
Oatmeal is a kind of flour.
45. Some dreams are terrible;
No lambs are terrible.
46. No rich man begs in the street;
All who are not rich should keep accounts.
47. No thieves are honest;
Some dishonest people are found out
48. All wasps are unfriendly;
All puppies are friendly.
49. All improbable stories are doubted;
None of these stories are probable.
50. "He told me you had gone away."
"He never says one word of truth."

[June, 1886.]

6.3 The Game of Logic

Source: The Game of Logic (edition from 1886 with minor differences as noted)

Colours for Counters.



See, the Sun is overhead,
Shining on us, FULL and
RED!

Now the Sun is gone away,
And the EMPTY sky is
GREY!

Chapter I. New Lamps for Old.

“Light come, light go.”

Quoted from proverb

§ 1. Propositions.

“Some new Cakes are nice.”

“No new Cakes are nice.”
⌊“All new cakes are nice.”¹

There are three ‘*Propositions*’ for you—the only three kinds we are going to use in this Game: and the first thing to be done is to learn how to express them on the Board.

Let us begin with

“Some new Cakes are nice.”

But, before doing so, a remark has to be made—one that is rather important, and by no means easy to understand all in a moment: so please to read this *very* carefully.

The world contains many *Things* (such as “Buns”, “Babies”, “Beetles”, “Battledores”, &c.); and these Things possess many *Attributes* (such as “baked”, “beautiful”, “black”, “broken”, &c.: in fact, whatever can be “attributed to”, that is “said to belong to”, any Thing, is an Attribute). Whenever we wish to mention a Thing, we use a *Substantive*: when we wish to mention an Attribute, we use an *Adjective*. People have asked the question “Can a Thing exist without any Attributes belonging to it?” It is a very puzzling question, and I’m not going to try to answer it: let us turn up our noses, and treat it with contemptuous silence, as if it really wasn’t worth noticing. But, if they put it the other way, and ask “Can an Attribute exist without any Thing for it to belong to?”, we may say at once “No: no more than a Baby could go a railway-journey with no one to take care of it!” You never saw “beautiful” floating about in the air, or littered about on the floor, without any Thing to *be* beautiful, now did you?

And now what am I driving at, in all this long rigmarole? It is this. You may put “is” or “are” between the names of two *Things* (for example, “some Pigs are fat Animals”), or between the names of two *Attributes* (for example, “pink is light-red”), and in each case it will make good sense. But, if you put “is” or “are” between the name of a *Thing* and the name of an *Attribute* (for example, “some Pigs are pink”), you do *not* make good sense (for how can a Thing *be* an Attribute?) unless you have an understanding with the person to whom you are speaking. And the simplest understanding would, I think, be this—that the Substantive shall be supposed to be repeated at the end of the sentence, so that the sentence, if written out in full, would be “some Pigs are pink (Pigs)”. And now the word “are” makes quite good sense.

Thus, in order to make good sense of the Proposition “some new Cakes are nice”, we must suppose it to be written out in full, in the form “some new Cakes are nice (Cakes)”. Now this contains two ‘*Terms*’—“new Cakes” being one of them, and “nice (Cakes)” the other. “New Cakes,” being the one we are talking about, is called the ‘*Subject*’ of the Proposition, and “nice (Cakes)” the ‘*Predicate*’. Also this Proposition is said to be a ‘*Particular*’ one, since it does not speak of the *whole* of its Subject, but only of a *part* of it. The other

¹In the 1886 edition:

“Some red Apples are ripe.”
“No red Apples are ripe.”
“All red Apples are ripe.”

The same changes apply to the whole chapter, i. e. every “new” was “red” (including “redness” for “newness”), every “Cake” was “Apple” and every “nice” was “ripe” (including “ripeness” for “niceness”, and “unripe” for “not-nice”). Only other changes are noted explicitly.

two kinds are said to be ‘*Universal*’, because they speak of the *whole* of their Subjects—the one denying niceness, and the other asserting it, of the *whole* class of “new Cakes”. Lastly, if you would like to have a definition of the word ‘*Proposition*’ itself, you may take this:—“a sentence stating that some, or none, or all, of the Things belonging to a certain class, called its ‘Subject’, are also Things belonging to a certain other class, called its ‘Predicate’.”

You will find these seven words—*Proposition, Attribute, Term, Subject, Predicate, Particular, Universal*—charmingly useful, if any friend should happen to ask if you have ever studied Logic. Mind you bring all seven words into your answer, and your friend will go away deeply impressed—‘a sadder and a wiser man’.

Quoted from *The Rime of the Ancient Mariner* by Samuel Taylor Coleridge

Now please to look at the smaller Diagram on the Board, and suppose it to be a cupboard, intended for all the Cakes in the world (it would have to be a good large one, of course). And let us suppose all the new ones to be put into the upper half (marked ‘*x*’), and all the rest (that is, the *not-new* ones) into the lower half (marked ‘*x'*’). Thus the lower half would contain *elderly Cakes, aged Cakes, ante-diluvian Cakes*²—if there are any: I haven’t seen many, myself—and so on. Let us also suppose all the nice Cakes to be put into the left-hand half (marked ‘*y*’), and all the rest (that is, the *not-nice* ones) into the right-hand half (marked ‘*y'*’). At present, then, we must understand *x* to mean “new”, *x'* “not-new”, *y* “nice”, and *y'* “not-nice”.

And now what kind of Cakes would you expect to find in compartment No. 5?

It is part of the upper half, you see; so that, if it has any Cakes in it, they must be *new*: and it is part of the left-hand half; so that they must be *nice*. Hence, if there are any Cakes in this compartment, they must have the double ‘*Attribute*’ “new and nice”: or, if we use letters, they must be “*x y*”.

Observe that the letters *x, y* are written on two of the edges of this compartment. This you will find a very convenient rule for knowing what Attributes belong to the Things in any compartment. Take No. 7, for instance. If there are any Cakes there, they must be “*x' y*”, that is, they must be “not-new and nice”.

Now let us make another agreement—that a red counter in a compartment shall mean that it is ‘*occupied*’, that is, that there are *some* Cakes in it. (The word ‘some,’ in Logic, means ‘one or more’: so that a single Cake in a compartment would be quite enough reason for saying “there are *some* Cakes here”). Also let us agree that a grey counter in a compartment shall mean that it is ‘*empty*’, that is, that there are *no* Cakes in it. In the following Diagrams, I shall put ‘1’ (meaning ‘one or more’) where you are to put a *red* counter, and ‘0’ (meaning ‘none’) where you are to put a *grey* one.

As the Subject of our Proposition is to be “new Cakes”, we are only concerned, at present, with the *upper* half of the cupboard, where all the Cakes have the attribute *x*, that is, “new.”

Now, fixing our attention on this upper half, suppose we found it marked like this,



that is, with a red counter in No. 5. What would this tell us, with regard to the

²yellow Apples, blue Apples, mauve-coloured Apples

class of “new Cakes”?

Would it not tell us that there are *some* of them in the *xy*-compartment? That is, that some of them (besides having the Attribute *x*, which belongs to both compartments) have the Attribute *y* (that is, “nice”). This we might express by saying “some *x*-Cakes are *y*-(Cakes)”, or, putting words instead of letters,

“Some new Cakes are nice (Cakes)”,

or, in a shorter form,

“Some new Cakes are nice”.

At last we have found out how to represent the first Proposition of this Section. If you have not *clearly* understood all I have said, go no further, but read it over and over again, till you *do* understand it. After that is once mastered, you will find all the rest quite easy.

It will save a little trouble, in doing the other Propositions, if we agree to leave out the word “Cakes” altogether. I find it convenient to call the whole class of Things, for which the cupboard is intended, the ‘*Universe*.’ Thus we might have begun this business by saying “Let us take a Universe of Cakes.” (Sounds nice, doesn’t it?)

Of course any other Things would have done just as well as Cakes. We might make Propositions about “a Universe of Lizards”, or even “a Universe of Hornets”. (Wouldn’t *that* be a charming Universe to live in?)

So far, then, we have learned that

1	
---	--

means “some *x* are *y*,” i. e. “some new are nice.”

I think you will see, without further explanation, that

	1
--	---

means “some *x* are *y*’,” i. e. “some new are not-nice.”

Now let us put a *grey* counter into No. 5, and ask ourselves the meaning of

0	
---	--

This tells us that the *xy*-compartment is *empty*, which we may express by “no *x* are *y*”, or, “no new Cakes are nice”.³ This is the second of the three Propositions at the head of this Section.

In the same way,

	0
--	---

would mean “no *x* are *y*’,” or, “no new Cakes are not-nice.”⁴

What would you make of this, I wonder?

1	1
---	---

³no red are ripe

⁴no red are unripe

I hope you will not have much trouble in making out that this represents a *double* Proposition: namely, “some x are y , and some are y' ,” i. e. “some new are nice, and some are not-nice.”

The following is a little harder, perhaps:—



This means “no x are y , and none are y' ,” i. e. “no new are nice, and none are not-nice”: which leads to the rather curious result that “no new \lrcorner exist,” i. e. “no Cakes are new.”⁵ This is because⁶ “nice” and “not-nice”⁷ make what we call an ‘*exhaustive*’ division of the class “new Cakes”: i. e., between them, they *exhaust* the whole class, so that all the new Cakes, that exist, must be found in one or the other of them.

And now suppose you had⁸ to represent, with counters, the contradictory to “no Cakes are new”, which would be “some Cakes are new”,⁹ or, putting letters for words, “some Cakes are x ”,¹⁰ how would you do it?

This will puzzle you a little, I expect. Evidently you must put a red counter *somewhere* in the x -half of the cupboard, since you know there are *some* new Cakes. But you must not put it into the *left-hand* compartment, since you do not know them to be *nice*: nor may you put into the *right-hand* one, since you do not know them to be *not-nice*.

What, then, are you to do? I think the best way out of the difficulty is to place the red counter *on the division-line* between the xy -compartment and the xy' -compartment. This I shall represent (as I always put ‘1’ where *you* are to put a red counter) by the diagram



Our ingenious American cousins have invented a phrase to express the position of a man who wants to join one or other of two parties——such as their two parties ‘Democrats’ and ‘Republicans’——but ca’n’t make up his mind *which*. Such a man is said to be “sitting on the fence.” Now that is exactly the position of the red counter you have just placed on the division-line. He likes the look of No. 5, and he likes the look of No. 6, and he doesn’t know *which* to jump down into. So there he sits astride, silly fellow, dangling his legs, one on each side of the fence!

Now I am going to give you a much harder one to make out. What does this mean?



This is clearly a *double* Proposition. It tells us, not only that “some x are y ,” but also that “no x are *not* y .” Hence the result is “*all* x are y ,” i. e. “all new Cakes are nice”,¹¹ which is the last of the three Propositions at the head of this Section.

We see, then, that the Universal Proposition

⁵exist *at all*”.

⁶follows from the fact that

⁷not ripe

⁸I were to ask you

⁹“no red exist at all”, that is, “some red exist”

¹⁰some x exist

¹¹all red are ripe

“All new Cakes are nice”

consists of *two* Propositions taken together, namely,

“Some new Cakes are nice,”
and “No new Cakes are not-nice.”

In the same way

0	1
---	---

would mean “all x are y ”, that is,

“All new Cakes are not-nice.”

Now what would you make of such a Proposition as “The Cake you have given me is nice”? Is it Particular, or Universal?

“Particular, of course,” you readily reply. “One single Cake is hardly worth calling ‘some,’ even.”

No, my dear impulsive Reader, it is ‘Universal’. Remember that, few as they are (and I grant you they couldn’t well be fewer), they are (or rather ‘it is’) *all* that you have given me! Thus, if (leaving ‘red’ out of the question) I divide my Universe of Cakes into two classes—the Cakes you have given me (to which I assign the upper half of the cupboard), and those you *haven’t* given me (which are to go below)—I find the lower half fairly full, and the upper one as nearly as possible empty. And then, when I am told to put an upright division into each half, keeping the *nice* Cakes to the left, and the *not-nice* ones to the right, I begin by carefully collecting *all* the Cakes you have given me (saying to myself, from time to time, “Generous creature! How shall I ever repay such kindness?”), and piling them up in the left-hand compartment. *And it doesn’t take long to do it!*

Here is another Universal Proposition for you. “Barzillai Beckalegg is an honest man.” That means “*All* the Barzillai Beckaleggs, that I am now considering, are honest men.” (You think I invented that name, now don’t you? But I didn’t. It’s on a carrier’s cart, somewhere down in Cornwall.)

This kind of Universal Proposition (where the Subject is \lrcorner a single Thing¹²) \lrcorner is¹³ called an “*Individual*” Proposition.

Now let us take “*nice* Cakes” as the Subject of our Proposition: that is, let us fix our thoughts on the *left-hand* half of the cupboard, where all the Cakes have the attribute y , that is, “*nice*”.

Suppose we find it marked like this:—

1

What would that tell us?

I hope that it is not necessary, after explaining the *horizontal* oblong so fully, to spend much time over the *upright* one. I hope you will see, for yourself, that this means “some y are x ”, that is,

“Some nice Cakes are new.”

¹²one single thing

¹³is sometimes

“But,” you will say, “we have had this case before. You put a red counter into No. 5, and you told us it meant ‘some new Cakes are nice’; and *now* you tell us that it means ‘some *nice* Cakes are *new*’! Can it mean *both*?”

The question is a very thoughtful one, and does you *great* credit, dear Reader! It *does* mean both. If you choose to take x (that is, “new Cakes”) as your Subject, and to regard No. 5 as part of a *horizontal* oblong, you may read it “some x are y ”, that is, “some new Cakes are nice”: but, if you choose to take y (that is, “nice Cakes”) as your Subject, and to regard No. 5 as part of an *upright* oblong, *then* you may read it “some y are x ”, that is, “some nice Cakes are new”. They are merely two different ways of expressing the very same truth.

Without more words, I will simply set down the other ways in which this upright oblong might be marked, adding the meaning in each case. By comparing them with the various cases of the horizontal oblong, you will, I hope, be able to understand them clearly.

Symbols.	Meanings.
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">1</div> </div>	Some y are x' ; i. e. Some nice are not-new.
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">0</div> </div>	No y are x ; i. e. No nice are new. [Observe that this is merely another way of expressing “No new are nice.”]
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">0</div> </div>	No y are x' ; i. e. No nice are not-new.
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">1</div> </div>	Some y are x , and some are x' ; i. e. Some nice are new, and some are not-new.
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">1</div> </div>	
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">0</div> </div>	No y are x , and none are x' ; i. e. No y exist; i. e. \lrcorner No Cakes are nice. ¹⁴
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">0</div> </div>	
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">1</div> </div>	All y are x ; i. e. All nice are new.
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">0</div> </div>	
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">0</div> </div>	All y are x' ; i. e. All nice are not-new.
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">1</div> </div>	

You will find it a good plan to examine yourself on this table, by covering up first one column and then the other, and ‘dodging about’, as the children say.

Also you will do well to write out for yourself two other tables—one for the *lower* half of the cupboard, and the other for its *right-hand* half.

And now I think we have said all we need to say about the smaller Diagram, and may go on to the larger one.

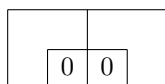
This may be taken to be a cupboard divided in the same way as the last, but *also* divided into two portions, for the Attribute m . Let us give to m the meaning “wholesome”: and let us suppose that all *wholesome* Cakes are placed *inside* the central Square, and all the *unwholesome* ones *outside* it, that is, in one or other of the four queer-shaped *outer* compartments.

We see that, just as, in the smaller Diagram, the Cakes in each compartment had *two* Attributes, so, here, the Cakes in each compartment have *three* Attributes: and, just as the letters, representing the *two* Attributes, were written on the *edges* of the compartment, so, here, they are written at the *corners*. (Observe that m' is supposed to be written at each of the four outer corners.) So that we can tell in a moment, by looking at a compartment, what three Attributes belong to the Things in it. For instance, take No. 12. Here we find x, y', m , at the corners: so we know that the Cakes in it, if there are any, have the triple Attribute ‘ $xy'm$ ’, that is, “new, not-nice, and wholesome.” Again, take No. 16. Here we find, at the corners, x', y', m' : so the Cakes in it are “not-new, not-nice, and unwholesome.” (Remarkably untempting Cakes!)

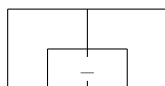
It would take far too long to go through all the Propositions, containing x and y, x and m , and y and m , which can be represented on this diagram (there are ninety-six altogether, so I am sure you will excuse me!), and I must content myself with doing two or three, as specimens. You will do well to work out a lot more for yourself.

Taking the upper half by itself, so that our Subject is “new Cakes”, how are we to represent “no new Cakes are wholesome”?

This is, writing letters for words, “no x are m .” Now this tells us that none of the Cakes, belonging to the upper half of the cupboard, are to be found *inside* the central Square: that is, the two compartments, No. 11 and No. 12, are *empty*. And this, of course, is represented by



And now how are we to represent the contradictory Proposition “*some* x are m ”? This is a difficulty I have already considered. I think the best way is to place a red counter *on the division-line* between No. 11 and No. 12, and to understand this to mean that *one* of the two compartments is ‘occupied,’ but that we do not at present know *which*. This I shall represent thus:—



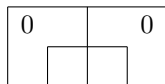
Now let us express “all x are m .”

This consists, we know, of *two* Propositions,

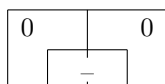
“Some x are m ,”
and “No x are m' .”

Let us express the negative part first. This tells us that none of the Cakes, belonging to the upper half of the cupboard, are to be found *outside* the central

Square: that is, the two compartments, No. 9 and No. 10, are *empty*. This, of course, is represented by

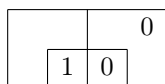


But we have yet to represent “Some x are m .” This tells us that there are *some* Cakes in the oblong consisting of No. 11 and No. 12: so we place our red counter, as in the previous example, on the division-line between No. 11 and No. 12, and the result is



Now let us try one or two interpretations.

What are we to make of this, with regard to x and y ?



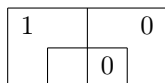
This tells us, with regard to the xy' -Square, that it is wholly ‘empty’, since *both* compartments are so marked. With regard to the xy -Square, it tells us that it is ‘occupied’. True, it is only *one* compartment of it that is so marked; but that is quite enough, whether the *other*¹⁵ be ‘occupied’ or ‘empty’, to settle the fact that there is *something* in the Square.

If, then, we transfer our marks to the smaller Diagram, so as to get rid of the m -subdivisions, we have a right to mark it

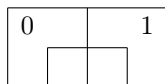


which means, you know, “all x are y .”

The result would have been exactly the same, if the given oblong had been marked thus:—



Once more: how shall we interpret this, with regard to x and y ?



This tells us, as to the xy -Square, that *one* of its compartments is ‘empty’. But this information is quite useless, as there is no mark in the *other* compartment. If the other compartment happened to be ‘empty’ too, the Square would be ‘empty’: and, if it happened to be ‘occupied’, the Square would be ‘occupied’. So, as we do not know *which* is the case, we can say nothing about *this* Square.

The other Square, the xy' -Square, we know (as in the previous example) to be ‘occupied’.

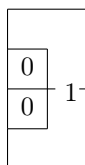
¹⁵other compartment

If, then, we transfer our marks to the smaller Diagram, we get merely this:—

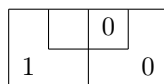


which means, you know, “some x are y ’.”

These principles may be applied to all the other oblongs. For instance, to represent “all y are m ” we should mark the *right-hand upright oblong* (the one that has the attribute y) thus:—



and, if we were told to interpret the lower half of the cupboard, marked as follows, with regard to x and y ,



we should transfer it to the smaller Diagram thus,



and read it “all x are y ”.

Two more remarks about Propositions need to be made.¹⁶

One is that, in every Proposition beginning with “some” or “all”, the *actual existence* of the ‘Subject’ is asserted. If, for instance, I say “all misers are selfish,” I mean that misers *actually exist*. If I wished to avoid making this assertion, and merely to state the *law* that miserliness necessarily involves selfishness, I should say “no misers are unselfish” which does not assert that any misers exist at all, but merely that, if any *did* exist, they *would* be selfish.¹⁷

The other is that, when a Proposition begins¹⁸ with “some” or “no”, and contains¹⁹ more than two Attributes, these Attributes may be re-arranged, and shifted from one Term to the other, *ad libitum*. For example, “some abc are def ” may be re-arranged as “some bf are $acde$ ” each being equivalent to “some Things are $abcdef$ ”.²⁰ Again, “No wise old men are rash and reckless gamblers” may be re-arranged as “No rash old gamblers are wise and reckless,” each being equivalent to “No men are wise old rash reckless gamblers.”²¹

§ 2. Syllogisms.

Now suppose we divide our Universe of Things in three ways, with regard to three different Attributes. Out of these three Attributes, we may make up three

¹⁶missing in 1886 edition

¹⁷paragraph missing in 1886 edition

¹⁸One more remark about Propositions should be made. When they begin

¹⁹contain

²⁰some $abcdef$ exist

²¹missing in 1886 edition

different couples (for instance, if they were a, b, c , we might make up the three couples ab, ac, bc). Also suppose we have two Propositions given us, containing two of these three couples, and that from them we can prove a third Proposition containing the third couple. (For example, if we divide our Universe for m, x , and y ; and if we have the two Propositions given us, “no m are x ” and “all m' are y ”, containing the two couples mx and my , it might be possible to prove from them a third Proposition, containing x and y .)

In such a case we call the given Propositions ‘*the Premisses*’, the third one ‘*the Conclusion*’, and the whole set ‘*a Syllogism*’.

Evidently, one of the Attributes must occur in both Premisses; or else one must occur in *one* Premiss, and its *contradictory* in the other.

In the first case (when, for example, the Premisses are “some m are x ” and “no m are y ”) the Term, which occurs twice, is called “*the Middle Term*”, because it serves as a sort of link between the other two Terms.

In the second case (when, for example, the Premisses are “no m are x ” and “all m' are y ”) the two Terms, which contain these contradictory Attributes, may be called “*the Middle Terms*”.

Thus, in the first case, the class of “ m -Things” is the Middle Term; and, in the second case, the two classes of “ m -Things” and “ m' -Things” are the Middle Terms.

The Attribute, which occurs in the Middle Term or Terms, disappears in the Conclusion, and is said to be “eliminated”, which literally means “turned out of doors”.

Now let us try to draw a Conclusion from the two Premisses—

“Some new Cakes are unwholesome; }
 No nice Cakes are unwholesome.” }

In order to express them with counters, we need to divide Cakes in *three* different ways, with regard to newness, to niceness, and to wholesomeness. For this we must use the larger Diagram, making x mean “new”, y “nice”, and m “wholesome”. (Everything *inside* the central Square is supposed to have the attribute m , and everything *outside* it the attribute m' , i. e. “*not-m*”.)

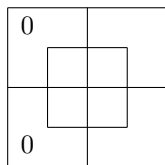
You had better adopt the rule \perp to make²² m mean the Attribute which occurs in the *Middle* Term or Terms. (I have chosen m as the symbol, because ‘middle’ begins with ‘m’.)

Now, in representing the two Premisses, I prefer to begin with the *negative* one (the one beginning with “no”), because *grey* counters can always be placed with *certainty*, and will then help to fix the position of the red counters, which are sometimes a little uncertain where they will be most welcome.

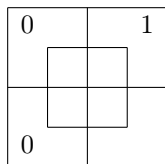
Let us express, then, “no nice Cakes are unwholesome (Cakes)”, i. e. “no y -Cakes are m' -(Cakes)”. This tells us that none of the Cakes belonging to the y -half of the cupboard are in its m' -compartments (i. e. the ones *outside* the central Square). Hence the two compartments, No. 9 and No. 15, are both

²²of making

‘empty’; and we must place a grey counter in *each* of them, thus:—



We have now to express the other Premiss, namely, “some new Cakes are unwholesome (Cakes)”, i. e. “some x -Cakes are m' -(Cakes)”. This tells us that some of the Cakes in the x -half of the cupboard are in its m' -compartments. Hence *one* of the two compartments, No. 9 and No. 10, is ‘occupied’: and, as we are not told in *which* of these two compartments to place the red counter, the usual rule would be to lay it on the division-line between them: but, in this case, the other Premiss has settled the matter for us, by declaring No. 9 to be *empty*. Hence the red counter has no choice, and *must* go into No. 10, thus:—



And now what counters will²³ this information enable us to place in the *smaller* Diagram, so as to get some Proposition involving x and y only, leaving out m ? Let us take its four compartments, one by one.

First, No. 5. All we know about *this* is that its *outer* portion is empty: but we know nothing about its *inner* portion. Thus the Square *may* be empty, or it *may* have something in it. Who can tell? So we dare not place *any* counter in this Square.

Secondly, what of No. 6? Here we are a little better off. We know that there is *something* in it, for there is a red counter in its outer portion. It is true we do not know whether its inner portion is empty or occupied: but what does *that* matter? One solitary Cake, in one corner of the Square, is quite sufficient excuse for saying “*this Square is occupied*”, and for marking it with a red counter.

As to No. 7, we are in the same condition as with No. 5—we find it *partly* ‘empty’, but we do not know whether the other part is empty or occupied: so we dare not mark this Square.

And as to No. 8, we have simply no information *at all*.

The result is



Our ‘Conclusion’, then, must be got out of the rather meagre piece of information that there is a red counter in the xy' -Square. Hence our Conclusion is “some x are y' ”, i. e. “some new Cakes are not-nice (Cakes)”: or, if you prefer to take y' as your Subject, “some not-nice Cakes are new (Cakes)”; but the other looks neatest.²⁴

²³will all

²⁴is neatest, I think

We will now write out the whole Syllogism, putting the symbol \therefore for “therefore”, and omitting “Cakes”, for the sake of brevity, at the end of each Proposition.

“Some new Cakes are unwholesome; }
 No nice Cakes are unwholesome, }
 \therefore Some new Cakes are not-nice.”

And you have now worked out, successfully, your first ‘*Syllogism*’. Permit me to congratulate you, and to express the hope that it is but the beginning of a long and glorious series of similar victories!

We will work out one other Syllogism—a rather harder one than the last—and then, I think, you may be safely left to play the Game by yourself, or (better) with any friend whom you can find, that is able and willing to take a share in the sport.

Let us see what we can make of the two Premises—

“All Dragons are uncanny; }
 All Scotchmen are canny.” }

Remember, I don’t guarantee the Premises to be *facts*. In the first place, I never even saw a Dragon: and, in the second place, it isn’t of the slightest consequence to us, as *Logicians*, whether our Premises are true or false: all *we* have to do is to make out whether they *lead logically to the Conclusion*, so that, if *they* were true, *it* would be true also.

You see, we must give up the “Cakes” now, or our cupboards will be of no use to us. We must take, as our ‘Universe’, some class of things which will include Dragons and Scotchmen: shall we say ‘Animals’? And, as “canny” is evidently the Attribute belonging to the ‘Middle’ Terms, we will let *m* stand for “canny”, *x* for “Dragons”, and *y* for “Scotchmen”. So that our two Premises are, in full,

“All Dragon-Animals are uncanny (Animals); }
 All Scotchman-Animals are canny (Animals).” }

And these may be expressed, using letters for words, thus:—

“All *x* are *m*’; }
 All *y* are *m*.” }

The first Premiss consists, as you already know, of two parts:—

“Some *x* are *m*’,”
 and “No *x* are *m*.”

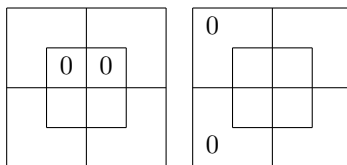
And the second also consists of two parts:—

“Some *y* are *m*,”
 and “No *y* are *m*’.”

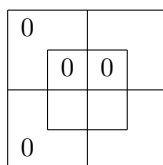
Let us take the negative portions first.

We have, then, to mark, on the larger Diagram, first, “no *x* are *m*”, and secondly, “no *y* are *m*’”. I think you will see, without further explanation, that

the two results, separately, are



and that these two, when combined, give us

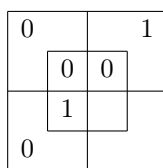


We have now to mark the two positive portions, “some x are m ” and “some y are m ”.

The only two compartments, available for Things which are xm' are No. 9 and No. 10. Of these, No. 9 is already marked as ‘empty’; so our red counter *must* go into No. 10.

Similarly, the only two, available for ym , are No. 11 and No. 13. Of these, No. 11 is already marked as ‘empty’; so our red counter *must* go into No. 13.

The final result is



And now how much of this information can usefully be transferred to the smaller Diagram?

Let us take its four compartments, one by one.

As to No. 5? This, we see, is wholly ‘empty’. (So mark it with a grey counter.)

As to No. 6? This, we see, is ‘occupied’. (So mark it with a red counter.)

As to No. 7? Ditto, ditto.

As to No. 8? No information.

The smaller Diagram is now pretty liberally marked:—



And now what Conclusion can we read off from this? Well, it is impossible to pack such abundant information into *one* Proposition: we shall have to indulge in *two*, this time.

First, by taking x as Subject, we get “all x are y ”, that is,

“All Dragons are not-Scotchmen”:

secondly, by taking y as Subject, we get “all y are x ”, that is,

“All Scotchmen are not-Dragons”.

Let us now write out, all together, our two Premisses and our brace of Conclusions.

“All Dragons are uncanny; }
All Scotchmen are canny. }
∴ { All Dragons are not-Scotchmen;
All Scotchmen are not-Dragons.”

Let me mention, in conclusion, that you may perhaps meet with logical treatises in which it is not assumed that any Thing *exists* at all, but “some x are y ” is understood to mean “the Attributes x , y are *compatible*, so that a Thing can have both at once”, and “no x are y ” to mean “the Attributes x , y are *incompatible*, so that nothing can have both at once”.

In such treatises, Propositions have quite different meanings from what they have in our ‘Game of Logic’, and it will be well to understand exactly what the difference is.

First take “some x are y ”. Here *we* understand “are” to mean “are, as an actual *fact*”—which of course implies that some x -Things *exist*. But *they* (the writers of these other treatises) only understand “are” to mean “*can be*”, which does not at all imply that any *exist*. So they mean *less* than we do: our meaning includes theirs (for of course “some x are y ” includes “some x can be y ”), but theirs does *not* include ours. For example, “some Welsh hippopotami are heavy” would be *true*, according to these writers (since the Attributes “Welsh” and “heavy” are quite *compatible* in a hippopotamus), but it would be *false* in our Game (since there are no Welsh hippopotami to *be* heavy).

Secondly, take “no x are y ”. Here *we* only understand “are” to mean “are, as an actual *fact*”—which does not at all imply that \lrcorner no x can be y .²⁵ But *they* understand the Proposition to mean, not only that none *are* y , but that none *can possibly* be y . So they mean *more* than we do: their meaning includes ours (for of course “no x can be y ” includes “no x are y ”), but ours does *not* include theirs. For example, “no Policemen are eight feet high” would be *true* in our Game (since, as an actual fact, no such splendid specimens \lrcorner are ever²⁶ found), but it would be *false*, according to these writers (since the Attributes “belonging to the Police Force” and “eight feet high” are quite *compatible*: there is nothing to *prevent* a Policeman from growing to that height, if sufficiently rubbed with Rowland’s Macassar Oil—which is said to make *hair* grow, when rubbed on hair, and so of course will make a *Policeman* grow, when rubbed on a Policeman).

Thirdly, take “all x are y ”, which consists of the two partial Propositions “some x are y ” and “no x are y ”. Here, of course, the treatises mean *less* than we do in the *first* part, and *more* than we do in the *second*. But the two operations don’t balance each other—any more than you can console a man, for having knocked down one of his chimneys, by giving him an extra door-step.

If you meet with Syllogisms of this kind, you may work them, quite easily, by the system I have given you: you have only to make ‘are’ mean ‘are *capable of being*’, and all will go smoothly. For “some x are y ” will become “some \lrcorner x ²⁷ are

²⁵they *cannot* be y

²⁶can be

²⁷ x -Things

capable of being y^{28} , that is, “the Attributes x, y are *compatible*”. And “no x are y ” will become “no x^{29} are capable of being y^{30} ”, that is, “the Attributes x, y are *incompatible*”. And, of course, “all x are y ” will become “some x^{31} are capable of being y^{32} , and none are capable of being y^{33} ”, that is, “the Attributes x, y are *compatible*, and the Attributes³⁴ x, y' are *incompatible*.” In using the Diagrams for this system, you must understand a red counter to mean “there may *possibly* be something in this compartment,” and a grey one to mean “there cannot *possibly* be anything in this compartment.”

§ 3. Fallacies.

And so you think, do you, that the chief use of Logic, in real life, is to deduce Conclusions from workable Premisses, and to satisfy yourself that the Conclusions, deduced by other people, are correct? I only wish it were! Society would be much less liable to panics and other delusions, and *political* life, especially, would be a totally different thing, if even a majority of the arguments, that are scattered broadcast over the world, were correct! But it is all the other way, I fear. For *one* workable Pair of Premisses (I mean a Pair that lead to a logical Conclusion) that you meet with in reading your newspaper or magazine, you will probably find *five* that lead to no Conclusion at all: and, even when the Premisses *are* workable, for *one* instance, where the writer draws a correct Conclusion, there are probably *ten* where he draws an incorrect one.

In the first case, you may say “the *Premisses* are fallacious”: in the second, “the *Conclusion* is fallacious.”

The chief use you will find, in such Logical skill as this Game may teach you, will be in detecting ‘*Fallacies*’ of these two kinds.

The first kind of Fallacy——‘Fallacious Premisses’——you will detect when, after marking them on the larger Diagram, you try to transfer the marks to the smaller. You will take its four compartments, one by one, and ask, for each in turn, “What mark can I place *here*?”; and in *every* one the answer will be “No information!”, showing that there is *no Conclusion at all*. For instance,

“All soldiers are brave; }

 Some Englishmen are brave. }

 ∴ Some Englishmen are soldiers.”

looks uncommonly *like* a Syllogism, and might easily take in a less experienced Logician. But *you* are not to be caught by such a trick! You would simply set out the Premisses, and would then calmly remark “Fallacious *Premisses!*”: you wouldn’t condescend to ask what *Conclusion* the writer professed to draw——knowing that, *whatever* it is, it *must* be wrong. You would be just as safe as that wise mother was, who said “Mary, just go up to the nursery, and see what Baby’s doing, *and tell him not to do it!*”

²⁸ y -(Things)

²⁹ x -(Things)

³⁰ y -(Things)

³¹ x -(Things)

³² y -(Things)

³³ y' -(Things)

³⁴missing in the 1886 edition

The other kind of Fallacy——‘Fallacious Conclusion’ ——you will not detect till you have marked *both* Diagrams, and have read off the correct Conclusion, and have compared it with the Conclusion which the writer has drawn.

But mind, you mustn’t say “*Fallacious Conclusion*,” simply because it is not *identical* with the correct one: it may be a *part* of the correct Conclusion, and so be quite correct, *as far as it goes*. In this case you would merely remark, with a pitying smile, “*Defective Conclusion!*” Suppose, for example, you were to meet with this Syllogism:—

$$\left. \begin{array}{l} \text{“All unselfish people are generous; } \\ \text{No misers are generous.} \end{array} \right\} \\ \therefore \text{No misers are unselfish,}”$$

the Premisses of which might be thus expressed in letters:—

$$\left. \begin{array}{l} \text{“All } x' \text{ are } m; \\ \text{No } y \text{ are } m.”} \end{array} \right\}$$

Here the correct Conclusion would be “All x' are y' ” (that is, “All unselfish people are not misers”), while the Conclusion, drawn by the writer, is “No y are x' ,” (which is the same as “No x' are y ,” and so is *part* of “All x' are y' .”) Here you would simply say “*Defective Conclusion!*” The same thing would happen, if you were in a confectioner’s shop, and if a little boy were to come in, put down twopence, and march off triumphantly with a single penny-bun. You would shake your head mournfully, and would remark “*Defective Conclusion! Poor little chap!*” And perhaps you would ask the young lady behind the counter whether she would let *you* eat the bun, which the little boy had paid for and left behind him: and perhaps *she* would reply “*Sha’n’t!*”

But if, in the above example, the writer had drawn the Conclusion “All misers are selfish” (that is, “All y are x' ”), this would be going *beyond* his legitimate rights (since it would assert the *existence* of y , which is not contained in the Premisses), and you would very properly say “*Fallacious Conclusion!*”

Now, when you read other treatises on Logic, you will meet with various kinds of (so-called) ‘Fallacies’, which are by no means *always* so. For example, if you were to put before one of these Logicians the Pair of Premisses

$$\left. \begin{array}{l} \text{“No honest men cheat; } \\ \text{No dishonest men are trustworthy.”} \end{array} \right\}$$

and were to ask him what Conclusion followed, he would probably say “None at all! Your Premisses offend against *two* distinct Rules, and are as fallacious as they can well be!” Then suppose you were bold enough to say “The Conclusion is ‘No men who cheat are trustworthy,’” I fear your Logical friend would turn away hastily——perhaps angry, perhaps only scornful: in any case, the result would be unpleasant. *I advise you not to try the experiment!*

“But why is this?” you will say. “Do you mean to tell us that all these Logicians are wrong?” Far from it, dear Reader! From *their* point of view, they are perfectly right. But they do not include, in their system, anything like *all* the possible forms of Syllogism.

They have a sort of nervous dread of Attributes beginning with a negative particle. For example, such Propositions as “All not- x are y ,” “No x are not- y ,” are quite outside their system. And thus, having (from sheer nervousness)

excluded a quantity of very useful forms, they have made rules which, though quite applicable to the few forms which they allow of, are no use at all when you consider all possible forms.

Let us not quarrel with them, dear Reader! There is room enough in the world for both of us. Let us quietly take our broader system: and, if they choose to shut their eyes to all these useful forms, and to say “They are not Syllogisms at all!” we can but stand aside, and let them Rush upon their Fate! There is scarcely anything of yours, upon which it is so dangerous to Rush, as your Fate. You may Rush upon your Potato-beds, or your Strawberry-beds, without doing much harm: you may even Rush upon your Balcony (unless it is a new house, built by contract, and with no clerk of the works) and may survive the foolhardy enterprise: but if you once Rush upon your *Fate*—why, you must take the consequences!

Chapter II. Cross Questions.

*“The Man in the Wilderness asked of me
‘How many strawberries grow in the sea?’”*

Quoted from nursery rhyme

§ 1. Elementary.

1. What is an ‘Attribute’? Give examples.
2. When is it good sense to put “is” or “are” between two names? Give examples.
3. When is it *not* good sense? Give examples.
4. When it is *not* good sense, what is the simplest agreement to make, in order to make good sense?
5. Explain ‘Proposition’, ‘Term’, ‘Subject’, and ‘Predicate’. Give examples.
6. What are ‘Particular’ and ‘Universal’ Propositions? Give examples.
7. Give a rule for knowing, when we look at the smaller Diagram, what Attributes belong to the things in each compartment.
8. What does “some” mean in Logic?³⁵
9. In what sense do we use the word ‘Universe’ in this Game?
10. What is a ‘Double’ Proposition? Give examples.
11. When is a class of Things said to be ‘exhaustively’ divided? Give examples.
12. Explain the phrase “sitting on the fence.”
13. What two partial Propositions make up, when taken together, “all x are y ”?
14. What are ‘Individual’ Propositions? Give examples.
15. What kinds of Propositions imply, in this Game, the *existence* of their Subjects?
16. When a Proposition contains more than two Attributes, these Attributes may in some cases be re-arranged, and shifted from one Term to the other. In what cases may this be done? Give examples.

Break up each of the following into two *partial* Propositions:

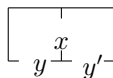
17. All tigers are fierce.

³⁵Remark: At the end of each page there is a reference on which pages the solutions are found. This has not been reproduced here, and is not in the 1886 edition.

18. All hard-boiled eggs are unwholesome.
19. I am happy.
20. John is not at home.

21. Give a rule for knowing, when we look at the larger Diagram, what Attributes belong to the Things contained in each compartment.
22. Explain 'Premisses', 'Conclusion', and 'Syllogism'. Give examples.
23. Explain the phrases "Middle Term" and "Middle Terms".
24. In marking a pair of Premisses on the larger Diagram, why is it best to mark *negative* Propositions before *affirmative* ones?
25. Why is it of no consequence to us, as Logicians, whether the Premisses are true or false?
26. How can we work Syllogisms in which we are told that "some x are y " is to be understood to mean "the Attributes x, y are *compatible*", and "no x are y " to mean "the Attributes x, y are *incompatible*"?
27. What are the two kinds of 'Fallacies'?
28. How may we detect 'Fallacious Premisses'?
29. How may we detect a 'Fallacious Conclusion'?
30. Sometimes the Conclusion, offered to us, is not identical with the correct Conclusion, and yet cannot be fairly called 'Fallacious'. When does this happen? And what name may we give to such a Conclusion?

§ 2. Half of Smaller Diagram. Propositions to be represented.



1. Some x are not- y .
2. All x are not- y .
3. Some x are y , and some are not- y .
4. No x exist.
5. \neg Some x exist.³⁶
6. No x are not- y .
7. Some x are not- y , and some x exist.

Taking x = "judges"; y = "just";

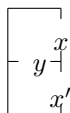
8. No judges are just.
9. Some judges are unjust.
10. All judges are just.

Taking x = "plums";³⁷ y = "wholesome";

³⁶Questions 5 to 7 are missing in the 1886 edition, the following questions have different numbers.

³⁷"cakes", also in the following questions

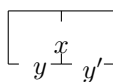
11. Some plums are wholesome.
12. There are no wholesome plums.
13. Plums are some of them wholesome, and some not.
14. All plums are unwholesome.



Taking y = “diligent students”; x = “successful”;

15. No diligent students are unsuccessful,
16. All diligent students are successful.
17. No students are diligent.
18. There are some diligent, but unsuccessful, students.
19. \lrcorner Some students are diligent.³⁸

§ 3. Half of Smaller Diagram. Symbols to be interpreted.



- | | | | | | | | | | |
|--|---|---|--|---|--|---|---|---|---|
| <ol style="list-style-type: none"> 1. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px; text-align: center;">0</td></tr></table> 3. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px; text-align: center;">-</td></tr></table> | | 0 | | - | <ol style="list-style-type: none"> 2. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px; text-align: center;">0</td><td style="width: 20px; height: 20px; text-align: center;">0</td></tr></table> 4. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px; text-align: center;">0</td><td style="width: 20px; height: 20px; text-align: center;">1</td></tr></table> | 0 | 0 | 0 | 1 |
| | 0 | | | | | | | | |
| | - | | | | | | | | |
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Taking x = “good riddles”; y = “hard”;

- | | | | | | | | | | | | | | |
|--|---|--|---|---|---|---|---|---|---|---|--|---|--|
| <ol style="list-style-type: none"> 5. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px; text-align: center;">0</td><td style="width: 20px; height: 20px; text-align: center;">0</td></tr></table> 7. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px; text-align: center;">0</td><td style="width: 20px; height: 20px; text-align: center;">0</td></tr></table> | 1 | | 0 | 0 | 0 | 0 | <ol style="list-style-type: none"> 6. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">0</td></tr><tr><td style="width: 20px; height: 20px; text-align: center;">0</td><td style="width: 20px; height: 20px;"></td></tr></table> 8. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px; text-align: center;">0</td><td style="width: 20px; height: 20px;"></td></tr></table> | 1 | 0 | 0 | | 0 | |
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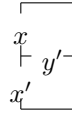
Taking x = “lobsters”; y = \lrcorner “selfish”;³⁹

- | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|--|---|--|---|---|---|---|
| <ol style="list-style-type: none"> 9. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px; text-align: center;">1</td></tr><tr><td style="width: 20px; height: 20px; text-align: center;">0</td><td style="width: 20px; height: 20px; text-align: center;">1</td></tr></table> 11. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px; text-align: center;">0</td><td style="width: 20px; height: 20px; text-align: center;">1</td></tr></table> | | 1 | 0 | 1 | 0 | 1 | <ol style="list-style-type: none"> 10. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px; text-align: center;">0</td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">1</td></tr></table> 12. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">1</td></tr></table> | 0 | | 1 | 1 | 1 | 1 |
| | 1 | | | | | | | | | | | | |
| 0 | 1 | | | | | | | | | | | | |
| 0 | 1 | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | | |

³⁸The 1886 edition has additionally:

Taking y = “old men”; x = “strong and active”;

17. All old men are strong and active.
 18. Some old men are weak or lazy.
 19. No old men are strong.
 20. All old men are lazy.
- ³⁹selfish and unforgiving



Taking y = “healthy people”; x = “happy”;

13.

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1

 14.

1

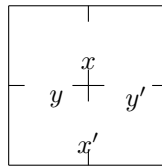
 15.

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1

 16.

0
0

§ 4. Smaller Diagram. Propositions to be represented.



1. All y are x .
2. Some y are not- x .
3. No not- x are not- y .
4. Some x are not- y .
5. Some not- y are x .
6. No not- x are y .
7. Some not- x are not- y .
8. All not- x are not- y .
9. Some not- y exist.
10. No not- x exist.
11. Some y are x , and some are not- x .
12. All x are y , and all not- y are not- x .

Taking “nations” as Universe; x = “civilised”; and⁴⁰ y = “warlike”;

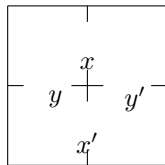
13. No uncivilised nation is warlike.
14. All unwarlike nations are uncivilised.
15. Some nations are unwarlike.
16. All warlike nations are civilised, and all civilised nations are warlike.
17. No nation is uncivilised.

Taking “crocodiles” as Universe; x = “hungry”; and y = “amiable”;

18. All hungry crocodiles are unamiable.
19. No crocodiles are amiable when hungry.
20. Some crocodiles, when not hungry, are amiable; but some are not.
21. No crocodiles are amiable, and some are hungry.
22. All crocodiles, when not hungry, are amiable; and all unamiable crocodiles are hungry.
23. Some hungry crocodiles are amiable, and some that are not hungry are unamiable.

⁴⁰“and” accidentally missing in 1887 edition

§ 5. Smaller Diagram. Symbols to be interpreted.



1.

1	
	1
	0

2.

	0
0	0

Taking “houses” as Universe; x = “built of brick”; and y = “two-storied”; interpret

5.

0	
0	
	0

6.

0	1

Taking “boys” as Universe; x = “fat”; and y = “active”; interpret

9.

1	1
0	1
	0

10.

	0
	1
1	
0	1

Taking “cats” as Universe; x = “green-eyed”; and y = “good-tempered”; interpret

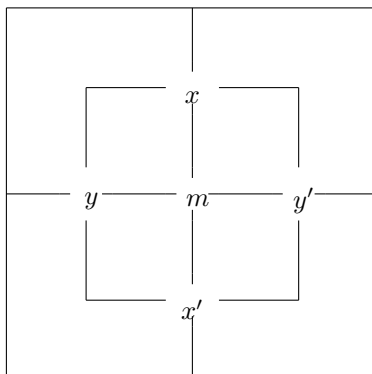
13.

0	0
	0
1	
	0

14.

	1
1	
0	1
1	0

§ 6. Larger Diagram. Propositions to be represented.



1. No x are m .
2. Some y are m' .
3. All m are x' .
4. No m' are y' .
5. No m are x , }
All y are m . }
6. Some x are m , }
No y are m . }
7. All m are x' , }
No m are m' }
8. No x' are m , }
No y' are m' }

Taking “rabbits” as Universe; m = “greedy”; x = “old”; and y = “black”;
represent

9. No old rabbits are greedy.
10. Some not-greedy rabbits are black.
11. All white rabbits are free from greediness.
12. All greedy rabbits are young.
13. No old rabbits are greedy; }
All black rabbits are greedy }
14. All rabbits, that are not greedy, are black; }
No old rabbits are free from greediness. }

Taking “birds” as Universe; m = “that sing loud”; x = “well-fed”; and y =
“happy”; represent

15. All well-fed birds sing loud;
 No birds, that sing loud, are unhappy. }
 16. All birds, that do not sing loud, are unhappy;
 No well-fed birds fail to sing loud. }

Taking “persons” as Universe; m = “in the house”; x = “John”; and y = “having a tooth-ache”; represent

17. John is in the house;
 Everybody in the house is suffering from tooth-ache. }
 18. There is no one in the house but John;
 Nobody, out of the house, has a tooth-ache. }

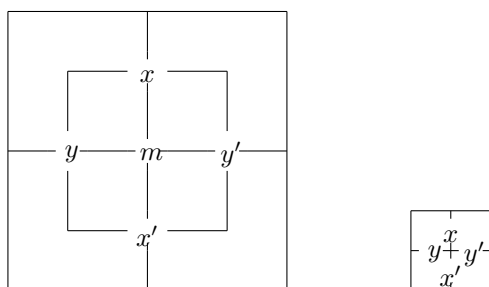
Taking “persons” as Universe; m = “I”; x = “that has taken a walk”; y = “that feels better”; represent

19. I have been out for a walk;
 I feel much better. }

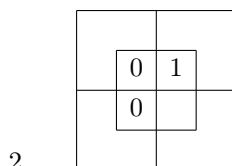
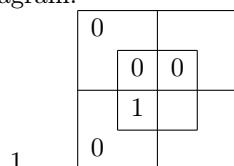
Choosing your own ‘Universe’ &c., represent

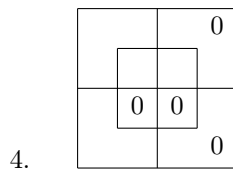
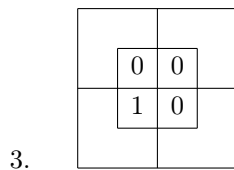
20. I sent him to bring me a kitten;
 He brought me a kettle by mistake. }

§ 7. Both Diagrams to be employed.



N.B. In each Question, a small Diagram should be drawn, for x and y only, and marked in accordance with the given large Diagram: and then as many Propositions as possible, for x and y , should be read off from this small Diagram.





Mark, on a large Diagram, the following pairs of Propositions from the preceding Section: then mark a small Diagram in accordance with it, &c.⁴¹

- | | |
|------------|-------------|
| 5. No. 13. | 9. No. 17. |
| 6. No. 14. | 10. No. 18. |
| 7. No. 15. | 11. No. 19. |
| 8. No. 16. | 12. No. 20. |

Mark, on a large Diagram, the following Pairs of Propositions: then mark a small Diagram, &c. These are, in fact, Pairs of *Premisses* for Syllogisms: and the results, read off from the small Diagram, are the *Conclusions*.

Other version:

→ 6.2, p. 948

- | | | |
|--|---|--|
| 13. No exciting books suit feverish patients; | } | |
| Unexciting books make one drowsy. | | |
| 14. Some, who deserve the fair, get their deserts; | } | |
| None but the brave deserve the fair. | | |
| 15. No children are patient; | } | |
| No impatient person can sit still. | | |
| 16. All pigs are fat; | } | |
| No skeletons are fat. | | |
| 17. No monkeys are soldiers; | } | |
| All monkeys are mischievous. | | |
| 18. None of my cousins are just; | } | |
| No judges are unjust. | | |
| 19. Some days are rainy; | } | |
| Rainy days are tiresome. | | |
| 20. All medicine is nasty; | } | |
| Senna is a medicine. | | |
| 21. Some Jews are rich; | } | |
| All [Patagonians] ⁴² are Gentiles. | | |
| 22. All teetotalers like sugar; | } | |
| No nightingale drinks wine. | | |
| 23. No muffins are wholesome; | } | |
| All buns are unwholesome. | | |
| 24. No fat creatures run well; | } | |
| Some greyhounds run well. | | |

⁴¹Remark: The following table has two page references, this has not been reproduced here and is not in the 1886 edition.

⁴²Kamschatkans

25. All soldiers march; }
 Some youths are not soldiers. }
26. Sugar is sweet; }
 Salt is not sweet. }
27. Some eggs are hard-boiled; }
 No eggs are uncrackable. }
28. There are no Jews in the house; }
 There are no Gentiles in the garden. }
29. All battles are noisy; }
 What makes no noise may escape notice. }
30. No Jews are mad; }
 All Rabbis are Jews. }
31. There are no fish that cannot swim; }
 Some skates are fish. }
32. All passionate people are unreasonable; }
 Some orators are passionate. }

Chapter III. Crooked Answers.

*"I answered him, as I thought good,
 'As many as red-herrings grow in the wood'."*

Quoted from nursery
 rhyme

§ 1. Elementary.

1. Whatever can be "attributed to", that is "said to belong to", a Thing, is called an 'Attribute'. For example, "baked", which can (frequently) be attributed to "Buns", and "beautiful", which can (seldom) be attributed to "Babies".

2. When they are the Names of two Things (for example, "these Pigs are fat Animals"), or of two Attributes (for example, "pink is light red").

3. When one is the Name of a Thing, and the other the Name of an Attribute (for example, "these Pigs are pink"), since a Thing cannot actually *be* an Attribute.

4. That the Substantive shall be supposed to be repeated at the end of the sentence (for example, "these Pigs are pink (Pigs)").

5. A 'Proposition' is a sentence stating that some, or none, or all, of the Things belonging to a certain class, called the 'Subject', are also Things belonging to a certain other class, called the 'Predicate'. For example, "some new Cakes⁴³ are not nice", that is (written in full) "some new Cakes are not nice Cakes"; where the class "new Cakes" is the Subject, and the class "not-nice Cakes" is the Predicate.⁴⁴

6. A Proposition, stating that *some* of the Things belonging to its Subject are so-and-so, is called 'Particular'. For example, "some new Cakes are nice", "some new Cakes are not nice."

⁴³The remarks in chapter I apply here and in the following questions, too.

⁴⁴Remark: At the end of each page there is a reference on which pages the questions are found. This has not been reproduced here, and is not in the 1886 edition.

A Proposition, stating that *none* of the Things belonging to its Subject, or that *all* of them, are so-and-so, is called 'Universal'. For example, "no new Cakes are nice", "all new Cakes are not nice".

7. The Things in each compartment possess *two* Attributes, whose symbols will be found written on two of the *edges* of that compartment.

8. "One or more."

9. As a name of the class of Things to which the whole Diagram is assigned.

10. A Proposition containing two statements. For example, "some new Cakes are nice and some are not-nice."

11. When the whole class, thus divided, is "exhausted" among the sets into which it is divided, there being no member of it which does not belong to some one of them. For example, the class "new Cakes" is "exhaustively" divided into "nice" and "not-nice", since *every* new Cake must be one or the other.

12. When a man cannot make up his mind which of two parties he will join, he is said to be "sitting on the fence"—not being able to decide on which side he will jump down.

13. "Some *x* are *y*" and "no *x* are *y*".

14. A Proposition, whose Subject is $\lrcorner a$ ⁴⁵ single Thing, is called 'Individual'. For example, "I am happy", "John is not at home". These are Universal Propositions, being the same as "all the I's that exist are happy", "*all* the Johns, that I am now considering, are not at home".

15. \lrcorner Propositions beginning with "some" or "all".⁴⁶

16. When they begin with "some" or "no". For example, "some *abc* are *def*" may be re-arranged as "some *bf* are *acde*", each being equivalent to "some *abcdef* exist".

17. Some tigers are fierce,

No tigers are not-fierce.

18. Some hard-boiled eggs are unwholesome,

No hard-boiled eggs are wholesome.

19. Some I's are happy,

No I's are unhappy.

20. Some Johns are not at home,

No Johns are at home.

21. The Things, in each compartment of the larger Diagram, possess *three* Attributes, whose symbols will be found written at three of the *corners* of the compartment (except in the case of *m'*, which is not actually inserted in the Diagram, but is *supposed* to stand at each of its four outer corners).

22. If the Universe of Things be divided with regard to three different Attributes; and if two Propositions be given, containing two different couples of these Attributes; and if from these we can prove a third Proposition, containing the two Attributes that have not yet occurred together; the given Propositions are called 'the Premisses', the third one 'the Conclusion', and the whole set 'a Syllogism'. For example, the Premisses might be "no *m* are *x*" and "all *m'* are *y*"; and it might be possible to prove from them a Conclusion containing *x* and *y*.

23. If an Attribute occurs in both Premisses, the Term containing it is called 'the Middle Term'. For example, if the Premisses are "some *m* are *x*" and "no

⁴⁵one

⁴⁶'Particular' and 'Universal' Propositions.

m are y' ”, the class of “ m -Things” is the Middle Term.

If an Attribute occurs in one Premiss, and its contradictory in the other, the Terms containing them may be called ‘the Middle Terms’. For example, if the Premisses are “no m are x' ” and “all m' are y ”, the two classes of “ m -Things” and “ m' -Things” may be called ‘the Middle Terms’.

24. Because they can be marked with *certainty*: whereas *affirmative* Propositions (that is, those that begin with “some” or “all”) sometimes require us to place a red counter ‘sitting on a fence’.

25. Because the only question we are concerned with is whether the Conclusion *follows logically* from the Premisses, so that, if *they* were true, *it* also would be true.

26. By understanding a red counter to mean “this compartment *can be* occupied”, and a grey one to mean “this compartment *cannot be* occupied” or “this compartment *must be* empty”.

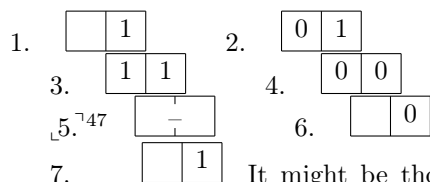
27. ‘Fallacious Premisses’ and ‘Fallacious Conclusion’.

28. By finding, when we try to transfer marks from the larger Diagram to the smaller, that there is ‘no information’ for any of its four compartments.

29. By finding the correct Conclusion, and then observing that the Conclusion, offered to us, is neither identical with it nor a part of it.

30. When the offered Conclusion is part of the correct Conclusion. In this case, we may call it a ‘Defective Conclusion’.

§ 2. Half of Smaller Diagram. Propositions represented.



It might be thought that the proper Diagram would be

—	1
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, in order to express “some x exist”: but this is really contained in “some x are y' .” To put a red counter on the division-line would only tell us “*one of the* compartments is occupied”, which we know already, in knowing that *one* is occupied.⁴⁸

- | | | |
|--|---|---|
| 8. No x are y . i. e. | 0 | |
| 9. Some x are y' . i. e. | | 1 |
| 10. All x are y . i. e. | 1 | 0 |
| 11. Some x are y . i. e. | 1 | |
| 12. No x are y . i. e. | 0 | |
| 13. Some x are y , and some are y' . i. e. | 1 | 1 |
| 14. All x are y' . i. e. | 0 | 1 |

⁴⁷Solutions 5 to 7 are missing in the 1886 edition, the following questions have different numbers.

⁴⁸Remark: This solution is referenced by several other solutions, this has not been reproduced here.

15. No y are x' . i. e.

0
16. All y are x . i. e.

1
0
17. No y exist. i. e.

0
0
18. Some y are x' . i. e.

1
- 19.⁴⁹ Some y exist. i. e.

1

§ 3. Half of Smaller Diagram. Symbols interpreted.

1. No x are y' .
2. No x exist.
3. Some x exist.
4. All x are y' .
5. Some x are y . i. e. Some good riddles are hard.
6. All x are y . i. e. All good riddles are hard.
7. No x exist. i. e. No riddles are good.
8. No x are y . i. e. No good riddles are hard.
9. Some x are y' . i. e. Some lobsters are \lrcorner unselfish⁵⁰.
10. No x are y . i. e. No lobsters are selfish.
11. All x are y' . i. e. All lobsters are unselfish.
12. Some x are y , and some are y' . i. e. Some lobsters are selfish, and some are unselfish.
13. All y' are x' . i. e. All invalids are unhappy.
14. Some y' exist. i. e. Some people are unhealthy.
15. Some y' are x , and some are x' . i. e. Some invalids are happy, and some are unhappy.
16. No y' exist. i. e. Nobody is unhealthy.

⁴⁹The 1886 edition has additionally:

17. All y are x . i. e.

1
0
18. Some y are x' . i. e.

1
19. No y are x . i. e.

0
20. All y are x' . i. e.

0
1

⁵⁰“unselfish or forgiving” (also in the following answers)

§ 4. Smaller Diagram. Propositions represented.

1.

1	
0	

2.

1	

3.

	0

4.

	1

5.

	1

6.

0	

7.

	1

8.

0	1

9.

	1

10.

0	0

11.

1	
1	

12.

1	0
	1

13. No x' are y . i. e.

0	

14. All y' are x' . i. e.

	0
	1

15. Some y' exist. i. e.

	1

16. All y are x , and all x are y . i. e.

1	0
0	

17. No x' exist. i. e.

0	0

18. All x are y' . i. e.

0	1

19. No x are y . i. e.

0	

20. Some x' are y , but some are y' . i. e.

1	1

21. No y exist, and some x exist. i. e.

0	1
0	

22. All x' are y , and all y' are x . i. e.

	1
1	0

23. Some x are y , and some x' are y' . i. e.

1	
	1

§ 5. Smaller Diagram. Symbols interpreted.

1. Some y are not- x ,
or, Some not- x are y .
2. No not- x are not- y ,
or, No not- y are not- x .
3. \lrcorner All⁵¹ not- y are x .
4. No not- x exist. i. e. \lrcorner No Things are not- x .⁵²
5. No y \lrcorner exist.⁵³ i. e. No houses are two-storied.
6. Some x' \lrcorner exist.⁵⁴ i. e. Some houses are not built of brick.
7. No x are y' . Or, no y' are x . i. e. No houses, built of brick, are other than two-storied. Or, no houses, that are not two-storied, are built of brick.
8. All x' are y' . i. e. All houses, that are not built of brick, are not two-storied.
9. Some x are y , and some are y' . i. e. Some fat boys are active, and some are not.
10. All y' are x' . i. e. All lazy boys are thin.
11. All x are y' and all y' are x . i. e. All fat boys are lazy, and all lazy ones are fat.
12. All y are x , and all x' are y . i. e. All active boys are fat, and all thin ones are lazy.
13. No x exist, and no y' exist. i. e. No cats have green eyes, and none have bad tempers.
14. Some x are y' , and some x' are y . Or, some y are x' , and some y' are x . i. e. Some green-eyed cats are bad-tempered, and some, that have not green eyes, are good-tempered. Or, some good-tempered cats have not green eyes, and some bad-tempered ones have green eyes.
15. Some x are y , and no x' are y' . Or, some y are x , and no y' are x' . i. e. Some green-eyed cats are good-tempered, and none, that are not green-eyed, are bad-tempered. Or, some good-tempered cats have green eyes, and none, that are bad-tempered, have not green eyes.
16. All x are y' , and all x' are y . Or, all y are x' and all y' are x . i. e. All green-eyed cats are bad-tempered, and all, that have not green eyes, are good-tempered. Or, all good-tempered ones have eyes that are not green, and all bad-tempered ones have green eyes.

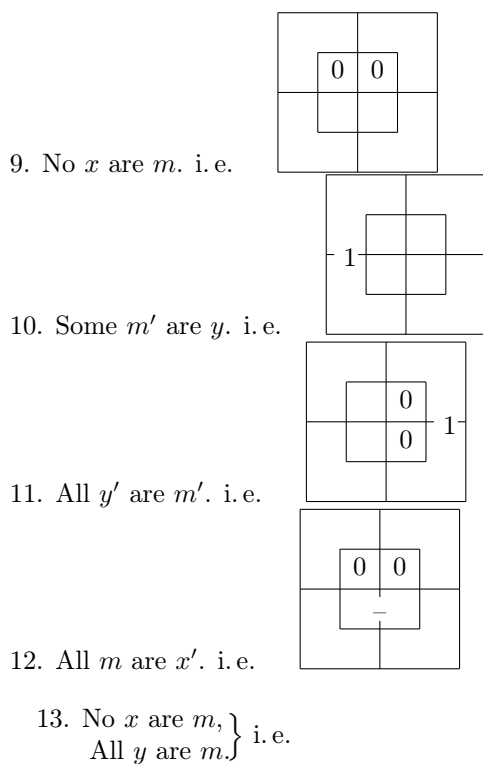
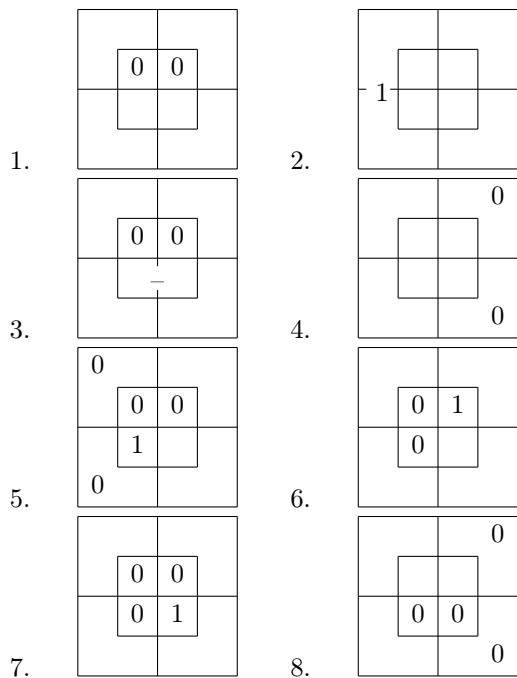
⁵¹Mistakenly "No" in the 1887 edition

⁵²There are no not- x .

⁵³exist. i. e. No two-storied houses exist.

⁵⁴exist. i. e. Some houses, not built of brick, exist.

§ 6. Larger Diagram. Propositions represented.



0	
0	0
1	
0	

14. All m' are y , } i. e.
 No x are m' }

0		0
1		0

15. All x are m , } i. e.
 No m are y' }

0		0
1	0	
	0	

16. All m' are y' , } i. e.
 No x are m' }

0		0
0		1

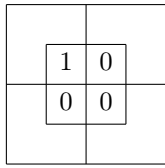
17. All x are m , } i. e.
 All m are y }

0		0
1	0	
	0	

18. No x' are m , } i. e.
 No m' are y }

0		
0	0	0

19. All m are x , } i. e.
 All m are y }



20. We had better take “persons” as Universe. We may choose “myself” as ‘Middle Term’, in which case the Premisses will take the form

I am a-person-who-sent-him-to-bring-a-kitten. }
 I am a-person-to-whom-he-brought-a-kettle-by-mistake. }

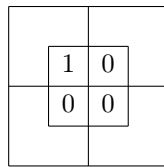
Or we may choose “he” as ‘Middle Term’, in which case the Premisses will take the form

He is a-person-whom-I-sent-to-bring-me-a-kitten. }
 He is a-person-who-brought-me-a-kettle-by-mistake. }

The latter form seems best, as the interest of the anecdote clearly depends on *his* stupidity—not on what happened to *me*. Let us then make m = “he”; x = “persons whom I sent, &c.”; and y = “persons who brought, &c.”

Hence,

All m are x , }
 All m are y , } and the required Diagram is



§ 7. Both Diagrams employed.

1.

0	
1	

 i. e. All y are x' .
2.

	1

 i. e. Some x are y' ; or, Some y' are x .
3.

1	

 i. e. Some y are x' ; or, Some x' are y .
4.

	0

 i. e. No x' are y' ; or, No y' are x' .
5.

0	
1	

 i. e. All y are x' . i. e. All black rabbits are young.
6.

1	

 i. e. Some y are x' . i. e. Some black rabbits are young.

7.

1	0

 i. e. All x are y . i. e. All well-fed birds are happy.
8.

	1

 i. e. Some x' are y' . i. e. Some birds, that are not well-fed, are unhappy; or, Some unhappy birds are not well-fed.
9.

1	0

 i. e. All x are y . i. e. John has got a tooth-ache.
10.

0	

 i. e. No x' are y . i. e. No one, but John, has got a tooth-ache.
11.

1	

 i. e. Some x are y . i. e. Some one, who has taken a walk, feels better.
12.

1	

 i. e. Some x are y . i. e. Some one, whom I sent to bring me a kitten, brought me a kettle by mistake.
13.

		0
	0	0
1		
		0

	0

Let “books” be Universe; m = “exciting”; x = “that suit feverish patients”; y = “that make one drowsy”.

No m are x ,
All m' are y . } \therefore No y' are x .

i. e. No books suit feverish patients, except such as make one drowsy.

14.

	1	0
		0

1	

Let “persons” be Universe; m = “that deserve the fair”; x = “that get their deserts”; y = “brave”.

Some m are x ,
No y' are m . } \therefore Some y are x .

i. e. Some brave persons get their deserts.

15.

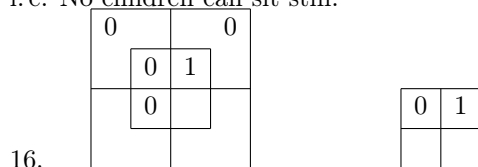
0		
	0	0
0		

0	

Let “persons” be Universe; m = “patient”; x = “children”; y = “that can sit still”.

No x are m , }
 No m' are y . } \therefore No x are y .

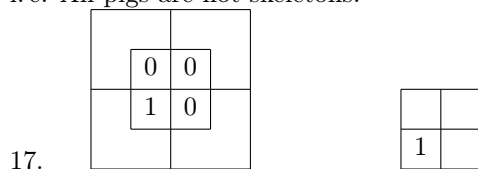
i. e. No children can sit still.



Let “things” be Universe; m = “fat”; x = “pigs”; y = “skeletons”.

All x are m , }
 No y are m . } \therefore All x are y' .

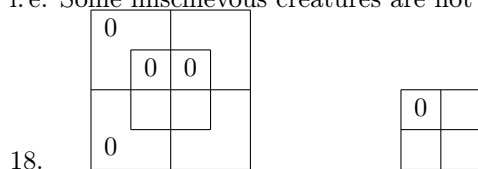
i. e. All pigs are not-skeletons.



Let “creatures” be Universe; m = “monkeys”; x = “soldiers”; y = “mischievous”.

No m are x , }
 All m are y . } \therefore Some y are x' .

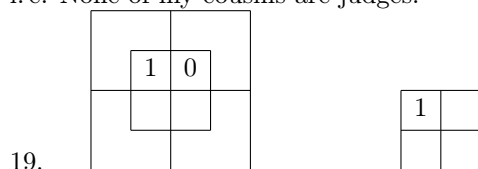
i. e. Some mischievous creatures are not soldiers.



Let “persons” be Universe; m = “just”; x = “my cousins”; y = “judges”.

No x are m , }
 No y are m' . } \therefore No x are y .

i. e. None of my cousins are judges.



Let “periods”⁵⁵ be Universe; m = “days”; x = “rainy”; y = “tiresome”.

⁵⁵things

Some m are x ,
 All xm are y . } \therefore Some x are y .

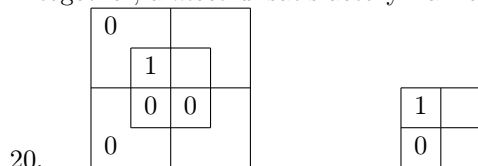
i. e. Some rainy periods⁵⁶ are tiresome.

N.B. These are not legitimate Premisses, since⁵⁷ the Conclusion is really part of the second Premiss, so that⁵⁸ the first Premiss is superfluous. This may be shown, in letters, thus:—

“All xm are y ” contains “Some xm are y ”, which contains “Some x are y ”. Or, in words, “All rainy days are tiresome” contains “Some rainy days are tiresome”, which contains “Some rainy periods⁵⁹ are tiresome”.

Moreover, the first Premiss, besides being superfluous, is actually contained in the second; since it is equivalent to “Some rainy days exist”, which, as we know, is implied in the Proposition “All rainy days are tiresome”.

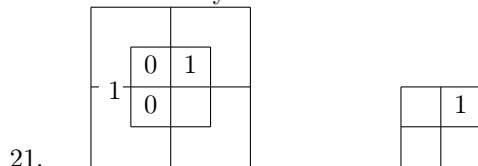
Altogether, a *most* unsatisfactory Pair of Premisses!



Let “things” be Universe; m = “medicine”; x = “nasty”; y = “senna”.

All m are x ,
 All y are m . } \therefore All y are x .

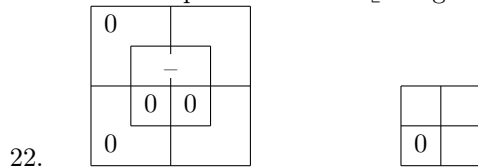
i. e. Senna is nasty.



Let “persons” be Universe, m = “Jews”; x = “rich”; y = “Patagonians”.⁶⁰

Some m are x ,
 All y are m' . } \therefore Some x are y' .

i. e. Some rich persons are not Patagonians.⁶¹



Let “creatures” be Universe; m = “teetotalers”; x = “that like sugar”; y = “nightingales”.

⁵⁶things

⁵⁷since x and y both enter into the second Premiss; so that

⁵⁸and

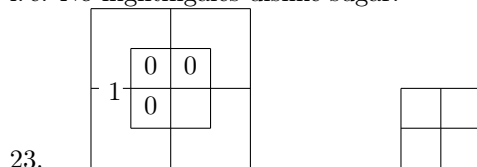
⁵⁹things

⁶⁰Kamschatgans

⁶¹Kamschatgans

All m are x ,
 No y are m' . } \therefore No y are x' .

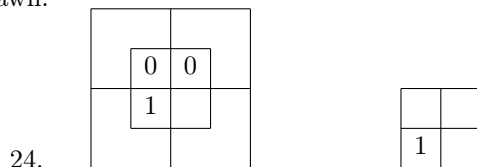
i. e. No nightingales dislike sugar.



Let “food” be Universe; m = “wholesome”; x = “muffins”; y = “buns”.

No x are m ,
 All y are m' . }

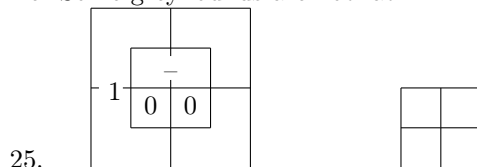
There is ‘no information’ for the smaller Diagram; so no Conclusion can be drawn.



Let “creatures” be Universe; m = “that run well”; x = “fat”; y = “greyhounds”.

No x are m ,
 Some y are m . } \therefore Some y are x' .

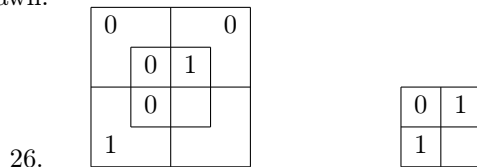
i. e. Some greyhounds are not fat.



Let “persons” be Universe; m = “soldiers”; x = “that march”; y = “youths”.

All m are x ,
 Some y are m' . }

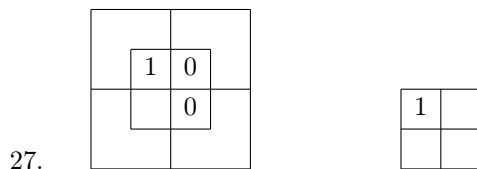
There is ‘no information’ for the smaller Diagram; so no Conclusion can be drawn.



Let “food” be Universe; m = “sweet”; x = “sugar”; y = “salt”.

All x are m ,
 All y are m' . } \therefore { All x are y' .
 All y are x' .

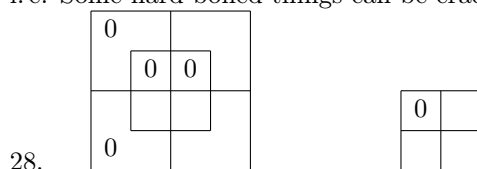
i. e. $\left\{ \begin{array}{l} \text{Sugar is not salt.} \\ \text{Salt is not sugar.} \end{array} \right.$



Let “things” be Universe; m = “eggs”; x = “hard-boiled”; y = “crackable”.

$\left. \begin{array}{l} \text{Some } m \text{ are } x, \\ \text{No } m \text{ are } y'. \end{array} \right\} \therefore \text{Some } x \text{ are } y.$

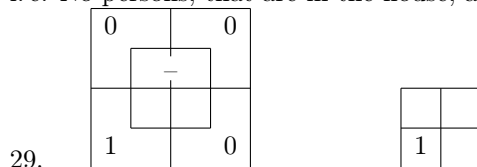
i. e. Some hard-boiled things can be cracked.



Let “persons” be Universe; m = “Jews”; x = “that are in the house”; y = “that are in the garden”.

$\left. \begin{array}{l} \text{No } m \text{ are } x, \\ \text{No } m' \text{ are } y. \end{array} \right\} \therefore \text{No } x \text{ are } y.$

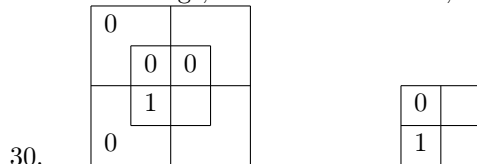
i. e. No persons, that are in the house, are also in the garden.



Let “things” be Universe; m = “noisy”; x = “battles”; y = “that may escape notice”.

$\left. \begin{array}{l} \text{All } x \text{ are } m, \\ \text{All } m' \text{ are } y. \end{array} \right\} \therefore \text{Some } x' \text{ are } y.$

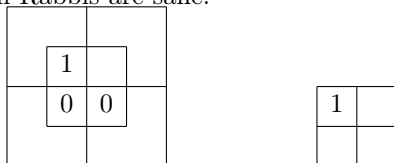
i. e. Some things, that are not battles, may escape notice.



Let “persons” be Universe; m = “Jews”; x = “mad”; y as “Rabbis”.

$\left. \begin{array}{l} \text{No } m \text{ are } x, \\ \text{All } y \text{ are } m. \end{array} \right\} \therefore \text{All } y \text{ are } x'.$

i. e. All Rabbits are sane.

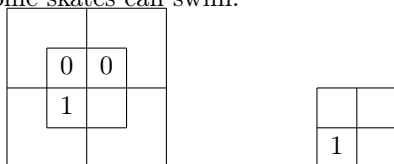


31.

Let “things” be Universe; m = “fish”; x = “that can swim”; y = “skates”.

No m are x' ,
Some y are m . } \therefore Some y are x .

i. e. Some skates can swim.



32.

Let “people” be Universe; m = “passionate”; x = “reasonable”; y = “orators”.

All m are x' ,
Some y are m . } \therefore Some y are x' .

i. e. Some orators are unreasonable.

Chapter IV. Hit or Miss.

*“Thou canst not hit it, hit it, hit it,
Thou canst not hit it, my good man.”*

Quoted from *Love’s Labour’s Lost* by William Shakespeare

Other version:

→ 6.2, p. 949

1. Pain is wearisome;
No pain is eagerly wished for. }
2. No bald person needs a hair-brush;
No lizards have hair. }
3. All thoughtless people do mischief;
No thoughtful person forgets a promise. }
4. I do not like John;
Some of my friends like John. }
5. No potatoes are pine-apples;
All pine-apples are nice. }
6. No pins are ambitious;
No needles are pins. }
7. All my friends have colds;
No one can sing who has a cold. }
8. All these dishes are well-cooked;
Some dishes are unwholesome if not well-cooked. }

9. No medicine is nice; }
Senna is a medicine. }
10. Some oysters are silent; }
No silent creatures are amusing. }
11. All wise men walk on their feet; }
All unwise men walk on their hands. }
12. "Mind your own business; }
This quarrel is no business of yours." }
13. No bridges are made of sugar; }
Some bridges are picturesque. }
14. No riddles interest me that can be solved; }
All these riddles are insoluble. }
15. John is industrious; }
All industrious people are happy. }
16. No frogs write books; }
Some people use ink in writing books. }
17. No pokers are soft; }
All pillows are soft. }
18. No antelope is ungraceful; }
Graceful animals delight the eye. }
19. Some uncles are ungenerous; }
All merchants are generous. }
20. No unhappy people chuckle; }
No happy people groan. }
21. Audible music causes vibration in the air; }
Inaudible music is not worth paying for. }
22. He gave me five pounds; }
I was delighted. }
23. No old Jews are fat millers; }
All my friends are old millers. }
24. Flour is good for food; }
Oatmeal is a kind of flour. }
25. Some dreams are terrible; }
No lambs are terrible. }
26. No rich man begs in the street; }
All who are not rich should keep accounts. }
27. No thieves are honest; }
Some dishonest people are found out. }
28. All wasps are unfriendly; }
All puppies are friendly. }
29. All improbable stories are doubted; }
None of these stories are probable. }
30. "He told me you had gone away." }

“He never says one word of truth.”

31. His songs never last an hour; }
A song, that lasts an hour, is tedious. }
32. No bride-cakes are wholesome; }
Unwholesome food should be avoided. }
33. No old misers are cheerful; }
Some old misers are thin. }
34. All ducks waddle; }
Nothing that waddles is graceful. }
35. No Professors are ignorant; }
Some ignorant people are conceited. }
36. Toothache is never pleasant; }
Warmth is never unpleasant. }
37. Bores are terrible; }
You are a bore. }
38. Some mountains are insurmountable; }
All stiles can be surmounted. }
39. No Frenchmen like plumpudding; }
All Englishmen like plumpudding. }
40. No idlers win fame; }
Some painters are not idle. }
41. No lobsters are unreasonable; }
No reasonable creatures expect impossibilities. }
42. No kind deed is unlawful; }
What is lawful may be done without fear. }
43. No fossils can be crossed in love; }
An oyster may be crossed in love. }
44. “This is beyond endurance!” }
“Well, nothing beyond endurance has ever happened to *me*.” }
45. All uneducated men are shallow; }
All these students are educated. }
46. All my cousins are unjust; }
No judges are unjust. }
47. No country, that has been explored, is infested by dragons; }
Unexplored countries are fascinating. }
48. No misers are generous; }
Some old men are not generous. }
49. A prudent man shuns hyænas; }
No banker is imprudent. }
50. Some poetry is original; }
No original work is producible at will. }
51. No misers are unselfish; }
None but misers save egg-shells. }

52. All pale people are phlegmatic; }
 No one, who is not pale, looks poetical. }
53. All spiders spin webs; }
 Some creatures, that do not spin webs, are savage. }
54. None of my cousins are just; }
 All judges are just. }
55. John is industrious; }
 No industrious people are unhappy. }
56. Umbrellas are useful on a journey; }
 What is useless on a journey should be left behind. }
57. Some pillows are soft; }
 No poker are soft. }
58. I am old and lame; }
 No old merchant is a lame gambler. }
59. No eventful journey is ever forgotten; }
 Uneventful journeys are not worth writing a book about. }
60. Sugar is sweet; }
 Some sweet things are liked by children. }
61. Richard is out of temper; }
 No one but Richard can ride that horse. }
62. All jokes are meant to amuse; }
 No Act of Parliament is a joke. }
63. "I saw it in a newspaper." }
 "All newspapers tell lies." }
64. No nightmare is pleasant; }
 Unpleasant experiences are not anxiously desired. }
65. Prudent travellers carry plenty of small change; }
 Imprudent travellers lose their luggage. }
66. All wasps are unfriendly; }
 No puppies are unfriendly. }
67. He called here yesterday; }
 He is no friend of mine. }
68. No quadrupeds can whistle; }
 Some cats are quadrupeds. }
69. No cooked meat is sold by butchers; }
 No uncooked meat is served at dinner. }
70. Gold is heavy; }
 Nothing but gold will silence him. }
71. Some pigs are wild; }
 There are no pigs that are not fat. }
72. No emperors are dentists; }
 All dentists are dreaded by children. }
73. All, who are not old, like walking; }

- Neither you nor I are old.
74. All blades are sharp; }
Some grasses are blades. }
75. No dictatorial person is popular; }
She is dictatorial. }
76. Some sweet things are unwholesome; }
No muffins are sweet. }
77. No military men write poetry; }
No generals are civilians. }
78. Boredoms are dreaded; }
A bore is never begged to prolong his visit. }
79. All owls are satisfactory; }
Some excuses are unsatisfactory. }
80. All my cousins are unjust; }
All judges are just. }
81. Some buns are rich; }
All buns are nice. }
82. No medicine is nice; }
No pills are unmedicinal. }
83. Some lessons are difficult; }
What is difficult needs attention. }
84. No unexpected pleasure annoys me; }
Your visit is an unexpected pleasure. }
- 85.⁶² Caterpillars are not eloquent; }
Jones is eloquent. }
86. Some bald people wear wigs; }
All your children have hair. }
87. All wasps are unfriendly; }
Unfriendly creatures are always unwelcome. }
88. No bankrupts are rich; }
Some merchants are not bankrupts. }
- 89.⁶³ Weasels sometimes sleep; }
All animals sometimes sleep. }
90. Ill-managed concerns are unprofitable; }
Railways are never ill-managed. }
91. Everybody has seen a pig; }
Nobody admires a pig. }

Extract a Pair of Premises out of each of the following: and deduce the Conclusion, if there is one:—

⁶²Missing in the 1886 edition.

⁶³Missing in the 1886 edition.

92.⁶⁴ “The Lion, as any one can tell you who has been chased by them as often as *I* have, is a very savage animal: and there are *certain*⁶⁵ individuals among them, though I will not guarantee it as a general law, who do not drink coffee.”

93. “It was most absurd of you to offer it! You might have known, if you had had any sense, that no old sailors ever like gruel!”

“But I thought, as he was an uncle of yours—”

“An uncle of mine, indeed! Stuff!”

“*You*⁶⁶ may call it stuff, if you like. All I know is, *my* uncles are all old men: and they like gruel like anything!”

“Well, then *your* uncles are—”

94. “Do come away! I can’t stand this squeezing any more. No crowded shops are comfortable, you know very well.”

“Well, who expects to be comfortable, out shopping?”

“Why, *I* do, of course! And I’m sure there are some shops, further down the street, that are not crowded. So—”

95. “They say *no*⁶⁷ doctors are *metaphysical*⁶⁸ organists: and that lets me into a little fact about *you*, you know.”

“Why, how do you make *that* out? You never heard me play the organ.”

“No, *doctor*,⁶⁹ but I’ve heard you talk about Browning’s poetry: and that showed me that you’re *metaphysical*,⁷⁰ at any rate. So—”

Extract a Syllogism out of each of the following: and test its correctness:—

96. “Don’t talk to me! I’ve known more rich merchants than you have: and I can tell you not *one* of them was ever an old miser since the world began!”

“And what has that got to do with old Mr. Brown?”

“Why, isn’t he very rich?”

“Yes, of course he is. And what then?”

“Why, don’t you see that it’s absurd to call him a miserly merchant? Either he’s not a merchant, or he’s not a miser!”

97. “*It is* so kind of you to enquire! I’m really feeling a great deal better to-day.”

“And is it Nature, or Art, *that is*⁷¹ to have the credit of this happy change?”

“Art, I think. The Doctor has given me some of that patent medicine of his.”

“Well, I’ll never call him a humbug again. There’s *somebody*, at any rate, that feels better after taking his medicine!”

⁶⁴The 1886 edition has additionally:

91. “Good morning, dear Mrs. Jones! I’ve just seen the most extraordinary people you ever met! You never saw such bonnets!”

“Oh, I know who you mean. They lodge just opposite.”

“Do they? Well, I do wonder who they are!”

“So do I.”

⁶⁵certainly

⁶⁶Well, you

⁶⁷missing in 1886 edition

⁶⁸never enthusiastic

⁶⁹missing in 1886 edition

⁷⁰*enthusiastic*

⁷¹that’s

98. “No, I don’t like you one bit. And I’ll go and play with my doll. *Dolls* are never unkind.”

“So you like a doll better than a cousin? Oh you little silly!”

“Of course I do! *Cousins* are never kind—at least no cousins *I’ve* ever seen.”

“Well, and what does *that* prove, I’d like to know! If you mean that cousins aren’t dolls, who ever said they were?”

99.⁷² “What are you talking about geraniums for? You can’t tell one flower from another, at this distance! I grant you they’re all *red* flowers: it doesn’t need a telescope to know *that*.”

“Well, some geraniums are red, aren’t they?”

“I don’t deny it. And what then? I suppose you’ll be telling me some of those flowers are geraniums!”

“Of course that’s what I should tell you, if you’d the sense to follow an argument! But what’s the good of proving anything to *you*, I should like to know?”

100. “Boys, you’ve passed a fairly good examination, all things considered. Now let me give you a word of advice before I go. Remember that all, who are really anxious to learn, work *hard*.”

“I thank you, Sir, in the name of my scholars! And proud am I to think there are *some* of them, at least, that belong to that are⁷³ really *anxious* to learn.”

“Very glad to hear it: and how do you make it out to be so?”

“Why, Sir, *I* know how hard they work—some of them, that is. Who should know better?”

Extract from the following speech a series of Syllogisms, or arguments having the form of Syllogisms: and test their correctness.

It is supposed to be spoken by a fond mother, in answer to a friend’s cautious suggestion that she is perhaps a *little* overdoing it, in the way of lessons, with her children.

101. “Well, they’ve got their own way to make in the world. *We* can’t leave them a fortune apiece! And money’s not to be had, as *you* know, without money’s worth: they must *work* if they want to live. And how are they to work, if they don’t know anything? Take my word for it, there’s no place for ignorance in *these* times! And all authorities agree that the time to learn is when you’re young. One’s got no memory afterwards, worth speaking of. A child will learn more in an hour than a grown man in five. So those, that have to learn, must learn when they’re young, if ever they’re to learn at all. Of course that doesn’t do unless children are *healthy*: I quite allow *that*. Well, the doctor tells me no children are healthy unless they’ve got a good colour in their cheeks. And only just look at my darlings! Why, their cheeks bloom like peonies! Well, now, they

⁷²The 1886 edition has additionally:

99. “You’re as greedy as a pig!”

“*That* doesn’t prove much, unless you mean to say that every pig, as ever is, is greedy.”

“Then that’s just what I do mean to say.”

“Well, I’ll tell you another interesting fact about pigs. Not one of them can fly!”

“I knew that before, Mister Impertinence! So *something*, that’s greedy, can’t fly: and I think its *you*!”

⁷³that category!”

“What category, might I ask?”

“The category, Sir, of them as—I mean of boys that are

tell me that, to keep children in health, you should never give them more than six hours altogether at lessons in the day, and at least two half-holidays in the week. And that's *exactly* our plan, I can assure you! We never go beyond six hours, and every Wednesday and Saturday, as ever is, not one syllable of lessons do they do after their one o'clock dinner! So how you can imagine I'm running any risk in the education of my precious pets is more than *I* can understand, I promise you!"

6.4 Fifth Paper on Logic

Source: printed 1887

Examples. Sets of Premisses

1. No ducks waltz;
All officers waltz;
All my poultry are ducks.
2. All puddings are nice;
All these dishes are puddings;
No nice things are wholesome.
3. No fat old men are active;
All wise men are old;
No unwise lawyers are fat.
4. All novels are exciting;
I have no books but novels;
Nothing exciting belongs to me.
5. All pencils are made of lead;
No rubbish is useful;
All lead-pencils are useful.
6. No buns are unwholesome;
No puffy currant buns are stale;
All new puffy food is unwholesome.
7. All rich noblemen are well-dressed;
All my friends are rich;
No well-dressed persons sweep chimnies.
8. All eels wriggle;
No eels wear boots;
Nothing, that wriggles and wears no boots, can act Shakespeare.
9. No unkind advice is welcome;
No welcome letters, that I have had to-day, are unanswered;
None of to-day's letters, that I have answered, are kind.
10. No cats can sing well;
None of my household get any cream, unless they can sing well;
All cats get cream.
11. All boots are leather;
Anything made of buttered toast is good to eat;
No leather boots are good to eat.
12. There are no Jews in the street;
No Gentiles say "shpoonj";
All my servants are in the street.

Other version:
→ 6.24, p. 1119

Other version:
→ 6.18, p. 1032

13. No hoofed animal has scales;
No pigs are destitute of hoofs;
No pigs, without scales, have wings.
14. Nothing, that is meant to hold fluids, is worth taking care of
when broken;
All jugs are meant to hold fluids;
All useful things are worth taking care of.
15. All English sailors are light-hearted;
All sailors are enterprising;
None but Englishmen are enterprising.
16. All unripe fruit is unwholesome;
All these apples are wholesome;
No fruit, grown in the shade, is ripe.
17. No frogs are dignified;
All fat things in this garden eat greedily;
Nothing that eats greedily is fat, except a frog.
18. All bilious boys refuse buns;
All greedy boys are bilious;
No healthy boys refuse buns.
19. No pins of mine, that will bend, are useful;
Nothing made of steel will bend;
All my useless pins are made of steel.
20. All rolling stones are restless;
All stones are heavy;
All restless things, that gather moss, are light.
21. All respectable umbrellas are meant to open;
Useful old things should be preserved;
Things that are meant to open but will not do it, need not be
preserved;
All new umbrellas will open;
What is old is always respectable.
22. No young crabs are melancholy;
All healthy policemen are sane;
No discontented judges are chickens;
All rich bakers are fat;
Some rich healthy young judges are unmarried.
23. Ungraceful creatures are thoughtful when left alone;
No elephants are graceful;
When one is disliked, one is left alone;
Thoughtful elephants are universally liked;
Ungraceful creatures, who are not fond of apples, are disliked.
24. All, who have lost their way and have not learned to dance, are
unfriendly;
No gypsies, who have learned to dance, are wild;
All wild people, who have not lost their way, are uncivil;
All my nephews have lost their way;

- All uncivil people, who are not nephews of mine, have learned to dance.
25. No invalids are unromantic civilians;
 All architects are dreamy enthusiasts;
 No lovers are hopeless;
 No military men are dreamy;
 All romantic enthusiasts are in love;
 All who live on muffins are hopeless invalids.
26. All short-hand-writers are fit to be printers;
 Salmon, that can read small print, have good eyesight;
 No young folk need be pitied, unless they are short-hand-writers;
 Those who have good eyesight do not wear spectacles;
 Young folk, who have bad eyesight and cannot read small print,
 are not fit to be printers.
 Those who cannot read small print are to be pitied.
27. No savage animals are trustworthy sentinels;
 Mastiffs are domesticated wolves;
 All warm-blooded domesticated carnivora have claws;
 All quadrupeds are warm-blooded animals;
 My property consists of savage quadrupeds;
 A wolf, that wags its tail, may be trusted, even if it has claws;
 There is nothing in this house but my dogs;
 All dogs are carnivorous sentinels.
28. All the gay and hopeful are Germans;
 All old gorilla-keepers are good-tempered;
 All young captains are gay;
 Those who are good-tempered need not take snuff;
 No young Germans are experienced;
 Melancholy old folk ought to take snuff;
 People of experience do not keep gorillas, unless they feel out of spirits;
 Young people never despair.
29. Ball-guests, who are caricatured, are sulky;
 A conceited ball-guest is ridiculous;
 A man who is pleased, and yet sulky, is a paradox;
 Ridiculous ball-guests are caricatured;
 Conceited people, if entertaining, are not avoided;
 Frogs, who are never invited to balls, are unpopular;
 People, who are sulky and ridiculous, are avoided;
 A ball-guest, who is a paradox, is entertaining;
 Popular people are pleased when they are caricatured.
30. All English aldermen are well-fed;
 All the military men in my family are Hussars;
 People with toothache are unhappy, even if well-fed;
 All the English, who are not members of my family, are babies;
 All the aldermen in my family are fat;
 No well-fed gluttons are discontented;
 No discontented foreigners are happy;

All active babies are aldermen;
No Hussars are lazy gluttons;
All happy babies are well-fed;
All lazy civilians are aldermen;
None of my family are ill-fed, except the babies.

[May, 1887.]

6.5 Sixth Paper on Logic

Source: printed 1887

Examples. Sets of Premises

1. (1) Despised and silent gluttons are discontented, but are not quarrelsome;
(2) All ugly lady-birds are shy, silent, and sulky;
(3) Shy discontented creatures, that are hated, are always quarrelsome;
(4) A crocodile is an ugly lazy glutton;
(5) All creatures, that are lazy and sulky, are hated and despised.
2. (1) No wise old friends of mine are happy;
(2) No rich friends of mine are unhealthy youths;
(3) No dishonest friends of mine are old fools;
(4) No friends of mine are talkative young paupers;
(5) No honest old friends of mine are foolish;
(6) No young friends of mine are rich and healthy;
(7) No friends of mine are unhappy old sages;
(8) No poor young friends of mine are silent.
3. (1) All old monkeys are docile;
(2) All affectionate cats purr;
(3) All healthy dogs bark;
(4) All my fat pets are in this basket;
(5) No small pigs are affectionate;
(6) Black cats can be easily carried about;
(7) No cross active creatures jump, except monkeys;
(8) I make pets of all affectionate docile creatures;
(9) A healthy monkey, if electrified, becomes a pig;
(10) The large creatures in this basket are all cats;
(11) Old dogs are always cross;
(12) No fat creatures bark, except when electrified;
(13) All affectionate old creatures jump;
(14) All the creatures in this basket, that purr, are black;
(15) Large dogs cannot be easily carried about;
(16) Creatures, that are cross and destitute of affection, are always lazy;
(17) Unhealthy creatures are either large or thin.
4. (1) A quarrelsome man does not deserve blame if he is not in his right mind;
(2) Men, who are objects of terror, are always avoided;
(3) The popular candidates in this election are Liberals;
(4) Captains always tell long yarns;
(5) A man of slim figure, who is constantly quoted as a model citizen, is always conceited;
(6) Any man of genial manners may safely go through the town to-day, except Mr. Brown;

- (7) No good man of business, who is cautious as to what he states, ever says he has seen the sea-serpent;
 - (8) A thoughtless man is a constant cause of mischief;
 - (9) A popular man, who is fat, is always out of breath;
 - (10) A man, who tells long yarns and has no geniality of manner, is an object of terror;
 - (11) Mr. Brown is a candidate in this election;
 - (12) A man, who is ready to make amends for any harm he has done, is always a humble man;
 - (13) No man, who tells long yarns without giving names or dates, is readily believed;
 - (14) No quarrelsome man would be safe in the streets to-day, unless he were a candidate in this election;
 - (15) A good business-man, who is not quarrelsome, is cautious as to everything he states;
 - (16) No man ever tells long yarns, when running to catch a train and out of breath;
 - (17) A man, who has caused mischief and is not ready to make amends for the harm he has done, cannot be in his right mind;
 - (18) No man, who gives names and dates, is avoided, unless he is in his second childhood;
 - (19) The Liberal candidates in this election are all running to catch the train;
 - (20) Any man, who gives names and dates, is a good man of business;
 - (21) No quarrelsome man is an object of terror if he is in his second childhood;
 - (22) A man deserves blame if he is not ready to make amends for any harm he has done;
 - (23) A man who tells long yarns is always popular;
 - (24) A man of genial manners, who is ready to make amends for any harm he has done, is constantly quoted as a model citizen.
5. (1) Fortunate men, who are lawyers' clerks, are always hungry;
- (2) All the basket-makers are out of work;
 - (3) A man without self-restraint is helped five times to plum-pudding;
 - (4) No one but Whittington ever heard bells speak;
 - (5) A bore, who has self-restraint, gets rich;
 - (6) No lean and slippered pantaloon is respected;
 - (7) A man, who is helped five times to plum-pudding, is a glutton;
 - (8) Those who complain always get listened to;
 - (9) A rich man, who has never heard bells speak, is always lean;
 - (10) None but lawyers' clerks have self-restraint;
 - (11) A pantomime-actor, who wears slippers, is a pantaloon;
 - (12) The famous Whittington was elected Lord Mayor;
 - (13) A fat man, who talks without cessation when any one will listen to him, is a bore;
 - (14) All lean persons, who are self-restrained, act in pantomimes;
 - (15) Those who never complain get underpaid;

- (16) Egoists are intolerable;
 - (17) Any one, who has heard bells speak, is fortunate;
 - (18) No hungry lawyer's clerk was ever elected Lord Mayor;
 - (19) All letter-carriers, who do not live in this village, complain if underpaid;
 - (20) Any one, who is listened to, will talk without cessation;
 - (21) Pantaloons, employed in pantomimes, are respected if rich;
 - (22) All, who have not heard bells speak, are egoists;
 - (23) A bore is endurable, provided he does not wear slippers;
 - (24) All hungry men, who complain, become famous;
 - (25) The people in this village are all basket-makers.
6. (1) All Jews wear beards;
- (2) No learned traveller cares for pitch-and-toss;
 - (3) All Frenchmen walk fast;
 - (4) One who squints is graceful if he is good-humoured;
 - (5) There is no one in the house but Ebenezer;
 - (6) Those who can see always avoid pigs;
 - (7) No discontented person, who has not travelled much, is interesting;
 - (8) People with heads on their shoulders are not irritating, so long as they are not talkative;
 - (9) A squinting Gentile, who is easily taken in, ought not to buy a horse;
 - (10) All old people are discontented invalids;
 - (11) No one of learning, who is very remarkable, travels much;
 - (12) Any one, who has not been educated by a pig, will take to smoking, unless he is threatened with a blunderbuss;
 - (13) All, who are not in the house, have heads on their shoulders;
 - (14) Nothing but a pig can be made into bacon;
 - (15) Those who are learned are always interesting;
 - (16) No Jews are fond of pigs;
 - (17) Bearded persons, who look shy, are in failing health;
 - (18) Ebenezer has a head on his shoulders so long as he is alive;
 - (19) All invalids are fretful and troublesome;
 - (20) When a cab-driver retires from business, he always takes to farming;
 - (21) None but Frenchmen are fat and yet graceful;
 - (22) Gentiles are easily taken in;
 - (23) Those who wear beards always retire from business when their health fails;
 - (24) All fretful creatures that grunt can be made into bacon;
 - (25) A dull person is not troublesome, so long as he has some sense in his head;
 - (26) Fat people, who wish to ride, are always good-humoured;
 - (27) An unlearned person, who avoids pigs, has some sense in his head;
 - (28) Any one, who does not care for pitch-and-toss and is willing to be painted green, is very remarkable;
 - (29) A talkative cab-driver is never a bore;

- (30) All farmers, who wear beards, are fond of pigs;
- (31) A Jew that squints always looks shy;
- (32) No fat pigs walk fast;
- (33) Any one, who looks anxious, is an irritating bore;
- (34) Creatures, that are not pigs but have been educated by pigs, always grunt;
- (35) If Ebenezer took to smoking, it would kill him;
- (36) All unlearned persons are dull;
- (37) Those who have heads on their shoulders always look anxious;
- (38) A blind person, who is easily taken in, may buy a horse, provided he does not wish to ride;
- (39) All pigs are fat.

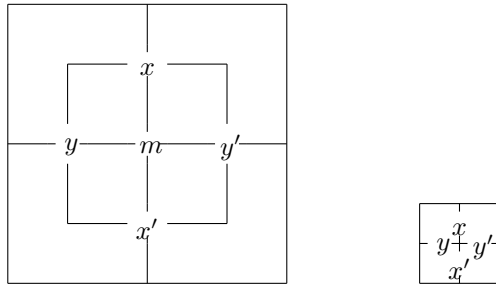
[June, 1887.]

Solutions:

1. All lady-birds are not crocodiles, and all crocodiles are not lady-birds.
2. I don't have any friends.
3. Old dogs are thin or lazy.
4. No captain, who says he has seen the sea-serpent, is readily believed.
5. No letter-carrier with work is not a glutton.
6. No old, but alive, squinting cab-driver, who is not threatened with a blunderbuss, is willing to be painted green. [At least I think that this is correct.]

6.6 Questions in Logic

Source: printed 1887 in two editions, first with more compact layout and table of assigned marks missing; all questions are printed in the left column, with space in the right column for answers, for blocks IV, V, and VI empty diagrams are provided as in the examples, this has not been reproduced here



N.B. The marks, assigned to this paper, are as follows:—

Quest.	Mark.	II. ...	5	IV. (2)	4	VI. (2)	6
I. ...	3	(1)	2	(3)	4	(3)	6
(1)	1	(2)	2	V. (2)	5	(4)	6
(2)	1	(3)	2	(3)	5	(5)	6
(3)	1	III. (1)	3	(4)	5	(6)	6
		(2)	3	(5)	5	(7)	6
		(3)	3	(6)	5	(8)	6

Thus the *maximum* attainable is 101.

I.

Explain the words 'Subject' and 'Predicate.'

Name the Subject, and the Predicate, of each of the following Propostions:—

- (1) No wise man is headstrong and passionate.
- (2) Happy is the man who is content.
- (3) My brothers are all in France.

II.

Explain the words 'Converse' and 'Contradictory.'

Name the Converse, and the Contradictory, of each of the following Propostions:—

- (1) No wise man is headstrong and passionate.
- (2) Some dogs do not bark.
- (3) All beautiful pictures are valuable.

III.

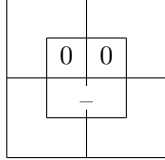
State the Contradictory of each of the following double Propostions:—

- (1) Some of his sons are soldiers and some are not.
- (2) He is deceiving us, or is deceived.
- (3) This book is neither instructive nor amusing.

IV.

Taking the first of the following examples as a model, mark the remaining diagrams.

- (1) All m are x' .



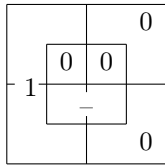
- (2) No y' are m .

- (3) All x' are m' .

V.

Taking the first of the following examples as a model, mark the given Premises on the large diagram: then mark the smaller according to the information given by the larger: then state the conclusion, if any.

- (1) All m are x' ; }
 All m' are y . }



hence

i. e. "No x are y' ."

- (2) No x are m ; }
 No m' are y . }

- (3) No m are x ; }
 All m are y . }

- (4) Some x are m ; }
 All y are m' . }

- (5) All m are x ; }
 Some y are m' . }

- (6) All x' are m ; }
 All y' are m' . }

VI.

Taking the first of the following examples as a model, find the conclusion, if any, of each of the following Pairs of Premises.

- (1) No birds have hoofs; }
 All canaries are birds. }

Let m = birds.

x = hoofed.

y = canaries.

No m are x ; }
 All y are m . }

0	
0	0
1	
0	

hence

0	
1	

\therefore All y are x' .

i. e. All canaries are hoofless.

(2) This book is not interesting; }
 An interesting book makes time go quickly. }

(3) No pigs can dance; }
 All Frenchmen can dance. }

(4) All unhappy grocers frown; }
 My grocer is happy. }

(5) No dictionaries are interesting; }
 Some novels are uninteresting. }

(6) I am tired; }
 Nobody likes dancing a hornpipe when he is tired. }

(7) He called here yesterday; }
 He is no friend of mine. }

(8) John is proud; }
 James is not proud. }

6.7 A Challenge to Logicians

Source: printed 1892

Other versions:

→ 6.8, p. 1010

→ 6.24, p. 1167

Given

1. If some a are b and some not, some c are not d ;
2. If some e are f , and if some g are h , some j are k ;
3. If all l are m , no n are p ;
4. If some c are d and some not, some g are h ;
5. If no e are f , and if some n are p , some j are not k ;
6. If some e are not f , and if some g are not h , some n are p ;
7. If some c are not d , and if some j are k , no e are f ;
8. If some g are not h , and if some j are not k , some l are m ;
9. If some e are not f , and if some n are p , some a are not b ;
10. If some a are b , and if some c are d , some g are not h ;
11. If some c are not d , and if some l are not m , some e are f ;

To Prove

If some a are b , and if some e are not f , no c are d .

*C. L. Dodgson.
Ch. Ch., Oxford,
Oct. 1892*

[N.B. Copies of this paper may be had by applying to Messrs. PARKER,
Broad Street.]

6.8 Eighth Paper on Logic

Source: printed 1892 in two variants, first with minor differences as noted

Examples. Sets of Premisses

1. (1) If all a are b , no c are d ;
 (2) If some a are not b , some c are not d .
 Prove that, if all c are d , no a are b .
2. (1) If some a are b and some not, some c are not d ;
 (2) If some c are d , either some a are b , or some e are not f .
 Prove that, if all c are d , and if all e are f , all a are b .
3. (1) If all a are b , no c are d ;
 (2) If no a are b , and if some c are not d , some e are not f ;
 (3) If some a are b and some not, and if some g are h , no e are f .
 Prove that, if some c are d and some not, and if all e are f ,
 no g are h .
4. (1) If some a are b and some not, some c are not d ;
 (2) If some e are f , and if some g are h , some k are l ;
 (3) If all m are n , no p are q ;
 (4) If some c are d and some not, some g are h ;
 (5) If no e are f , and if some p are q , some k are not l ;
 (6) If some e are not f , and if some g are not h , some p are q ;
 (7) If some c are not d , and if some k are l , no e are f ;
 (8) If some g are not h , and if some k are not l , some m are n ;
 (9) If some e are not f , and if some p are q , some a are not b ;
 (10) If some a are b , and if some c are d , some g are not h ;
 (11) If some c are not d , and if some m are not n , some e are f .
 Prove that, if some a are b , and if some e are not f , no c are
 d .
5. (1) If all a are b , and if some e are f and some not, some c are d ;
 (2) If all e are f , and if some g are h , some a are not b ;
 (3) \sqcup If¹ some c are d and some not, and if some e are not f , \sqcup no
 a are b ;²
 \sqcup (4)³ If some a are not b , and if some e are f , no g are h ;
 (5) If some c are d , and if some g are h , some c are not d .
 Prove that, if some a are b , and if all g are h , no e are f .

Other versions:

→ 6.7, p. 1009

→ 6.24, p. 1167

- \sqcup 6.⁷⁴ Six friends, A, B, C, D, E, F , and their six wives, all walk out daily, in parties of various size and composition, under the following conditions:—

Other version:

→ 6.24, p. 1171

¹If some a are b , and if

²some g are h

³(4) and (5) are swapped in the first version.

⁴

6. (1) Six friends, A, B, C, D, E, F , and their wives, walk out daily, in large or small parties at pleasure.
- (2) When A, B, C take their wives, E accompanies (i. e. is in the same party with) F 's wife;
- (3) When D, E, F take their wives, A accompanies B 's wife;

- (1) When A is with (i. e. is in the same party with) his wife, and B with his, and E with F 's, C is with D 's;
- (2) When A is with his wife, and F with his, and when B is with C 's wife, D is not with E 's;
- (3) When C and D and their wives are in the same party, and when A is not with B 's wife, E is not with F 's;
- (4) When A is with his wife, and D with his, and when B is not with C 's, E is with F 's;
- (5) When E is with his wife, and F with his, and C with D 's, A is not with B 's;
- (6) When B and C and their wives are in the same party, and when E is not with F 's wife, D is with E 's.

Prove that there is, every day, at least *one* couple who are not in the same party.

7. (1) All active old Jews are healthy;
- (2) All indolent magistrates are \neg popular;⁵
- (3) All rich snuff-takers are unhealthy;
- (4) All unpopular magistrates are Jews;
- (5) All young snuff-takers are poor;
- (6) \neg All rich old men,⁶ who are unhealthy, are unpopular;
- (7) All magistrates, who are not Jews, are \neg studious;⁷
- (8) \neg All rich magistrates are talented;⁸
- (9) All talented and popular \neg students⁹ are rich;
- (10) \neg All poor snuff-takers are unpopular;¹⁰
- (11) \neg All unpopular magistrates abstain from snuff;¹¹
- (12) All talented Jews, who are active, are rich.

Prove that no magistrates take snuff.

[Dec. 1892.]¹²

(4) When A , F take their wives, and when B accompanies C 's wife, D accompanies E 's wife;

(5) When A , D take their wives, and when E accompanies F 's wife, B accompanies C 's wife;

(6) When C , F take their wives, and when D accompanies E 's wife, A does *not* accompany B 's wife.

Prove that there is, every day, at least *one* man who does not take his wife.

⁵popular

⁶All old military men

⁷military men

⁸All healthy snuff-takers are early risers

⁹soldiers

¹⁰All young men, who rise late, abstain from snuff

¹¹All magistrates, who are not military men, are active

¹²[Nov., 1892]

6.9 Ninth Paper on Logic

Source: printed 1892

Examples. Sets of Premises

1. (1) There is always sunshine when the wind is in the East;
(2) When it is cold and foggy, my neighbour practises the flute;
(3) When my fire smokes, I set the door open;
(4) When it is cold and I feel rheumatic, I light my fire;
(5) When the wind is in the East and comes in gusts, my fire smokes;
(6) When I keep the door open, I am free from headache;
(7) Even when the sun is shining and it is not cold, I keep my window shut if it is foggy;
(8) When the wind does not come in gusts, and when I have a fire and keep the door shut, I do not feel rheumatic;
(9) Sunshine always brings on fog;
(10) When my neighbour practises the flute, I shut the door, even if I have no headache;
(11) When there is a fog and the wind is in the East, I feel rheumatic.

Prove that, when the wind is in the East, I keep my window shut.

2. A certain Railway-Company has appointed a Committee of Shareholders, under the following conditions:—Directors are *ex-officio* members of it; Bondholders also are admissible; all others are inadmissible.

It is given that:—

- (1) All admissible Shareholders, who are on the Committee and are lame Directors, live in town;
- (2) All short-sighted elderly Shareholders, who are admissible but are not Directors, are on the Committee;
- (3) All elderly Shareholders, living out of town, who are neither Directors nor Members of the Committee, are admissible;
- (4) All lame short-sighted Shareholders, who are admissible and are on the Committee, are Directors.

Prove that no lame elderly Shareholders, who live out of town, are short-sighted.

3. Prove that, if A is greater than B , and if B is greater than C , A is greater than C .
4. (1) All, whom I have taught, except any own sons, know something;
(2) A contented barber is a welcome visitor;
(3) All, except those who are in this house, are scholars;
(4) All the fat men, who have been plucked, are grinning;
(5) Any one, who admires a bald head, is either a brother of mine or is in good spirits;

- (6) Inattentive people know nothing;
- (7) Nobody with a headache likes beating a gong;
- (8) Any one in this house, who makes foolish remarks, is a son of mine;
- (9) None but the young like toffy;
- (10) All barbers wear white aprons;
- (11) A fanciful man, who does not read hard, is always complaining;
- (12) Peter is a candidate for Matriculation;
- (13) All, who do little, except my sons, are contented;
- (14) The candidates for Responsions, who have not been plucked, are all in good spirits;
- (15) No son of mine, who is in good health, is fat;
- (16) All attentive scholars, who are not boys, are boastful;
- (17) My brothers are all barbers;
- (18) Any one, who wears a white apron and can endure a hurdy-gurdy, is worthy of respect;
- (19) No boys dance jigs when at lessons;
- (20) Those of my sons, who are always complaining, are ambitious;
- (21) All the hard-reading men, who have been plucked, are fat;
- (22) All respectable barbers dance jigs;
- (23) Any one, who has a headache, is either attentive or else is one of my old pupils;
- (24) Boastful persons do little;
- (25) All the young, when not at lessons, like beating a gong;
- (26) All, except scholars, make foolish remarks;
- (27) Boys are mischievous;
- (28) All my sons, except Peter, are candidates for Responsions;
- (29) All grinning barbers are in good health;
- (30) All, who are ambitious, read hard;
- (31) A man in good spirits, who does not like beating a gong, cannot endure a hurdy-gurdy;
- (32) All the candidates for Matriculation have been plucked;
- (33) No boaster is a welcome visitor;
- (34) All mischievous persons, except my sons, like toffy;
- (35) Any one, who does not admire a bald head, is a barber;
- (36) All invalids are fanciful.

Prove that no invalid with a headache can endure a hurdy-gurdy.

- 5. (1) One seldom finds a man who is neither a speculator nor bad to lend money to;
- (2) All my friends, who are members of this club, are would-be celebrities;
- (3) A wise man demands a receipt when he pays a bill;
- (4) No handsome man, outside this town, is sure to get into hot water;
- (5) No dancing-master is sought after, if very fat;
- (6) No passionate man is popular, unless he is generous;

- (7) A foolish speculator is on the road to ruin;
- (8) A generous man gets testimonials, if he blows his own trumpet;
- (9) All wise enthusiasts are poetical;
- (10) A man, who dresses in sheep-skins and lives on whale-blubber, is an Arctic voyager;
- (11) A generous man, who is not a dandy, retails other people's jokes;
- (12) A passionate man, who is above taking advice, is sure to get into hot water;
- (13) An ugly man, who gets on badly, is not an eligible suitor;
- (14) All foolish dandies are old;
- (15) All British merchants are economical;
- (16) A man, who has not dreamy eyes, is despised by ladies, unless he is intimate with the Royal Family;
- (17) A man, who blows his own trumpet, is noticed by society;
- (18) All wise noblemen are rich;
- (19) A man does not demand receipts when he pays bills, unless he is getting on badly;
- (20) All the firemen in this town are ugly;
- (21) All uncommon men, who are not would-be celebrities, are members of this club;
- (22) A man, who is noticed by society and gets testimonials, is no fool;
- (23) No economical man is bad to lend money to, unless he lives on whale-blubber;
- (24) No influential man is sought after, unless he is a dancing-master;
- (25) Commoners are eligible suitors, if intimate with the Royal Family;
- (26) All wise dreamy-eyed men are fond of barley-sugar;
- (27) A man without enthusiasm loves walking by moonlight;
- (28) An overbearing man is influential, if he is generous;
- (29) Arctic voyagers, who dress in sheep-skins, are wise;
- (30) No one is economical, unless he is a merchant;
- (31) All would-be celebrities, who retail other people's jokes, blow their own trumpets;
- (32) All the wise men in this town are firemen;
- (33) A man, who is despised by ladies, is sought after, provided he loves walking by moonlight;
- (34) Old dandies retail other people's jokes;
- (35) Men, who pay no bills, get on badly;
- (36) All foolish members of this club are friends of mine;
- (37) No one, who is above taking advice, has influence if he is overbearing;
- (38) A speculator, who is on the road to ruin, is a bad man to lend money to;
- (39) Men with dreamy eyes, who are fond of barley-sugar, are despised by ladies;
- (40) All wise dancing-masters are very fat;
- (41) Rich noblemen are eligible suitors;

- (42) All men, who live on whale-blubber and are above taking advice, dress in sheep-skins;
- (43) All poetical enthusiasts love walking by moonlight;
- (44) All foreign merchants are wise.
- Prove that no passionate overbearing man is popular.

[Nov., 1892.]

6.10 Eighth and Ninth Paper on Logic. Notes

Source: printed 1892

In attempting any of these Problems, the reader is requested to bear in mind the following assumptions, which I have made throughout:—

(1) That the proposition “all x are y ” is the sum total of the *two* propositions “some x are y ” and “no x are not y ”.

(2) That the proposition “no x exist” is the sum total of the *two* propositions “no x are y ” and “no x are not y ”.

(3) That, in setting a Problem, I hold myself free to demand proof of a *less* conclusion than might be logically deduced from the premisses: e. g. if the full logical conclusion were “all x are y ”, I should hold myself free to set, as the Problem, “prove that some x are y ”; or, if the full logical conclusion were “no x exist”, I should hold myself free to set, as the Problem, “prove that no x are y ”. Thus, in Paper 8, Problem 7, if it were possible to prove, from the premisses, that “no magistrates exist”, I should hold myself free to set, as the Problem, “prove that no magistrates take snuff”.

(4) That, in setting a Problem of the form adopted in the first four of Paper 8, where the premisses and the conclusion assert certain *sequences* among certain sub-propositions, but neither assert nor deny any such sub-proposition taken by itself, I hold myself free to demand proof of a *less* result than might be logically deduced from the premisses: e. g. if the full logical conclusion were “if all a are b , and if some c are d , all x are y ”, I should hold myself free to set, as the Problem, “prove that, if all a are b , and if some c are d , some x are y ”; or, if the full logical conclusion were “if all a are b , and if some c are d , no x exist”, I should hold myself free to set, as the Problem, “prove that, if all a are b , and if some c are d , no x are y ”.

[It may be worth while to remark, in reference to the case last mentioned, that it would not be correct to say that the Problem, whose full conclusion is “if all a are b , and if some c are d , no x exist”, is only soluble, (i. e. that its conclusion is only true), if one of the terms be non-existent; for this conclusion merely asserts a *sequence* among the three sub-propositions, “all a are b ”, “some c are d ”, “no x exist”, and the *validity of this sequence* is entirely independent of the truth or falsehood of these sub-propositions taken by themselves. Thus, it would be quite logical, in the case contemplated, to give an additional premiss, viz. “some x exist”, without making the Problem at all less soluble.

Supposing that this additional premiss were given, the *full* reply to this Problem, if set in the form “prove that, if all a are b , and if some c are d , no x exist”, would be “from the given premisses, omitting the last, we have proved the required sequence, viz. “if all a are b , and if some c are d , no x exist”: but it is also given that “some x exist”: hence, if the two propositions, “all a are b ” and “some c are d ”, were simultaneously true, the two propositions, “no x exist” and “some x exist”, would be simultaneously true; which is absurd: hence the two propositions, “all a are b ” and “some c are d ”, cannot be simultaneously true”.

And the *full* reply to this same Problem, if set in the form “prove that, if all a are b , and if some c are d , no x are y ”, would be “from the given premisses, omitting the last, we have proved the sequence “if all a are b , and if some c are d , no x exist”, which contains, as a portion of itself, the required sequence “if all a are b , and if some c are d , no x are y ”: but it is also given that “some x exist”:

hence two results follow:—first, combining the two propositions, “no x are y ” and “some x exist”, into the single proposition “all x are not y ”, we prove the sequence “if all a are b , and if some c are d , all x are not y ”; secondly, we see that, if the two propositions, “all a are b ” and “some c are d ”, were simultaneously true, the two propositions, “no x exist” and “some x exist”, would be simultaneously true; which is absurd: hence the two propositions, “all a are b ” and “some c are d ”, cannot be simultaneously true”.

To make my meaning yet more clear, let me add a “concrete” illustration. Supposing I had set a Problem, having, as its premisses, the rules enacted by an eccentric school-master as to the daily dinner, and, as its conclusion, “prove that, when there is beef and spinach, there are no potatoes”; and supposing it were found that some of the rules led to the conclusion “when there is beef, there are no boiled potatoes”, and that the others led to the conclusion “when there is spinach, there are no unboiled potatoes”, so that the whole set of rules led to the conclusion “when there is beef and spinach, there are no potatoes”: it would not be correct to say that this Problem is only soluble (i. e. that its conclusion is only true) if potatoes never appear on the table: for this conclusion merely asserts a *sequence* among the three propositions, “there is beef”, “there is spinach”, “there are no potatoes”: and, if we were told “there always *are* potatoes on the table”, this fact would not in the least affect *the validity of this sequence*, but would merely prove that the dinner never includes both beef and spinach, but that one or the other of them must always be absent.]

(5) That the proposition “ A is true or B is true” is to be regarded as the contradictory of “ A is false and B is false,” and that this is the *only* state of things which it is meant to *exclude*. Hence it is to be regarded as compatible with any one of the other three possible states of things, viz.:—

- (a) “ A is true and B is false”;
- (b) “ A is false and B is true”;
- (c) “Both are true”.

(6) That two phrases, which merely differ slightly in form, are to be regarded as identical: e. g. “sun-shine always brings on fog” is to be regarded as identical with “when the sun shines it is foggy”: similarly, “I light my fire” and “I have a fire” are to be regarded as identical.

(7) That predicates, one of which denies the other, are to be regarded as contradictory, and as constituting an exhaustive division of the things of which they are predicated: e. g. in using the predicates, “popular” and “unpopular”, of men, I assume that every man is one or the other, so that the two classes, “popular men” and “unpopular men”, constitute an exhaustive division of “men”.

(8) That the proposition “ B is greater than C ” must be assumed to mean that the *magnitude*, residing in B , is greater than that residing in C , and would continue so to be, even if it resided in something other than B . Hence it must be assumed to be equivalent to “every thing, that is not less than B , is greater than C ”.

[N.B. If this assumption be *not* made; i. e. if it be assumed that the proposition “ B is greater than C ” predicates the quality “greater than the magnitude residing in C ”, of the magnitude residing in B , *merely when so residing*, and does *not* predicate any quality of it, when residing in something *other* than B ; it does not seem possible to prove the required conclusion from the data.]

[Nov. 1892.]

6.11 A Disputed Point in Logic (April 1894)

Source: printed 1894, text (especially those parts by “Nemo”) by John Cook Wilson

There are two Propositions, A and B .
Let it be granted that
 If A is true, B is true. (i)
Let there be another Proposition C , such that
 If C is true, then if A is true B is not true. (ii)

NEMO and OUTIS differ about the truth of C .
NEMO says C cannot be true: OUTIS says it may be.

NEMO's Argument

Number (ii) amounts to this:—
 If C is true, then (i) is not true.
But, *ex hypothesi*, (i) is true.
∴ C cannot be true; for the assumption of C involves an absurdity.

OUTIS's Reply

NEMO's two assertions, “if C is true, then (i) is not true” and “the assumption of C involves an absurdity”, are erroneous.

The assumption of C does *not* involve any absurdity; since the two propositions, “if A is true, B is true” and “if A is true, B is not true”, are compatible.

But the assumption of C and A together *does* involve an absurdity; since the two propositions, “ B is true” and “ B is not true”, *are* incompatible.

Hence it follows, not that C is untrue, but that C and A cannot be true together.

NEMO's Rejoinder

OUTIS has wrongly divided protasis and apodosis in (ii).

The absurdity is not the last clause of (ii), “ B is not true”, but *all* that follows the word “then”, i. e. the Hypothetical “If A is true B is not true”; and, by (ii), it is the assumption of C only which causes this absurdity.

In fact, OUTIS has made (ii) equivalent to “If C is true [and if A is true] then if A is true B is not true”. This is erroneous: the words in the brackets in the compound protasis are superfluous, and the remainder is the true protasis which conditions the absurd apodosis, as is evident from the form of (ii) originally given.

[April, 1894.]

6.12 A Disputed Point in Logic. A Concrete Example.

Source: manuscript written 1894

Another manuscript with the same title dated April 11, 1894 is not reproduced here, as it is an early variant of the printed version with Allen, Brown, and Carr.

16/4/94

This island consists of a Northern and a Southern Division; but I am not sure where the boundary-line is.

The Northern Division is Brown's estate: the Southern is mine.

Brown is selling his estate to me; but I do not know whether the sale is completed.

The following propositions are true.

- I. If this field is Brown's, it must be in the Northern Division (for otherwise it would be part of *my* estate).
- II. If the sale is completed, then, if this field is Brown's, it cannot be in the Northern Division (for otherwise it would be *mine* by purchase).

Now let "A is true" = "this field is Brown's"

"B is true" = "this field is in the Northern Division"

"C is true" = "the sale is completed"

Then Propositions I, II, are equivalent to (i), (ii), and the question "can C be true?" is equivalent to "is it possible that the sale is completed?"

Here the 2 Propositions, "if A is true B is true" and "if A is true B is not true," both of them contain a logical sequence. Also they are *compatible*; their combined effect being "A is not true."

Hence, if C is true, A is not true; and *vice versa*, if A is true, C is not true: i. e. A and C cannot be true together.

But there is nothing to prevent C *alone* being true; i. e. it is possible, consistently with I and II, that the sale *may* have been completed.

6.13 A Disputed Point in Logic (May 1894)

Source: printed 1894

There are three men in a house, Allen, Brown, and Carr, who may go in and out, provided that (1) they never go out all at once, and that (2) Allen never goes out without Brown.

Can Carr ever go out?

NEMO and OUTIS differ on this point.

NEMO says he cannot: OUTIS says he can.

The rules, by which the men are bound, may be expressed thus:—

- (1) If Carr goes out, then if Allen goes out Brown does not go out.
- (2) If Allen goes out, Brown goes out.

NEMO's Argument

Number (1) amounts to this:—

If Carr goes out, then (2) is not true.

But, *ex hypothesi*, (2) is true.

∴ Carr cannot go out; for the assumption that he goes out involves an absurdity.

OUTIS's Reply

NEMO's two assertions, "if Carr goes out, then (2) is not true" and "the assumption that Carr goes out involves an absurdity", are erroneous.

The assumption, that Carr goes out, does *not* involve any absurdity; since the two propositions, "if Allen goes out Brown does not go out" and "if Allen goes out Brown goes out", are *compatible*.

But the assumption, that Carr and Allen go out both at once, *does* involve an absurdity; since the two propositions, "Brown does not go out" and "Brown goes out", are *incompatible*.

Hence it follows, not that Carr cannot go out, but that Carr and Allan cannot go out both at once.

NEMO's Rejoinder

OUTIS has wrongly divided protasis and apodosis in (1).

The absurdity is not the last clause of (1), "Brown does not go out", but *all* that follows the word "then", i. e. the Hypothetical "If Allen goes out Brown does not go out"; and, by (1), it is the assumption, that Carr goes out, which causes this absurdity.

In fact, OUTIS has made (1) equivalent to "If Carr goes out [and if Allen goes out] then if Allen goes out Brown does not go out". This is erroneous: the words in the brackets in the compound protasis are superfluous, and the remainder is the true protasis which conditions the absurd apodosis, as is evident from the form of (1) originally given.

[May 1, 1894.]

6.14 A Theorem in Logic

Source: printed 1894

There are three Propositions, A , B , and C .

It is given that

“If A is true, B is true. (i)

If C is true, then if A is true B is not true. (ii)

Number (ii) amounts to this:—

If C is true, then (i) is not true.

But, *ex hypothesi*, (i) is true.

∴ C cannot be true; for the assumption of C involves an absurdity.

This Theorem in Hypotheticals—that the Propositions, numbered (i) and (ii), together prove that C cannot be true—may be illustrated by the following algebraical example:—

Let $ax + (a - b)y + z = 5$; (1)

$bx + z = 6$ (2)

Equation (1) may be stated as a Hypothetical, thus:—

“If ax , $(a - b)y$, and z be added together, the number ‘5’ is obtained”.

Let ‘ A ’ mean “ ax , $(a - b)y$, and z are added together”;

‘ B ’ ” “the number ‘5’ is obtained”;

‘ C ’ ” “ $a = b$ ”.

Then we have

“If A is true B is true”.

Assume that C is true; i. e. that $a = b$.

Then $(ax + (a - b)y + z)$ becomes $(bx + z)$, which, by Equation (2), must *always* = 6.

Hence

“If C is true, then if A is true B is not true”.

Therefore C cannot be true;

i. e. ‘ a ’ cannot = ‘ b ’.

6.15 A Logical Paradox

Source: Mind, July 1894

By Lewis Carroll

“What, *nothing* to do?” said Uncle Jim. “Then come along with me down to Allen’s. And you can just take a turn while I get myself shaved.”

“All right,” said Uncle Joe. “And the Cub had better come too, I suppose?”

The “Cub” was *me*, as the reader will perhaps have guessed for himself. I’m turned *fifteen*—more than three months ago; but there’s no sort of use in mentioning *that* to Uncle Joe; he’d only say “Go to your cubbicle, little boy!” or “Then I suppose you can do cubbic equations?” or some equally vile pun. He asked me yesterday to give him an instance of a Proposition in *A*. And I said “All uncles make vile puns”. And I don’t think he liked it. However, that’s neither here nor there. I was glad enough to go. I *do* love hearing those uncles of mine “chop logic,” as they call it; and they’re desperate hands at it, *I* can tell you!

“That is not a logical inference from my remark,” said Uncle Jim.

“Never said it was,” said Uncle Joe: “it’s a *Reductio ad Absurdum*”.

“An *Illicit Process of the Minor!*” chuckled Uncle Jim.

That’s the sort of way they always go on, whenever *I’m* with them. As if there was any fun in calling me a Minor!

After a bit, Uncle Jim began again, just as we came in sight of the barber’s. “I only hope *Carr* will be at home,” he said. “Brown’s so clumsy. And Allen’s hand has been shaky ever since he had that fever.”

“Carr’s *certain* to be in,” said Uncle Joe.

“I’ll bet you sixpence he *isn’t!*” said I.

“Keep your bets for your betters,” said Uncle Joe. “I mean”—he hurried on, seeing by the grin on my face what a slip he’d made—“I mean that I can *prove* it, logically. It isn’t a matter of *chance*.”

“Prove it *logically!*” sneered Uncle Jim. “Fire away, then! I defy you to do it!”

“For the sake of argument,” Uncle Joe began, “let us assume Carr to be *out*. And let us see what that assumption would lead to. I’m going to do this by *Reductio ad Absurdum*.”

“Of course you are!” growled Uncle Jim. “Never knew any argument of *yours* that didn’t end in some absurdity or other!”

“Unprovoked by your unmanly taunts,” said Uncle Joe in a lofty tone, “I proceed. Carr being out, you will grant that, if Allen is *also* out, *Brown* must be at home?”

“What’s the good of *his* being at home?” said Uncle Jim. “I don’t want *Brown* to shave me! He’s too clumsy.”

“Patience is one of those inestimable qualities——” Uncle Joe was beginning; but Uncle Jim cut him off short.

“*Argue!*” he said. “Don’t *moralise!*”

“Well, but *do* you grant it?” Uncle Joe persisted. “Do you grant me that, if Carr is out, it follows that if Allen is out *Brown must* be in?”

“Of course he must,” said Uncle Jim; “or there’d be nobody to mind the shop.”

“We see, then, that the absence of Carr brings into play a certain Hypothetical, whose *protasis* is ‘Allen is out,’ and whose *apodosis* is ‘Brown is in’. And we see that, so long as Carr remains out, this Hypothetical remains in force?”

“Well, suppose it does. What then?” said Uncle Jim.

“You will also grant me that the truth of a Hypothetical—I mean its *validity* as a logical *sequence*—does not in the least depend on its *protasis* being actually *true*, nor even on its being *possible*. The Hypothetical ‘If you were to run from here to London in five minutes you would surprise people,’ remains true as a *sequence*, whether you can do it or not.”

“I *ca’n’t* do it,” said Uncle Jim.

“We have now to consider *another* Hypothetical. What was that you told me yesterday about Allen?”

“I told you,” said Uncle Jim, “that ever since he had that fever he’s been so nervous about going out alone, he always takes Brown with him.”

“Just so,” said Uncle Joe. “Then the Hypothetical ‘if Allen is out Brown is out’ is *always* in force, isn’t it?”

“I suppose so,” said Uncle Jim. (He seemed to be getting a little nervous, himself, now.)

“Then, if Carr is out, we have *two* Hypotheticals, ‘if Allen is out Brown is *in*’ and ‘If Allen is out Brown is *out*,’ in force at once. And two *incompatible* Hypotheticals, mark you! They *ca’n’t possibly* be true together!”

“*Ca’n’t* they?” said Uncle Jim.

“How *can* they?” said Uncle Joe. “How *can* one and the same *protasis* prove two contradictory *apodoses*? You grant that the two *apodoses*, ‘Brown is *in*’ and ‘Brown is *out*,’ are contradictory, I suppose?”

“Yes, I grant *that*,” said Uncle Jim.

“Then I may sum up,” said Uncle Joe. “If Carr is out, these two Hypotheticals are true together. And we know that they *cannot* be true together. Which is absurd. Therefore Carr *cannot* be out. There’s a nice *Reductio ad Absurdum* for you!”

Uncle Jim looked thoroughly puzzled; but after a bit he plucked up courage, and began again. “I don’t feel at all clear about that *incompatibility*. Why shouldn’t those two Hypotheticals be true together? It seems to me that would simply prove ‘Allen is in’. Of course, it’s clear that the *apodoses* of those two Hypotheticals are incompatible—‘Brown is in’ and ‘Brown is out’. But why shouldn’t we put it like this? If Allen is out Brown is *out*. If Carr and Allen are *both* out, Brown is *in*. Which is absurd. Therefore Carr and Allen *ca’n’t* be *both* of them out. But, so long as Allen is *in*, I don’t see what’s to hinder Carr from going *out*.”

“My dear, but most illogical, brother!” said Uncle Joe. (Whenever Uncle Joe begins to “dear” you, you may make pretty sure he’s got you in a cleft stick!) “Don’t you see that you are wrongly dividing the *protasis* and the *apodosis* of that Hypothetical? Its *protasis* is simply ‘Carr is out’; and its *apodosis* is a sort of sub-Hypothetical, ‘If Allen is out, Brown is *in*’. And a most absurd *apodosis* it is, being hopelessly incompatible with that other Hypothetical, that we know is *always* true, ‘If Allen is out, Brown is *out*’. And it’s simply the assumption ‘Carr is out’ that has caused this absurdity. So there’s only *one* possible conclusion. *Carr is in!*”

How long this argument *might* have lasted, I haven’t the least idea. I believe *either* of them could argue for six hours at a stretch. But, just at this moment,

we arrived at the barber's shop; and, on going inside, we found——

Note

The paradox, of which the foregoing paper is an ornamental presentment, is, I have reason to believe, a very real difficulty in the Theory of Hypotheticals. The disputed point has been for some time under discussion by several practised logicians, to whom I have submitted it; and the various and conflicting opinions, which my correspondence with them has elicited, convince me that the subject needs further consideration, in order that logical teachers and writers may come to some agreement as to what Hypotheticals *are*, and how they ought to be treated.

The original dispute, which arose, more than a year ago, between two students of Logic, may be symbolically represented as follows:—

There are two Propositions, *A* and *B*.

It is given that

- (1) If *C* is true, then, if *A* is true, *B* is not true;
- (2) If *A* is true, *B* is true.

The question is, can *C* be true?

The reader will see that if, in these two Propositions, we replace the letters, *A*, *B*, *C* by the names Allen, Brown, Carr, and the words “true” and “not true” by the words “out” and “in” we get

- (1) If Carr is out, then, if Allen is out, Brown is in;
- (2) If Allen is out, Brown is out.

These are the very two Propositions on which “Uncle Joe” builds his argument.

Several very interesting questions suggest themselves in connexion with this point, such as

Can a Hypothetical, whose protasis is false, be regarded as legitimate?

Are two Hypotheticals, of the forms “If *A* then *B*” and “If *A* then not-*B*,” compatible?

What difference in meaning, if any, exists between the following Propositions?

- (1) *A*, *B*, *C*, cannot be all true at once;
- (2) If *C* and *A* are true, *B* is not true;
- (3) If *C* is true, then, if *A* is true, *B* is not true;
- (4) If *A* is true, then, if *C* is true, *B* is not true.

The following concrete form of the paradox has just been sent me, and may perhaps, as embodying *necessary* truth, throw fresh light on the question.

Let there be three lines, *KL*, *LM*, *MN*, forming, at *L* and *M*, equal acute angles on the same side of *LM*.

Let “*A*” mean “The points *K* and *N* coincide, so that the three lines form a triangle”.

Let “*B*” mean “The triangle has equal base-angles”.

Let “*C*” mean “The lines *KL* and *MN* are unequal”.

Then we have

- (1) If *C* is true, then, if *A* is true, *B* is not true;
- (2) If *A* is true, *B* is true.

The second of these Propositions needs no proof; and the first is proved in Euc., i, 6, though of course it may be questioned whether it fairly represents Euclid's meaning.

I greatly hope that some of the readers of MIND who take an interest in logic will assist in clearing up these curious difficulties.

6.16 A Logical Puzzle

Source: printed 1894

There are three Propositions, A , B , and C .

It is given that

- “If A is true, B is true. (i)
- If C is true, then if A is true B is not true. (ii)

NEMO and OUTIS differ about the truth of C .

NEMO says C cannot be true: OUTIS says it may be.

NEMO’s Argument

Number (ii) amounts to this:—

If C is true, then (i) is not true.

But, *ex hypothesi*, (i) is true.

∴ C cannot be true; for the assumption of C involves an absurdity.

OUTIS’s Reply

NEMO’s two assertions, “if C is true, then (i) is not true” and “the assumption of C involves an absurdity”, are erroneous.

The assumption of C alone does *not* involve any absurdity, since the two Hypotheticals, “if A is true, B is true” and “if A is true, B is not true”, are *compatible*; i. e. they can be true together, in which case A cannot be true.

But the assumption of C and A together does involve an absurdity; since the two Propositions, “ B is true” and “ B is not true”, are *incompatible*.

Hence it follows, not that C , taken by itself, cannot be true, but that C and A cannot be true together.

NEMO’s Rejoinder

OUTIS has wrongly divided Protasis and Apodosis in (ii).

The absurdity is not the last clause of (ii), “ B is not true”, but *all* that follows the word “then”, i. e. the Hypothetical “If A is true B is not true”; and, by (ii), it is the assumption of C only which causes this absurdity.

In fact, OUTIS has made (ii) equivalent to “If C is true [and if A is true] then if A is true B is not true”. This is erroneous: the words in the brackets in the compound Protasis are superfluous, and the remainder is the true Protasis which conditions the absurd Apodosis, as is evident from the form of (ii) originally given.

This Theorem in Hypotheticals—that the Propositions, numbered (i) and (ii), together prove that C cannot be true—may be illustrated by the following algebraical example:—

$$\text{Let } ax + (a - b)y + z = 5; \dots\dots\dots (1)$$

$$bx + z = 6 \dots\dots\dots (2)$$

Equation (1) may be stated as a Hypothetical, thus:—

“If ax , $(a - b)y$, and z be added together, the number ‘5’ is obtained”.

Let ‘ A ’ mean “ ax , $(a - b)y$, and z are added together”;

‘ B ’ ” “the number ‘5’ is obtained”;

‘ C ’ ” “ $a = b$ ”.

Then we have

“If A is true B is true”.

Assume that C is true; i. e. that $a = b$.

Then $(ax + (a - b)y + z)$ becomes $(bx + z)$, which, by Equation (2), must *always* = 6.

Hence

“If C is true, then if A is true B is not true”.

Therefore C cannot be true;

i. e. ‘ a ’ cannot = ‘ b ’.

OUTIS’s Second Reply

This reply will include (α) a proof that “NEMO’s Argument” is self-destructive; (β) a proof that his algebraical example fails, owing to its not correctly representing the data; (γ) a proof that, when corrected, it illustrates OUTIS’s contention, viz. that Hypotheticals (i) and (ii) prove, not that C , *taken by itself*, cannot be true, but that C and A cannot be true *together*; (δ) a simple proof of the *true* outcome of these two Hypotheticals.

(α)

Let us consider the Trio of Hypotheticals (which we will call (K), (L), and (M))

(K) “If X is true, Y is not true”.

(L) “If X is true, Y is true”.

(M) “If X is not true, Y is true”

It will not be disputed that (L) and (M), taken together, are equivalent to the Categorical (which we will call ‘ N ’) “ Y is true.” Hence the above Trio of Hypotheticals is equivalent to the Hypothetical and Categorical

(K) “If X is true, Y is not true”.

(N) “ Y is true”.

For this Trio (or its equivalent Pair) two different interpretations might be proposed, viz.

“(K) and (L) cannot be true together. Hence, (K), (L), and (M) cannot be true together.”

“(K) and (N) can be true together; that is, (K), (L), and (M) can be true together.”

These interpretations are *incompatible*.

Now, when NEMO says “the assumption of C involves an absurdity”, the “absurdity”, to which he alludes, is the *simultaneous truth* of the two Propositions “If A is true B is true” and “If A is true B is not true”.

These two Propositions are Hypotheticals of the forms (L) and (K): and, in declaring that the assumption of their simultaneous truth involves an absurdity, NEMO virtually declares that they *cannot be true together*.

Here, then, he adopts the *first* interpretation of the Trio of Hypotheticals, (K), (L), and (M).

Again, when he says “ $\therefore C$ cannot be true”, the premisses, from which he deduces this conclusion, are the two Propositions “If C is true, then (i) is not true. But, *ex hypothesi*, (i) is true”.

These two Propositions are a Hypothetical and a Categorical of the forms (*K*) and (*N*): and, in deducing a conclusion from them, regarded as premisses, NEMO virtually declares that they *can be true together*.

Here, then, he adopts the *second* interpretation of the Trio of Hypotheticals, (*K*), (*L*), and (*M*).

Thus, he has adopted, in the course of one and the same argument, *two incompatible* interpretations of this Trio.

Hence, “NEMO’s Argument” is self-destructive.

(β)

Let us now examine NEMO’s algebraical example.

He gives us Equations (1) and (2) as *always true*.

Hence Equation (1) remains true, even when $a = b$.

Hence his second Hypothetical is incomplete: it ought to be “If *C* is true, then if *A* is true *B* is (by Equation 1) true, but (by Equation 2) not true.”

Hence his algebraical example fails, owing to its not correctly representing the data.

(γ)

The two Hypotheticals, when *fully* stated, run thus:—

“If *A* is true, *B* is (by Equation 1) true”;

“If *C* is true, then if *A* is true *B* is (by Equation 1) true, but (by Equation 2) not true.”

These two may be stated as *three* Hypotheticals, viz.

“If *A* is true, *B* is (by Equation 1) true”;

“If *C* is true, then if *A* is true *B* is (by Equation 1) true;

“If *C* is true, then if *A* is true *B* is (by Equation 2) not true.”

The second of these we may omit, as it leads to no result. The other two may be more briefly stated thus:—

“If *A* and (1) are true, *B* is true;

If *C* and *A* and (2) are true, *B* is not true”.

And the correct conclusion is, not that *C*, *taken by itself*, cannot be true, but that *C*, *A*, (1), and (2) cannot all be true *together*.

But *A* is *always possible*; so that we may, if we like, assume it is *always true*, and not mention it.

The two Hypotheticals may now be written thus:—

“If (1) is true, *B* is true;

If *C* and (2) are true, *B* is not true”.

Therefore *C* and (1) and (2) cannot all be true *together*, though any *two* of them may be true *by themselves*.

Thus, if *C* and (1) are true, then (2) cannot be true: that is, if $a = b$ (so that Equation (1) becomes “ $bx + z = 5$ ”), and if Equation 1 is true, and if $bx + z = 6$, then it cannot be true that

$$ax + (a - b)y + z = 5.$$

Thirdly, if (1) and (2) are true, then C cannot be true: that is, if *both* the given Equations are true, then a cannot $= b$.

This algebraical example might easily mislead an unwary reader, from the fact that its Conclusion, " C cannot be true," is (on the assumption that Equations 1 and 2 are always true) a true one. The fallacy lies in prefixing the word "Therefore," and thereby asserting that this Conclusion *follows from the two Hypotheticals*. This is *not* the case: the *real* reason, why C cannot be true, is that *it is incompatible with Equations 1 and 2* (by subtraction we get $(a-b)(x+y) = -1$, whence it follows that $(a-b)$ cannot $= 0$; i. e. that a cannot $= b$: the two Hypotheticals, by themselves, do *not* prove it.

(δ)

The *true* outcome, of the original Hypotheticals numbered (i) and (ii), may be very simply exhibited as follows:—

Let ' t ' stand for "true", and ' f ' for "false".

There are 8 conceivable combinations of A , B , and C , with regard to truth and falsity: these are as follows:—

	1.	2.	3.	4.	5.	6.	7.	8.
$A.$	t	t	t	t	f	f	f	f
$B.$	t	t	f	f	t	t	f	f
$C.$	t	f	t	f	t	f	t	f

Of these, Nos. 3 and 4 are forbidden by (i), and No. 1 is forbidden by (ii).

The other 5 combinations are *possible*; and *two* of them, viz. Nos. 5 and 7, contain the condition " C is true", which NEMO believes to be *impossible*.

[September, 1894.]

6.17 Questions for Solution: 14122

Source: The Educational Times, February 1899

A solution by H. W. Curjel was published in September 1899, see

<https://archive.org/details/educationaltimes52educ/page/386>, by H. MacColl
in June 1900, see

<https://archive.org/details/educationaltimes53educ/page/258>

14122. (The late “LEWIS CARROLL.”)—It is given that (1), if C is true, then, if A is true, B is not true; and (2), if A is true, B is true. Can C be true? What difference in meaning, if any, exists between the following propositions?—
(1) A, B, C cannot be all true at once; (2) if C and A are true, B is not true;
(3) if C is true, then, if A is true, B is not true.

6.18 Symbolic Logic. Specimen-Syllogisms. Premises

Source: printed 1894 in two editions, first with minor differences as noted

1. Nothing intelligible ever puzzles *me*;
Logic puzzles me.
2. Nothing, that is nice, need be shunned;
Some kinds of jam are nice.
3. Warmth relieves pain;
Nothing, that does *not* relieve pain, is useful in toothache.
4. No birds, except peacocks, are proud of their tails;
Some birds, that are proud of their tails, cannot sing.
5. All those bonbons are chocolate-creams;
All these bonbons are delicious.
6. No one, when exercising self-control, fails to keep his temper;
Some persons, when contradicted, keep their tempers.
7. Nothing in this book interest me;
This book consists entirely of easy riddles.
8. All clever people are popular;
All good-tempered people are popular.
9. No portrait of a lady, that makes her simper or scowl, is satisfactory.
No photograph of a lady ever fails to make her simper or scowl.
10. Those, who are fully occupied, never talk about their grievances;
Discontented people are always talking about their grievances.
11. No tall men have woolly hair;
All niggers have woolly hair.
12. Your course is always honest;
Your course is always the best policy.
13. All is not gold that glitters;
Glittering things dazzle the eyes.
14. I don't believe *everything* he tells me;
I believe he is planning to go abroad.
- 15.¹ All dogs of mine, that are not black, are valuable;
Some of my greyhounds have won prizes.
16. (1) No cats sing well;
(2) None of my household get any cream, unless they sing well;
(3) All cats get cream.
17. (1) All boots are leather;

Other version:
→ 6.4, p. 998

¹This is missing in the first edition, the following have numbers 15 to 17.

- (2) Anything made of buttered toast is good to eat;
 - (3) No leather boots are good to eat.
18. (1) No pins of mine, that will bend, are useful;
- (2) Nothing made of steel will bend;
 - (3) All my useless pins are made of steel.⁷²
19. (1) Ungraceful creatures are thoughtful when left alone;
- (2) No elephants are graceful;
 - (3) When one is disliked, one is left alone;
 - (4) Thoughtful elephants are universally liked;
 - (5) Ungraceful creatures, who are not fond of apples, are disliked.
20. (1) No invalids are unromantic civilians;
- (2) All architects are dreamy enthusiasts;
 - (3) No lovers are unhappy;
 - (4) No military men are dreamy;
 - (5) All romantic enthusiasts are in love;
 - (6) All who live on muffins are unhappy invalids.

[Feb., 1894]

²In the first edition followed by:

18. (1) All rolling stones are restless;
- (2) All stones are heavy;
 - (3) All restless things, that gather moss, are light.

6.19 Symbolic Logic. Specimen-Syllogisms. (2nd Ed.) Conclusions

Source: printed 1894

1. Logic is unitelligible.
2. Some kinds of jam need not be shunned.
3. [*No conclusion.*]
4. Some peacocks cannot sing.
5. Some chocolate-creams are delicious.
6. [*No conclusion.*]
7. Easy riddles do not interest me.¹
8. [*No conclusion.*]
9. No photograph of a lady is satisfactory.
10. Those, who are fully occupied, are contented; and discontented people are not fully occupied.
11. All niggers are short.
12. Honesty is sometimes the best policy.
13. Some things, that dazzle the eyes, are not gold.
14. The assertion “the only thing he has told me is that he is planning to go abroad” is false.
15. The assertion “I have no black dogs that have won prizes and no valuable greyhounds” is false.
16. Cats are forbidden in my house.
17. Boots are not made of buttered toast; and things made of buttered toast are not boots.
18. All my pins are unbendable.
19. Ungraceful creatures, who are not fond of apples, are not elephants.²
20. Architects do not live on muffins; and those, who live on muffins, are not architects.

[Feb., 1894]

¹This should be: Some easy riddles do not interest me.

²This should be: Elephants are fond of apples; and creatures, who are not fond of apples, are not elephants.

6.20 Symbolic Logic. Questions. I

Source: printed 1894

1. Explain the words "Logic" and "Proof".
2. Why do we need Logic?
3. Explain "Proposition". State the 3 ordinary forms, using x and y . And give an example of each kind, of your own invention.
4. Explain "Division", and "Exhaustive Division".
5. Break up each of the following Propositions under the 4 headings "Sign of Quantity", "Subject", "Copula", "Predicate".

- (a) Some of us cannot understand Logic.
- (b) I don't like Logic!
- (c) No cheap goods last long.

6. In Diagram $\begin{array}{|c|c|} \hline x & y \\ \hline y & x \\ \hline \end{array}$, what Propositions would be represented by $\begin{array}{|c|c|} \hline 0 & \\ \hline \end{array}$, $\begin{array}{|c|c|} \hline & 1 \\ \hline \end{array}$, $\begin{array}{|c|c|} \hline 0 & 1 \\ \hline \end{array}$, $\begin{array}{|c|c|} \hline 0 & 0 \\ \hline \end{array}$?

7. Represent (drawing a diagram for each),

- (a) No x are not- y .
- (b) All x are y .
- (c) Some x exist.
- (d) Some books are bound and some are not. (x = "books"; y = "bound books".)
- (e) All my friends are unkind. (x = "my friends"; y = "kind friends".)
- (f) I have no friends.

8. State the Contradictories of (a), (c), (f), in Question 7.

[Feb., 1894]

6.21 Symbolic Logic. Questions. II

Source: printed 1894

1. Describe the 3 ways in which we get knowledge.
2. Which of the following Divisions are 'Cross', 'Exhaustive', 'Incomplete', 'Dichotomy'.

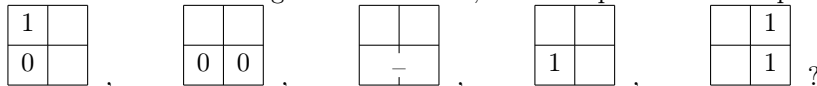
- (1) Dividing the girls in a certain School into 'over 10', '10', 'under 10'.
- (2) Dividing them into 'those whose names are one syllable', 'those whose names are two syllables'.
- (3) Dividing them into 'those who learn Arithmetic', 'those who learn History'.
- (4) Dividing them into 'not more than 5 feet high', 'not less than 5 feet high'.
- (5) Dividing them into 'those who are in this room', 'those who are not in this room'.
- (6) Dividing them into 'those who can sing and dance', 'those who can sing but cannot dance', 'those who can dance but cannot sing', 'those who can neither sing nor dance'.

3. State the following as Logical Propositions:—

- (a) Over-eating injures the health.
- (b) Some friends called here yesterday.
- (c) Nobody likes to be contradicted.

4. Name the 'Sign of Quantity', and the 'Predicate' of (a), the 'Copula' of (b), and the 'Subject' of (c).

5. In the lower Diagram on the card, what Propositions are represented by



6. Represent (drawing a diagram for each):—

- (a) Some things are neither x nor y .
- (b) All not- x are y .
- (c) No not- y exist.
- (d) Mary is ill. (Univ. = 'people'; x = "Mary"; y = "ill".)
- (e) There is nothing nice for dinner. (Univ. = "food"; x = "provided for dinner"; y = "nice".)
- (f) There is nothing for dinner!

7. Break up each of the Double Propositions, (d) and (f), into two single ones.

[Feb., 1894]

6.22 What the Tortoise Said to Achilles

Source: Mind, April 1895

By Lewis Carroll

Achilles had overtaken the Tortoise, and had seated himself comfortably on its back.

“So you’ve got to the end of our race-course?” said the Tortoise. “Even though it *does* consist of an infinite series of distances? I thought some wiseacre or other had proved that the thing couldn’t be done?”

“It *can* be done,” said Achilles. “It *has* been done! *Solvitur ambulando*. You see the distances were constantly *diminishing*; and so—”

“But if they had been constantly *increasing*?” the Tortoise interrupted. “How then?”

“Then I shouldn’t be *here*,” Achilles modestly replied; “and *you* would have got several times round the world, by this time!”

“You flatter me—*flatten*, I mean,” said the Tortoise; “for you *are* a heavy weight, and *no* mistake! Well now, would you like to hear of a race-course, that most people fancy they can get to the end of in two or three steps, while it *really* consists of an infinite number of distances, each one longer than the previous one?”

“Very much indeed!” said the Grecian warrior, as he drew from his helmet (few Grecian warriors possessed *pockets* in those days) an enormous note-book and a pencil. “Proceed! And speak *slowly*, please! *Short-hand* isn’t invented yet!”

“That beautiful First Proposition of Euclid!” the Tortoise murmured dreamily. “You admire Euclid?”

“Passionately! So far, at least, as one *can* admire a treatise that wo’n’t be published for some centuries to come!”

“Well, now, let’s take a little bit of the argument in that First Proposition—just *two* steps, and the conclusion drawn from them. Kindly enter them in your note-book. And, in order to refer to them conveniently, let’s call them *A*, *B*, and *Z*:—

- (A) Things that are equal to the same are equal to each other.
- (B) The two sides of this Triangle are things that are equal to the same.
- (Z) The two sides of this Triangle are equal to each other.

“Readers of Euclid will grant, I suppose, that *Z* follows logically from *A* and *B*, so that any one who accepts *A* and *B* as true, *must* accept *Z* as true?”

“Undoubtedly! The youngest child in a High School—as soon as High Schools are invented, which will not be till some two thousand years later—will grant *that*.”

“And if some reader had *not* yet accepted *A* and *B* as true, he might still accept the *sequence* as a *valid* one, I suppose?”

“No doubt such a reader might exist. He might say ‘I accept as true the Hypothetical Proposition that, *if* *A* and *B* be true, *Z* must be true; but I *don’t* accept *A* and *B* as true.’ Such a reader would do wisely in abandoning Euclid, and taking to football.”

“And might there not *also* be some reader who would say ‘I accept *A* and *B* as true, but I *don’t* accept the Hypothetical’?”

“Certainly there might. *He*, also, had better take to football.”

“And *neither* of these readers,” the Tortoise continued, “is *as yet* under any logical necessity to accept *Z* as true?”

“Quite so,” Achilles assented.

“Well, now, I want you to consider *me* as a reader of the *second* kind, and to force me, logically, to accept *Z* as true.”

“A tortoise playing football would be—” Achilles was beginning

“—an anomaly, of course,” the Tortoise hastily interrupted. “Don’t wander from the point. Let’s have *Z* first, and football afterwards!”

“I’m to force you to accept *Z*, am I?” Achilles said musingly. “And your present position is that you accept *A* and *B*, but you *don’t* accept the Hypothetical—”

“Let’s call it *C*,” said the Tortoise.

“—but you *don’t* accept

(*C*) If *A* and *B* are true, *Z* must be true.”

“That is my present position,” said the Tortoise.

“Then I must ask you to accept *C*.”

“I’ll do so,” said the Tortoise, “as soon as you’ve entered it in that note-book of yours. What else have you got in it?”

“Only a few memoranda,” said Achilles, nervously fluttering the leaves: “a few memoranda of—of the battles in which I have distinguished myself!”

“Plenty of blank leaves, I see!” the Tortoise cheerily remarked. “We shall need them *all!*” (Achilles shuddered.) “Now write as I dictate:—

(*A*) Things that are equal to the same are equal to each other.

(*B*) The two sides of this Triangle are things that are equal to the same.

(*C*) If *A* and *B* are true, *Z* must be true.

(*Z*) The two sides of this Triangle are equal to each other.”

“You should call it *D*, not *Z*,” said Achilles. “It comes *next* to the other three. If you accept *A* and *B* and *C*, you *must* accept *Z*.”

“And why *must* I?”

“Because it follows *logically* from them. If *A* and *B* and *C* are true, *Z* *must* be true. You don’t dispute *that*, I imagine?”

“If *A* and *B* and *C* are true, *Z* *must* be true,” the Tortoise thoughtfully repeated. “That’s *another* Hypothetical, isn’t it? And, if I failed to see its truth, I might accept *A* and *B* and *C*, and *still* not accept *Z*, mightn’t I?”

“You might,” the candid hero admitted; “though such obtuseness would certainly be phenomenal. Still, the event is *possible*. So I must ask you to grant *one* more Hypothetical.”

“Very good. I’m quite willing to grant it, as soon as you’ve written it down. We will call it

(*D*) If *A* and *B* and *C* are true, then *Z* must be true.

Have you entered that in your note-book?”

“I *have!*” Achilles joyfully exclaimed, as he ran the pencil into its sheath. “And at last we’ve got to the end of this ideal race-course! Now that you accept *A* and *B* and *C* and *D*, *of course* you accept *Z*.”

“Do I?” said the Tortoise innocently. “Let’s make that quite clear. I accept *A* and *B* and *C* and *D*. Suppose I *still* refused to accept *Z*?”

“Then Logic would take you by the throat, and *force* you to do it!” Achilles triumphantly replied. “Logic would tell you ‘You ca’n’t help yourself. Now that you’ve accepted *A* and *B* and *C* and *D*, you *must* accept *Z!*’ So you’ve no choice, you see.”

“Whatever *Logic* is good enough to tell me is worth *writing down*,” said the Tortoise. “So enter it in your book, please. We will call it

(*E*) If *A* and *B* and *C* and *D* are true, *Z* must be true. Until I’ve granted *that*, of course I needn’t grant *Z*. So it’s quite a *necessary* step, you see?”

“I see,” said Achilles; and there was a touch of sadness in his tone.

Here the narrator, having pressing business at the Bank, was obliged to leave the happy pair, and did not again pass the spot until some months afterwards. When he did so, Achilles was still seated on the back of the much-enduring Tortoise, and was writing in his note-book, which appeared to be nearly full. The Tortoise was saying “Have you got that last step written down? Unless I’ve lost count, that makes a thousand and one. There are several millions more to come. And *would* you mind, as a personal favour, considering what a lot of instruction this colloquy of ours will provide for the Logicians of the Nineteenth Century—*would* you mind adopting a pun that my cousin the Mock-Turtle will then make, and allowing yourself to be re-named *Taught-U*s?”

“As you please!” replied the weary warrior, in the hollow tones of despair, as he buried his face in his hands. “Provided that *you*, for *your* part, will adopt a pun the Mock-Turtle never made, and allow yourself to be re-named *A Kill-Ease*!”

6.23 Logical Nomenclature

Source: printed 1895, in two variants

Desiderata

Variant I

In each of the following sets of words, printed in italics and enclosed in brackets, the Reader is requested to score the one which he thinks most appropriate, or to insert one of his own invention, if he can think of one better than any of them.

(1)

The name “soldier” represents, equally well, each of a number of different objects of thought; and, when we hear it used, we are not certain what particular object of thought the speaker refers to. Such a name may be called [*collective, common, general, indefinite, etc.*]

(2)

The name “London”, or the name “soldiers” (when used in the sense of “*all soldiers*”, as in the Proposition “Soldiers are men”), represents only *one* object of thought; and, when we hear it used, we are certain what particular object of thought the speaker refers to. Such a name may be called [*definite, individual, particular, singular, etc.*]

(3)

Suppose that a certain valid argument has “No *A* are *B*” for its Conclusion; but that this Conclusion is *false*, one of the Premisses also being *false*.

(1) We may say

“The Conclusion “No *A* are *B*” is [*consequent, correct, lawful, legal, legitimate, logical, right, valid, etc.*] but *false*’.

(2) Again, we may say

“The Conclusion “Some *A* are *B*” is [*inconsequent, incorrect, unlawful, illegal, illegitimate, illogical, wrong, invalid, etc.*] though *true*’.

(4)

Suppose that a certain valid argument has the double Proposition “No *A* are *B*, and no *C* are *D*” for its Conclusion.

(3) We may say

“The Conclusion “No *A* are *B*, and no *C* are *D*” is [*consequent, etc.*] and [*complete, full, perfect, etc.*]’.

(4) Again, we may say

“The Conclusion “No *A* are *B*” is [*consequent, etc.*] but [*incomplete, imperfect, deficient, defective, etc.*]’.

For each of the following Fallacies a short and expressive Name is desired.

(1)

“Schoolboys are numerous;
My sons are not numerous.
∴ My sons are not schoolboy.”

(2)

“Books in my bookcase are books in my room. Hence, to diminish the number of books in my bookcase is to diminish the number of books in my room.”

(3)

“He who is most hungry eats most;
He who eats most is least hungry.
∴ He who is most hungry is least hungry.”

(4)

“So your picture is No. 1 in the Catalogue, is it? Well, *that* doesn’t prove it to be the best in the Exhibition!” [This *insinuates*, without actually saying it, that the artist had assumed that the mark ‘No. 1’ *did* prove his picture to be the best. It might perhaps be called ‘*The Fallacy of denying what has not been asserted*’.]

June, 1895

Variant II

In each of the following sets of words, printed in italics and enclosed in brackets, the Reader is requested to score the one which he thinks most appropriate, or to insert one of his own invention, if he can think of one better than any of them.

(1)

A name, which represents, equally well, each of a number of different objects of thought (e. g. “soldier”), may be called [*collective, common, general, indefinite, etc.*]

(2)

A name, which represents only *one* object of thought (e. g. “the sun”), may be called [*definite, individual, particular, singular, etc.*]

(3)

Under which category would you place the following names, “our soldiers”, “our army”, “Frenchmen”, “manhood”?

(4)

The Conclusion of a valid argument may be called [*consequent, correct, lawful, legal, legitimate, logical, right, valid, etc.*]

(5)

Would you prefix the adverb “*formally*”?

(6)

A Proposition, offered as the Conclusion of an invalid argument, may be called [*inconsequent, incorrect, unlawful, illegal, illegitimate, illogical, wrong, invalid, etc.*]

(7)

When a Proposition, offered as the Conclusion of a valid argument, contains the *whole* of its Conclusion, it may be called [*complete, full, perfect, etc.*]

(8)

When it contains only a *portion* of its Conclusion, it may be called [*incomplete, imperfect, deficient, defective, etc.*]

June, 1895.

6.24 Symbolic Logic. Part I: Elementary

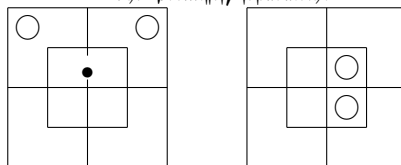
Source: Symbolic Logic. Part I: Elementary; fourth edition (one chapter currently not included)

Many syllogisms from Book VIII, Chapter I, § 5 and § 7 are reprinted from earlier works (especially *The Game of Logic*, Chapter IV, and *Symbolic Logic. Specimen-Syllogisms*), but in a new order, so linking the other version is not possible.

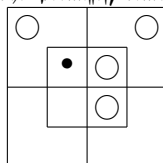
A Syllogism worked out.

That story of yours, about your once meeting the sea-serpent, always sets me off yawning;
I never yawn, unless when I'm listening to something totally devoid of interest.

The Premises, separately.



The Premises, combined.



The Conclusion.



That story, of yours, about your once meeting the sea-serpent, is totally devoid of interest.

Book I. Things and Their Attributes.

Chapter I. Introductory.

The Universe contains 'Things.'

[For example, "I," "London," "roses," "redness," "old English books," "the letter which I received yesterday."]

Things have 'Attributes.'

[For example, "large," "red," "old," "which I received yesterday."]

One Thing may have many Attributes; and one Attribute may belong to many Things.

[Thus, the Thing "a rose" may have the Attributes "red," "scented," "full-blown," &c.; and the Attribute "red" may belong to the Things "a rose," "a brick," "a ribbon," &c.]

Any Attribute, or any Set of Attributes, may be called an 'Adjunct.'

[This word is introduced in order to avoid the constant repetition of the phrase "Attribute or Set of Attributes."]

Thus, we may say that a rose has the Attribute “red” (or the Adjunct “red,” whichever we prefer); or we may say that it has the Adjunct “red, scented and full-blown.”]

Chapter II. Classification.

‘Classification,’ or the formation of Classes, is a Mental Process, in which we imagine that we have put together, in a group, certain Things. Such a group is called a ‘**Class**.’

This Process may be performed in three different ways, as follows:—

(1) We may imagine that we have put together all Things. The Class so formed (i. e. the Class “Things”) contains the whole Universe.

(2) We may think of the Class “Things,” and may imagine that we have picked out from it all the Things which possess a certain Adjunct *not* possessed by the whole Class. This Adjunct is said to be ‘**peculiar**’ to the Class so formed. In this case, the Class “Things” is called a ‘**Genus**’ with regard to the Class so formed: the Class, so formed, is called a ‘**Species**’ of the Class “Things”: and its peculiar Adjunct is called its ‘**Differentia**’.

As this Process is entirely *Mental*, we can perform it whether there *is*, or *is not*, an *existing* Thing which possesses that Adjunct. If there *is*, the Class is said to be ‘**Real**’; if not, it is said to be ‘**Unreal**’, or ‘**Imaginary**.’

[For example, we may imagine that we have picked out, from the Class “Things,” all the Things which possess the Adjunct “material, artificial, consisting of houses and streets”; and we may thus form the Real Class “towns.” Here we may regard “Things” as a *Genus*, “Towns” as a *Species* of Things, and “material, artificial, consisting of houses and streets” as its *Differentia*.

Again, we may imagine that we have picked out all the Things which possess the Adjunct “weighing a ton, easily lifted by a baby”; and we may thus form the *Imaginary* Class “Things that weigh a ton and are easily lifted by a baby.”]

(3) We may think of a certain Class, *not* the Class “Things,” and may imagine that we have picked out from it all the Members of it which possess a certain Adjunct *not* possessed by the whole Class. This Adjunct is said to be ‘**peculiar**’ to the smaller Class so formed. In this case, the Class thought of is called a ‘**Genus**’ with regard to the smaller Class picked out from it: the smaller Class is called a ‘**Species**’ of the larger: and its peculiar Adjunct is called its ‘**Differentia**’.

[For example, we may think of the Class “towns,” and imagine that we have picked out from it all the towns which possess the Attribute “lit with gas”; and we may thus form the Real Class “towns lit with gas.” Here we may regard “Towns” as a *Genus*, “Towns lit with gas” as a *Species* of Towns, and “lit with gas” as its *Differentia*.

If, in the above example, we were to alter “lit with gas” into “paved with gold,” we should get the *Imaginary* Class “towns paved with gold.”]

A Class, containing only *one* Member is called an ‘**Individual**.’

[For example, the Class “towns having four million inhabitants,” which Class contains only *one* Member, viz. “London.”]

Hence, any single Thing, which we can name so as to distinguish it from all other Things, may be regarded as a one-Member Class.

[Thus “London” may be regarded as the one-Member Class, picked out from the Class “towns,” which has, as its *Differentia*, “having four million inhabitants.”]

A Class, containing two or more Members, is sometimes regarded as *one single Thing*. When so regarded, it may possess an Adjunct which is *not* possessed

by any Member of it taken separately.

[Thus, the Class "The soldiers of the Tenth Regiment," when regarded as *one single Thing*, may possess the Attribute "formed in square," which is *not* possessed by any Member of it taken separately.]

Chapter III. Division.

§ 1. Introductory. 'Division' is a Mental Process, in which we think of a certain Class of Things, and imagine that we have divided it into two or more smaller Classes.

[Thus, we might think of the Class "books," and imagine that we had divided it into the two smaller Classes "bound books" and "unbound books," or into the three Classes, "books priced at less than a shilling," "shilling-books," "books priced at more than a shilling," or into the twenty-six Classes, "books whose names begin with A," "books whose names begin with B," &c.]

A Class, that has been obtained by a certain Division, is said to be 'codivisional' with every Class obtained by that Division.

[Thus, the Class "bound books" is codivisional with each of the two Classes, "bound books" and "unbound books."

Similarly, the Battle of Waterloo may be said to have been "contemporary" with every event that happened in 1815.]

Hence a Class, obtained by Division, is codivisional with itself.

[Thus, the Class "bound books" is codivisional with itself.

Similarly, the Battle of Waterloo may be said to have been "contemporary" with itself.]

§ 2. Dichotomy. If we think of a certain Class, and imagine that we have picked out from it a certain smaller Class, it is evident that the *Remainder* of the large Class does *not* possess the Differentia of that smaller Class. Hence it may be regarded as *another* smaller Class, whose Differentia may be formed, from that of the Class first picked out, by prefixing the word "not"; and we may imagine that we have *divided* the Class first thought of into *two* smaller Classes, whose Differentiæ are *contradictory*. This kind of Division is called '**Dichotomy**'.

[For example, we may divide "books" into the two Classes whose Differentiæ are "old" and "not-old."]

In performing this Process, we may sometimes find that the Attributes we have chosen are used so loosely, in ordinary conversation, that it is not easy to decide *which* of the Things belong to the one Class and *which* to the other. In such a case, it would be necessary to lay down some arbitrary *rule*, as to *where* the one Class should end and the other begin.

[Thus, in dividing "books" into "old" and "not-old," we may say "Let all books printed before A.D. 1801, be regarded as 'old,' and all others as 'not-old'."]

Henceforward let it be understood that, if a Class of Things be divided into two Classes, whose Differentiæ have contrary meanings, each Differentia is to be regarded as equivalent to the other with the word "not" prefixed.

[Thus, if "books" be divided into "old" and "new" the Attribute "old" is to be regarded as equivalent to "not-new," and the Attribute "new" as equivalent to "not-old."]

After dividing a Class, by the Process of *Dichotomy*, into two smaller Classes, we may sub-divide each of these into two still smaller Classes; and this Process may be repeated over and over again, the number of Classes being doubled at each repetition.

[For example, we may divide “books” into “old” and “new” (i. e. “*not*-old”): we may then sub-divide each of these into “English” and “foreign” (i. e. “*not*-English”), thus getting *four* Classes, viz.

- (1) old English;
- (2) old foreign;
- (3) new English;
- (4) new foreign.

If we had begun by dividing into “English” and “foreign,” and had then sub-divided into “old” and “new,” the four Classes would have been

- (1) English old;
- (2) English new;
- (3) foreign old;
- (4) foreign new.

The Reader will easily see that these are the very same four Classes which we had before.]

Chapter IV. Names.

The word “Thing”, which conveys the idea of a Thing, *without* any idea of an Adjunct, represents *any* single Thing. Any other word (or phrase), which conveys the idea of a Thing, *with* the idea of an Adjunct represents *any* Thing which possesses that Adjunct; i. e., it represents any Member of the Class to which that Adjunct is *peculiar*.

Such a word (or phrase) is called a ‘**Name**’; and, if there be an existing Thing which it represents, it is said to be a Name of that Thing.

[For example, the words “Thing,” “Treasure,” “Town,” and the phrases “valuable Thing,” “material artificial Thing consisting of houses and streets,” “Town lit with gas,” “Town paved with gold,” “old English Book.”]

Just as a Class is said to be *Real*, or *Unreal*, according as there *is*, or *is not*, an existing Thing in it, so also a Name is said to be *Real*, or *Unreal*, according as there *is*, or *is not*, an existing Thing represented by it.

[Thus, “Town lit with gas” is a *Real* Name: “Town paved with gold” is an *Unreal* Name.]

Every Name is either a Substantive only, or else a phrase consisting of a Substantive and one or more Adjectives (or phrases used as Adjectives).

Every Name, except “Thing”, may usually be expressed in three different forms:—

- (a) The Substantive “Thing”, and one or more Adjectives (or phrases used as Adjectives) conveying the ideas of the Attributes;
- (b) A Substantive, conveying the idea of a Thing with the ideas of *some* of the Attributes, and one or more Adjectives (or phrases used as Adjectives) conveying the ideas of the *other* Attributes;
- (c) A Substantive conveying the idea of a Thing with the ideas of *all* the Attributes.

[Thus, the phrase “material living Thing, belonging to the Animal Kingdom, having two hands and two feet” is a Name expressed in Form (a).

If we choose to roll up together the Substantive "Thing" and the Adjectives "material, living, belonging to the Animal Kingdom," so as to make the new Substantive "Animal," we get the phrase "Animal having two hands and two feet," which is a Name (representing the same Thing as before) expressed in Form (*b*).

And, if we choose to roll up the whole phrase into one word, so as to make the new Substantive "Man," we get a Name (still representing the very same Thing) expressed in Form (*c*).]

A Name, whose Substantive is in the *plural* number, may be used to represent either

- (1) Members of a Class, *regarded as separate Things*;
- or (2) a whole Class, *regarded as one single Thing*.

[Thus, when I say "Some soldiers of the Tenth Regiment are tall," or "The soldiers of the Tenth Regiment are brave," I am using the Name "soldiers of the Tenth Regiment" in the *first* sense; and it is just the same as if I were to point to each of them *separately*, and to say "*This* soldier of the Tenth Regiment is tall," "*That* soldier of the Tenth Regiment is tall," and so on.

But, when I say "The soldiers of the Tenth Regiment are formed in square," I am using the phrase in the *second* sense; and it is just the same as if I were to say "The *Tenth Regiment* is formed in square.]"

Chapter V. Definitions.

It is evident that every Member of a *Species* is *also* a Member of the *Genus* out of which that *Species* has been picked, and that it possesses the *Differentia* of that *Species*. Hence it may be represented by a Name consisting of two parts, one being a Name representing any Member of the *Genus*, and the other being the *Differentia* of that *Species*. Such a Name is called a '**Definition**' of any Member of that *Species*, and to give it such a Name is to '**define**' it.

[Thus, we may define a "Treasure" as a "valuable Thing." In this case we regard "Things" as the *Genus*, and "valuable" as the *Differentia*.]

The following Examples, of this Process, may be taken as models for working others.

[Note that, in each Definition, the Substantive, representing a Member (or Members) of the *Genus*, is printed in Capitals.]

1. Define "a Treasure."
Ans. "a valuable THING."
2. Define "Treasures."
Ans. "valuable THINGS."
3. Define "a Town."
Ans. "a material artificial THING, consisting of houses and streets."
4. Define "Men."
Ans. "material, living THINGS, belonging to the Animal Kingdom, having two hands and two feet";
or else
"ANIMALS having two hands and two feet."
5. Define "London."

Ans. “the material artificial THING, which consists of houses and streets, and has four million inhabitants”;

or else

“the TOWN which has four million inhabitants.”

[Note that we here use the article “the” instead of “a”, because we happen to know that there is only *one* such Thing.

The Reader can set himself any number of Examples of this Process, by simply choosing the Name of any common Thing (such as “house,” “tree,” “knife”), making a Definition for it, and then testing his answer by referring to any English Dictionary.]

Book II. Propositions.

Chapter I. Propositions Generally.

§ 1. **Introductory.** Note that the word “some” is to be regarded, henceforward, as meaning “one or more.”

The word ‘Proposition,’ as used in ordinary conversation, may be applied to *any* word, or phrase, which conveys any information whatever.

[Thus the words “yes” and “no” are Propositions in the ordinary sense of the word; and so are the phrases “you owe me five farthings” and “I don’t!”

Such words as “oh!” or “never!”, and such phrases as “fetch me that book!” “which book do you mean?” do not seem, at first sight, to convey any *information*; but they can easily be turned into equivalent forms which do so, viz. “I am surprised,” “I will never consent to it,” “I order you to fetch me that book,” “I want to know which book you mean.”]

But a ‘**Proposition**,’ as used in this First Part of “Symbolic Logic,” has a peculiar form, which may be called its ‘**Normal form**’; and if any Proposition, which we wish to use in an argument, is not in normal form, we must reduce it to such a form, before we can use it.

A ‘**Proposition**,’ when in normal form, asserts, as to certain two Classes, which are called its ‘**Subject**’ and ‘**Predicate**,’ either

- (1) that *some* Members of its Subject are Members of its Predicate;
- or (2) that *no* Members of its Subject are Members of its Predicate;
- or (3) that *all* Members of its Subject are Members of its Predicate.

The Subject and the Predicate of a Proposition are called its ‘**Terms**.’

Two Propositions, which convey the *same* information, are said to be ‘**equivalent**’.

[Thus, the two Propositions, “I see John” and “John is seen by me,” are equivalent.]

§ 2. **Normal form of a Proposition.** A Proposition, in normal form, consists of four parts, viz.—

- (1) The word “some,” or “no,” or “all.” (This word, which tells us *how many* Members of the Subject are also Members of the Predicate, is called the ‘**Sign of Quantity**.’)
- (2) Name of Subject.
- (3) The verb “are” (or “is”). (This is called the ‘**Copula**.’)
- (4) Name of Predicate.

§ 3. Various kinds of Propositions. A Proposition, that begins with “Some”, is said to be ‘**Particular.**’ It is also called ‘a Proposition **in I.**’

[Note, that it is called ‘Particular,’ because it refers to a *part* only of the Subject.]

A Proposition, that begins with “No”, is said to be ‘**Universal Negative.**’ It is also called ‘a Proposition **in E.**’

A Proposition, that begins with “All”, is said to be ‘**Universal Affirmative.**’ It is also called ‘a Proposition **in A.**’

[Note, that they are called ‘Universal’, because they refer to the *whole* of the Subject.]

A Proposition, whose Subject is an *Individual*, is to be regarded as *Universal*.

[Let us take, as an example, the Proposition “John is not well”. This of course implies that there is an *Individual*, to whom the speaker refers when he mentions “John”, and whom the listener *knows* to be referred to. Hence the Class “men referred to by the speaker when he mentions ‘John’” is a one-Member Class, and the Proposition is equivalent to “*All* the men, who are referred to by the speaker when he mentions ‘John’, are not well.”]

Propositions are of two kinds, ‘Propositions of Existence’ and ‘Propositions of Relation.’

These shall be discussed separately.

Chapter II. Propositions of Existence.

A ‘**Proposition of Existence**’, when in normal form, has, for its *Subject*, the Class “existing Things”.

Its Sign of Quantity is “Some” or “No”.

[Note that, though its Sign of Quantity tells us *how many* existing Things are Members of its Predicate, it does *not* tell us the *exact* number: in fact, it only deals with *two* numbers, which are, in ascending order, “0” and “1 or more.”]

It is called “a Proposition of Existence” because its effect is to assert the *Reality* (i. e. the real *existence*), or else the *Imaginariness*, of its Predicate.

[Thus, the Proposition “Some existing Things are honest men” asserts that the Class “honest men” is *Real*.

This is the *normal* form; but it may also be expressed in any one of the following forms:—

- (1) “Honest men exist”;
- (2) “Some honest men exist”;
- (3) “The Class ‘honest men’ exists”;
- (4) “There are honest men”;
- (5) “There are some honest men”.

Similarly, the Proposition “No existing Things are men fifty feet high” asserts that the Class “men 50 feet high” is *Imaginary*.

This is the *normal* form; but it may also be expressed in any one of the following forms:—

- (1) “Men 50 feet high do not exist”;
- (2) “No men 50 feet high exist”;
- (3) “The Class ‘men 50 feet high’ does not exist”;
- (4) “There are not any men 50 feet high”;
- (5) “There are no men 50 feet high.”]

Chapter III. Propositions of Relation.

§ 1. Introductory. A **Proposition of Relation**, of the kind to be here discussed, has, for its Terms, two Specieses of the same Genus, such that each of the two Names conveys the idea of some Attribute *not* conveyed by the other.

[Thus, the Proposition “Some merchants are misers” is of the right kind, since “merchants” and “misers” are Specieses of the same Genus “men”; and since the Name “merchants” conveys the idea of the Attribute “mercantile”, and the name “misers” the idea of the Attribute “miserly”, each of which ideas is *not* conveyed by the other Name.

But the Proposition “Some dogs are setters” is *not* of the right kind, since, although it is true that “dogs” and “setters” are Specieses of the same Genus “animals”, it is *not* true that the Name “dogs” conveys the idea of any Attribute not conveyed by the Name “setters”. Such Propositions will be discussed in Part II.]

The Genus, of which the two Terms are Specieses, is called the ‘**Universe of Discourse**,’ or (more briefly) the ‘**Univ.**’

The Sign of Quantity is “Some” or “No” or “All”.

[Note that, though its Sign of Quantity tells us *how many* Members of its Subject are *also* Members of its Predicate, it does not tell us the *exact* number: in fact, it only deals with *three* numbers, which are, in ascending order, “0”, “1 or more”, “the total number of Members of the Subject”.]

It is called “a Proposition of Relation” because its effect is to assert that a certain *relationship* exists between its Terms.

§ 2. Reduction of a Proposition of Relation to Normal form. The Rules, for doing this, are as follows:—

(1) Ascertain what is the *Subject* (i. e., ascertain what Class we are *talking about*);

(2) If the verb, governed by the Subject, is *not* the verb “are” (or “is”), substitute for it a phrase beginning with “are” (or “is”);

(3) Ascertain what is the *Predicate* (i. e., ascertain what Class it is, which is asserted to contain *some*, or *none*, or *all*, of the Members of the Subject);

(4) If the Name of each Term is *completely expressed* (i. e. if it contains a Substantive), there is no need to determine the ‘Univ.’; but, if either Name is *incompletely expressed*, and contains *Attributes* only, it is then necessary to determine a ‘Univ.’, in order to insert its Name as the Substantive.

(5) Ascertain the *Sign of Quantity*;

(6) Arrange in the following order:—

Sign of Quantity,
Subject,
Copula,
Predicate.

[Let us work a few Examples, to illustrate these Rules.

(1)

“Some apples are not ripe.”

(1) The Subject is “apples.”

(2) The Verb is “are.”

(3) The Predicate is “not-ripe * * *.” (As no Substantive is expressed, and we have not yet settled what the Univ. is to be, we are forced to leave a blank.)

(4) Let Univ. be “fruit.”

- (5) The Sign of Quantity is “some.”
- (6) The Proposition now becomes
“Some | apples | are | not-ripe fruit.”

(2)

“None of my speculations have brought me as much as 5 per cent.”

- (1) The Subject is “my speculations.”
- (2) The Verb is “have brought,” for which we substitute the phrase “are * * * that have brought”.
- (3) The Predicate is “* * * that have brought &c.”
- (4) Let Univ. be “transactions.”
- (5) The Sign of Quantity is “none of.”
- (6) The Proposition now becomes
“None of | my speculations | are | transactions that have brought me as much as 5 per cent.”

(3)

“None but the brave deserve the fair.”

To begin with, we note that the phrase “none but the brave” is equivalent to “no *not-brave*.”

- (1) The Subject has for its *Attribute* “not-brave.” But no *Substantive* is supplied. So we express the Subject as “not-brave * * *.”
- (2) The Verb is “deserve,” for which we substitute the phrase “are deserving of”.
- (3) The Predicate is “* * * deserving of the fair.”
- (4) Let Univ. be “persons.”
- (5) The Sign of Quantity is “no.”
- (6) The Proposition now becomes
“No | not-brave persons | are | persons deserving of the fair.”

(4)

“A lame puppy would not say “thank you” if you offered to lend it a skipping-rope.”

- (1) The Subject is evidently “lame puppies,” and all the rest of the sentence must somehow be packed into the Predicate.
- (2) The Verb is “would not say,” &c., for which we may substitute the phrase “are not grateful for.”
- (3) The Predicate may be expressed as “* * * not grateful for the loan of a skipping-rope.”
- (4) Let Univ. be “puppies.”
- (5) The Sign of Quantity is “all.”
- (6) The Proposition now becomes
“All | lame puppies | are | puppies not grateful for the loan of a skipping-rope.”

(5)

“No one takes in the *Times*, unless he is well-educated.”

- (1) The Subject is evidently persons who are not well-educated (“no *one*” evidently means “no *person*”).
- (2) The Verb is “takes in,” for which we may substitute the phrase “are persons taking in.”
- (3) The Predicate is “persons taking in the *Times*.”
- (4) Let Univ. be “persons.”
- (5) The Sign of Quantity is “no.”
- (6) The Proposition now becomes
“No | persons who are not well-educated | are | persons taking in the *Times*.”

(6)

“My carriage will meet you at the station.”

(1) The Subject is “my carriage.” This, being an ‘Individual,’ is equivalent to the Class “my carriages.” (Note that this Class contains only *one* Member.)

(2) The Verb is “will meet”, for which we may substitute the phrase “are * * * that will meet.”

(3) The Predicate is “* * * that will meet you at the station.”

(4) Let Univ. be “things.”

(5) The Sign of Quantity is “all.”

(6) The Proposition now becomes

“All | my carriages | are | things that will meet you at the station.”

(7)

“Happy is the man who does not know what ‘toothache’ means!”

(1) The Subject is evidently “the man &c.” (Note that in this sentence, the *Predicate* comes first.) At first sight, the Subject seems to be an ‘*Individual*’; but on further consideration, we see that the article “the” does *not* imply that there is only *one* such man. Hence the phrase “the man who” is equivalent to “all men who”.

(2) The Verb is “are.”

(3) The Predicate is “happy * * *.”

(4) Let Univ. be “men.”

(5) The Sign of Quantity is “all.”

(6) The Proposition now becomes

“All | men who do not know what ‘toothache’ means | are | happy men.”

(8)

“Some farmers always grumble at the weather, whatever it may be.”

(1) The Subject is “farmers.”

(2) The Verb is “grumble,” for which we substitute the phrase “are * * * who grumble.”

(3) The Predicate is “* * * who always grumble &c.”

(4) Let Univ. be “persons.”

(5) The Sign of Quantity is “some.”

(6) The Proposition now becomes

“Some | farmers | are | persons who always grumble at the weather, whatever it may be.”

(9)

“No lambs are accustomed to smoke cigars.”

(1) The Subject is “lambs.”

(2) The Verb is “are.”

(3) The Predicate is “* * * accustomed &c.”

(4) Let Univ. be “animals.”

(5) The Sign of Quantity is “no.”

(6) The Proposition now becomes

“No | lambs | are | animals accustomed to smoke cigars.”

(10)

“I ca’n’t understand examples that are not arranged in regular order, like those I am used to.”

(1) The Subject is “examples that,” &c.

(2) The Verb is “I ca’n’t understand,” which we must alter, so as to have “examples,” instead of “I,” as the nominative case. It may be expressed as “are not understood by me.”

(3) The Predicate is “* * * not understood by me.”

- (4) Let Univ. be “examples.”
- (5) The Sign of Quantity is “all.”
- (6) The Proposition now becomes

“All | examples that are not arranged in regular order like those I am used to | are | examples not understood by me.”]

§ 3. A Proposition of Relation, beginning with “All”, is a Double Proposition. A Proposition of Relation, beginning with “All”, asserts (as we already know) that “*All* Members of the Subject are Members of the Predicate”. This evidently contains, as a *part* of what it tells us, the smaller Proposition “*Some* Members of the Subject are Members of the Predicate”.

[Thus, the Proposition “*All* bankers are rich men” evidently contains the smaller Proposition “*Some* bankers are rich men”.]

The question now arises “What is the *rest* of the information which this Proposition gives us?”

In order to answer this question, let us begin with the smaller Proposition, “*Some* Members of the Subject are Members of the Predicate,” and suppose that this is *all* we have been told; and let us proceed to inquire what *else* we need to be told, in order to know that “*All* Members of the Subject are Members of the Predicate”.

[Thus, we may suppose that the Proposition “*Some* bankers are rich men” is all the information we possess; and we may proceed to inquire what *other* Proposition needs to be added to it, in order to make up the entire Proposition “*All* bankers are rich men”.]

Let us also suppose that the ‘Univ.’ (i. e. the Genus, of which both the Subject and the Predicate are Specieses) has been divided (by the Process of *Dichotomy*) into two smaller Classes, viz.

- (1) the Predicate;
- (2) the Class whose Differentia is *contradictory* to that of the Predicate.

[Thus, we may suppose that the Genus “men,” (of which both “bankers” and “rich men” are Specieses) has been divided into the two smaller Classes, “rich men”, “poor men”.]

Now we know that *every* Member of the Subject is (as shown at p. 1047) a Member of the Univ. Hence *every* Member of the Subject is either in Class (1) or else in Class (2).

[Thus, we know that *every* banker is a Member of the Genus “men”. Hence, *every* banker is either in the Class “rich men”, or else in the Class “poor men”.]

Also we have been told that, in the case we are discussing, *some* Members of the Subject are in Class (1). What *else* do we need to be told, in order to know that *all* of them are there? Evidently we need to be told that *none* of them are in Class (2); i. e. that *none* of them are Members of the Class whose Differentia is *contradictory* to that of the Predicate.

[Thus, we may suppose we have been told that *some* bankers are in the Class “rich men”. What *else* do we need to be told, in order to know that *all* of them are there? Evidently we need to be told that *none* of them are in the Class “poor men”.]

Hence a Proposition of Relation, beginning with “All”, is a *Double* Proposition, and is ‘**equivalent**’ to (i. e. gives the same information as) the *two* Propositions

- (1) “*Some* Members of the Subject are Members of the Predicate”;
- (2) “*No* Members of the Subject are Members of the Class whose Differentia is *contradictory* to that of the Predicate”.

[Thus, the Proposition “*All* bankers are rich men” is a *Double* Proposition, and is equivalent to the *two* Propositions

- (1) “*Some* bankers are rich men”;
- (2) “*No* bankers are *poor* men”.]

§ 4. What is implied, in a Proposition of Relation, as to the Reality of its Terms? Note that the rules, here laid down, are *arbitrary*, and only apply to Part I of my “Symbolic Logic.”

A Proposition of Relation, beginning with “Some”, is henceforward to be understood as asserting that there are *some existing Things*, which, being Members of the Subject, are also Members of the Predicate; i. e. that *some existing Things* are Members of *both* Terms at once. Hence it is to be understood as implying that *each* Term, taken by itself, is *Real*.

[Thus, the Proposition “Some rich men are invalids” is to be understood as asserting that *some existing Things* are “rich invalids”. Hence it implies that *each* of the two Classes, “rich men” and “invalids”, taken by itself, is *Real*.]

A Proposition of Relation, beginning with “No”, is henceforward to be understood as asserting that there are *no existing Things* which, being Members of the Subject, are also Members of the Predicate; i. e. that *no existing Things* are Members of *both* Terms at once. But this implies nothing as to the *Reality* of either Term taken by itself.

[Thus, the Proposition “No mermaids are milliners” is to be understood as asserting that *no existing Things* are “mermaid-milliners”. But this implies nothing as to the *Reality*, or the *Unreality*, of either of the two Classes, “mermaids” and “milliners”, taken by itself. In this case as it happens, the Subject is *Imaginary*, and the Predicate *Real*.]

A Proposition of Relation, beginning with “All”, contains (see § 3) a similar Proposition beginning with “Some”. Hence it is to be understood as implying that *each* Term, taken by itself, is *Real*.

[Thus, the Proposition “All hyænas are savage animals” contains the Proposition “Some hyænas are savage animals”. Hence it implies that *each* of the two Classes, “hyænas” and “savage animals”, taken by itself, is *Real*.]

§ 5. Translation of a Proposition of Relation into one or more Propositions of Existence. We have seen that a Proposition of Relation, beginning with “Some,” asserts that *some existing Things*, being Members of its Subject, are *also* Members of its Predicate. Hence, it asserts that some existing Things are Members of *both*; i. e. it asserts that some existing Things are Members of the Class of Things which have *all* the Attributes of the Subject and the Predicate.

Hence, to translate it into a Proposition of Existence, we take “existing Things” as the new *Subject*, and Things, which have *all* the Attributes of the Subject and the Predicate, as the new Predicate.

Similarly for a Proposition of Relation beginning with “No”.

A Proposition of Relation, beginning with “All”, is (as shown in § 3) equivalent to *two* Propositions, one beginning with “Some” and the other with “No”, each of which we now know how to translate.

[Let us work a few Examples, to illustrate these Rules.

(1)

“Some apples are not ripe.”

Here we arrange thus:—

“Some” *Sign of Quantity.*

“existing Things” *Subject.*

“are” *Copula.*

“not-ripe apples” *Predicate.*

or thus:—

“Some | existing Things | are | not-ripe apples.”

(2)

“Some farmers always grumble at the weather, whatever it may be.”

Here we arrange thus:—

“Some | existing Things | are | farmers who always grumble at the weather,
whatever it may be.”

(3)

“No lambs are accustomed to smoke cigars.”

Here we arrange thus:—

“No | existing Things | are | lambs accustomed to smoke cigars.”

(4)

“None of my speculations have brought me as much as 5 per cent.”

Here we arrange thus:—

“No | existing Things | are | speculations of mine, which have brought me as
much as 5 per cent.”

(5)

“None but the brave deserve the fair.”

Here we note, to begin with, that the phrase “none but the brave” is equivalent to
“no not-brave men.” We then arrange thus:—

“No | existing Things | are | not-brave men deserving of the fair.”

(6)

“All bankers are rich men.”

This is equivalent to the two Propositions “Some bankers are rich men” and “No
bankers are poor men.”

Here we arrange thus:—

“Some | existing Things | are | rich bankers”;

and

“No | existing Things | are | poor bankers.”]

[Work Examples § 1, 1-4 (p. 1100).]

Book III. The Biliteral Diagram.

xy	xy'
$x'y$	$x'y'$

Chapter I. Symbols and Cells.

First, let us suppose that the above Diagram is an enclosure assigned to a certain Class of Things, which we have selected as our 'Universe of Discourse.' or, more briefly, as our 'Univ'.

[For example, we might say "Let Univ. be 'books'"; and we might imagine the Diagram to be a large table, assigned to all "books."]

[The Reader is strongly advised, in reading this Chapter, *not* to refer to the above Diagram, but to draw a large one for himself, *without any letters*, and to have it by him while he reads, and keep his finger on that particular *part* of it, about which he is reading.]

Secondly, let us suppose that we have selected a certain Adjunct, which we may call " x ," and have divided the large Class, to which we have assigned the whole Diagram, into the two smaller Classes whose Differentiæ are " x " and "not- x " (which we may call " x' "), and that we have assigned the *North* Half of the Diagram to the one (which we may call "the Class of x -Things," or "the x -Class"), and the *South* Half to the other (which we may call "the Class of x' -Things," or "the x' -Class").

[For example, we might say "Let x mean 'old,' so that x' will mean 'new,'" and we might suppose that we had divided books into the two Classes whose Differentiæ are "old" and "new," and had assigned the *North* Half of the table to "*old* books" and the *South* Half to "*new* books."]

Thirdly, let us suppose that we have selected another Adjunct, which we may call " y ," and have subdivided the x -Class into the two Classes whose Differentiæ are " y " and " y' ," and that we have assigned the *North-West* Cell to the one (which we may call "the xy -Class"), and the *North-East* Cell to the other (which we may call "the xy' -Class").

[For example, we might say "Let y mean 'English,' so that y' will mean 'foreign'," and we might suppose that we had subdivided "old books" into the two Classes whose Differentiæ are "English" and "foreign", and had assigned the *North-West* Cell to "old *English* books", and the *North-East* Cell to "old *foreign* books."]

Fourthly, let us suppose that we have subdivided the x' -Class in the same manner, and have assigned the *South-West* Cell to the $x'y$ -Class, and the *South-East* Cell to the $x'y'$ -Class.

[For example, we might suppose that we had subdivided "new books" into the two Classes "new *English* books" and "new *foreign* books", and had assigned the *South-West* Cell to the one, and the *South-East* Cell to the other.]

It is evident that, if we had begun by dividing for y and y' , and had then subdivided for x and x' , we should have got the *same* four Classes. Hence we see that we have assigned the *West* Half to the y -Class, and the *East* Half to the y' -Class.

[Thus, in the above Example, we should find that we had assigned the *West* Half of the table to "*English* books" and the *East* Half to "*foreign* books."]

We have, in fact, assigned the four Quarters of the table to four different Classes of books, as here shown.]

old English books	old foreign books
new English books	new foreign books

The Reader should carefully remember that, in such a phrase as “the x -Things,” the word “Things” means that particular *kind* of Things, to which the whole Diagram has been assigned.

[Thus, if we say “Let Univ. be ‘books’,” we mean that we have assigned the whole Diagram to “books.” In that case, if we took “ x ” to mean “old”, the phrase “the x -Things” would mean “the old books.”]

The Reader should not go on to the next Chapter until he is *quite familiar* with the *blank* Diagram I have advised him to draw.

He ought to be able to name, *instantly*, the *Adjunct* assigned to any *Compartment* named in the right-hand column of the following Table.

Table I

<i>Adjuncts of Classes.</i>	<i>Compartments, or Cells, assigned to them.</i>	
x	North	Half.
x'	South	”
y	West	”
y'	East	”
xy	North-	West Cell.
xy'	”	East ”
$x'y$	South-	West ”
$x'y'$	”	East ”

Also he ought to be able to name, *instantly*, the *Compartment* assigned to any *Adjunct* named in the left-hand column.

To make sure of this, he had better put the book into the hands of some genial friend, while he himself has nothing but the blank Diagram, and get that genial friend to question him on this Table, *dodging* about as much as possible. The Questions and Answers should be something like this:—

- Q. “Adjunct for West Half?”
A. “ y .”
Q. “Compartment for xy' ?”
A. “North-East Cell.”
Q. “Adjunct for South-West Cell?”
A. “ $x'y$.”
&c., &c.

After a little practice, he will find himself able to do without the blank Diagram, and will be able to see it *mentally* (“in my mind’s eye, Horatio!”) while answering the questions of his genial friend. When *this* result has been reached, he may safely go on to the next Chapter.

Quoted from *Hamlet*
by William
Shakespeare

Chapter II. Counters.

Let us agree that a *Red Counter*, placed within a Cell, shall mean “This Cell is *occupied*” (i. e. “There is at least *one* Thing in it”).

Let us also agree that a *Red Counter*, placed on the partition between two Cells, shall mean “The Compartment, made up of these two Cells, is *occupied*; but it is not known *whereabouts*, in it, its occupants are.” Hence it may be understood to mean “At least *one* of these two Cells is occupied: possibly *both* are.”

Our ingenious American cousins have invented a phrase to describe the condition of a man who has not yet made up his mind *which* of two political parties he will join: such a man is said to be “**sitting on the fence**.” This phrase exactly describes the condition of the Red Counter.

Let us also agree that a *Grey Counter*, placed within a Cell, shall mean “This Cell is *empty*” (i. e. “There is *nothing* in it”).

[The Reader had better provide himself with 4 Red Counters and 5 Grey ones.]

Chapter III. Representation of Propositions.

§ 1. Introductory. Henceforwards, in stating such Propositions as “Some *x*-Things exist” or “No *x*-Things are *y*-Things”, I shall omit the word “Things”, which the Reader can supply for himself, and shall write them as “Some *x* exist” or “No *x* are *y*”.

[Note that the word “Things” is here used with a special meaning, as explained at p. 1057.]

A Proposition, containing only *one* of the Letters used as Symbols for Attributes, is said to be ‘**Unilateral**’.

[For example, “Some *x* exist”, “No *y*’ exist”, &c.]

A Proposition, containing *two* Letters, is said to be ‘**Bilateral**’.

[For example, “Some *xy*’ exist”, “No *x*’ are *y*”, &c.]

A Proposition is said to be ‘**in terms of**’ the Letters it contains, whether with or without accents.

[Thus, “Some *xy*’ exist”, “No *x*’ are *y*”, &c., are said to be *in terms of x* and *y*.]

§ 2. Representation of Propositions of Existence. Let us take, first, the Proposition “Some *x* exist”.

[Note that this Proposition is (as explained at p. 1049) equivalent to “Some existing Things are *x*-Things.”]

This tells us that there is at least *one* Thing in the North Half; that is, that the North Half is *occupied*. And this we can evidently represent by placing a *Red Counter* (here represented by a *dotted circle*) on the partition which divides the North Half.



[In the “books” example, this Proposition would be “Some old books exist”.]

Similarly we may represent the three similar Propositions “Some *x*’ exist”, “Some *y* exist”, and “Some *y*’ exist”.

[The Reader should make out all these for himself. In the “books” example, these Propositions would be “Some new books exist”, &c.]

Let us take, next, the Proposition “No *x* exist”.

This tells us that there is *nothing* in the North Half; that is, that the North Half is *empty*; that is, that the North-West Cell and the North-East Cell are

both of them *empty*. And this we can represent by placing *two Grey Counters* in the North Half, one in each Cell.

[The Reader may perhaps think that it would be enough to place a *Grey Counter* on the partition in the North Half, and that, just as a *Red Counter*, so placed, would mean “This Half is *occupied*”, so a *Grey* one would mean “This Half is *empty*”.



This, however, would be a mistake. We have seen that a *Red Counter*, so placed, would mean “At least *one* of these two Cells is occupied: possibly *both* are.” Hence a *Grey* one would merely mean “At least *one* of these two Cells is empty: possibly *both* are”. But what we have to represent is, that both Cells are *certainly* empty: and this can only be done by placing a *Grey Counter* in *each* of them.

In the “books” example, this Proposition would be “No old books exist”.]

Similarly we may represent the three similar Propositions “No x' exist”, “No y' exist”, and “No $y'x'$ exist”.

[The Reader should make out all these for himself. In the “books” example, these three Propositions would be “No new books exist”, &c.]

Let us take, next, the Proposition “Some xy exist”.

This tells us that there is at least *one* Thing in the North-West Cell; that is, that the North-West Cell is *occupied*. And this we can represent by placing a *Red Counter* in it.



[In the “books” example, this Proposition would be “Some old English books exist”.]

Similarly we may represent the three similar Propositions “Some xy' exist”, “Some $x'y$ exist”, and “Some $x'y'$ exist”.

[The Reader should make out all these for himself. In the “books” example, these three Propositions would be “Some old foreign books exist”, &c.]

Let us take, next, the Proposition “No xy exist”.

This tells us that there is *nothing* in the North-West Cell; that is, that the North-West Cell is *empty*. And this we can represent by placing a *Grey Counter* in it.



[In the “books” example, this Proposition would be “No old English books exist”.]

Similarly we may represent the three similar Propositions “No xy' exist”, “No $x'y$ exist”, and “No $x'y'$ exist”.

[The Reader should make out all these for himself. In the “books” example, these three Propositions would be “No old foreign books exist”, &c.]

We have seen that the Proposition “No x exist” may be represented by placing *two Grey Counters* in the North Half, one in each Cell.



We have also seen that these two *Grey Counters*, taken *separately*, represent the two Propositions “No xy exist” and “No xy' exist”.

Hence we see that the Proposition “No x exist” is a *Double Proposition*, and is equivalent to the *two* Propositions “No xy exist” and “No xy' exist”.

[In the “books” example, this Proposition would be “No old books exist”.

Hence this is a *Double Proposition*, and is equivalent to the *two* Propositions “No old *English* books exist” and “No old *foreign* books exist”.]

§ 3. Representation of Propositions of Relation. Let us take, first, the Proposition “Some x are y ”.

This tells us that at least *one* Thing, in the *North* Half, is also in the *West* Half. Hence it must be in the space *common* to them, that is, in the *North-West Cell*. Hence the North-West Cell is *occupied*. And this we can represent by placing a *Red Counter* in it.



[Note that the *Subject* of the Proposition settles which *Half* we are to use; and that the *Predicate* settles in which *portion* of it we are to place the Red Counter.]

In the “books” example, this Proposition would be “Some old books are English”.]

Similarly we may represent the three similar Propositions “Some x are y ”, “Some x' are y ”, and “Some x' are y' ”.

[The Reader should make out all these for himself. In the “books” example, these three Propositions would be “Some old books are foreign”, &c.]

Let us take, next, the Proposition “Some y are x ”.

This tells us that at least *one* Thing, in the *West* Half, is also in the *North* Half. Hence it must be in the space *common* to them, that is, in the *North-West Cell*. Hence the North-West Cell is *occupied*. And this we can represent by placing a *Red Counter* in it.



[In the “books” example, this Proposition would be “Some English books are old”.]

Similarly we may represent the three similar Propositions “Some y are x ”, “Some y' are x ”, and “Some y' are x' ”.

[The Reader should make out all these for himself. In the “books” example, these three Propositions would be “Some English books are new”, &c.]

We see that this *one* Diagram has now served to represent no less than *three* Propositions, viz.



- (1) “Some xy exist;
- (2) Some x are y ;
- (3) Some y are x ”.

Hence these three Propositions are equivalent.

[In the “books” example, these Propositions would be

- (1) “Some old English books exist;
- (2) Some old books are English;
- (3) Some English books are old”.]

The two equivalent Propositions, “Some x are y ” and “Some y are x ”, are said to be ‘**Converse**’ to each other; and the Process, of changing one into the other, is called ‘**Converting**’, or ‘**Conversion**’.

[For example, if we were told to convert the Proposition

“Some apples are not ripe,”

we should first choose our Univ. (say “fruit”), and then complete the Proposition, by supplying the Substantive “fruit” in the Predicate, so that it would be

“Some apples are not-ripe fruit”;

and we should then convert it by interchanging its Terms, so that it would be

“Some not-ripe fruit are apples”.]

Similarly we may represent the three similar Trios of equivalent Propositions; the whole Set of *four* Trios being as follows:—

- (1) "Some xy exist" = "Some x are y " = "Some y are x ".
- (2) "Some xy' exist" = "Some x are y' " = "Some y' are x ".
- (3) "Some $x'y$ exist" = "Some x' are y " = "Some y are x' ".
- (4) "Some $x'y'$ exist" = "Some x' are y' " = "Some y' are x' ".

Let us take, next, the Proposition "No x are y ".

This tells us that no Thing, in the *North* Half, is also in the *West* Half. Hence there is *nothing* in the space *common* to them, that is, in the *North-West Cell*. Hence the North-West Cell is *empty*. And this we can represent by placing a *Grey Counter* in it.



[In the "books" example, this Proposition would be "No old books are English".]

Similarly we may represent the three similar Propositions "No x are y ", and "No x' are y ", and "No x' are y' ".

[The Reader should make out all these for himself. In the "books" example, these three Propositions would be "No old books are foreign", &c.]

Let us take, next, the Proposition "No y are x ".

This tells us that no Thing, in the *West* Half, is also in the *North* Half. Hence there is *nothing* in the space *common* to them, that is, in the *North-West Cell*. That is, the North-West Cell is *empty*. And this we can represent by placing a *Grey Counter* in it.



[In the "books" example, this Proposition would be "No English books are old".]

Similarly we may represent the three similar Propositions "No y are x ", "No y' are x ", and "No y' are x' ".

[The Reader should make out all these for himself. In the "books" example, these three Propositions would be "No English books are new", &c.]

We see that this *one* Diagram has now served to present no less than *three* Propositions, viz.



- (1) "No xy exist;
- (2) No x are y ;
- (3) No y are x ."

Hence these three Propositions are equivalent.

[In the "books" example, these Propositions would be

- (1) "No old English books exist;
- (2) No old books are English;
- (3) No English books are old".]

The two equivalent Propositions, "No x are y " and "No y are x ", are said to be 'Converse' to each other.

[For example, if we were told to convert the Proposition

"No porcupines are talkative",

we should first choose our Univ. (say "animals"), and then complete the Proposition, by supplying the Substantive "animals" in the Predicate, so that it would be

"No porcupines are talkative animals",

and we should then convert it, by interchanging its Terms, so that it would be

"No talkative animals are porcupines".]

Similarly we may represent the three similar Trios of equivalent Propositions; the whole Set of *four* Trios being as follows:—

- (1) "No xy exist" = "No x are y " = "No y are x ".
- (2) "No xy' exist" = "No x are y' " = "No y' are x ".
- (3) "No $x'y$ exist" = "No x' are y " = "No y are x' ".
- (4) "No $x'y'$ exist" = "No x' are y' " = "No y' are x' ".

Let us take, next, the Proposition "All x are y ".

We know (see p. 1053) that this is a *Double* Proposition, and equivalent to the *two* Propositions "Some x are y " and "No x are y' ", each of which we already know how to represent.



[Note that the *Subject* of the given Proposition settles which *Half* we are to use; and that its *Predicate* settles in which *portion* of that *Half* we are to place the Red Counter.]

Table II

Some x exist		No x exist	
Some x' exist		No x' exist	
Some y exist		No y exist	
Some y' exist		No y' exist	

Similarly we may represent the seven similar Propositions "All x are y' ", "All x' are y ", "All x' are y' ", "All y are x ", "All y are x' ", "All y' are x ", and "All y' are x' ".





















Let us take, lastly, the Double Proposition "Some x are y and some are y' ", each part of which we already know how to represent.



Similarly we may represent the three similar Propositions, "Some x' are y and some are y' ", "Some y are x and some are x' ", "Some y' are x and some are x' ".

The Reader should now get his genial friend to question him, severely, on these two Tables. The *Inquisitor* should have the Tables before him: but the *Victim* should have nothing but a blank Diagram, and the Counters with which he is to represent the various Propositions named by his friend, e. g. "Some y exist", "No y' are x ", "All x are y ", &c. &c.

Table III

Some xy exist = Some x are y = Some y are x		All x are y	
Some xy' exist = Some x are y' = Some y' are x		All x are y'	
Some $x'y$ exist = Some x' are y = Some y are x'		All x' are y	
Some $x'y'$ exist = Some x' are y' = Some y' are x'		All x' are y'	
No xy exist = No x are y = No y are x		All y are x	
No xy' exist = No x are y' = No y' are x		All y are x'	
No $x'y$ exist = No x' are y = No y are x'		All y' are x	
No $x'y'$ exist = No x' are y' = No y' are x'		All y' are x'	
Some x are y , and some are y'		Some y are x and some are x'	
Some x' are y , and some are y'		Some y' are x and some are x'	

Chapter IV. Interpretation of Biliteral Diagram When Marked With Counters.

The Diagram is supposed to be set before us, with certain Counters placed upon it; and the problem is to find out what Proposition, or Propositions, the Counters represent.

As the process is simply the reverse of that discussed in the previous Chapter, we can avail ourselves of the results there obtained, as far as they go.

First, let us suppose that we find a *Red* Counter placed in the North-West Cell.



We know that this represents each of the Trio of equivalent Propositions

“Some xy exist” = “Some x are y ” = “Some y are x ”.

Similarly we may interpret a *Red* Counter, when placed in the North-East, or South-West, or South-East Cell.

Next, let us suppose that we find a *Grey* Counter placed in the North-West Cell.



We know that this represents each of the Trio of equivalent Propositions

“No xy exist” = “No x are y ” = “No y are x ”.

Similarly we may interpret a *Grey* Counter, when placed in the North-East, or South-West, or South-East Cell.

Next, let us suppose that we find a *Red* Counter placed on the partition which divides the North Half.



We know that this represents the Proposition “Some x exist.”

Similarly we may interpret a *Red* Counter, when placed on the partition which divides the South, or West, or East Half.

Next, let us suppose that we find *two Red* Counters placed in the North Half, one in each Cell.



We know that this represents the *Double* Proposition “Some x are y and some are y ”.

Similarly we may interpret *two Red* Counters, when placed in the South, or West, or East Half.

Next, let us suppose that we find *two Grey* Counters placed in the North Half, one in each Cell.



We know that this represents the Proposition “No x exist”.

Similarly we may interpret *two Grey* Counters, when placed in the South, or West, or East Half.

Lastly, let us suppose that we find a *Red* and a *Grey* Counter placed in the North Half, the *Red* in the North-*West* Cell, and the *Grey* in the North-*East* Cell.



We know that this represents the Proposition, “All x are y ”.

[Note that the *Half*, occupied by the two Counters, settles what is to be the *Subject* of the Proposition, and that the *Cell*, occupied by the *Red* Counter, settles what is to be its *Predicate*.]

Similarly we may interpret a *Red* and a *Grey* counter, when placed in any one of the seven similar positions

Red in North-East, Grey in North-West;
Red in South-West, Grey in South-East;

Red in South-East, Grey in South-West;
 Red in North-West, Grey in South-West;
 Red in South-West, Grey in North-West;
 Red in North-East, Grey in South-East;
 Red in South-East, Grey in North-East.

Once more the genial friend must be appealed to, and requested to examine the Reader on Tables II and III, and to make him not only *represent* Propositions, but also *interpret* Diagrams when marked with Counters.

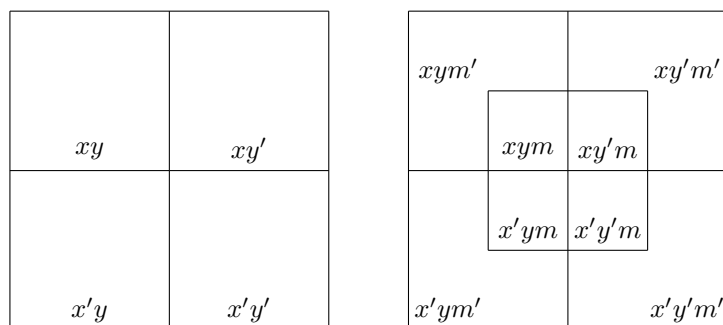
The Questions and Answers should be like this:—

- Q. Represent “No x' are y' .”
 A. Grey Counter in S.E. Cell.
 Q. Interpret Red Counter on E. partition.
 A. “Some y' exist.”
 Q. Represent “All y' are x .”
 A. Red in N.E. Cell; Grey in S.E.
 Q. Interpret Grey Counter in S.W. Cell.
 A. “No $x'y$ exist” = “No x' are y ” = “No y are x' ”.
 &c., &c.

At first the Examinee will need to have the Board and Counters before him; but he will soon learn to dispense with these, and to answer with his eyes shut or gazing into vacancy.

[Work Examples § 1, 5–8 (p. 1100).]

Book IV. The Trilateral Diagram.



Chapter I. Symbols and Cells.

First, let us suppose that the above *left-hand* Diagram is the Biliteral Diagram that we have been using in Book III., and that we change it into a *Trilateral* Diagram by drawing an *Inner Square*, so as to divide each of its 4 Cells into 2 portions, thus making 8 Cells altogether. The *right-hand* Diagram shows the result.

[The Reader is strongly advised, in reading this Chapter, *not* to refer to the above Diagrams, but to make a large copy of the right-hand one for himself, *without any letters*, and to have it by him while he reads, and keep his finger on that particular *part* of it, about which he is reading.]

Secondly, let us suppose that we have selected a certain Adjunct, which we may call “ m ”, and have subdivided the xy -Class into the two Classes whose Differentiæ are m and m' , and that we have assigned the N.W. *Inner* Cell to the one (which we may call “the Class of xym -Things”, or “the xym -Class”), and the N.W. *Outer* Cell to the other (which we may call “the Class of xym' -Things”, or “the xym' -Class”).

[Thus, in the “books” example, we might say “Let m mean ‘bound’, so that m' will mean ‘unbound’”, and we might suppose that we had subdivided the Class “old English books” into the two Classes, “old English bound books” and “old English unbound books”, and had assigned the N.W. *Inner* Cell to the one, and the N.W. *Outer* Cell to the other.]

Thirdly, let us suppose that we have subdivided the xy' -Class, the $x'y$ -Class, and the $x'y'$ -Class in the same manner, and have, in each case, assigned the *Inner* Cell to the Class possessing the Attribute m , and the *Outer* Cell to the Class possessing the Attribute m' .

[Thus, in the “books” example, we might suppose that we had subdivided the “new English books” into the two Classes, “new English bound books” and “new English unbound books”, and had assigned the S.W. *Inner* Cell to the one, and the S.W. *Outer* Cell to the other.]

It is evident that we have now assigned the *Inner Square* to the m -Class, and the *Outer Border* to the m' -Class.

[Thus, in the “books” example, we have assigned the *Inner Square* to “bound books” and the *Outer Border* to “unbound books”.]

When the Reader has made himself familiar with this Diagram, he ought to be able to find, in a moment, the Compartment assigned to a particular *pair* of Attributes, or the Cell assigned to a particular *trio* of Attributes. The following Rules will help him in doing this:—

- (1) Arrange the Attributes in the order x, y, m .
- (2) Take the *first* of them and find the Compartment assigned to it.
- (3) Then take the *second*, and find what *portion* of that compartment is assigned to it.
- (4) Treat the *third*, if there is one, in the same way.

[For example, suppose we have to find the Compartment assigned to ym . We say to ourselves “ y has the *West* Half; and m has the *Inner* portion of that West Half.”

Again, suppose we have to find the Cell assigned to $x'ym'$. We say to ourselves “ x' has the *South* Half; y has the *West* portion of that South Half, i. e. has the *South-West Quarter*; and m' has the *Outer* portion of that South-West Quarter.”]

The Reader should now get his genial friend to question him on the Table given on the next page, in the style of the following specimen-Dialogue.

- Q. Adjunct for South Half, Inner Portion?
A. $x'm$.
Q. Compartment for m' ?
A. The Outer Border.
Q. Adjunct for North-East Quarter, Outer Portion?
A. $xy'm'$.
Q. Compartment for ym ?
A. West Half, Inner Portion.
Q. Adjunct for South Half?

- A. x' .
- Q. Compartment for $x'y'm$?
- A. South-East Quarter, Inner Portion.
- &c. &c.

Table IV.

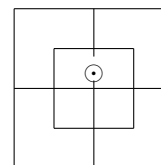
<i>Adjunct of Classes.</i>	<i>Compartments, or Cells, assigned to them.</i>				
x	North	Half.			
x'	South	"			
y	West	"			
y'	East	"			
m	Inner	Square.			
m'	Outer	Border.			
xy	North-	West	Quarter.		
xy'	"	East	"		
$x'y$	South-	West	"		
$x'y'$	"	East	"		
xm	North	Half,	Inner	Portion.	
xm'	"	"	Outer	"	
$x'm$	South	"	Inner	"	
$x'm'$	"	"	Outer	"	
ym	West	"	Inner	"	
ym'	"	"	Outer	"	
$y'm$	East	"	Inner	"	
$y'm'$	"	"	Outer	"	
xym	North-	West	Quarter,	Inner	Portion.
xym'	"	"	"	Outer	"
$xy'm$	"	East	"	Inner	"
$xy'm'$	"	"	"	Outer	"
$x'ym$	South-	West	"	Inner	"
$x'ym'$	"	"	"	Outer	"
$x'y'm$	"	East	"	Inner	"
$x'y'm'$	"	"	"	Outer	"

Chapter II. Representation of Propositions in Terms of x and m , or of y and m .

§ 1. Representation of Propositions of Existence in terms of x and m , or of y and m . Let us take, first, the Proposition "Some xm exist".

[Note that the *full* meaning of this Proposition is (as explained at p. 1049) "Some existing Things are xm -Things".]

This tells us that there is at least *one* Thing in the Inner portion of the North Half; that is, that this Compartment is *occupied*. And this we can evidently represent by placing a *Red Counter* on the partition which divides it.

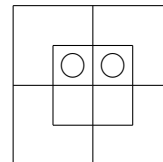


[In the "books" example, this Proposition would mean "Some old bound books exist" (or "There are some old bound books").]

Similarly we may represent the seven similar Propositions, "Some xm' exist", "Some $x'm$ exist", "Some $x'm'$ exist", "Some ym exist", "Some ym' exist", "Some $y'm$ exist", and "Some $y'm'$ exist".

Let us take, next, the Proposition “No xm exist”.

This tells us that there is *nothing* in the Inner portion of the North Half; that is, that this Compartment is *empty*. And this we can represent by placing *two Grey Counters* in it, one in each Cell.



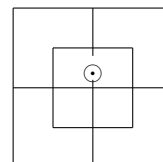
Similarly we may represent the seven similar Propositions, in terms of x and m , or of y and m , viz. “No xm' exist”, “No $x'm$ exist”, &c.

These sixteen Propositions of Existence are the only ones that we shall have to represent on this Diagram.

§ 2. Representation of Propositions of Relation in terms of x and m , or of y and m . Let us take, first, the Pair of Converse Propositions

“Some x are m ” = “Some m are x .”

We know that each of these is equivalent to the Proposition of Existence “Some xm exist”, which we already know how to represent.

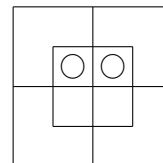


Similarly for the seven similar Pairs, in terms of x and m , or of y and m .

Let us take, next, the Pair of Converse Propositions

“No x are m ” = “No m are x .”

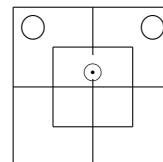
We know that each of these is equivalent to the Proposition of Existence “No xm exist”, which we already know how to represent.



Similarly for the seven similar Pairs, in terms of x and m , or of y and m .

Let us take, next, the Proposition “All x are m .”

We know (see p. 1053) that this is a *Double Proposition*, and equivalent to the *two* Propositions “Some x are m ” and “No x are m' ”, each of which we already know how to represent.



Similarly for the fifteen similar Propositions, in terms of x and m , or of y and m .

These thirty-two Propositions of Relation are the only ones that we shall have to represent on this Diagram.

The Reader should now get his genial friend to question him on the following four Tables.

The Victim should have nothing before him but a blank Trilateral Diagram, a Red Counter, and 2 Grey ones, with which he is to represent the various Propositions named by the Inquisitor, *e. g.* “No y' are m ”, “Some xm' exist”, &c., &c.

Table V.

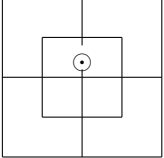
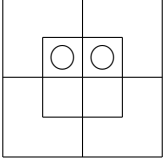
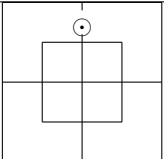
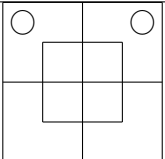
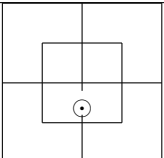
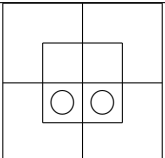
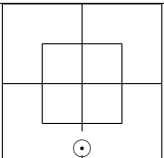
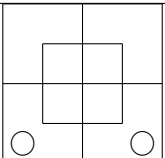
	<p>Some xm exist = Some x are m = Some m are x</p>	<p>No xm exist = No x are m = No m are x</p>	
	<p>Some xm' exist = Some x are m' = Some m' are x</p>	<p>No xm' exist = No x are m' = No m' are x</p>	
	<p>Some $x'm$ exist = Some x' are m = Some m are x'</p>	<p>No $x'm$ exist = No x' are m = No m are x'</p>	
	<p>Some $x'm'$ exist = Some x' are m' = Some m' are x'</p>	<p>No $x'm'$ exist = No x' are m' = No m' are x'</p>	

Table VI.

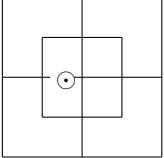
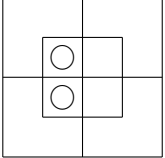
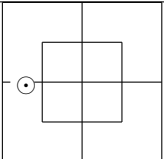
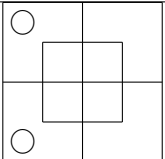
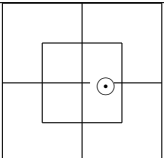
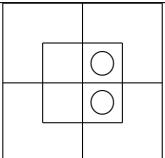
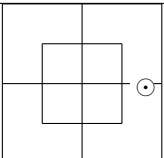
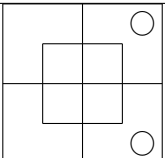
	<p>Some ym exist = Some y are m = Some m are y</p>	<p>No ym exist = No y are m = No m are y</p>	
	<p>Some ym' exist = Some y are m' = Some m' are y</p>	<p>No ym' exist = No y are m' = No m' are y</p>	
	<p>Some $y'm$ exist = Some y' are m = Some m are y'</p>	<p>No $y'm$ exist = No y' are m = No m are y'</p>	
	<p>Some $y'm'$ exist = Some y' are m' = Some m' are y'</p>	<p>No $y'm'$ exist = No y' are m' = No m' are y'</p>	

Table VII.

	All x are m	All x are m'	
	All x' are m	All x' are m'	
	All m are x	All m are x'	
	All m' are x	All m' are x'	

Table VIII.

	All y are m	All y are m'	
	All y' are m	All y' are m'	
	All m are y	All m are y'	
	All m' are y	All m' are y'	

Chapter III. Representation of Two Propositions of Relation, One in Terms of x and m , and the Other in Terms of y and m , on the Same Diagram.

The Reader had better now begin to draw little Diagrams for himself, and to mark them with the Digits “I” and “O”, instead of using the Board and Counters: he may put a “I” to represent a *Red* Counter (this may be interpreted to mean “There is at least *one* Thing here”), and a “O” to represent a *Grey* Counter (this may be interpreted to mean “There is *nothing* here”).

The Pair of Propositions, that we shall have to represent, will always be, one in terms of x and m , and the other in terms of y and m .

When we have to represent a Proposition beginning with “All”, we break it up into the *two* Propositions to which it is equivalent.

When we have to represent, on the same Diagram, Propositions, of which some begin with “Some” and others with “No”, we represent the *negative* ones *first*. This will sometimes save us from having to put a “I” “on a fence” and afterwards having to shift it into a Cell.

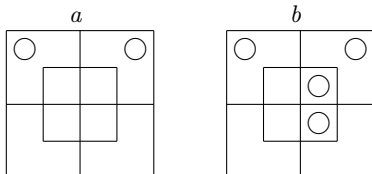
[Let us work a few examples.

(1)

“No x are m' ;
No y' are m ”.

Let us first represent “No x are m' ”. This gives us Diagram *a*.

Then, representing “No y' are m ” on the same Diagram, we get Diagram *b*.



(2)

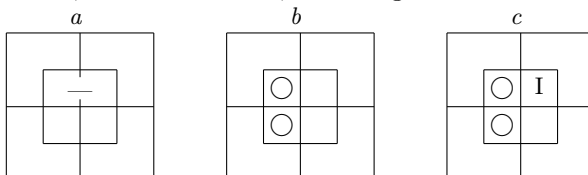
“Some m are x ;
No m are y ”.

If, neglecting the Rule, we were begin with “Some m are x ”, we should get Diagram *a*.

And if we were then to take “No m are y ”, which tells us that the Inner N.W. Cell is *empty*, we should be obliged to take the “I” off the fence (as it no longer has the choice of *two* Cells), and to put it into the Inner N.E. Cell, as in Diagram *c*.

This trouble may be saved by beginning with “No m are y ”, as in Diagram *b*.

And *now*, when we take “Some m are x ”, there is no fence to sit on! The “I” has to go, at once, into the N.E. Cell, as in Diagram *c*.



(3)

“No x' are m' ;
All m are y ”.

Here we begin by breaking up the Second into the two Propositions to which it is equivalent. Thus we have *three* Propositions to represent, viz.—

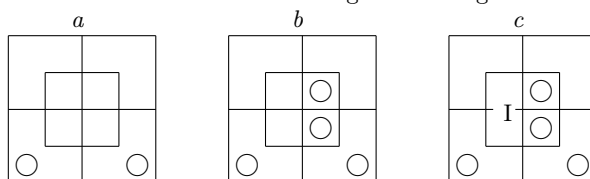
- (1) “No x' are m' ;
- (2) Some m are y ;
- (3) No m are y' ”.

These we will take in the order 1, 3, 2.

First we take No. (1), viz. “No x' are m' ”. This gives us Diagram *a*.

Adding to this, No. (3), viz. “No m are y' ”, we get Diagram *b*.

This time the “I”, representing No. (2), viz. “Some m are y ,” has to sit on the fence, as there is no “O” to order it off! This gives us Diagram *c*.



(4)

“All m are x ;
All y are m ”.

Here we break up *both* Propositions, and thus get *four* to represent, viz.—

- (1) “Some m are x ;
- (2) No m are x' ;
- (3) Some y are m ;
- (4) No y are m' ”.

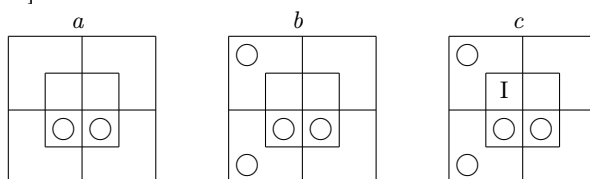
These we will take in the order 2, 4, 1, 3.

First we take No. (2), viz. “No m are x' ”. This gives us Diagram *a*.

To this we add No. (4), viz. “No y are m' ”, and thus get Diagram *b*.

If we were to add to this No. (1), viz. “Some m are x ”, we should have to put the “I” on a fence: so let us try No. (3) instead, viz. “Some y are m ”. This gives us Diagram *c*.

And now there is no need to trouble about No. (1), as it would not add anything to our information to put a “I” on the fence. The Diagram *already* tells us that “Some m are x ”.]



[Work Examples § 1, 9–12 (p. 1100); § 2, 1–20 (p. 1100).]

Chapter IV. Interpretation, in Terms of x and y , of Trilateral Diagram, When Marked With Counters or Digits.

The problem before us is, given a marked Trilateral Diagram, to ascertain *what* Propositions of Relation, in terms of x and y , are represented on it.

The best plan, for a *beginner*, is to draw a *Bilateral* Diagram alongside of it, and to transfer, from the one to the other, all the information he can. He

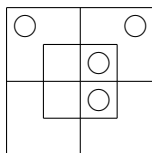
can then read off, from the Biliteral Diagram, the required Propositions. After a little practice, he will be able to dispense with the Biliteral Diagram, and to read off the result from the Trilateral Diagram itself.

To *transfer* the information, observe the following Rules:—

- (1) Examine the N.W. Quarter of the Trilateral Diagram.
- (2) If it contains a “T”, in *either* Cell, it is certainly *occupied*, and you may mark the N.W. Quarter of the Biliteral Diagram with a “T”.
- (3) If it contains *two* “O”s, one in *each* Cell, it is certainly *empty*, and you may mark the N.W. Quarter of the Biliteral Diagram with a “O”.
- (4) Deal in the same way with the N.E., the S.W., and the S.E. Quarter.

[Let us take, as examples, the results of the four Examples worked in the previous Chapters.

(1)



In the N.W. Quarter, only *one* of the two Cells is marked as *empty*: so we do not know whether the N.W. Quarter of the Biliteral Diagram is *occupied* or *empty*: so we cannot mark it.

In the N.E. Quarter, we find *two* “O”s: so *this* Quarter is certainly *empty*; and we mark it so on the Biliteral Diagram.

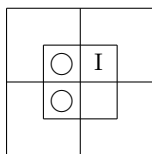


In the S.W. Quarter, we have no information *at all*.

In the S.E. Quarter, we have not enough to use.

We may read off the result as “No x are y ”, or “No y' are x ,” whichever we prefer.

(2)



In the N.W. Quarter, we have not enough information to use.

In the N.E. Quarter, we find a “I”. This shows us that it is *occupied*: so we may mark the N.E. Quarter on the Biliteral Diagram with a “I”.

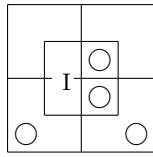


In the S.W. Quarter, we have not enough information to use.

In the S.E. Quarter, we have none at all.

We may read off the result as “Some x are y ”, or “Some y' are x ”, whichever we prefer.

(3)



In the N.W. Quarter, we have *no* information. (The “I”, sitting on the fence, is of no use to us until we know on *which* side he means to jump down!)

In the N.E. Quarter, we have not enough information to use.

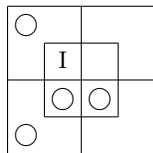
Neither have we in the S.W. Quarter.

The S.E. Quarter is the only one that yields enough information to use. It is certainly *empty*: so we mark it as such on the Biliteral Diagram.

We may read off the results as “No x' are y' ”, or “No y' are x' ”, whichever we prefer.



(4)



The N.W. Quarter is *occupied*, in spite of the “O” in the Outer Cell. So we mark it with a “I” on the Biliteral Diagram.

The N.E. Quarter yields no information.

The S.W. Quarter is certainly *empty*. So we mark it as such on the Biliteral Diagram.

The S.E. Quarter does not yield enough information to use.

We read off the result as “All y are x .”]

[Review Tables V, VI (pp. 1069, 1070). Work Examples § 1, 13–16 (p. 1100); § 2, 21–32 (p. 1101); § 3, 1–20 (p. 1102).]



Book V. Syllogisms.

Chapter I. Introductory

When a Trio of Biliteral Propositions of Relation is such that

- (1) all their six Terms are Species of the same Genus,
- (2) every two of them contain between them a Pair of codivisional Classes,
- (3) the three Propositions are so related that, if the first two were true, the third would be true,

the Trio is called a ‘**Syllogism**’; the Genus, of which each of the six Terms is a Species, is called its ‘**Universe of Discourse**’, or, more briefly, its ‘**Univ.**’; the first two Propositions are called its ‘**Premisses**’, and the third its ‘**Conclusion**’; also the Pair of codivisional Terms in the Premisses are called its ‘**Eliminands**’, and the other two its ‘**Retinends**’.

The Conclusion of a Syllogism is said to be ‘**consequent**’ from its Premisses: hence it is usual to prefix to it the word “Therefore” (or the Symbol “ \therefore ”).

[Note that the ‘Eliminands’ are so called because they are *eliminated*, and do not appear in the Conclusion; and that the ‘Retinends’ are so called because they are *retained*, and *do* appear in the Conclusion.

Note also that the question, whether the Conclusion is or is not *consequent* from the Premisses, is not affected by the *actual* truth or falsity of any of the Trio, but depends entirely on their *relationship to each other*.

As a specimen-Syllogism, let us take the Trio

“No x -Things are m -Things;
 No y -Things are m' -Things.
 No x -Things are y -Things.”

which we may write, as explained at p. 1058, thus:—

“No x are m ;
 No y are m' .
 No x are y ”.

Here the first and second contain the Pair of codivisional Classes m and m' ; the first and third contain the Pair x and x ; and the second and third contain the Pair y and y .

Also the three Propositions are (as we shall see hereafter) so related that, if the first two were true, the third would also be true.

Hence the Trio is a *Syllogism*; the two Propositions, “No x are m ” and “No y are m' ”, are its *Premisses*; the Proposition “No x are y ” is its *Conclusion*; the Terms m and m' are its *Eliminands*; and the Terms x and y are its *Retinends*.

Hence we may write it thus:—

“No x are m ;
 No y are m' .
 ∴ No x are y ”.

As a second specimen, let us take the Trio

“All cats understand French;
 Some chickens are cats.
 Some chickens understand French”.

These, put into normal form, are

“All cats are creatures understanding French;
 Some chickens are cats.
 Some chickens are creatures understanding French”.

Here all the six Terms are Species of the Genus “creatures.”

Also the first and second Propositions contain the Pair of codivisional Classes “cats” and “cats”; the first and third contain the Pair “creatures understanding French” and “creatures understanding French”; and the second and third contain the Pair “chickens” and “chickens”.

Also the three Propositions are (as we shall see at p. 1081) so related that, if the first two were true, the third would be true. (The first two are, as it happens, *not* strictly true in *our* planet. But there is nothing to hinder them from being true in some *other* planet, say *Mars* or *Jupiter*—in which case the third would *also* be true in that planet, and its inhabitants would probably engage chickens as nursery-governesses. They would thus secure a singular *contingent* privilege, unknown in England, namely, that they would be able, at any time when provisions ran short, to utilise the nursery-governess for the nursery-dinner!)

Hence the Trio is a *Syllogism*; the Genus “creatures” is its ‘Univ.’; the two Propositions, “All cats understand French” and “Some chickens are cats”, are its *Premisses*, the Proposition “Some chickens understand French” is its *Conclusion*; the Terms “cats”

and “cats” are its *Eliminands*; and the Terms, “creatures understanding French” and “chickens”, are its *Retinends*.

Hence we may write it thus:—

“All cats understand French;
Some chickens are cats;
∴ Some chickens understand French.”]

Chapter II. Problems in Syllogisms.

§ 1. Introductory. When the Terms of a Proposition are represented by *words*, it is said to be ‘**concrete**’; when by *letters*, ‘**abstract**.’

To translate a Proposition from concrete into abstract form, we fix on a Univ., and regard each Term as a *Species* of it, and we choose a letter to represent its *Differentia*.

[For example, suppose we wish to translate “Some soldiers are brave” into abstract form. We may take “men” as Univ., and regard “soldiers” and “brave men” as *Species* of the *Genus* “men”; and we may choose x to represent the peculiar Attribute (say “military”) of “soldiers,” and y to represent “brave.” Then the Proposition may be written “Some military men are brave men”; *i. e.* “Some x -men are y -men”; *i. e.* (omitting “men,” as explained at p. 1058) “Some x are y .”

In practice, we should merely say “Let Univ. be “men”, x = soldiers, y = brave”, and at once translate “Some soldiers are brave” into “Some x are y .”]

The Problems we shall have to solve are of two kinds, viz.

(1) “Given a Pair of Propositions of Relation, which contain between them a pair of codivisional Classes, and which are proposed as Premisses: to ascertain what Conclusion, if any, is consequent from them.”

(2) “Given a Trio of Propositions of Relation, of which every two contain a pair of codivisional Classes, and which are proposed as a Syllogism: to ascertain whether the proposed Conclusion is consequent from the proposed Premisses, and, if so, whether it is *complete*.”

These Problems we will discuss separately.

§ 2. Given a Pair of Propositions of Relation, which contain between them a pair of codivisional Classes, and which are proposed as Premisses: to ascertain what Conclusion, if any, is consequent from them.

The Rules, for doing this, are as follows:—

- (1) Determine the ‘Universe of Discourse’.
- (2) Construct a Dictionary, making m and m (or m and m') represent the pair of codivisional Classes, and x (or x') and y (or y') the other two.
- (3) Translate the proposed Premisses into abstract form.
- (4) Represent them, together, on a Trilateral Diagram.
- (5) Ascertain what Proposition, if any, in terms of x and y , is *also* represented on it.
- (6) Translate this into concrete form.

It is evident that, if the proposed Premisses were true, this other Proposition would *also* be true. Hence it is a *Conclusion* consequent from the proposed Premisses.

[Let us work some examples.

(1)

“No son of mine is dishonest;
 People always treat an honest man with respect”.

Taking “men” as Univ., we may write these as follows:—

“No sons of mine are dishonest men;
 All honest men are men treated with respect”.

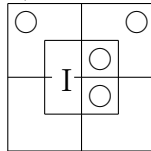
We can now construct¹ our Dictionary, viz. m = honest; x = sons of mine; y = treated with respect.

(Note that the expression “ x = sons of mine” is an abbreviated form of “ x = the Differentia of ‘sons of mine’, when regarded as a Species of ‘men’”.)

The next thing is to translate the proposed Premisses into abstract form, as follows:—

“No x are m' ;
 All m are y ”.

Next, by the process described at p. 1072, we represent these on a Trilateral Diagram, thus:—



Next, by the process described at p. 1073, we transfer to a Biliteral Diagram all the information we can.



The result we read as “No x are y' ” or as “No y' are x ,” whichever we prefer. So we refer to our Dictionary, to see which will look best; and we choose

“No x are y' ”,

which, translated into concrete form, is

“No son of mine fails to be treated with respect”.

(2)

“All cats understand French;
 Some chickens are cats”.

Taking “creatures” as Univ., we write these as follows:—

“All cats are creatures understanding French;
 Some chickens are cats”.

We can now construct our Dictionary, viz. m = cats; x = understanding French; y = chickens.

The proposed Premisses, translated into abstract form, are

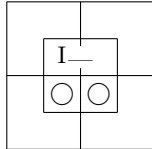
“All m are x ;
 Some y are m ”.

In order to represent these on a Trilateral Diagram, we break up the first into the two Propositions to which it is equivalent, and thus get the *three* Propositions

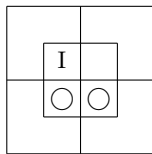
¹accidentally “construct”

- (1) "Some m are x ;
- (2) No m are x' ;
- (3) Some y are m ".

The Rule, given at p. 1072, would make us take these in the order 2, 1, 3.
This, however, would produce the result



So it would be better to take them in the order 2, 3, 1. Nos. (2) and (3) give us the result here shown; and now we need not trouble about No. (1), as the Proposition "Some m are x " is *already* represented on the Diagram.



Transferring our information to a Biliteral Diagram, we get



This result we can read either as "Some x are y " or "Some y are x ".
After consulting our Dictionary, we choose

"Some y are x ",

which, translated into concrete form, is

"Some chickens understand French."

(3)

"All diligent students are successful;
All ignorant students are unsuccessful".

Let Univ. be "students"; m = successful; x = diligent; y = ignorant.
These Premises, in abstract form, are

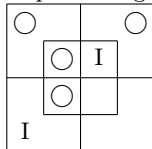
"All x are m ;
All y are m' ".

These, broken up, give us the four Propositions

- (1) "Some x are m ;
- (2) No x are m' ;
- (3) Some y are m' ;
- (4) No y are m ".

which we will take in the order 2, 4, 1, 3.

Representing these on a Trilateral Diagram, we get



And this information, transferred to a Biliteral Diagram, is



Here we get *two* Conclusions, viz.

“All x are y' ;
All y are x' .”

And these, translated into concrete form, are

“All diligent students are (not-ignorant, i. e.) learned;
All ignorant students are (not-diligent, i. e.) idle”. (See p. 1045.)

(4)

“Of the prisoners who were put on their trial at the last Assizes, all, against whom the verdict ‘guilty’ was returned, were sentenced to imprisonment;
Some, who were sentenced to imprisonment, were also sentenced to hard labour”.

Let Univ. be “the prisoners who were put on their trial at the last Assizes”; m = who were sentenced to imprisonment; x = against whom the verdict ‘guilty’ was returned; y = who were sentenced to hard labour.

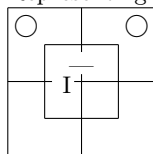
The Premises, translated into abstract form, are

“All x are m ;
Some m are y ”.

Breaking up the first, we get the three

- (1) “Some x are m ;
- (2) No x are m' ;
- (3) Some m are y ”.

Representing these, in the order 2, 1, 3, on a Trilateral Diagram, we get



Here we get no Conclusion at all.

You would very likely have guessed, if you had seen *only* the Premises, that the Conclusion would be

“Some, against whom the verdict ‘guilty’ was returned, were sentenced to hard labour”.

But this Conclusion is not even *true*, with regard to the Assizes I have here invented.

“Not *true!*” you exclaim. “Then who *were* they, who were sentenced to imprisonment and were also sentenced to hard labour? They *must* have had the verdict ‘guilty’ returned against them, or how could they be sentenced?”

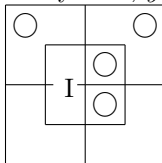
Well, it happened like *this*, you see. They were three ruffians, who had committed highway-robbery. When they were put on their trial, they *pleaded* ‘guilty’. So no *verdict* was returned at all; and they were sentenced at once.]

I will now work out, in their briefest form, as models for the Reader to imitate in working examples, the above four concrete Problems.

(1) [see p. 1077]

“No son of mine is dishonest;
People always treat an honest man with respect.”

Univ. "men"; m = honest; x = my sons; y = treated with respect.



"No x are m' ;
All m are y ."

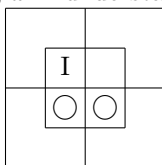
\therefore "No x are y' ."

i. e. "No son of mine ever fails to be treated with respect."

(2) [see p. 1078]

"All cats understand French;
Some chickens are cats".

Univ. "creatures"; m = cats; x = understanding French; y = chickens.



"All m are x ;
Some y are m ."

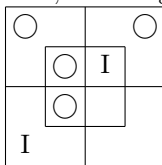
\therefore "Some y are x ."

i. e. "Some chickens understand French."

(3) [see p. 1079]

"All diligent students are successful;
All ignorant students are unsuccessful".

Univ. "students"; m = successful; x = diligent; y = ignorant.



"All x are m ;
All y are m' ."

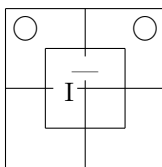
\therefore "All x are y' ; All y are x' ."

i. e. "All diligent students are learned; and all ignorant students are idle".

(4) [see p. 1080]

"Of the prisoners who were put on their trial at the last Assizes, all,
against whom the verdict 'guilty' was returned, were sentenced
to imprisonment;
Some, who were sentenced to imprisonment, were also sentenced to
hard labour".

Univ. "prisoners who were put on their trial at the last Assizes", m = sentenced to imprisonment; x = against whom the verdict 'guilty' was returned; y = sentenced to hard labour.



“All x are m ;
Some m are y .”

There is no Conclusion.

[Review Tables VII, VIII (p. 1071). Work Examples § 1, 17–21 (p. 1100); § 4, 1–6 (p. 1105); § 5, 1–6 (p. 1107).]

§ 3. Given a Trio of Propositions of Relation, of which every two contain a Pair of codivisional Classes, and which are proposed as a Syllogism; to ascertain whether the proposed Conclusion is consequent from the proposed Premisses, and, if so, whether it is complete.
The Rules, for doing this, are as follows:—

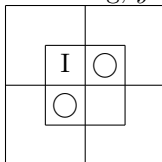
- (1) Take the proposed Premisses, and ascertain, by the process described at p. 1077, what Conclusion, if any, is consequent from them.
- (2) If there be *no* Conclusion, say so.
- (3) If there be a Conclusion, compare it with the proposed Conclusion, and pronounce accordingly.

I will now work out, in their briefest form, as models for the Reader to imitate in working examples, six Problems.

(1)

“All soldiers are strong;
All soldiers are brave.
Some strong men are brave.”

Univ. “men”; m = soldiers; x = strong; y = brave.



“All m are x ;
All m are y .
Some x are y .”



∴ “Some x are y .”

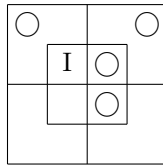
Hence proposed Conclusion is right.

(2)

“I admire these pictures;
When I admire anything I wish to examine it thoroughly.
I wish to examine some of these pictures thoroughly.”

Univ. “things”; m = admired by me; x = these pictures; y = things which I wish to examine thoroughly.

“All x are m ;
 All m are y .
 Some x are y .”



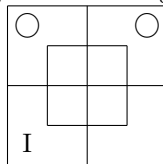
∴ “All x are y .”

Hence proposed Conclusion is *incomplete*, the *complete* one being “I wish to examine *all* these pictures thoroughly”.

(3)

“None but the brave deserve the fair;
 Some braggarts are cowards.
 Some braggarts do not deserve the fair.”

Univ. “persons”; m = brave; x = deserving of the fair; y = braggarts.



“No m' are x ;
 Some y are m' .
 Some y are x' .”



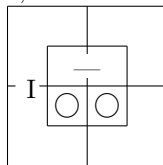
∴ “Some y are x' .”

Hence proposed Conclusion is right.

(4)

“All soldiers can march;
 Some babies are not soldiers.
 Some babies cannot march”.

Univ. “persons”; m = soldiers; x = able to march; y = babies.



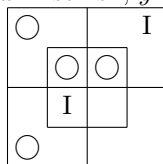
“All m are x ;
 Some y are m' .
 Some y are x' .”

There is no Conclusion.

(5)

“All selfish men are unpopular;
 All obliging men are popular.
 All obliging men are unselfish”.

Univ. “men”; m = popular; x = selfish; y = obliging.



“All x are m' ;
 All y are m .
 All y are x' .”



∴ “All x are y' ; All y are x' .”

Hence proposed Conclusion is *incomplete*, the *complete* one containing, in addition, “All selfish men are disobliging”.

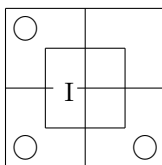
(6)

”No one, who means to go by the train and cannot get a conveyance, and has not enough time to walk to the station, can do without running;

This party of tourists mean to go by the train and cannot get a conveyance, but they have plenty of time to walk to the station.

This party of tourists need not run.”

Univ. “persons meaning to go by the train, and unable to get a conveyance”; m = having enough time to walk to the station; x = needing to run; y = these tourists.



“No m' are x' ;
All y are m .
All y are x' .”

There is no Conclusion.

[Here is *another* opportunity, gentle Reader, for playing a trick on your innocent friend. Put the proposed Syllogism before him, and ask him what he thinks of the Conclusion.

He will reply “Why, it’s perfectly correct, of course! And if your precious Logic-book tells you it *isn’t*, don’t believe it! You don’t mean to tell me those tourists *need* to run? If I were one of them, and knew the *Premisses* to be true, I should be *quite* clear that I *needn’t* run—and I *should walk!*”

And *you* will reply “But suppose there was a mad bull behind you?”

And then your innocent friend will say “Hum! Ha! I must think that over a bit!”

You may then explain to him, as a convenient *test* of the soundness of a Syllogism, that, if circumstances can be invented which, without interfering with the truth of the *Premisses*, would make the *Conclusion* false, the Syllogism *must* be unsound.]

[Review Tables V–VIII (pp. 1069–1071). Work Examples § 4, 7–12 (p. 1105); § 5, 7–12 (p. 1107); § 6, 1–10 (p. 1111); § 7, 1–6 (p. 1112).]

Book VI. The Method of Subscripts.

Chapter I. Introductory.

Let us agree that “ x_1 ” shall mean “Some existing Things have the Attribute x ”, i. e. (more briefly) “Some x exist”; also that “ xy_1 ” shall mean “Some xy exist”, and so on. Such a Proposition may be called an ‘**Entity**.’

[Note that, when there are *two* letters in the expression, it does not in the least matter which stands *first*: “ xy_1 ” and “ yx_1 ” mean exactly the same.]

Also that “ x_0 ” shall mean “No existing Things have the Attribute x ”, i. e. (more briefly) “No x exist”; also that “ xy_0 ” shall mean “No xy exist”, and so on. Such a Proposition may be called a ‘**Nullity**’.

Also that “†” shall mean “and”.

[Thus “ $ab_1 \dagger cd_0$ ” means “Some ab exist and no cd exist”.]

Also that “P” shall mean “would, if true, prove”.

[Thus, “ $x_0 \text{ P } xy_0$ ” means “The Proposition ‘No x exist’ would, if true, prove the Proposition ‘No xy exist’.”]

When two Letters are both of them accented, or both *not* accented, they are said to have ‘**Like Signs**’, or to be ‘**Like**’: when one is accented, and the other not, they are said to have ‘**Unlike Signs**’, or to be ‘**Unlike**’.

Chapter II. Representation of Propositions of Relation.

Let us take, first, the Proposition “Some x are y ”.

This, we know, is equivalent to the Proposition of Existence “Some xy exist”. (See p. 1060.) Hence it may be represented by the expression “ xy_1 ”.

The Converse Proposition “Some y are x ” may of course be represented by the *same* expression, viz. “ xy_1 ”.

Similarly we may represent the three similar Pairs of Converse Propositions, viz.—

$$\begin{aligned} \text{“Some } x \text{ are } y\text{”} &= \text{“Some } y' \text{ are } x\text{”}, \\ \text{“Some } x' \text{ are } y\text{”} &= \text{“Some } y \text{ are } x'\text{”}, \\ \text{“Some } x' \text{ are } y'\text{”} &= \text{“Some } y' \text{ are } x'\text{”}. \end{aligned}$$

Let us take, next, the Proposition “No x are y ”.

This, we know, is equivalent to the Proposition of Existence “No xy exist”. (See p. 1061.) Hence it may be represented by the expression “ xy_0 ”.

The Converse Proposition “No y are x ” may of course be represented by the *same* expression, viz. “ xy_0 ”.

Similarly we may represent the three similar Pairs of Converse Propositions, viz.—

$$\begin{aligned} \text{“No } x \text{ are } y'\text{”} &= \text{“No } y' \text{ are } x\text{”}, \\ \text{“No } x' \text{ are } y\text{”} &= \text{“No } y \text{ are } x'\text{”}, \\ \text{“No } x' \text{ are } y'\text{”} &= \text{“No } y' \text{ are } x'\text{”}. \end{aligned}$$

Let us take, next, the Proposition “All x are y ”.

Now it is evident that the Double Proposition of Existence “Some x exist and no xy' exist” tells us that *some* x -Things exist, but that *none* of them have the Attribute y' : that is, it tells us that *all* of them have the Attribute y : that is, it tells us that “All x are y ”.

Also it is evident that the expression “ $x_1 \dagger xy'_0$ ” represents this Double Proposition.

Hence it also represents the Proposition “All x are y ”.

[The Reader will perhaps be puzzled by the statement that the Proposition “All x are y ” is equivalent to the Double Proposition “Some x exist and no xy' exist,” remembering that it was stated, at p. 1062, to be equivalent to the Double Proposition “Some x are y and no x are y' ” (i. e. “Some xy exist and no xy' exist”). The explanation is that the Proposition “Some xy exist” contains *superfluous information*. “Some x exist” is enough for our purpose.]

This expression may be written in a shorter form, viz. “ $x_1y'_0$ ”, since *each* Subscript takes effect back to the *beginning* of the expression.

Similarly we may represent the seven similar Propositions “All x are y' ”, “All x' are y ”, “All x' are y' ”, “All y are x ”, “All y are x' ”, “All y' are x ”, and “All y' are x' ”.

[The Reader should make out all these for himself.]

It will be convenient to remember that, in translating a Proposition, beginning with “All”, from abstract form into subscript form, or *vice versâ*, the Predicate *changes sign* (that is, changes from positive to negative, or else from negative to positive).

[Thus, the Proposition “All y are x ” becomes “ $y_1 x_0$ ”, where the Predicate changes from x' to x .

Again, the expression “ $x'_1 y'_0$ ” becomes “All x' are y ”, where the Predicate changes for y' to y .]

Chapter III. Syllogisms.

§ 1. Representation of Syllogisms. We already know how to represent each of the three Propositions of a Syllogism in subscript form. When that is done, all we need, besides, is to write the three expressions in a row, with “†” between the Premisses, and “P” before the Conclusion.

[Thus the Syllogism

“No x are m' ;
All m are y .
∴ No x are y' .”

may be represented thus:—

$$x m'_0 \dagger m_1 y'_0 \text{ P } x y'_0$$

When a Proposition has to be translated from concrete form into subscript form, the Reader will find it convenient, just at first, to translate it into *abstract* form, and *thence* into subscript form. But, after a little practice, he will find it quite easy to go straight from concrete form to subscript form.]

§ 2. Formulæ for solving Problems in Syllogisms. When once we have found, by Diagrams, the Conclusion to a given Pair of Premisses, and have represented the Syllogism in subscript form, we have a *Formula*, by which we can at once find, without having to use Diagrams again, the Conclusion to any *other* Pair of Premisses having the *same* subscript forms.

[Thus, the expression

$$x m_0 \dagger y m'_0 \text{ P } x y_0$$

is a Formula, by which we can find the Conclusion to any Pair of Premisses whose subscript forms are

$$x m_0 \dagger y m'_0$$

For example, suppose we had the Pair of Propositions

“No gluttons are healthy;
No unhealthy men are strong”.

proposed as Premisses. Taking “men” as our ‘Universe’, and making m = healthy; x = gluttons; y = strong; we might translate the Pair into abstract form, thus:—

“No x are m ;
No m' are y ”.

These, in subscript form, would be

$$x m_0 \dagger m' y_0$$

which are identical with those in our *Formula*. Hence we at once know the Conclusion to be

$$xy_0$$

that is, in abstract form,

“No x are y ”;

that is, in concrete form,

“No gluttons are strong”.]

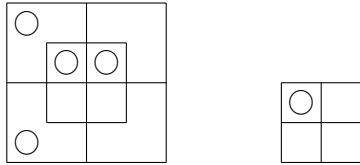
I shall now take three different forms of Pairs of Premises, and work out their Conclusions, once for all, by Diagrams; and thus obtain some useful Formulæ. I shall call them “Fig. I”, “Fig. II”, and “Fig. III”.

Fig. I.

This includes any Pair of Premises which are both of them Nullities, and which contain Unlike Eliminands.

The simplest case is

$$xm_0 \dagger ym'_0$$



$\therefore xy_0$

In this case we see that the Conclusion is a Nullity, and that the Retinends have kept their Signs.

And we should find this Rule to hold good with *any* Pair of Premises which fulfil the given conditions.

[The Reader had better satisfy himself of this, by working out, on Diagrams, several varieties, such as

$$\begin{aligned} & m_1x_0 \dagger ym'_0 \text{ (which } \mathbb{P}xy_0) \\ & xm'_0 \dagger m_1y_0 \text{ (which } \mathbb{P}xy_0) \\ & x'm_0 \dagger ym'_0 \text{ (which } \mathbb{P}x'y_0) \\ & m'_1x'_0 \dagger m_1y'_0 \text{ (which } \mathbb{P}x'y'_0).] \end{aligned}$$

If either Retinend is asserted in the *Premises* to exist, of course it may be so asserted in the *Conclusion*.

Hence we get two *Variants* of Fig. I, viz.

- (α) where *one* Retinend is so asserted;
- (β) where *both* are so asserted.

[The Reader had better work out, on Diagrams, examples of these two Variants, such as

$$\begin{aligned} & m_1x_0 \dagger y_1m'_0 \text{ (which proves } y_1x_0) \\ & x_1m'_0 \dagger m_1y_0 \text{ (which proves } x_1y_0) \\ & x'_1m_0 \dagger y_1m'_0 \text{ (which proves } x'_1y_0 \dagger y_1x'_0).] \end{aligned}$$

The Formula, to be remembered, is

$$xm_0 \dagger ym'_0 \mathbb{P} xy_0$$

with the following two Rules:—

- (1) *Two Nullities, with Unlike Eliminands, yield a Nullity, in which both Retinends keep their Signs.*
- (2) *A Retinend, asserted in the Premisses to exist, may be so asserted in the Conclusion.*

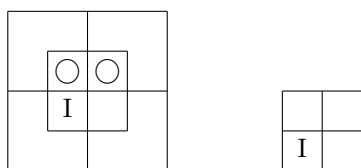
[Note that Rule (1) is merely the Formula expressed in words.]

Fig. II.

This includes any Pair of Premisses, of which one is a Nullity and the other an Entity, and which contain Like Eliminands.

The simplest case is

$$xm_0 \dagger ym_1$$



$\therefore x'y_1$

In this case we see that the Conclusion is an Entity, and that the Nullity-Retinend has changed its Sign.

And we should find this Rule to hold good with *any* Pair of Premisses which fulfil the given conditions.

[The Reader had better satisfy himself of this, by working out, on Diagrams, several varieties, such as

- $x'm_0 \dagger ym_1$ (which $\mathbb{P}xy_1$)
- $x_1m'_0 \dagger y'm'_1$ (which $\mathbb{P}x'y'_1$)
- $m_1x_0 \dagger y'm_1$ (which $\mathbb{P}x'y'_1$).]

The Formula, to be remembered, is,

$$xm_0 \dagger ym_1 \mathbb{P} x'y_1$$

with the following Rule:—

A Nullity and an Entity, with Like Eliminands, yield an Entity, in which the Nullity-Retinend changes its Sign.

[Note that this Rule is merely the Formula expressed in words.]

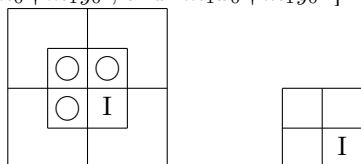
Fig. III.

This includes any Pair of Premisses which are both of them Nullities, and which contain Like Eliminands asserted to exist.

The simplest case is

$$xm_0 \dagger ym_0 \dagger m_1$$

[Note that “ m_1 ” is here stated *separately*, because it does not matter in which of the two Premisses it occurs: so that this includes the *three* forms “ $m_1x_0 \dagger ym_0$ ”, “ $xm_0 \dagger m_1y_0$ ”, and “ $m_1x_0 \dagger m_1y_0$ ”.]



$\therefore x'y'_1$

In this case we see that the Conclusion is an Entity, and that *both* Retinends have changed their Signs.

And we should find this Rule to hold good with *any* Pair of Premisses which fulfil the given conditions.

[The Reader had better satisfy himself of this, by working out, on Diagrams, several varieties, such as

$x'm_0 \dagger m_1y_0$ (which $\mathbb{P}xy'_1$)
 $m'_1x_0 \dagger m'y'_0$ (which $\mathbb{P}x'y_1$)
 $m_1x'_0 \dagger m_1y'_0$ (which $\mathbb{P}xy_1$).]

The Formula, to be remembered, is

$$xm_0 \dagger ym_0 \dagger m_1 \mathbb{P} x'y'_1$$

with the following Rule (which is merely the Formula expressed in words):—

Two Nullities, with Like Eliminands asserted to exist, yield an Entity, in which both Retinends change their Signs.

In order to help the Reader to remember the peculiarities and Formulæ of these three Figures, I will put them all together in one Table.

Table IX

<p>Fig. I. $xm_0 \dagger ym'_0 \mathbb{P} xy_0$ Two Nullities, with Unlike Eliminands, yield a Nullity, in which both Retinends keep their Signs. A Retinend, asserted in the Premisses to exist, may be so asserted in the Conclusion.</p>
<p>Fig. II. $xm_0 \dagger ym_1 \mathbb{P} x'y_1$ A Nullity and an Entity, with Like Eliminands, yield an Entity, in which the Nullity-Retinend changes its Sign.</p>
<p>Fig. III. $xm_0 \dagger ym_0 \dagger m_1 \mathbb{P} x'y'_1$ Two Nullities, with Like Eliminands asserted to exist, yield an Entity, in which both Retinends change their Signs.</p>

I will now work out, by these Formulæ, as models for the Reader to imitate, some Problems in Syllogisms which have been already worked, by Diagrams, in Book V., Chap. II.

(1) [see p. 1080]

“No son of mine is dishonest;
 People always treat an honest man with respect.”

Univ. “men”; m = honest; x = my sons; y = treated with respect.

$$xm'_0 \dagger m_1y'_0 \mathbb{P} xy'_0 \quad \text{[Fig. I.]}$$

i. e. “No son of mine ever fails to be treated with respect.”

(2) [see p. 1081]

“All cats understand French;
Some chickens are cats.”

Univ. “creatures”; m = cats; x = understanding French; y = chickens.

$$m_1x'_0 \dagger ym_1 \mathbb{P} xy_1 \quad [\text{Fig. II.}]$$

i. e. “Some chickens understand French.”

(3) [see p. 1081]

“All diligent students are successful;
All ignorant students are unsuccessful.”

Univ. “students”; m = successful; x = diligent; y = ignorant.

$$x_1m'_0 \dagger y_1m_0 \mathbb{P} x_1y_0 \dagger y_1x_0 \quad [\text{Fig. I } (\beta).]$$

i. e. “All diligent students are learned; and all ignorant students are idle.”

(4) [see p. 1082]

“All soldiers are strong;
All soldiers are brave.
Some strong men are brave.”

Univ. “men”; m = soldiers; x = strong; y = brave.

$$m_1x'_0 \dagger m_1y'_0 \mathbb{P} xy_1 \quad [\text{Fig. III.}]$$

Hence proposed Conclusion is right.

(5) [see p. 1082]

“I admire these pictures;
When I admire anything, I wish to examine it thoroughly.
I wish to examine some of these pictures thoroughly.”

Univ. “things”; m = admired by me; x = these; y = things which I wish to examine thoroughly.

$$x_1m'_0 \dagger m_1y'_0 \mathbb{P} x_1y'_0 \quad [\text{Fig. I } (\alpha).]$$

Hence proposed Conclusion, xy_1 , is *incomplete*, the *complete* one being “I wish to examine *all* these pictures thoroughly.”

(6) [see p. 1083]

“None but the brave deserve the fair;
Some braggarts are cowards.
Some braggarts do not deserve the fair.”

Univ. “persons”; m = brave; x = deserving of the fair; y = braggarts.

$$m'x_0 \dagger ym'_1 \mathbb{P} x'y_1 \quad [\text{Fig. II.}]$$

Hence proposed Conclusion is right.

(7) [see p. 1084]

”No one, who means to go by the train and cannot get a conveyance, and has not enough time to walk to the station, can do without running;

This party of tourists mean to go by the train and cannot get a conveyance, but they have plenty of time to walk to the station. This party of tourists need not run.”

Univ. “persons meaning to go by the train, and unable to get a conveyance”; m = having enough time to walk to the station; x = needing to run; y = these tourists.

$m'x_0 \dagger y_1 m'_0$ do not come under any of the three Figures. Hence it is necessary to return to the Method of Diagrams, as shown at p. 1084.

Hence there is no Conclusion.

[Work Examples § 4, 12–20 (p. 1105); § 5, 13–24 (p. 1107); § 6, 1–6 (p. 1111); § 7, 1–3 (p. 1112). Also read Note (A), at p. 1145.]

§ 3. Fallacies. Any argument which *deceives* us, by seeming to prove what it does not really prove, may be called a ‘**Fallacy**’ (derived from the Latin verb *fallo* “I deceive”): but the particular kind, to be now discussed, consists of a Pair of Propositions, which are proposed as the Premisses of a Syllogism, but yield no Conclusion.

When each of the proposed Premisses is a Proposition in *I*, or *E*, or *A*, (the only kinds with which we are now concerned,) the Fallacy may be detected by the ‘Method of Diagrams,’ by simply setting them out on a Trilateral Diagram, and observing that they yield no information which can be transferred to the Biliteral Diagram.

But suppose we were working by the ‘Method of *Subscripts*,’ and had to deal with a Pair of proposed Premisses, which happened to be a ‘Fallacy,’ how could we be certain that they would not yield any Conclusion?

Our best plan is, I think, to deal with *Fallacies* in the same way as we have already dealt with *Syllogisms*: that is, to take certain forms of Pairs of Propositions, and to work them out, once for all, on the Trilateral Diagram, and ascertain that they yield *no* Conclusion; and then to record them, for future use, as *Formulæ for Fallacies*, just as we have already recorded our three *Formulæ for Syllogisms*.

Now, if we were to record the two Sets of Formulæ in the *same* shape, viz. by the Method of Subscripts, there would be considerable risk of confusing the two kinds. Hence, in order to keep them distinct, I propose to record the Formulæ for *Fallacies* in *words*, and to call them “Forms” instead of “Formulæ.”

Let us now proceed to find, by the Method of Diagrams, three “Forms of Fallacies,” which we will then put on record for future use. They are as follows:—

- (1) Fallacy of Like Eliminands not asserted to exist.
- (2) Fallacy of Unlike Eliminands with an Entity-Premiss.
- (3) Fallacy of two Entity-Premisses.

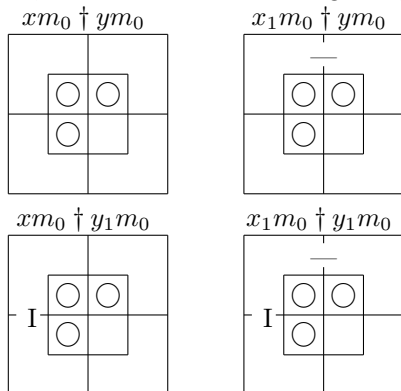
These shall be discussed separately, and it will be seen that each fails to yield a Conclusion.

(1) Fallacy of Like Eliminands not asserted to exist.

It is evident that neither of the given Propositions can be an *Entity*, since that kind asserts the *existence* of both of its Terms (see p. 1054). Hence they must both be *Nullities*.

Hence the given Pair may be represented by $(xm_0 \dagger ym_0)$, with or without x_1, y_1 .

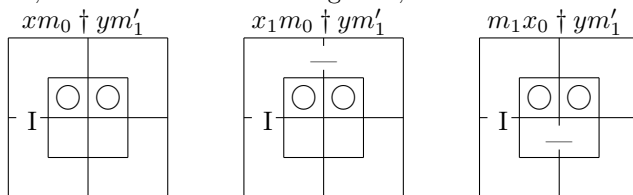
These, set out on Trilateral Diagrams, are



(2) Fallacy of Unlike Eliminands with an Entity-Premiss.

Here the given Pair may be represented by $(xm_0 \dagger ym'_1)$ with or without x_1 or m_1 .

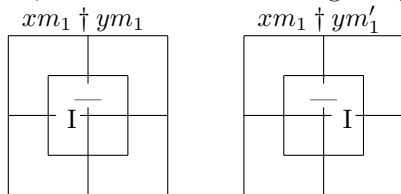
These, set out on Trilateral Diagrams, are



(3) Fallacy of two Entity-Premisses.

Here the given Pair may be represented by either $(xm_1 \dagger ym_1)$ or $(xm_1 \dagger ym'_1)$.

These, set out on Trilateral Diagrams, are



§ 4. Method of proceeding with a given Pair of Propositions. Let us suppose that we have before us a Pair of Propositions of Relation, which contain between them a Pair of codivisional Classes, and that we wish to ascertain what Conclusion, if any, is consequent from them. We translate them, if necessary, into subscript-form, and then proceed as follows:—

(1) We examine their Subscripts, in order to see whether they are

(a) a Pair of Nullities;

or (b) a Nullity and an Entity;
or (c) a Pair of Entities.

(2) If they are a Pair of Nullities, we examine their Eliminands, in order to see whether they are Unlike or Like.

If their Eliminands are *Unlike*, it is a case of Fig. I. We then examine their Retinends, to see whether one or both of them are asserted to *exist*. If one Retinend is so asserted, it is a case of Fig. I (α); if both, it is a case of Fig. I (β).

If their Eliminands are Like, we examine them, in order to see whether either of them is asserted to exist. If so, it is a case of Fig. III.; if not, it is a case of "Fallacy of Like Eliminands not asserted to exist."

(3) If they are a Nullity and an Entity, we examine their Eliminands, in order to see whether they are Like or Unlike.

If their Eliminands are Like, it is a case of Fig. II.; if *Unlike*, it is a case of "Fallacy of Unlike Eliminands with an Entity-Premiss."

(4) If they are a Pair of Entities, it is a case of "Fallacy of two Entity-Premisses."

[Work Examples § 4, 1–11 (p. 1105); § 5, 1–12 (p. 1107); § 6, 7–12 (p. 1111); § 7, 7–12 (p. 1113).]

Book VII. Sorites

Chapter I. Introductory.

When a Set of three or more Biliteral Propositions are such that all their Terms are Species of the same Genus, and are also so related that two of them, taken together, yield a Conclusion, which, taken with another of them, yields another Conclusion, and so on, until all have been taken, it is evident that, if the original Set were true, the last Conclusion would *also* be true.

Such a Set, with the last Conclusion tacked on, is called a '**Sorites**'; the original Set of Propositions is called its '**Premisses**'; each of the intermediate Conclusions is called a '**Partial Conclusion**' of the Sorites; the last Conclusion is called its '**Complete Conclusion**,' or, more briefly, its '**Conclusion**'; the Genus, of which all the Terms are Species, is called its '**Universe of Discourse**', or, more briefly, its '**Univ.**'; the Terms, used as Eliminands in the Syllogisms, are called its '**Eliminands**'; and the two Terms, which are retained, and therefore appear in the Conclusion, are called its '**Retinends**'.

[Note that each *Partial* Conclusion contains one or two *Eliminands*; but that the *Complete* Conclusion contains *Retinends* only.]

The Conclusion is said to be '**consequent**' from the Premisses; for which reason it is usual to prefix to it the word "Therefore" (or the symbol "∴").

[Note that the question, whether the Conclusion is or is not *consequent* from the Premisses, is not affected by the *actual* truth or falsity of any one of the Propositions which make up the Sorites, but depends entirely on their *relationship to one another*.

As a specimen-Sorites, let us take the following Set of 5 Propositions:—

- (1) "No *a* are *b*';
- (2) All *b* are *c*;
- (3) All *c* are *d*;
- (4) No *e*' are *a*';
- (5) All *h* are *e*'".

Here the first and second, taken together, yield "No a are c' ".

This, taken along with the third, yields "No a are d' ".

This, taken along with the fourth, yields "No d' are e' ".

And this, taken along with the fifth, yields "All h are d' ".

Hence, if the original Set were true, this would *also* be true.

Hence the original Set, with this tacked on, is a *Sorites*; the original Set is its *Premisses*; the Proposition "All h are d' " is its *Conclusion*; the Terms a , b , c , e are its *Eliminands*; and the Terms d and h are its *Retinends*.

Hence we may write the whole Sorites thus:—

"No a are b' ;
All b are c ;
All c are d ;
No e' are a' ;
All h are e' .
∴ All h are d' ."

In the above Sorites, the 3 Partial Conclusions are the Positions "No a are e' ", "No a are d' ", "No d' are e' "; but, if the Premisses were arranged in other ways, other Partial Conclusions might be obtained. Thus, the order 41523 yields the Partial Conclusions "No c' are b' ", "All h are b' ", "All h are c' ". There are altogether *nine* Partial Conclusions to this Sorites, which the Reader will find it an interesting task to make out for himself.]

Chapter II. Problems in Soriteses.

§ 1. **Introductory.** The Problems we shall have to solve are of the following form:—

"Given three or more Propositions of Relation, which are proposed as Premisses: to ascertain what Conclusion, if any, is consequent from them."

We will limit ourselves, at present, to Problems which can be worked by the Formulæ of Fig. I. (See p. 1087.) Those, that require *other* Formulæ, are rather too hard for beginners.

Such Problems may be solved by either of two Methods, viz.

- (1) The Method of Separate Syllogisms;
- (2) The Method of Underscoring.

These shall be discussed separately.

§ 2. **Solution by Method of Separate Syllogisms.** The Rules, for doing this, are as follows:—

- (1) Name the 'Universe of Discourse'.
- (2) Construct a Dictionary, making a , b , c , &c. represent the Terms.
- (3) Put the Proposed Premisses into subscript form. (4) Select two which, containing between them a pair of codivisional Classes, can be used as the Premisses of a Syllogism.
- (5) Find their Conclusion by Formula.
- (6) Find a third Premiss which, along with this Conclusion, can be used as the Premisses of a second Syllogism.
- (7) Find a second Conclusion by Formula.
- (8) Proceed thus, until all the proposed Premisses have been used.

- (9) Put the last Conclusion, which is the Complete Conclusion of the Sorites, into concrete form.

[As an example of this process, let us take, as the proposed Set of Premisses,

- (1) "All the policemen on this beat sup with our cook;
- (2) No man with long hair can fail to be a poet;
- (3) Amos Judd has never been in prison;
- (4) Our cook's 'cousins' all love cold mutton;
- (5) None but policemen on this beat are poets;
- (6) None but her 'cousins' ever sup with our cook;
- (7) Men with short hair have all been in prison."

Univ. "men"; a = Amos Judd; b = cousins of our cook; c = having been in prison; d = long-haired; e = loving cold mutton; h = poets; k = policemen on this beat; l = supping with our cook.

We now have to put the proposed Premisses into *subscript* form. Let us begin by putting them into *abstract* form. The result is

- (1) "All k are l ;
- (2) No d are h' ;
- (3) All a are c' ;
- (4) All b are e ;
- (5) No k' are h ;
- (6) No b' are l ;
- (7) All d' are c ."

And it is now easy to put them into *subscript* form, as follows:—

- (1) $k_1 l'_0$
- (2) dh'_0
- (3) $a_1 c_0$
- (4) $b_1 e'_0$
- (5) $k' h_0$
- (6) $b' l_0$
- (7) $d'_1 c'_0$

We now have to find a pair of Premisses which will yield a Conclusion. Let us begin with No. (1), and look down the list, till we come to one which we can take along with it, so as to form Premisses belonging to Fig. I. We find that No. (5) will do, since we can take k as our Eliminand. So our first syllogism is

- (1) $k_1 l'_0$
 - (5) $k' h_0$
- $\therefore l' h_0 \dots$ (8)

We must now begin again with $l' h_0$ and find a Premiss to go along with it. We find that No. (2) will do, h being our Eliminand. So our next Syllogism is

- (8) $l' h_0$
 - (2) dh'_0
- $\therefore l' d_0 \dots$ (9)

We have now used up Nos. (1), (5), and (2), and must search among the others for a partner for $l' d_0$. We find that No. (6) will do. So we write

- (9) $l' d_0$
 - (6) $b' l_0$
- $\therefore db'_0 \dots$ (10)

Now what can we take along with db'_0 ? No. (4) will do.

$$\begin{array}{l}
(10) db'_0 \\
(4) b_1e'_0 \\
\therefore de'_0 \dots (11)
\end{array}$$

Along with *this* we may take No. (7).

$$\begin{array}{l}
(11) de'_0 \\
(7) d'_1c'_0 \\
\therefore c'e'_0 \dots (12)
\end{array}$$

And along with *this* we may take No. (3).

$$\begin{array}{l}
(12) c'e'_0 \\
(3) a_1c_0 \\
\therefore a_1e'_0
\end{array}$$

This Complete Conclusion, translated into *abstract* form, is

“All *a* are *e*”;

and this, translated into *concrete* form, is

“Amos Judd loves cold mutton.”

In actually *working* this Problem, the above explanations would, of course, be omitted, and all, that would appear on paper, would be as follows:—

$$\begin{array}{l}
(1) k_1l'_0 \\
(2) dh'_0 \\
(3) a_1c_0 \\
(4) b_1e'_0 \\
(5) k'h_0 \\
(6) b'l_0 \\
(7) d'_1c'_0 \\
(1) k_1l'_0 \\
(5) k'h_0 \\
\therefore l'h_0 \dots (8)
\end{array}$$

$$\begin{array}{l}
(8) l'h_0 \\
(2) dh'_0 \\
\therefore l'd_0 \dots (9)
\end{array}$$

$$\begin{array}{l}
(9) l'd_0 \\
(6) b'l_0 \\
\therefore db'_0 \dots (10)
\end{array}$$

$$\begin{array}{l}
(10) db'_0 \\
(4) b_1e'_0 \\
\therefore de'_0 \dots (11)
\end{array}$$

$$\begin{array}{l}
(11) de'_0 \\
(7) d'_1c'_0 \\
\therefore c'e'_0 \dots (12)
\end{array}$$

$$\begin{array}{l}
(12) c'e'_0 \\
(3) a_1c_0 \\
\therefore a_1e'_0
\end{array}$$

Note that, in working a Sorites by this Process, we may begin with *any* Premiss we choose.]

§ 3. Solution by Method of Underscoring. Consider the Pair of Premisses

$$xm_0 \dagger ym'_0$$

which yield the Conclusion xy_0

We see that, in order to get this Conclusion, we must eliminate m and m' , and write x and y together in one expression.

Now, if we agree to *mark* m and m' as eliminated, and to read the two expressions together, as if they were written in one, the two Premisses will then exactly represent the *Conclusion*, and we need not write it out separately.

Let us agree to mark the eliminated letters by *underscoring* them, putting a *single* score under the *first*, and a *double* one under the *second*.

The two Premisses now become

$$xm_0 \dagger y\underline{m}'_0$$

which we read as " xy_0 ".

In copying out the Premisses for underscoring, it will be convenient to *omit all subscripts*. As to the "0's" we may always *suppose* them written, and, as to the "1's", we are not concerned to know *which* Terms are asserted to *exist*, except those which appear in the *Complete Conclusion*; and for *them* it will be easy enough to refer to the original list.

[I will now go through the process of solving, by this method, the example worked in § 2.

The Data are

$$\begin{array}{ccccccc} 1 & 2 & 3 & 4 & 5 & 6 & 7 \\ k_1l'_0 \dagger & dh'_0 \dagger & a_1c_0 \dagger & b_1e'_0 \dagger & k'h_0 \dagger & b'l_0 \dagger & d'_1c'_0 \end{array}$$

The Reader should take a piece of paper, and write out this solution for himself. The first line will consist of the above Data; the second must be composed, bit by bit, according to the following directions.

We begin by writing down the first Premiss, with its numeral over it, but omitting the subscripts.

We have now to find a Premiss which can be combined with this, *i. e.*, a Premiss containing either k' or l . The first we find is No. 5; and this we tack on, with a \dagger .

To get the *Conclusion* from these, k and k' must be eliminated, and what remains must be taken as one expression. So we *underscore* them, putting a *single* score under k , and a *double* one under k' . The result we read as $l'h$.

We must now find a Premiss containing either l or h' . Looking along the row, we fix on No. 2, and tack it on.

Now these 3 Nullities are really equivalent to $(l'h \dagger dh')$, in which h and h' must be eliminated, and what remains taken as one expression. So we *underscore* them. The result reads as $l'd$.

We now want a Premiss containing l or d' . No. 6 will do.

These 4 Nullities are really equivalent to $(l'd \dagger b'l)$. So we underscore l' and l . The result reads as db' .

We now want a Premiss containing d' or b . No. 4 will do.

Here we underscore b' and b . The result reads as de' .

We now want a Premiss containing d' or e . No. 7 will do.

Here we underscore d and d' . The result reads as $c'e'$.

We now want a Premiss containing c or e . No. 3 will do—in fact *must* do, as it is the only one left.

Here we underscore c' and c ; and, as the whole thing now reads as $e'a$, we tack on $e'a_0$ as the *Conclusion*, with a \mathbb{P} .

We now look along the row of Data, to see whether e' or a has been given as *existent*. We find that a has been so given in No. 3. So we add this fact to the Conclusion, which now stands as $\mathbb{P}e'a_0 \dagger a_1$, *i. e.* $\mathbb{P}a_1e'_0$; *i. e.* "All a are e ."

If the Reader has faithfully obeyed the above directions, his written solution will now stand as follows:—

$$\begin{array}{ccccccc} 1 & 2 & 3 & 4 & 5 & 6 & 7 \\ k_1l'_0 & \dagger & dh'_0 & \dagger & a_1c_0 & \dagger & b_1e'_0 & \dagger & k'h_0 & \dagger & b'l_0 & \dagger & d'_1c'_0 \end{array}$$

$$\begin{array}{ccccccc} 1 & 5 & 2 & 6 & 4 & 7 & 3 \\ \underline{k'l'} & \dagger & \underline{k'h} & \dagger & \underline{dh'} & \dagger & \underline{b'l} & \dagger & \underline{b'e'} & \dagger & \underline{d'c'} & \dagger & \underline{ac} & \mathbb{P}e'a_0 \dagger a_1i.e. \mathbb{P}a_1e'_0; \end{array}$$

i. e. “All *a* are *e*.”

The Reader should now take a second piece of paper, and copy the Data only, and try to work out the solution for himself, beginning with some other Premiss.

If he fails to bring out the Conclusion $a_1e'_0$, I would advise him to take a third piece of paper, and *begin again!*

I will now work out, in its briefest form, a Sorites of 5 Premisses, to serve as a model for the Reader to imitate in working examples.

- (1) "I greatly value everything that John gives me;
- (2) Nothing but this bone will satisfy my dog;
- (3) I take particular care of everything that I greatly value;
- (4) This bone was a present from John;
- (5) The things, of which I take particular care, are things I do *not* give to my dog".

Univ. “things”; *a* = given by John to me; *b* = given by me to my dog; *c* = greatly valued by me; *d* = satisfactory to my dog; *e* = taken particular care of by me; *h* = this bone.

$$\begin{array}{ccccccc} 1 & 2 & 3 & 4 & 5 \\ a_1c'_0 & \dagger & h'd_0 & \dagger & c_1e'_0 & \dagger & h_1a'_0 & \dagger & e_1b_0 \end{array}$$

$$\begin{array}{ccccccc} 1 & 3 & 4 & 2 & 5 \\ \underline{ac'} & \dagger & \underline{ce'} & \dagger & \underline{ha'} & \dagger & \underline{hd} & \dagger & \underline{eb} & \mathbb{P}db_0 \end{array}$$

i. e. “Nothing, that I give my dog, satisfies him,” or, “My dog is not satisfied with *anything* that I give him!”

[Note that, in working a Sorites by this process, we may begin with *any* Premiss we choose. For instance, we might begin with No. 5, and the result would then be

$$\begin{array}{ccccccc} 5 & 3 & 1 & 4 & 2 \\ \underline{eb} & \dagger & \underline{ce'} & \dagger & \underline{ac'} & \dagger & \underline{ha'} & \dagger & \underline{hd} & \mathbb{P}bd_0 \end{array}$$

]

[Work Examples § 4, 25–30 (p. 1106); § 5, 25–30 (p. 1108); § 6, 13–15 (p. 1112); § 7, 13–15 (p. 1113); § 8, 1–4, 13, 14, 19, 24 (p. 1115); § 9, 1–4, 26, 27, 40, 48 (p. 1120).]

The Reader, who has successfully grappled with all the Examples hitherto set, and who thirsts, like Alexander the Great, for “more worlds to conquer,” may employ his spare energies on the following 17 Examination-Papers. He is recommended not to attempt more than *one* Paper on any one day. The answers to the questions about words and phrases may be found by referring to the Index at p. 197.

- I. § 4, 31 (p. 100); § 5, 31–34 (p. 102); § 6, 16, 17 (p. 106); § 7, 16 (p. 108); § 8, 5, 6 (p. 110); § 9, 5, 22, 42 (pp. 112, 115, 119).
What is ‘Classification’? And what is a ‘Class’?
- II. § 4, 32 (p. 100); § 5, 35–38 (pp. 102, 103); § 6, 18 (p. 107); § 7, 17, 18 (p. 108); § 8, 7, 8 (p. 110); § 9, 6, 23, 43 (pp. 112, 115, 119). What are ‘Genus’, ‘Species’, and ‘Differentia’?
- III. § 4, 33 (p. 100); § 5, 39–42 (p. 103); § 6, 19, 20 (p. 107); § 7, 19 (p. 109); § 8, 9, 10 (p. 111); § 9, 7, 24, 44 (pp. 113, 116, 120).
What are ‘Real’ and ‘Imaginary’ Classes?
- IV. § 4, 34 (p. 100); § 5, 43–46 (p. 103); § 6, 21 (p. 107); § 7, 20, 21 (p. 109); § 8, 11, 12 (p. 111); § 9, 8, 25, 45 (pp. 113, 116, 120).
What is ‘Division’? When are Classes said to be ‘Codivisional’?
- V. § 4, 35 (p. 100); § 5, 47–50 (p. 103); § 6, 22, 23 (p. 107); § 7, 22 (p. 109); § 8, 15, 16 (p. 111); § 9, 9, 28, 46 (pp. 113, 116, 120).
What is ‘Dichotomy’? What arbitrary rule does \lceil it² sometimes require?
- VI. § 4, 36 (p. 100); § 5, 51–54 (p. 103); § 6, 24 (p. 107); § 7, 23, 24 (p. 109); § 8, 17 (p. 111); § 9, 10, 29, 47 (pp. 113, 117, 120).
What is a ‘Definition’?
- VII. § 4, 37 (p. 100); § 5, 55–58 (pp. 103, 104); § 6, 25, 26 (p. 107); § 7, 25 (p. 109); § 8, 18 (p. 111); § 9, 11, 30, 49 (pp. 113, 117, 121).
What are the ‘Subject’ and the ‘Predicate’ of a Proposition?
What is its ‘Normal’ form?
- VIII. § 4, 38 (p. 100); § 5, 59–62 (p. 104); § 6, 27 (p. 107); § 7, 26, 27 (p. 109); § 8, 20 (p. 111); § 9, 12, 31, 50 (pp. 113, 117, 121).
What is a Proposition ‘in *I*’? ‘In *E*’? And ‘in *A*’?
- IX. § 4, 39 (p. 100); § 5, 63–66 (p. 104); § 6, 28, 29 (p. 107); § 7, 28 (p. 109); § 8, 21 (p. 111); § 9, 13, 32, 51 (pp. 114, 117, 121).
What is the ‘Normal’ form of a Proposition of Existence?
- X. § 4, 40 (p. 100); § 5, 67–70 (p. 104); § 6, 30 (p. 107); § 7, 29, 30 (p. 109); § 8, 22 (p. 111); § 9, 14, 33, 52 (pp. 114, 117, 122).
What is the ‘Universe of Discourse’?
- XI. § 4, 41 (p. 100); § 5, 71–74 (p. 104); § 6, 31, 32 (p. 107); § 7, 31 (p. 109); § 8, 23 (p. 111); § 9, 15, 34, 53 (pp. 114, 118, 122).
What is implied, in a Proposition of Relation, as to the Reality of its Terms?
- XII. § 4, 42 (p. 100); § 5, 75–78 (p. 105); § 6, 33 (p. 107); § 7, 32, 33 (pp. 109, 110); § 8, 25 (p. 111); § 9, 16, 35, 54 (pp. 114, 118, 122). Explain the phrase “sitting on the fence”.
- XIII. § 5, 79–83 (p. 105); § 6, 34, 35 (p. 107); § 7, 34 (p. 110); § 8, 26 (p. 111); § 9, 17, 36, 55 (pp. 114, 118, 122). What are ‘Converse’ Propositions?
- XIV. § 5, 84–88 (p. 105); § 6, 36 (p. 107); § 7, 35, 36 (p. 110); § 8, 27 (p. 111); § 9, 18, 37, 56 (pp. 114, 118, 123). What are ‘Concrete’ and ‘Abstract’ Propositions?
- XV. § 5, 89–93 (p. 105); § 6, 37, 38 (p. 107); § 7, 37 (p. 110); § 8, 28 (p. 111); § 9, 19, 38, 57 (pp. 115, 118, 123). What is a ‘Syllogism’? And what are its ‘Premisses’ and its ‘Conclusion’?

²accidentally missing

- XVI. § 5, 94–97 (p. 106); § 6, 39 (p. 107); § 7, 38, 39 (p. 110); § 8, 29 (p. 111); § 9, 20, 39, 58 (pp. 115, 119, 123). What is a ‘Sorites’? And what are its ‘Premisses’, its ‘Partial Conclusions’, and its ‘Complete Conclusion’?
- XVII. § 5, 98–101 (p. 106); § 6, 40 (p. 107); § 7, 40 (p. 110); § 8, 30 (p. 111); § 9, 21, 41, 59, 60 (pp. 115, 119, 124). What are the ‘Universe of Discourse’, the ‘Eliminands’, and the ‘Retinends’, of a Syllogism? And of a Sorites?

Book VIII. Examples, Answers, and Solutions.

[N.B. Reference tags for Examples, Answers & Solutions will be found in the right margin.]³

Chapter I. Examples.

§ 1. Propositions of Relation, to be reduced to normal form.

1. I have been out for a walk.
2. I am feeling better.
3. No one has read the letter but John.
4. Neither you nor I are old.
5. No fat creatures run well.
6. None but the brave deserve the fair.
7. No one looks poetical unless he is pale.
8. Some judges lose their tempers.
9. I never neglect important business.
10. What is difficult needs attention.
11. What is unwholesome should be avoided.
12. All the laws passed last week relate to excise.
13. Logic puzzles me.
14. There are no Jews in the house.
15. Some dishes are unwholesome if not well-cooked.
16. Unexciting books make one drowsy.
17. When a man knows what he’s about, he can detect a sharper.
18. You and I know what we’re about.
19. Some bald people wear wigs.
20. Those who are fully occupied never talk about their grievances.
21. No riddles interest me if they can be solved.

§ 2. Pairs of Abstract Propositions, one in terms of x and m , and the other in terms of y and m , to be represented on the same Trilateral Diagram.

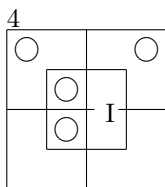
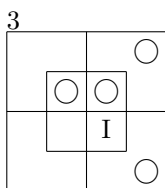
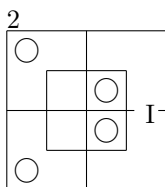
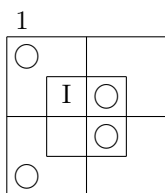
1. No x are m ;
No m' are y .
2. No x' are m' ;
All m' are y .
3. Some x' are m ;

³Remark: This has not been reproduced here.

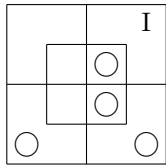
- No m are y .
4. All m are x ;
All m' are y' .
 5. All m' are x ;
All m' are y' .
 6. All x' are m' ;
No y' are m .
 7. All x are m ;
All y' are m' .
 8. Some m' are x' ;
No m are y .
 9. All m are x' ;
No m are y .
 10. No m are x' ;
No y are m' .
 11. No x' are m' ;
No m are y .
 12. Some x are m ;
All y' are m .
 13. All x' are m ;
No m are y .
 14. Some x are m' ;
All m are y .
 15. No m' are x' ;
All y are m .
 16. All x are m' ;
No y are m .
 17. Some m' are x ;
No m' are y' .
 18. All x are m' ;
Some m' are y' .
 19. All m are x ;
Some m are y' .
 20. No x' are m ;
Some y are m .
 21. Some x' are m' ;
All y' are m .
 22. No m are x ;
Some m are y .
 23. No m' are x ;
All y are m' .
 24. All m are x ;
No y' are m' .

25. Some m are x ;
No y' are m .
26. All m' are x' ;
Some y are m' .
27. Some m are x' ;
No y' are m' .
28. No x are m' ;
All m are y' .
29. No x' are m ;
No m are y' .
30. No x are m ;
Some y' are m' .
31. Some m' are x ;
All y' are m ;
32. All x are m' ;
All y are m .

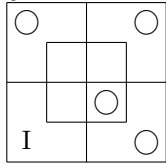
§ 3. Marked Trilateral Diagrams, to be interpreted in terms of x and y .



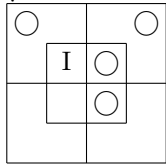
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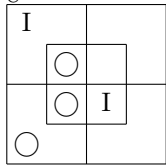
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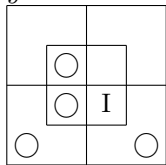
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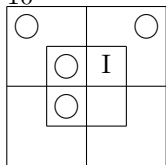
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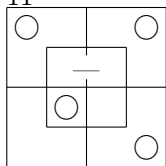
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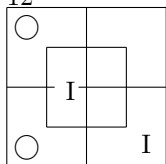
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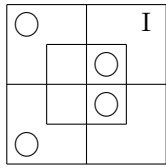
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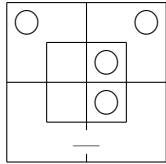
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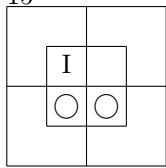
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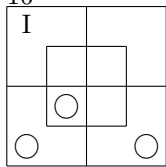
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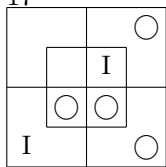
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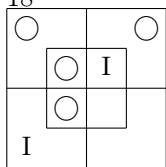
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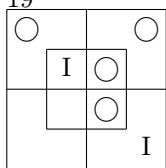
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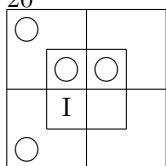
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§ 4. Pairs of Abstract Propositions, proposed as Premisses: Conclusions to be found.

1. No m are x' ;
All m' are y .
2. No m' are x ;
Some m' are y' .
3. All m' are x ;
All m' are y' .
4. No x' are m' ;
All y' are m .
5. Some m are x' ;
No y are m .
6. No x' are m ;
No m are y .
7. No m are x' ;
Some y' are m .
8. All m' are x' ;
No m' are y .
9. Some x' are m' ;
No m are y' .
10. All x are m ;
All y' are m' .
11. No m are x ;
All y' are m' .
12. No x are m ;
All y are m .
13. All m' are x ;
No y are m .
14. All m are x ;
All m' are y .
15. No x are m ;
No m' are y .
16. All x are m' ;
All y are m .
17. No x are m ;
All m' are y .
18. No x are m' ;
No m are y .
19. All m are x ;
All m are y' .
20. No m are x ;
All m' are y .
21. All x are m ;

- Some m' are y .
22. Some x are m ;
All y are m .
 23. All m are x ;
Some y are m .
 24. No x are m ;
All y are m .
 25. Some m are x' ;
All y' are m' .
 26. No m are x' ;
All y are m .
 27. All x are m' ;
All y' are m .
 28. All m are x' ;
Some m are y .
 29. No m are x ;
All y are m' .
 30. All x are m' ;
Some y are m .
 31. All x are m ;
All y are m .
 32. No x are m' ;
All m are y .
 33. No m are x ;
No m are y .
 34. No m are x' ;
Some y are m .
 35. No m are x ;
All y are m .
 36. All m are x' ;
Some y are m .
 37. All m are x ;
No y are m .
 38. No m are x ;
No m' are y .
 39. Some m are x' ;
No m are y .
 40. No x' are m ;
All y' are m .
 41. All x are m' ;
No y are m' .
 42. No m' are x ;
No y are m .

§ 5. Pairs of Concrete Propositions, proposed as Premisses: Conclusions to be found.

1. I have been out for a walk;
I am feeling better.
2. No one has read the letter but John;
No one, who has *not* read it, knows what it is about.
3. Those who are not old like walking;
You and I are young.
4. Your course is always honest;
Your course is always the best policy.
5. No fat creatures run well;
Some greyhounds run well.
6. Some, who deserve the fair, get their deserts;
None but the brave deserve the fair.
7. Some Jews are rich;
All Esquimaux are Gentiles.
8. Sugar-plums are sweet;
Some sweet things are liked by children.
9. John is in the house;
Everybody in the house is ill.
10. Umbrellas are useful on a journey;
What is useless on a journey should be left behind.
11. Audible music causes vibration in the air;
Inaudible music is not worth paying for.
12. Some holidays are rainy;
Rainy days are tiresome.
13. No Frenchmen like plumpudding;
All Englishmen like plumpudding.
14. No portrait of a lady, that makes her simper or scowl, is satisfactory;
No photograph of a lady ever fails to make her simper or scowl.
15. All pale people are phlegmatic;
No one looks poetical unless he is pale.
16. No old misers are cheerful;
Some old misers are thin.
17. No one, who exercises self-control, fails to keep his temper;
Some judges lose their tempers.
18. All pigs are fat;
Nothing that is fed on barley-water is fat.
19. All rabbits, that are not greedy, are black;
No old rabbits are free from greediness.
20. Some pictures are not first attempts;
No first attempts are really good.

21. I never neglect important business;
Your business is unimportant.
22. Some lessons are difficult;
What is difficult needs attention.
23. All clever people are popular;
All obliging people are popular.
24. Thoughtless people do mischief;
No thoughtful person forgets a promise.
25. Pigs cannot fly;
Pigs are greedy.
26. All soldiers march well;
Some babies are not soldiers.
27. No bride-cakes are wholesome;
What is unwholesome should be avoided.
28. John is industrious;
No industrious people are unhappy.
29. No philosophers are conceited;
Some conceited persons are not gamblers.
30. Some excise laws are unjust;
All the laws passed last week relate to excise.
31. No military men write poetry;
None of my lodgers are civilians.
32. No medicine is nice;
Senna is a medicine.
33. Some circulars are not read with pleasure;
No begging-letters are read with pleasure.
34. All Britons are brave;
No sailors are cowards.
35. Nothing intelligible ever puzzles *me*;
Logic puzzles me.
36. Some pigs are wild;
All pigs are fat.
37. All wasps are unfriendly;
All unfriendly creatures are unwelcome.
38. No old rabbits are greedy;
All black rabbits are greedy.
39. Some eggs are hard-boiled;
No eggs are uncrackable.
40. No antelope is ungraceful;
Graceful creatures delight the eye.
41. All well-fed canaries sing loud;
No canary is melancholy if it sings loud.
42. Some poetry is original;

- No original work is producible at will.
43. No country, that has been explored, is infested by dragons;
Unexplored countries are fascinating.
44. No coals are white;
No niggers are white.
45. No bridges are made of sugar;
Some bridges are picturesque.
46. No children are patient;
No impatient person can sit still.
47. No quadrupeds can whistle;
Some cats are quadrupeds.
48. Bores are terrible;
You are a bore.
49. Some oysters are silent;
No silent creatures are amusing.
50. There are no Jews in the house;
No Gentiles have beards a yard long.
51. Canaries, that do not sing loud, are unhappy;
No well-fed canaries fail to sing loud.
52. All my sisters have colds;
No one can sing who has a cold.
53. All that is made of gold is precious;
Some caskets are precious.
54. Some buns are rich;
All buns are nice.
55. All my cousins are unjust;
All judges are just.
56. Pain is wearisome;
No pain is eagerly wished for.
57. All medicine is nasty;
Senna is a medicine.
58. Some unkind remarks are annoying;
No critical remarks are kind.
59. No tall men have woolly hair;
Niggers have woolly hair.
60. All philosophers are logical;
An illogical man is always obstinate.
61. John is industrious;
All industrious people are happy.
62. These dishes are all well-cooked;
Some dishes are unwholesome if not well-cooked.
63. No exciting books suit feverish patients;
Unexciting books make one drowsy.

64. No pigs can fly;
All pigs are greedy.
65. When a man knows what he's about, he can detect a sharper;
You and I know what we're about.
66. Some dreams are terrible;
No lambs are terrible.
67. No bald creature needs a hairbrush;
No lizards have hair.
68. All battles are noisy;
What makes no noise may escape notice.
69. All my cousins are unjust;
No judges are unjust.
70. All eggs can be cracked;
Some eggs are hard-boiled.
71. Prejudiced persons are untrustworthy;
Some unprejudiced persons are disliked.
72. No dictatorial person is popular;
She is dictatorial.
73. Some bald people wear wigs;
All your children have hair.
74. No lobsters are unreasonable;
No reasonable creatures expect impossibilities.
75. No nightmare is pleasant;
Unpleasant experiences are not eagerly desired.
76. No plumcakes are wholesome;
Some wholesome things are nice.
77. Nothing that is nice need be shunned;
Some kinds of jam are nice.
78. All ducks waddle;
Nothing that waddles is graceful.
79. Sandwiches are satisfying;
Nothing in this dish is unsatisfying.
80. No rich man begs in the street;
Those who are not rich should keep accounts.
81. Spiders spin webs;
Some creatures, that do not spin webs, are savage.
82. Some of these shops are not crowded;
No crowded shops are comfortable.
83. Prudent travelers carry plenty of small change;
Imprudent travelers lose their luggage.
84. Some geraniums are red;
All these flowers are red.
85. None of my cousins are just;

- All judges are just.
86. No Jews are mad;
All my lodgers are Jews.
87. Busy folk are not always talking about their grievances;
Discontented folk are always talking about their grievances.
88. None of my cousins are just;
No judges are unjust.
89. All teetotalers like sugar;
No nightingale drinks wine.
90. No riddles interest me if they can be solved;
All these riddles are insoluble.
91. All clear explanations are satisfactory;
Some excuses are unsatisfactory.
92. All elderly ladies are talkative;
All good-tempered ladies are talkative.
93. No kind deed is unlawful;
What is lawful may be done without scruple.
94. No babies are studious;
No babies are good violinists.
95. All shillings are round;
All these coins are round.
96. No honest men cheat;
No dishonest men are trustworthy.
97. None of my boys are clever;
None of my girls are greedy.
98. All jokes are meant to amuse;
No Act of Parliament is a joke.
99. No eventful tour is ever forgotten;
Uneventful tours are not worth writing a book about.
100. All my boys are disobedient;
All my girls are discontented.
101. No unexpected pleasure annoys me;
Your visit is an unexpected pleasure.

§ 6. Trios of Abstract Propositions, proposed as Syllogisms: to be examined.

1. Some x are m ; No m are y' . Some x are y .
2. All x are m ; No y are m' . No y are x' .
3. Some x are m' ; All y' are m . Some x are y .
4. All x are m ; No y are m . All x are y' .
5. Some m' are x' ; No m' are y . Some x' are y' .
6. No x' are m ; All y are m' . All y are x' .
7. Some m' are x' ; All y' are m' . Some x' are y' .
8. No m' are x' ; All y' are m' . All y' are x .

9. Some m are x' ; No m are y . Some x' are y' .
10. All m' are x' ; All m' are y . Some y are x' .
11. All x are m' ; Some y are m . Some y are x' .
12. No x are m ; No m' are y' . No x are y' .
13. No x are m ; All y' are m . All y' are x' .
14. All m' are x' ; All m' are y . Some y are x' .
15. Some m are x' ; All y are m' . Some x' are y' .
16. No x' are m ; All y' are m' . Some y' are x .
17. No m' are x ; All m' are y' . Some x' are y' .
18. No x' are m ; Some m are y . Some x are y .
19. Some m are x ; All m are y . Some y are x' .
20. No x' are m' ; Some m' are y . Some x are y' .
21. No m are x ; All m are y' . Some x' are y' .
22. All x' are m ; Some y are m . All x' are y' .
23. All m are x ; No m' are y' . No x' are y' .
24. All x are m' ; All m' are y . All x are y .
25. No x are m' ; All m are y . No x are y' .
26. All m are x' ; All y are m . All y are x' .
27. All x are m ; No m are y' . All x are y .
28. All x are m ; No y' are m' . All x are y .
29. No x' are m ; No m' are y' . No x' are y' .
30. All x are m ; All m are y' . All x are y' .
31. All x' are m' ; No y' are m' . All x' are y .
32. No x are m ; No y' are m' . No x are y' .
33. All m are x' ; All y' are m . All y' are x' .
34. All x are m' ; Some y are m . Some y are x .
35. Some x are m ; All m are y . Some x are y .
36. All m are x' ; All y are m . All y are x' .
37. No m are x' ; All m are y' . Some x are y' .
38. No x are m ; No m are y' . No x are y' .
39. No m are x ; Some m are y . Some x' are y' .
40. No m are x' ; Some y are m . Some x are y .

§ 7. Trios of Concrete Propositions, proposed as Syllogisms: to be examined.

1. No doctors are enthusiastic;
You are enthusiastic.
You are not a doctor.
2. Dictionaries are useful;
Useful books are valuable.
Dictionaries are valuable.
3. No misers are unselfish;
None but misers save egg-shells.
No unselfish people save egg-shells.
4. Some epicures are ungenerous;
All my uncles are generous.
My uncles are not epicures.
5. Gold is heavy;

- Nothing but gold will silence him.
Nothing light will silence him.
6. Some healthy people are fat;
No unhealthy people are strong.
Some fat people are not strong.
7. "I saw it in a newspaper."
"All newspapers tell lies."
It was a lie.
8. Some cravats are not artistic;
I admire anything artistic.
There are some cravats that I do not admire.
9. His songs never last an hour;
A song, that lasts an hour, is tedious.
His songs are never tedious.
10. Some candles give very little light;
Candles are *meant* to give light.
Some things, that are meant to give light, give very little.
11. All, who are anxious to learn, work hard;
Some of these boys work hard.
Some of these boys are anxious to learn.
12. All lions are fierce;
Some lions do not drink coffee.
Some creatures that drink coffee are not fierce.
13. No misers are generous;
Some old men are ungenerous.
Some old men are misers.
14. No fossil can be crossed in love;
An oyster may be crossed in love.
Oysters are not fossils.
15. All uneducated people are shallow;
Students are all educated.
No students are shallow.
16. All young lambs jump;
No young animals are healthy, unless they jump.
All young lambs are healthy.
17. Ill-managed business is unprofitable;
Railways are never ill-managed.
All railways are profitable.
18. No Professors are ignorant;
All ignorant people are vain.
No professors are vain.
19. A prudent man shuns hyænas;
No banker is imprudent.
No banker fails to shun hyænas.
20. All wasps are unfriendly;

- No puppies are unfriendly.
Puppies are not wasps.
21. No Jews are honest;
Some Gentiles are rich.
Some rich people are dishonest.
22. No idlers win fame;
Some painters are not idle.
Some painters win fame.
23. No monkeys are soldiers;
All monkeys are mischievous.
Some mischievous creatures are not soldiers.
24. All these bonbons are chocolate-creams;
All these bonbons are delicious.
Chocolate-creams are delicious.
25. No muffins are wholesome;
All buns are unwholesome.
Buns are not muffins.
26. Some unauthorised reports are false;
All authorised reports are trustworthy.
Some false reports are not trustworthy.
27. Some pillows are soft;
No pokers are soft.
Some pokers are not pillows.
28. Improbable stories are not easily believed;
None of his stories are probable.
None of his stories are easily believed.
29. No thieves are honest;
Some dishonest people are found out.
Some thieves are found out.
30. No muffins are wholesome;
All puffy food is unwholesome.
All muffins are puffy.
31. No birds, except peacocks, are proud of their tails;
Some birds, that are proud of their tails, cannot sing.
Some peacocks cannot sing.
32. Warmth relieves pain;
Nothing, that does not relieve pain, is useful in toothache.
Warmth is useful in toothache.
33. No bankrupts are rich;
Some merchants are not bankrupts.
Some merchants are rich.
34. Bores are dreaded;
No bore is ever begged to prolong his visit.
No one, who is dreaded, is ever begged to prolong his visit.
35. All wise men walk on their feet;

- All unwise men walk on their hands.
 No man walks on both.
36. No wheelbarrows are comfortable;
 No uncomfortable vehicles are popular.
 No wheelbarrows are popular.
37. No frogs are poetical;
 Some ducks are unpoetical.
 Some ducks are not frogs.
38. No emperors are dentists;
 All dentists are dreaded by children.
 No emperors are dreaded by children.
39. Sugar is sweet;
 Salt is not sweet.
 Salt is not sugar.
40. Every eagle can fly;
 Some pigs cannot fly.
 Some pigs are not eagles.

§ 8. Sets of Abstract Propositions, proposed as Premisses for Sorites: Conclusions to be found. [N.B. At the end of this Section instructions are given for varying these Examples.]

1.

1. No c are d ;
2. All a are d ;
3. All b are c .

2.

1. All d are b ;
2. No a are c' ;
3. No b are c .

3.

1. No b are a ;
2. No c are d' ;
3. All d are b .

4.

1. No b are c ;
2. All a are b ;
3. No c' are d .

5.

1. All b' are a' ;
2. No b are c ;
3. No a' are d .

6.

1. All a are b' ;
2. No b' are c ;
3. All d are a .

7.

1. No d are b' ;
2. All b are a ;
3. No c are d' .

8.

1. No b' are d ;
2. No a' are b ;
3. All c are d .

9.

1. All b' are a ;
2. No a are d ;
3. All b are c .

10.

1. No c are d ;
2. All b are c ;
3. No a are d' .

11.

1. No b are c ;
2. All d are a ;
3. All c' are a' .

12.

1. No c are b' ;
2. All c' are d' ;
3. All b are a .

13.

1. All d are e ;
2. All c are a ;
3. No b are d' ;
4. All e are a' .

14.

1. All e are b ;
2. All a are e ;
3. All d are b' ;
4. All a' are c ;

15.

1. No b' are d ;
2. All e are c ;
3. All b are a ;
4. All d' are c' .

16.

1. No a' are e ;
2. All d are c' ;
3. All a are b ;
4. All e' are d .

17.

1. All d are c ;
2. All a are e ;
3. No b are d' ;
4. All c are e' .

18.

1. All a are b ;
2. All d are e ;
3. All a' are c' ;
4. No b are e .

19.

1. No b are c ;
2. All e are h ;
3. All a are b ;
4. No d are h ;
5. All e' are c .

20.

1. No d are h' ;
2. No c are e ;
3. All h are b ;
4. No a are d' ;
5. No b are e' .

21.

1. All b are a ;
2. No d are h ;
3. No c are e ;
4. No a are h' ;
5. All c' are b .

22.

1. All e are d' ;
2. No b' are h' ;
3. All c' are d ;
4. All a are e ;
5. No c are h .

23.

1. All b' are a' ;
2. No d are e' ;
3. All h are b' ;
4. No c are e ;
5. All d' are a .

24.

1. All h' are k' ;
2. No b' are a ;
3. All c are d ;
4. All e are h' ;
5. No d are k' ;
6. No b are c' .

25.

1. All a are d ;
2. All k are b ;
3. All e are h ;
4. No a' are b ;
5. All d are c ;
6. All h are k .

26.

1. All a' are h ;
2. No d' are k' ;
3. All e are b' ;
4. No h are k ;
5. All a are e ;
6. No b' are d .

27.

1. All c are d' ;
2. No h are b ;
3. All a' are k ;
4. No c are e' ;
5. All b' are d ;
6. No a are c' .

28.

1. No a' are k ;
2. All e are b ;
3. No h are $\lceil k \rceil^4$;
4. No d' are c ;
5. No a are b ;
6. All c' are h .

29.

1. No e are k ;
2. No b' are m ;
3. No a are c' ;
4. All h' are e ;
5. All d are k ;
6. No c are b ;
7. All d' are l ;
8. No h are m' .

30.

1. All n are m ;
2. All a' are e ;
3. No c' are l ;
4. All k are r' ;
5. No a are $\lceil h \rceil^5$;
6. No d are l' ;
7. No c are $\lceil n \rceil^6$;
8. All e are b ;
9. All m are r ;
10. All h are d .

[N.B. In each Example, in Sections 8 and 9, it is possible to begin with *any* Premiss, at pleasure, and thus to get as many different Solutions (all of course yielding the *same* Complete Conclusion) as there are Premisses in the Example. Hence § 8 really contains 129 different Examples, and § 9 contains 273.]

§ 9. Sets of Concrete Propositions, proposed as Premisses for Sorites: Conclusions to be found.

⁴accidentally k

⁵accidentally h

⁶accidentally n

Other version:
→ 6.4, p. 998

1.

- (1) Babies are illogical;
- (2) Nobody is despised who can manage a crocodile;
- (3) Illogical persons are despised.

Univ. “persons”; a = able to manage a crocodile; b = babies; c = despised; d = logical.

2.

- (1) My saucepans are the only things I have that are made of tin;
- (2) I find all *your* presents very useful;
- (3) None of my saucepans are of the slightest use.

Univ. “things of mine”; a = made of tin; b = my saucepans; c = useful; d = your presents.

3.

- (1) No potatoes of mine, that are new, have been boiled;
- (2) All my potatoes in this dish are fit to eat;
- (3) No unboiled potatoes of mine are fit to eat.

Univ. “my potatoes”; a = boiled; b = eatable; c = in this dish; d = new.

4.

- (1) There are no Jews in the kitchen;
- (2) No Gentiles say “shpoonj”;
- (3) My servants are all in the kitchen.

Univ. “persons”; a = in the kitchen; b = Jews; c = my servants; d = saying “shpoonj.”

5.

- (1) No ducks waltz;
- (2) No officers ever decline to waltz;
- (3) All my poultry are ducks.

Univ. “creatures”; a = ducks; b = my poultry; c = officers; d = willing to waltz.

6.

- (1) Every one who is sane can do Logic;
- (2) No lunatics are fit to serve on a jury;
- (3) None of *your* sons can do Logic.

Univ. “persons”; a = able to do Logic; b = fit to serve on a jury; c = sane; d = your sons.

7.

- (1) There are no pencils of mine in this box;
- (2) No sugar-plums of mine are cigars;
- (3) The whole of my property, that is not in this box, consists of cigars.

Univ. "things of mine"; a = cigars; b = in this box; c = pencils; d = sugar-plums.

8.

- (1) No experienced person is incompetent;
- (2) Jenkins is always blundering;
- (3) No competent person is always blundering.

Univ. "persons"; a = always blundering; b = competent; c = experienced; d = Jenkins.

9.

- (1) No terriers wander among the signs of the zodiac;
- (2) Nothing, that does not wander among the signs of the zodiac, is a comet;
- (3) Nothing but a terrier has a curly tail.

Univ. "things"; a = comets; b = curly-tailed; c = terriers; d = wandering among the signs of the zodiac.

10.

- (1) No one takes in the *Times*, unless he is well-educated;
- (2) No hedge-hogs can read;
- (3) Those who cannot read are not well-educated.

Univ. "creatures"; a = able to read; b = hedge-hogs; c = taking in the *Times*; d = well-educated.

11.

- (1) All puddings are nice;
- (2) This dish is a pudding;
- (3) No nice things are wholesome.

Univ. "things"; a = nice; b = puddings; c = this dish; d = wholesome.

12.

- (1) My gardener is well worth listening to on military subjects;
- (2) No one can remember the battle of Waterloo, unless he is very old;
- (3) Nobody is really worth listening to on military subjects, unless he can remember the battle of Waterloo.

Univ. "persons"; a = able to remember the battle of Waterloo; b = my gardener; c = well worth listening to on military subjects; d = very old.

13.

- (1) All humming-birds are richly coloured;
- (2) No large birds live on honey;
- (3) Birds that do not live on honey are dull in colour.

Univ. "birds"; a = humming-birds; b = large; c = living on honey; d = richly coloured.

14.

- (1) No Gentiles have hooked noses;
- (2) A man who is a good hand at a bargain always makes money;
- (3) No Jew is ever a bad hand at a bargain.

Univ. "persons"; a = good hands at a bargain; b = hook-nosed; c = Jews; d = making money.

15.

- (1) All ducks in this village, that are branded 'B,' belong to Mrs. Bond;
- (2) Ducks in this village never wear lace collars, unless they are branded 'B';
- (3) Mrs. Bond has no gray ducks in this village.

Univ. "ducks in this village"; a = belonging to Mrs. Bond; b = branded 'B'; c = gray; d = wearing lace-collars.

16.

- (1) All the old articles in this cupboard are cracked;
- (2) No jug in this cupboard is new;
- (3) Nothing in this cupboard, that is cracked, will hold water.

Univ. "things in this cupboard"; a = able to hold water; b = cracked; c = jugs; d = old.

17.

- (1) All unripe fruit is unwholesome;
- (2) All these apples are wholesome;
- (3) No fruit, grown in the shade, is ripe.

Univ. "fruit"; a = grown in the shade; b = ripe; c = these apples; d = wholesome.

18.

- (1) Puppies, that will not lie still, are always grateful for the loan of a skipping-rope;
- (2) A lame puppy would not say "thank you" if you offered to lend it a skipping-rope.
- (3) None but lame puppies ever care to do worsted-work.

Univ. "puppies"; a = caring to do worsted-work; b = grateful for the loan of a skipping-rope; c = lame; d = willing to lie still.

19.

- (1) No name in this list is unsuitable for the hero of a romance;
- (2) Names beginning with a vowel are always melodious;
- (3) No name is suitable for the hero of a romance, if it begins with a consonant.

Univ. “names”; a = beginning with a vowel; b = in this list; c = melodious; d = suitable for the hero of a romance.

20.

- (1) All members of the House of Commons have perfect self-command;
- (2) No M.P., who wears a coronet, should ride in a donkey-race;
- (3) All members of the House of Lords wear coronets.

Univ. “M.P.’s”; a = belonging to the House of Commons; b = having perfect self-command; c = one who may ride in a donkey-race; d = wearing a coronet.

21.

- (1) No goods in this shop, that have been bought and paid for, are still on sale;
- (2) None of the goods may be carried away, unless labeled “sold”;
- (3) None of the goods are labeled “sold,” unless they have been bought and paid for.

Univ. “goods in this shop”; a = allowed to be carried away; b = bought and paid for; c = labeled “sold”; d = on sale.

22.

- (1) No acrobatic feats, that are not announced in the bills of a circus, are ever attempted there;
- (2) No acrobatic feat is possible, if it involves turning a quadruple somersault;
- (3) No impossible acrobatic feat is ever announced in a circus bill.

Univ. “acrobatic feats”; a = announced in the bills of a circus; b = attempted in a circus; c = involving the turning of a quadruple somersault; d = possible.

23.

- (1) Nobody, who really appreciates Beethoven, fails to keep silence while the Moonlight-Sonata is being played;
- (2) Guinea-pigs are hopelessly ignorant of music;
- (3) No one, who is hopelessly ignorant of music, ever keeps silence while the Moonlight-Sonata is being played.

Univ. “creatures”; a = guinea-pigs; b = hopelessly ignorant of music; c = keeping silence while the Moonlight-Sonata is being played; d = really appreciating Beethoven.

24.

- (1) Coloured flowers are always scented;
- (2) I dislike flowers that are not grown in the open air;
- (3) No flowers grown in the open air are colourless.

Univ. "flowers"; a = coloured; b = grown in the open air; c = liked by me; d = scented.

25.

- (1) Showy talkers think too much of themselves;
- (2) No really well-informed people are bad company;
- (3) People who think too much of themselves are not good company.

Univ. "persons"; a = good company; b = really well-informed; c = showy talkers; d = thinking too much of one's self.

26.

- (1) No boys under 12 are admitted to this school as boarders;
- (2) All the industrious boys have red hair;
- (3) None of the day-boys learn Greek;
- (4) None but those under 12 are idle.

Univ. "boys in this school"; a = boarders; b = industrious; c = learning Greek; d = red-haired; e = under 12.

27.

- (1) The only articles of food, that my doctor allows me, are such as are not very rich;
- (2) Nothing that agrees with me is unsuitable for supper;
- (3) Wedding-cake is always very rich;
- (4) My doctor allows me all articles of food that are suitable for supper.

Univ. "articles of food"; a = agreeing with me; b = allowed by my doctor; c = suitable for supper; d = very rich; e = wedding-cake.

28.

- (1) No discussions in our Debating-Club are likely to rouse the British Lion, so long as they are checked when they become too noisy;
- (2) Discussions, unwisely conducted, endanger the peacefulness of our Debating-Club;
- (3) Discussions, that go on while Tomkins is in the Chair, are likely to rouse the British Lion;
- (4) Discussions in our Debating-Club, when wisely conducted, are always checked when they become too noisy.

Univ. “discussions in our Debating-Club”; *a* = checked when too noisy; *b* = dangerous to the peacefulness of our Debating-Club; *c* = going on while Tomkins is in the chair; *d* = likely to rouse the British Lion; *e* = wisely conducted.

29.

- (1) All my sons are slim;
- (2) No child of mine is healthy who takes no exercise;
- (3) All gluttons, who are children of mine, are fat;
- (4) No daughter of mine takes any exercise.

Univ. “my children”; *a* = fat; *b* = gluttons; *c* = healthy; *d* = sons; *e* = taking exercise.

30.

- (1) Things sold in the street are of no great value;
- (2) Nothing but rubbish can be had for a song;
- (3) Eggs of the Great Auk are very valuable;
- (4) It is only what is sold in the street that is really *rubbish*.

Univ. “things”; *a* = able to be had for a song; *b* = eggs of the Great Auk; *c* = rubbish; *d* = sold in the street; *e* = very valuable.

31.

- (1) No books sold here have gilt edges, except what are in the front shop;
- (2) All the *authorised* editions have red labels;
- (3) All the books with red labels are priced at 5s. and upwards;
- (4) None but *authorised* editions are ever placed in the front shop.

Univ. “books sold here”; *a* = authorised editions; *b* = gilt-edged; *c* = having red labels; *d* = in the front shop; *e* = priced at 5s. and upwards.

32.

- (1) Remedies for bleeding, which fail to check it, are a mockery;
- (2) Tincture of Calendula is not to be despised;
- (3) Remedies, which will check the bleeding when you cut your finger, are useful;
- (4) All mock remedies for bleeding are despicable.

Univ. “remedies for bleeding”; *a* = able to check bleeding; *b* = despicable; *c* = mockeries; *d* = Tincture of Calendula; *e* = useful when you cut your finger.

33.

- (1) None of the unnoticed things, met with at sea, are mermaids;
- (2) Things entered in the log, as met with at sea, are sure to be worth remembering;
- (3) *I* have never met with anything worth remembering, when on a voyage;
- (4) Things met with at sea, that are noticed, are sure to be recorded in the log;

Univ. “things met with at sea”; a = entered in log; b = mermaids; c = met with by me; d = noticed; e = worth remembering.

34.

- (1) The only books in this library, that I do *not* recommend for reading, are unhealthy in tone;
- (2) The bound books are all well-written;
- (3) All the romances are healthy in tone;
- (4) I do not recommend you to read any of the unbound books.

Univ. “books in this library”; a = bound; b = healthy in tone; c = recommended by me; d = romances; e = well-written.

35.

- (1) No birds, except ostriches, are 9 feet high;
- (2) There are no birds in this aviary that belong to any one but *me*;
- (3) No ostrich lives on mince-pies;
- (4) I have no birds less than 9 feet high.

Univ. “birds”; a = in this aviary; b = living on mince-pies; c = my; d = 9 feet high; e = ostriches.

36.

- (1) A plum-pudding, that is not really solid, is mere porridge;
- (2) Every plum-pudding, served at my table, has been boiled in a cloth;
- (3) A plum-pudding that is mere porridge is indistinguishable from soup;
- (4) No plum-puddings are really solid, except what are served at *my* table.

Univ. “plum-puddings”; a = boiled in a cloth; b = distinguishable from soup; c = mere porridge; d = really solid; e = served at my table.

37.

- (1) No interesting poems are unpopular among people of real taste;
- (2) No modern poetry is free from affectation;
- (3) All *your* poems are on the subject of soap-bubbles;
- (4) No affected poetry is popular among people of real taste;
- (5) No ancient poem is on the subject of soap-bubbles.

Univ. "poems"; *a* = affected; *b* = ancient; *c* = interesting; *d* = on the subject of soap-bubbles; *e* = popular among people of real taste; *h* = written by you.

38.

- (1) All the fruit at this Show, that fails to get a prize, is the property of the Committee;
- (2) None of my peaches have got prizes;
- (3) None of the fruit, sold off in the evening, is unripe;
- (4) None of the ripe fruit has been grown in a hot-house;
- (5) All fruit, that belongs to the Committee, is sold off in the evening.

Univ. "fruit at this Show"; *a* = belonging to the Committee; *b* = getting prizes; *c* = grown in a hot-house; *d* = my peaches; *e* = ripe; *h* = sold off in the evening.

39.

- (1) Promise-breakers are untrustworthy;
- (2) Wine-drinkers are very communicative;
- (3) A man who keeps his promises is honest;
- (4) No teetotalers are pawnbrokers;
- (5) One can always trust a very communicative person.

Univ. "persons"; *a* = honest; *b* = pawnbrokers; *c* = promise-breakers; *d* = trustworthy; *e* = very communicative; *h* = wine-drinkers.

40.

- (1) No kitten, that loves fish, is unteachable;
- (2) No kitten without a tail will play with a gorilla;
- (3) Kittens with whiskers always love fish;
- (4) No teachable kitten has green eyes;
- (5) No kittens have tails unless they have whiskers.

Univ. "kittens"; *a* = green-eyed; *b* = loving fish; *c* = tailed; *d* = teachable; *e* = whiskered; *h* = willing to play with a gorilla.

41.

- (1) All the Eton men in this College play cricket;
- (2) None but the Scholars dine at the higher table;
- (3) None of the cricketers row;
- (4) *My* friends in this College all come from Eton;
- (5) All the Scholars are rowing-men.

Univ. “men in this College”; *a* = cricketers; *b* = dining at the higher table; *c* = Etonians; *d* = my friends; *e* = rowing-men; *h* = Scholars.

42.

- (1) There is no box of mine here that I dare open;
- (2) My writing-desk is made of rose-wood;
- (3) All my boxes are painted, except what are here;
- (4) There is no box of mine that I dare not open, unless it is full of live scorpions;
- (5) All my rose-wood boxes are unpainted.

Univ. “my boxes”; *a* = boxes that I dare open; *b* = full of live scorpions; *c* = here; *d* = made of rose-wood; *e* = painted; *h* = writing-desks.

43.

- (1) Gentiles have no objection to pork;
- (2) Nobody who admires pigsties ever reads Hogg’s poems;
- (3) No Mandarin knows Hebrew;
- (4) Every one, who does not object to pork, admires pigsties;
- (5) No Jew is ignorant of Hebrew.

Univ. “persons”; *a* = admiring pigsties; *b* = Jews; *c* = knowing Hebrew; *d* = Mandarins; *e* = objecting to pork; *h* = reading Hogg’s poems.

44.

- (1) All writers, who understand human nature, are clever;
- (2) No one is a true poet unless he can stir the hearts of men;
- (3) Shakespeare wrote “Hamlet”;
- (4) No writer, who does not understand human nature, can stir the hearts of men;
- (5) None but a true poet could have written “Hamlet.”;

Univ. “writers”; *a* = able to stir the hearts of men; *b* = clever; *c* = Shakespeare; *d* = true poets; *e* = understanding human nature; *h* = writer of ‘Hamlet.’

45.

- (1) I despise anything that cannot be used as a bridge;
- (2) Everything, that is worth writing an ode to, would be a welcome gift to me;
- (3) A rainbow will not bear the weight of a wheel-barrow;
- (4) Whatever can be used as a bridge will bear the weight of a wheel-barrow;
- (5) I would not take, as a gift, a thing that I despise.

Univ. “things”; *a* = able to bear the weight of a wheel-barrow; *b* = acceptable to me; *c* = despised by me; *d* = rainbows; *e* = useful as a bridge; *h* = worth writing an ode to.

46.

- (1) When I work a Logic-example without grumbling, you may be sure it is one that I can understand;
- (2) These Soriteses are not arranged in regular order, like the examples I am used to;
- (3) No easy example ever make my head ache;
- (4) I ca'n't understand examples that are not arranged in regular order, like those I am used to;
- (5) I never grumble at an example, unless it gives me a headache.

Univ. "Logic-examples worked by me"; a = arranged in regular order, like the examples I am used to; b = easy; c = grumbled at by me; d = making my head ache; e = these Soriteses; h = understood by me.

47.

- (1) Every idea of mine, that cannot be expressed as a Syllogism, is really ridiculous;
- (2) None of my ideas about Bath-buns are worth writing down;
- (3) No idea of mine, that fails to come true, can be expressed as a Syllogism;
- (4) I never have any really ridiculous idea, that I do not at once refer to my solicitor;
- (5) My dreams are all about Bath-buns;
- (6) I never refer any idea of mine to my solicitor, unless it is worth writing down.

Univ. "my ideas"; a = able to be expressed as a Syllogism; b = about Bath-buns; c = coming true; d = dreams; e = really ridiculous h = referred to my solicitor; k = worth writing down.

48.

- (1) None of the pictures here, except the battle-pieces, are valuable;
- (2) None of the unframed ones are varnished;
- (3) All the battle-pieces are painted in oils;
- (4) All those that have been sold are valuable;
- (5) All the English ones are varnished;
- (6) All those in frames have been sold.

Univ. "the pictures here"; a = battle-pieces; b = English; c = framed; d = oil-paintings; e = sold; h = valuable; k = varnished.

49.

- (1) Animals, that do not kick, are always unexcitable;
- (2) Donkeys have no horns;
- (3) A buffalo can always toss one over a gate;
- (4) No animals that kick are easy to swallow;
- (5) No hornless animal can toss one over a gate;
- (6) All animals are excitable, except buffaloes.

Univ. “animals”; *a* = able to toss one over a gate; *b* = buffaloes; *c* = donkeys;
d = easy to swallow; *e* = excitable; *h* = horned; *k* = kicking.

50.

- (1) No one, who is going to a party, ever fails to brush his hair;
- (2) No one looks fascinating, if he is untidy;
- (3) Opium-eaters have no self-command;
- (4) Every one, who has brushed his hair, looks fascinating;
- (5) No one wears white kid gloves, unless he is going to a party;
- (6) A man is always untidy, if he has no self-command.

Univ. “persons”; *a* = going to a party; *b* = having brushed one’s hair; *c* =
having self-command; *d* = looking fascinating; *e* = opium-eaters; *h* = tidy; *k* =
wearing white kid gloves.

51.

- (1) No husband, who is always giving his wife new dresses, can be a
cross-grained man;
- (2) A methodical husband always comes home for his tea;
- (3) No one, who hangs up his hat on the gas-jet, can be a man that
is kept in proper order by his wife;
- (4) A good husband is always giving his wife new dresses;
- (5) No husband can fail to be cross-grained, if his wife does not keep
him in proper order;
- (6) An unmethodical husband always hangs up his hat on the gas-jet.

Univ. “husbands”; *a* = always coming home for his tea; *b* = always giving his
wife new dresses; *c* = cross-grained; *d* = good; *e* = hanging up his hat on the
gas-jet; *h* = kept in proper order; *k* = methodical.

52.

- (1) Everything, not absolutely ugly, may be kept in a drawing-room;
- (2) Nothing, that is encrusted with salt, is ever quite dry;
- (3) Nothing should be kept in a drawing-room, unless it is free from
damp;
- (4) Bathing-machines are always kept near the sea;
- (5) Nothing, that is made of mother-of-pearl, can be absolutely ugly;
- (6) Whatever is kept near the sea gets encrusted with salt.

Univ. “things”; *a* = absolutely ugly; *b* = bathing-machines; *c* = encrusted with
salt; *d* = kept near the sea; *e* = made of mother-of-pearl; *h* = quite dry; *k* =
things that may be kept in a drawing-room.

53.

- (1) I call no day “unlucky,” when Robinson is civil to me;
- (2) Wednesdays are always cloudy;
- (3) When people take umbrellas, the day never turns out fine;

- (4) The only days when Robinson is uncivil to me are Wednesdays;
- (5) Everybody takes his umbrella with him when it is raining;
- (6) My “lucky” days always turn out fine.

Univ. “days”; a = called by me ‘lucky’; b = cloudy; c = days when people take umbrellas; d = days when Robinson is civil to me; e = rainy; h = turning out fine; k = Wednesdays.

54.

- (1) No shark ever doubts that it is well fitted out;
- (2) A fish, that cannot dance a minuet, is contemptible;
- (3) No fish is quite certain that it is well fitted out, unless it has three rows of teeth;
- (4) All fishes, except sharks, are kind to children;
- (5) No heavy fish can dance a minuet;
- (6) A fish with three rows of teeth is not to be despised.

Univ. “fishes”; a = able to dance a minuet; b = certain that he is well fitted out; c = contemptible; d = having 3 rows of teeth; e = heavy; h = kind to children; k = sharks.

55.

- (1) All the human race, except my footmen, have a certain amount of common-sense;
- (2) No one, who lives on barley-sugar, can be anything but a mere baby;
- (3) None but a hop-scotch player knows what real happiness is;
- (4) No mere baby has a grain of common sense;
- (5) No engine-driver ever plays hop-scotch;
- (6) No footman of mine is ignorant of what true happiness is.

Univ. “human beings”; a = engine-drivers; b = having common sense; c = hop-scotch players; d = knowing what real happiness is; e = living on barley-sugar; h = mere babies; k = my footmen.

56.

- (1) I trust every animal that belongs to me;
- (2) Dogs gnaw bones;
- (3) I admit no animals into my study, unless they will beg when told to do so;
- (4) All the animals in the yard are mine;
- (5) I admit every animal, that I trust, into my study;
- (6) The only animals, that are really willing to beg when told to do so, are dogs.

Univ. “animals”; a = admitted to my study; b = animals that I trust; c = dogs; d = gnawing bones; e = in the yard; h = my; k = willing to beg when told.

57.

- (1) Animals are always mortally offended if I fail to notice them;
- (2) The only animals that belong to *me* are in that field;
- (3) No animal can guess a conundrum, unless it has been properly trained in a Board-School;
- (4) None of the animals in that field are badgers;
- (5) When an animal is mortally offended, it always rushes about wildly and howls;
- (6) I never notice any animal, unless it belongs to me;
- (7) No animal, that has been properly trained in a Board-School, ever rushes about wildly and howls.

Univ. "animals"; *a* = able to guess a conundrum; *b* = badgers; *c* = in that field; *d* = mortally offended if I fail to notice them; *e* = my; *h* = noticed by me; *k* = properly trained in a Board-School; *l* = rushing about wildly and howling.

58.

- (1) I never put a cheque, received by me, on that file, unless I am anxious about it;
- (2) All the cheques received by me, that are not marked with a cross, are payable to bearer;
- (3) None of them are ever brought back to me, unless they have been dishonoured at the Bank;
- (4) All of them, that are marked with a cross, are for amounts of over £100;
- (5) All of them, that are not on that file, are marked "not negotiable";
- (6) No cheque of yours, received by me, has ever been dishonoured;
- (7) I am never anxious about a cheque, received by me, unless it should happen to be brought back to me;
- (8) None of the cheques received by me, that are marked "not negotiable," are for amounts of over £100.

Univ. "cheques received by me"; *a* = brought back to me; *b* = cheques that I am anxious about; *c* = honoured; *d* = marked with a cross; *e* = marked 'not negotiable'; *h* = on that file; *k* = over £100; *l* = payable to bearer; *m* = your.

59.

- (1) All the dated letters in this room are written on blue paper;
- (2) None of them are in black ink, except those that are written in the third person;
- (3) I have not filed any of them that I can read;
- (4) None of them, that are written on one sheet, are undated;
- (5) All of them, that are not crossed, are in black ink;
- (6) All of them, written by Brown, begin with "Dear Sir";
- (7) All of them, written on blue paper, are filed;
- (8) None of them, written on more than one sheet, are crossed;
- (9) None of them, that begin with "Dear Sir," are written in the third person.

Univ. “letters in this room”; *a* = beginning with “Dear Sir”; *b* = crossed; *c* = dated; *d* = filed; *e* = in black ink; *h* = in third person; *k* = letters that I can read; *l* = on blue paper; *m* = on one sheet; *n* = written by Brown.

60.

- (1) The only animals in this house are cats;
- (2) Every animal is suitable for a pet, that loves to gaze at the moon;
- (3) When I detest an animal, I avoid it;
- (4) No animals are carnivorous, unless they prowl at night;
- (5) No cats fails to kill mice;
- (6) No animals ever take to me, except what are in this house;
- (7) Kangaroos are not suitable for pets;
- (8) None but carnivora kill mice;
- (9) I detest animals that do not take to me;
- (10) Animals, that prowl at night, always love to gaze at the moon.

Univ. “animals”; *a* = avoided by me; *b* = carnivora; *c* = cats; *d* = detested by me; *e* = in this house; *h* = kangaroos; *k* = killing mice; *l* = loving to gaze at the moon; *m* = prowling at night; *n* = suitable for pets; *r* = taking to me.

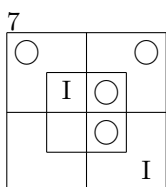
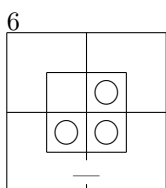
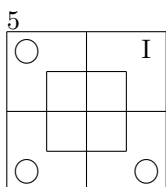
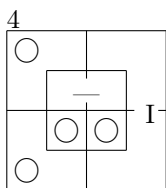
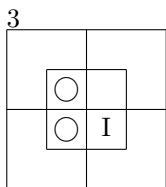
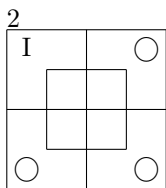
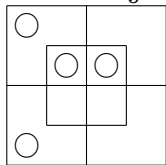
Chapter II. Answers.

Answers to § 1.

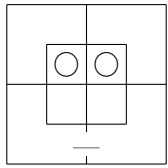
1. “All” *Sign of Quantity.*
 “persons represented by the Name ‘I’” (or ‘I’s’) *Subject.*
 “are” *Copula.*
 “persons who have been out for a walk” *Predicate.*
 or, more briefly,
 “All | ‘I’s | are | persons who have been out for a walk”.
2. “All | ‘I’s | are | persons who feel better”.
3. “No | persons who are not ‘John’ | are | persons who have read the letter”.
4. “No | Members of the Class ‘you and I’ | are | old persons”.
5. “No | fat creatures | are | creatures that run well”.
6. “No | not-brave persons | are | persons deserving of the fair”.
7. “No | not-pale persons | are | persons who look poetical”.
8. “Some | judges | are | persons who lose their tempers”.
9. “All | ‘I’s | are | persons who do not neglect important business”.
10. “All | difficult things | are | things that need attention”.
11. “All | unwholesome things | are | things that should be avoided”.
12. “All | laws passed last week | are | laws relating to excise”.
13. “All | logical studies | are | things that puzzle me”.
14. “No | persons in the house | are | Jews”.
15. “Some | not well-cooked dishes | are | unwholesome dishes”.
16. “All | unexciting books | are | books that make one drowsy”.
17. “All | men who know what they’re about | are | men who can detect a sharper”.
18. “All | Members of the Class ‘you and I’ | are | persons who know what they’re about”.

19. "Some | bald persons | are | persons accustomed to wear wigs".
 20. "All | fully occupied persons | are | persons who do not talk about their grievances".
 21. "No | riddles that can be solved | are | riddles that interest me".

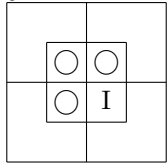
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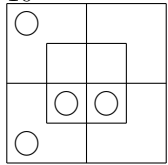
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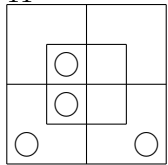
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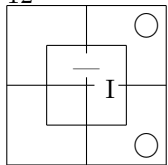
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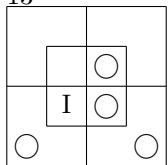
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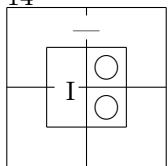
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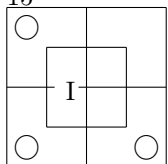
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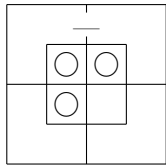
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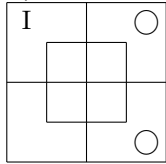
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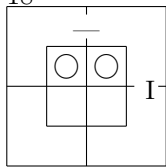
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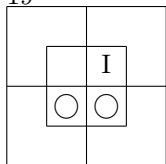
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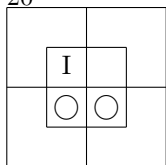
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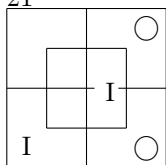
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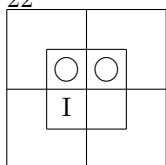
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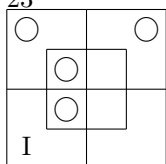
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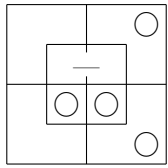
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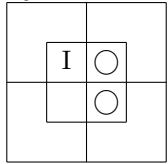
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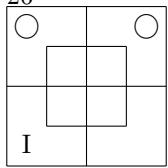
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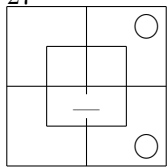
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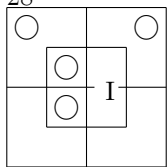
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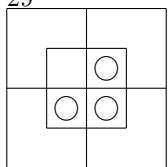
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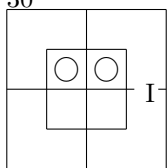
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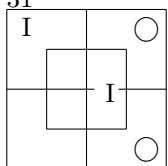
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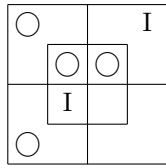
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31



32



Answers to § 3.

1. Some xy exist, or some x are y , or some y are x .
2. No information.
3. All y' are x' .
4. No xy exist, &c.
5. All y' are x .
6. All x' are y .
7. All x are y .
8. All x' are y' , and all y are x .
9. All x' are y' .
10. All x are y' .
11. No information.
12. Some $x'y'$ exist, &c.
13. Some xy' exist, &c.
14. No xy' exist, &c.
15. Some xy exist, &c.
16. All y are x .
17. All x' are y , and all y' are x .
18. All x are y' , and all y are x' .
19. All x are y , and all y' are x' .
20. All y are x' .

Answers to § 4.

1. No x' are y' .
2. Some x' are y' .
3. Some x are y' .
4. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
5. Some x' are y' .
6. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
7. Some x are y' .
8. Some x' are y' .
9. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
10. All x are y , and all y' are x' .
11. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
12. All y are x' .
13. No x' are y .
14. No x' are y' .
15. No x are y .
16. All x are y' , and all y are x' .
17. No x are y' .
18. No x are y .
19. Some x are y' .

20. No x are y' .
21. Some y are x' .
22. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
23. Some x are y .
24. All y are x' .
25. Some y are x' .
26. All y are x .
27. All x are y , and all y' are x' .
28. Some y are x' .
29. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
30. Some y are x' .
31. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
32. No x are y' .
33. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
34. Some x ⁷ are y .
35. All y are x' .
36. Some y are x' .
37. Some x are y' .
38. No x are y .
39. Some x' are y' .
40. All y' are x .
41. All x are y' .
42. No x are y .

Answers to § 5.

1. Somebody who has been out for a walk is feeling better.
2. No one but John knows what the letter is about.
3. You and I like walking.
4. Honesty is sometimes the best policy.
5. Some greyhounds are not fat.
6. Some brave persons get their deserts.
7. Some rich persons are not Esquimaux.
8. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
9. John is ill.
10. Some things, that are not umbrellas, should be left behind on a journey.
11. No music is worth paying for, unless it causes vibration in the air.
12. Some holidays are tiresome.
13. Englishmen are not Frenchmen.
14. No photograph of a lady is satisfactory.
15. No one looks poetical unless he is phlegmatic.
16. Some thin persons are not cheerful.
17. Some judges do not exercise self-control.
18. Pigs are not fed on barley-water.
19. Some black rabbits are not old.
20. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]

⁷accidentally x'

21. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
22. Some lessons need attention.
23. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
24. No one, who forgets a promise, fails to do mischief.
25. Some greedy creatures cannot fly.
26. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
27. No bride-cakes are things that need not be avoided.
28. John is happy.
29. Some people, who are not gamblers, are not philosophers.
30. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
31. None of my lodgers write poetry.
32. Senna is not nice.
33. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
34. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
35. Logic is unintelligible.
36. Some wild creatures are fat.
37. All wasps are unwelcome.
38. All black rabbits are young.
39. Some hard-boiled things can be cracked.
40. No antelopes fail to delight the eye.
41. All well-fed canaries are cheerful.
42. Some poetry is not producible at will.
43. No country infested by dragons fails to be fascinating.
44. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
45. Some picturesque things are not made of sugar.
46. No children can sit still.
47. Some cats cannot whistle.
48. You are terrible.
49. Some oysters are not amusing.
50. Nobody in the house has a beard a yard long.
51. Some ill-fed canaries are unhappy.
52. My sisters cannot sing.
53. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
54. Some rich things are nice.
55. My cousins are none of them judges, and judges are none of them cousins of mine.
56. Something wearisome is not eagerly wished for.
57. Senna is nasty.
58. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
59. Niggers are not any of them tall.
60. Some obstinate persons are not philosophers.
61. John is happy.
62. Some unwholesome dishes are not present here (i. e. cannot be spoken of as "these").
63. No books suit feverish patients unless they make one drowsy.
64. Some greedy creatures cannot fly.
65. You and I can detect a sharper.
66. Some dreams are not lambs.
67. No lizard needs a hairbrush.
68. Some things, that may escape notice, are not battles.

69. My cousins are not any of them judges.
70. Some hard-boiled things can be cracked.
71. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
72. She is unpopular.
73. Some people, who wear wigs, are not children of yours.
74. No lobsters expect impossibilities.
75. No nightmare is eagerly desired.
76. Some nice things are not plumcakes.
77. Some kinds of jam need not be shunned.
78. All ducks are ungraceful.
79. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
80. No man, who begs in the street, should fail to keep accounts.
81. Some savage creatures are not spiders.
82. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
83. No travelers, who do not carry plenty of small change, fail to lose their luggage.
84. [No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.]
85. Judges are none of them cousins of mine.
86. All my lodgers are sane.
87. Those who are busy are contented, and discontented people are not busy.
88. None of my cousins are judges.
89. No nightingale dislikes sugar.
90. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
91. Some excuses are not clear explanations.
92. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
93. No kind deed need cause scruple.
94. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
95. [No Concl. Fallacy of Like Eliminands not asserted to exist.]
96. No cheats are trustworthy.
97. No clever child of mine is greedy.
98. Some things, that are meant to amuse, are not Acts of Parliament.
99. No tour, that is ever forgotten, is worth writing a book about.
100. No obedient child of mine is contented.
101. Your visit does not annoy me.

Answers to § 6.

1. Conclusion right.
2. No Concl. Fallacy of Like Eliminands not asserted to exist.
3. Concl. right.
4. Concl. right.
5. Concl. right.
6. No Concl. Fallacy of Like Eliminands not asserted to exist.
7. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
8. Concl. right.
9. Concl. right.
10. Concl. right.
11. Concl. right.

12. Concl. right.
13. Concl. right.
14. Concl. right.
15. Concl. right.
16. No Concl. Fallacy of Like Eliminands not asserted to exist.
17. Concl. right.
18. Concl. right.
19. Concl. right.
20. Concl. right.
21. Concl. right.
22. Concl. wrong: the right one is "Some x are y ."
23. Concl. right.
24. Concl. right.
25. Concl. right.
26. Concl. right.
27. Concl. right.
28. No Concl. Fallacy of Like Eliminands not asserted to exist.
29. Concl. right.
30. Concl. right.
31. Concl. right.
32. Concl. right.
33. Concl. right.
34. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
35. Concl. right.
36. Concl. right.
37. Concl. right.
38. No Concl. Fallacy of Like Eliminands not asserted to exist.
39. Concl. right.
40. Concl. right.

Answers to § 7.

1. Concl. right.
2. Concl. right.
3. Concl. right.
4. Concl. wrong: right one is "Some epicures are not uncles of mine."
5. Concl. right.
6. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
7. Concl. wrong: right one is "The publication, in which I saw it, tells lies."
8. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
9. Concl. wrong: right one is "Some tedious songs are not his."
10. Concl. right.
11. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
12. Concl. wrong: right one is "Some fierce creatures do not drink coffee."
13. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
14. Concl. right.
15. Concl. wrong: right one is "Some shallow persons are not students."

16. No Concl. Fallacy of Like Eliminands not asserted to exist.
17. Concl. wrong: right one is "Some business, other than railways, is unprofitable."
18. Concl. wrong: right one is "Some vain persons are not Professors."
19. Concl. right.
20. Concl. wrong: right one is "Wasps are not puppies."
21. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
22. No Concl. Same Fallacy.
23. Concl. right.
24. Concl. wrong: right one is "Some chocolate-creams are delicious."
25. No Concl. Fallacy of Like Eliminands not asserted to exist.
26. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
27. Concl. wrong: right one is "Some pillows are not pokers."
28. Concl. right.
29. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
30. No Concl. Fallacy of Like Eliminands not asserted to exist.
31. Concl. right.
32. No Concl. Fallacy of Like Eliminands not asserted to exist.
33. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
34. Concl. wrong: right one is "Some dreaded persons are not begged to prolong their visits."
35. Concl. wrong: right one is "No man walks on neither."
36. Concl. right.
37. No Concl. Fallacy of Unlike Eliminands with an Entity-Premiss.
38. Concl. wrong: right one is "Some persons, dreaded by children, are not emperors."
39. Concl. incomplete: the omitted portion is "Sugar is not salt."
40. Concl. right.

Answers to § 8.

1. $a_1b_0 \dagger b_1a_0$.
2. d_1a_0 .
3. ac_0 .
4. a_1d_0 .
5. cd_0 .
6. d_1c_0 .
7. $a'c_0$.
8. $c_1a'_0$.
9. $c'd_0$.
10. b_1a_0 .
11. d_1b_0 .
12. $a'd_0$.
13. e_1b_0 .
14. $d_1e'_0$.
15. $e_1a'_0$.
16. $b'c_0$.
17. a_1b_0 .

18. d_1c_0 .
19. a_1d_0 .
20. ac_0 .
21. de_0 .
22. $a_1b'_0$.
23. h_1c_0 .
24. e_1a_0 .
25. $e_1c'_0$.
26. $e_1c'_0$.
27. hk'_0 .
28. $e_1d'_0$.
29. $l'a_0$.
30. $k_1b'_0$.

Answers to § 9.

1. Babies cannot manage crocodiles.
2. *Your* presents to me are not made of tin.
3. All my potatoes in this dish are old ones.
4. My servants never say "shpoonj."
5. My poultry are not officers.
6. None of *your* sons are fit to serve on a jury.
7. No pencils of mine are sugar-plums.
8. Jenkins is inexperienced.
9. No comet has a curly tail.
10. No hedge-hog takes in the *Times*.
11. This dish is unwholesome.
12. My gardener is very old.
13. All humming-birds are small.
14. No one with a hooked nose ever fails to make money.
15. No gray ducks in this village wear lace collars.
16. No jug in this cupboard will hold water.
17. These apples were grown in the sun.
18. Puppies, that will not lie still, never care to do worsted work.
19. No name in this list is unmelodious.
20. No M.P. should ride in a donkey-race, unless he has perfect self-command.
21. No goods in this shop, that are still on sale, may be carried away.
22. No acrobatic feat, which involves turning a quadruple somersault, is ever attempted in a circus.
23. Guinea-pigs never really appreciate Beethoven.
24. No scentless flowers please me.
25. Showy talkers are not really well-informed.
26. None but red-haired boys learn Greek in this school.
27. Wedding-cake always disagrees with me.
28. Discussions, that go on while Tomkins is in the chair, endanger the peacefulness of our Debating-Club.
29. All gluttons, who are children of mine, are unhealthy.
30. An egg of the Great Auk is not to be had for a song.

31. No books sold here have gilt edges, unless they are priced at 5s. and upwards.
32. When you cut your finger, you will find Tincture of Calendula useful.
33. *I* have never come across a mermaid at sea.
34. All the romances in this library are well-written.
35. No bird in this aviary lives on mince-pies.
36. No plum-pudding, that has not been boiled in a cloth, can be distinguished from soup.
37. All *your* poems are uninteresting.
38. None of my peaches have been grown in a hot-house.
39. No pawnbroker is dishonest.
40. No kitten with green eyes will play with a gorilla.
41. All *my* friends dine at the lower table.
42. My writing-desk is full of live scorpions.
43. No Mandarin ever reads Hogg's poems.
44. Shakespeare was clever.
45. Rainbows are not worth writing odes to.
46. These Sorites-examples are difficult.
47. All my dreams come true.
48. All the English pictures here are painted in oils.
49. Donkeys are not easy to swallow.
50. Opium-eaters never wear white kid gloves.
51. A good husband always comes home for his tea.
52. Bathing-machines are never made of mother-of-pearl.
53. Rainy days are always cloudy.
54. No heavy fish is unkind to children.
55. No engine-driver lives on barley-sugar.
56. All the animals in the yard gnaw bones.
57. No badger can guess a conundrum.
58. No cheque of yours, received by me, is payable to order.
59. I cannot read any of Brown's letters.
60. I always avoid a kangaroo.

[...]⁸

Notes.

(A) [See p. 1091]. One of the favourite objections, brought against the Science of Logic by its detractors, is that a Syllogism has no real validity as an argument, since it involves the Fallacy of *Petitio Principii* (i. e. "Begging the Question", the essence of which is that the whole Conclusion is involved in *one* of the Premises).

This formidable objection is refuted, with beautiful clearness and simplicity, by these three Diagrams, which show us that, in each of the three Figures, the Conclusion is really involved in the *two* Premises taken together, each contributing its share.

⁸Remark: Chapter III "Solutions" of Book VIII is currently not included here. It contains the detailed solutions to the above problems.

Thus, in Fig. I., the Premiss xm_0 empties the *Inner* Cell of the N.W. Quarter, while the Premiss ym_0 empties its *Outer* Cell. Hence it needs the *two* Premisses to empty the *whole* of the N.W. Quarter, and thus to prove the Conclusion xy_0 .

Again, in Fig. II., the Premiss xm_0 empties the Inner Cell of the N.W. Quarter. The Premiss ym_1 merely tells us that the Inner Portion of the W. Half is *occupied*, so that we may place a 'I' in it, *somewhere*; but, if this were the *whole* of our information, we should not know in *which* Cell to place it, so that it would have to 'sit on the fence': it is only when we learn, from the other Premiss, that the *upper* of these two Cells is *empty*, that we feel authorised to place the 'I' in the *lower* Cell, and thus to prove the Conclusion $x'y_1$.

Lastly, in Fig. III., the information, that *m exists*, merely authorises us to place a 'I' *somewhere* in the Inner Square—but it has large choice of fences to sit upon! It needs the Premiss xm_0 to drive it out of the N. Half of that Square; and it needs the Premiss ym_0 to drive it out of the W. Half. Hence it needs the *two* Premisses to drive it into the Inner Portion of the S.E. Quarter, and thus to prove the Conclusion $x'y'_1$.

Appendix

Addressed to Teachers.

§ 1. Introductory. There are several matters, too hard to discuss with *Learners*, which nevertheless need to be explained to any *Teachers*, into whose hands this book may fall, in order that they may thoroughly understand what my Symbolic Method *is*, and in what respects it differs from the many other Methods already published.

These matters are as follows:—

- The "Existential Import" of Propositions.
- The use of "is-not" (or "are-not") as a Copula.
- The theory "two Negative Premisses prove nothing."
- Euler's Method of Diagrams.
- Venn's Method of Diagrams.
- My Method of Diagrams.
- The Solution of a Syllogism by various Methods.
- My Method of treating Syllogisms and Sorites.
- Some account of Parts II, III.

§ 2. The "Existential Import" of Propositions. The writers, and editors, of the Logical text-books which run in the ordinary grooves—to whom I shall hereafter refer by the (I hope inoffensive) title "The Logicians"—take, on this subject, what seems to me to be a more humble position than is at all necessary. They speak of the Copula of a Proposition "with bated breath", almost as if it were a living, conscious Entity, capable of declaring for itself what it chose to mean, and that we, poor human creatures, had nothing to do but to ascertain *what* was its sovereign will and pleasure, and submit to it.

In opposition to this view, I maintain that any writer of a book is fully authorised in attaching any meaning he likes to any word or phrase he intends to use. If I find an author saying, at the beginning of his book, "Let it be understood that by the word '*black*' I shall always mean '*white*', and that by

the word ‘*white*’ I shall always mean ‘*black*,’” I meekly accept his ruling, however injudicious I may think it.

And so, with regard to the question whether a Proposition is or is not to be understood as asserting the existence of its Subject, I maintain that every writer may adopt his own rule, provided of course that it is consistent with itself and with the accepted facts of Logic.

Let us consider certain views that may *logically* be held, and thus settle which of them may *conveniently* be held; after which I shall hold myself free to declare which of them *I* intend to hold.

The *kinds* of Propositions, to be considered, are those that begin with “some”, with “no”, and with “all”. These are usually called Propositions “in *I*”, “in *E*”, and “in *A*”.

First, then, a Proposition in *I* may be understood as asserting, or else as *not* asserting, the existence of its Subject. (By “existence” I mean of course whatever kind of existence suits its nature. The two Propositions, “*dreams* exist” and “*drums* exist”, denote two totally different kinds of “existence”. A *dream* is an aggregate of ideas, and exists only in the *mind of a dreamer*: whereas a *drum* is an aggregate of wood and parchment, and exists in *the hands of a drummer*.)

First, let us suppose that *I* “asserts” (i. e. “asserts the existence of its Subject”).

Here, of course, we must regard a Proposition in *A* as making the *same* assertion, since it necessarily *contains* a Proposition in *I*.

We now have *I* and *A* “asserting”. Does this leave us free to make what supposition we choose as to *E*? My answer is “No. We are tied down to the supposition that *E* does *not* assert.” This can be proved as follows:—

If possible, let *E* “assert”. Then (taking *x*, *y*, and *z* to represent Attributes) we see that, if the Proposition “No *xy* are *z*” be true, some things exist with the Attributes *x* and *y*: i. e. “Some *x* are *y*.”

Also we know that, if the Proposition “Some *xy* are *z*” be true, the same result follows.

But these two Propositions are Contradictories, so that one or other of them *must* be true. Hence this result is *always* true: i. e. the Proposition “Some *x* are *y*” is *always* true!

Quod est absurdum. (See Note (A), p. 1173).

We see, then, that the supposition “*I* asserts” necessarily leads to “*A* asserts, but *E* does not”. And this is the *first* of the various views that may conceivably be held.

Next, let us suppose that *I* does *not* “assert.” And, along with this, let us take the supposition that *E* *does* “assert.”

Hence the Proposition “No *x* are *y*” means “Some *x* exist, and none of them are *y*”: i. e. “*all* of them are *not-y*,” which is a Proposition in *A*. We also know, of course, that the Proposition “All *x* are *not-y*” proves “No *x* are *y*.” Now two Propositions, each of which proves the other, are *equivalent*. Hence every Proposition in *A* is equivalent to one in *E*, and therefore “*asserts*”.

Hence our *second* conceivable view is “*E* and *A* assert, but *I* does not.”

This view does not seem to involve any necessary contradiction with itself or with the accepted facts of Logic. But, when we come to *test* it, as applied to the actual *facts* of life, we shall find I think, that it fits in with them so badly that its adoption would be, to say the least of it, singularly inconvenient for ordinary folk.

Let me record a little dialogue I have just held with my friend Jones, who is trying to form a new Club, to be regulated on strictly *Logical* principles.

Author. "Well, Jones! Have you got your new Club started yet?"

Jones (rubbing his hands). "You'll be glad to hear that some of the Members (mind, I only say 'some') are millionaires! Rolling in gold, my boy!"

Author. "That sounds well. And how many Members have entered?"

Jones (staring). "None at all. We haven't got it started yet. What makes you think we have?"

Author. "Why, I thought you said that some of the Members——"

Jones (contemptuously). "You don't seem to be aware that we're working on strictly *Logical* principles. A *Particular* Proposition does *not* assert the existence of its Subject. I merely meant to say that we've made a Rule not to admit *any* Members till we have at least *three* Candidates whose incomes are over ten thousand a year!"

Author. "Oh, *that's* what you meant, is it? Let's hear some more of your Rules."

Jones. "Another is, that no one, who has been convicted seven times of forgery, is admissible."

Author. "And here, again, I suppose you don't mean to assert there *are* any such convicts in existence?"

Jones. "Why, that's exactly what I *do* mean to assert! Don't you know that a Universal Negative *asserts* the existence of its Subject? *Of course* we didn't make that Rule till we had satisfied ourselves that there are several such convicts now living."

The Reader can now decide for himself how far this *second* conceivable view would fit in with the facts of life. He will, I think, agree with me that Jones' view, of the 'Existential Import' of Propositions, would lead to some inconvenience.

Thirdly, let us suppose that neither *I* nor *E* "asserts".

Now the supposition that the two Propositions, "Some *x* are *y*" and "No *x* are not-*y*", do *not* "assert", necessarily involves the supposition that "All *x* are *y*" does *not* "assert", since it would be absurd to suppose that they assert, when combined, more than they do when taken separately.

Hence the *third* (and last) of the conceivable views is that neither *I*, nor *E*, nor *A*, "asserts".

The advocates of this third view would interpret the Proposition "Some *x* are *y*" to mean "If there *were* any *x* in existence, some of them *would* be *y*"; and so with *E* and *A*.

It admits of proof that this view, as regards *A*, conflicts with the accepted facts of Logic.

Let us take the Syllogism *Darapti*, which is universally accepted as valid. Its form is

"All *m* are *x*;
All *m* are *y*.
∴ Some *y* are *x*".

This they would interpret as follows:—

"If there were any *m* in existence, all of them would be *x*;
If there were any *m* in existence, all of them would be *y*.
∴ If there were any *y* in existence, some of them would be *x*".

That this Conclusion does *not* follow has been so briefly and clearly explained by Mr. Keynes (in his “Formal Logic”, dated 1894, pp. 356, 357), that I prefer to quote his words:—

“Let no proposition imply the existence either of its subject or of its predicate.

“Take, as an example, a syllogism in *Darapti*:—

‘All *M* is *P*,
All *M* is *S*,
∴ Some *S* is *P*.’

“Taking *S*, *M*, *P*, as the minor, middle, and major terms respectively, the conclusion will imply that, if there is any *S*, there is some *P*. Will the premisses also imply this? If so, then the syllogism is valid; but not otherwise.

“The conclusion implies that if *S* exists *P* exists; but, consistently with the premisses, *S* may be existent while *M* and *P* are both non-existent. An implication is, therefore, contained in the conclusion, which is not justified by the premisses.”

This seems to *me* entirely clear and convincing. Still, “to make sicker”, I may as well throw the above (*soi-disant*) Syllogism into a concrete form, which will be within the grasp of even a *non*-logical Reader.

Let us suppose that a Boys’ School has been set up, with the following system of Rules:—

“All boys in the First (the highest) Class are to do French, Greek, and Latin. All in the Second Class are to do Greek only. All in the Third Class are to do Latin only.”

Suppose also that there *are* boys in the Third Class, and in the Second; but that no boy has yet risen into the First.

It is evident that there are no boys in the School doing French: still we know, by the Rules, what would happen if there *were* any.

We are authorised, then, by the *Data*, to assert the following two Propositions:—

“If there were any boys doing French, all of them would be doing
Greek;
If there were any boys doing French, all of them would be doing
Latin.”

And the Conclusion, according to “The Logicians” would be

“If there were any boys doing Latin, some of them would be doing
Greek.”

Here, then, we have two *true* Premisses and a *false* Conclusion (since we know that there *are* boys doing Latin, and that *none* of them are doing Greek). Hence the argument is *invalid*.

Similarly it may be shown that this “non-existential” interpretation destroys the validity of *Disamis*, *Datisi*, *Felapton*, and *Fresison*.

Some of “The Logicians” will, no doubt, be ready to reply “But we are not *Aldrichians*! Why should *we* be responsible for the validity of the Syllogisms of so antiquated an author as Aldrich?”

Very good. Then, for the *special* benefit of these “friends” of mine (with what ominous emphasis that name is sometimes used! “I must have a private interview

with *you, my young friend,*” says the bland Dr. Birch, “in my library, at 9 a. m. tomorrow. And you will please to be *punctual!*”), for their *special* benefit, I say, I will produce *another* charge against this “non-existential” interpretation.

It actually invalidates the ordinary Process of “Conversion”, as applied to Proposition in ‘*I*’.

Every logician, Aldrichian or otherwise, accepts it as an established fact that “Some *x* are *y*” may be legitimately converted into “Some *y* are *x*.”

But is it equally clear that the Proposition “If there *were* any *x*, some of them *would* be *y*” may be legitimately converted into “If there *were* any *y*, some of them *would* be *x*”? I trow not.

The example I have already used—of a Boys’ School with a non-existent First Class—will serve admirably to illustrate this new flaw in the theory of “The Logicians.”

Let us suppose that there is yet *another* Rule in this School, viz. “In each Class, at the end of the Term, the head boy and the second boy shall receive prizes.”

This Rule entirely authorises us to assert (in the sense in which “The Logicians” would use the words) “Some boys in the First Class will receive prizes”, for this simply means (according to them) “If there *were* any boys in the First Class, some of them *would* receive prizes.”

Now the Converse of this Proposition is, of course, “Some boys, who will receive prizes, are in the First Class”, which means (according to “The Logicians”) “If there *were* any boys about to receive prizes, some of them *would* be in the First Class” (which Class we know to be *empty*).

Of this Pair of Converse Propositions, the first is undoubtedly *true*: the second, *as* undoubtedly, *false*.

It is always sad to see a batsman knock down his own wicket: one pities him, as a man and a brother, but, as a *cricketer*, one can but pronounce him “Out!”

We see, then, that, among all the conceivable views we have here considered, there are only *two* which can *logically* be held, viz.

I and *A* “assert”, but *E* does not.

E and *A* “assert”, but *I* does not.

The *second* of these I have shown to involve great practical inconvenience.

The *first* is the one adopted in this book. (See p. 1054.)

Some further remarks on this subject will be found in Note (B), at p. 1174.

§ 3. The use of “is-not” (or “are-not”) as a Copula. Is it better to say “John *is-not* in-the-house” or “John *is* not-in-the-house”? “Some of my acquaintances *are-not* men-I-should-like-to-be-seen-with” or “Some of my acquaintances *are* men-I-should-*not*-like-to-be-seen-with”? That is the sort of question we have now to discuss.

This is no question of Logical Right and Wrong: it is merely a matter of *taste*, since the two forms mean exactly the same thing. And here, again, “The Logicians” seem to me to take much too humble a position. When they are putting the final touches to the grouping of their Proposition, just before the curtain goes up, and when the Copula—always a rather fussy ‘heavy father’, asks them “Am *I* to have the ‘not’, or will you tack it on to the Predicate?” they are much too ready to answer, like the subtle cab-driver, “Leave it to

you, Sir!" The result seems to be, that the grasping Copula constantly gets a "not" that had better have been merged in the Predicate, and that Propositions are differentiated which had better have been recognised as precisely similar. Surely it is simpler to treat "Some men are Jews" and "Some men are Gentiles" as being both of them, *affirmative* Propositions, instead of translating the latter into "Some men are-not Jews", and regarding it as a *negative* Propositions?

The fact is, "The Logicians" have somehow acquired a perfectly *morbid* dread of negative Attributes, which makes them shut their eyes, like frightened children, when they come across such terrible Propositions as "All not-*x* are *y*"; and thus they exclude from their system many very useful forms of Syllogisms.

Under the influence of this unreasoning terror, they plead that, in Dichotomy by Contradiction, the *negative* part is too large to deal with, so that it is better to regard each Thing as either included in, or excluded from, the *positive* part. I see no force in this plea: and the facts often go the other way. As a personal question, dear Reader, if *you* were to group your acquaintances into the two Classes, men that you *would* like to be seen with, and men that you would *not* like to be seen with, do you think the latter group would be so *very* much the larger of the two?

For the purposes of Symbolic Logic, it is so *much* the most convenient plan to regard the two sub-divisions, produced by Dichotomy, on the *same* footing, and to say, of any Thing, either that it "is" in the one, or that it "is" in the other, that I do not think any Reader of this book is likely to demur to my adopting that course.

§ 4. The theory that "two Negative Premisses prove nothing". This I consider to be *another* craze of "The Logicians", fully as morbid as their dread of a negative Attribute.

It is, perhaps, best refuted by the method of *Instantia Contraria*.

Take the following Pairs of Premisses:—

"None of my boys are conceited;

None of my girls are greedy".

"None of my boys are clever;

None but a clever boy could solve this problem".

"None of my boys are learned;

Some of my boys are not choristers".

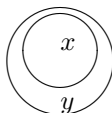
(This last Proposition is, in *my* system, an *affirmative* one, since *I* should read it "are not-choristers"; but, in dealing with "The Logicians," I may fairly treat it as a *negative* one, since *they* would read it "are-not choristers".)

If you, dear Reader, declare, after full consideration of these Pairs of Premisses, that you cannot deduce a Conclusion from *any* of them—why, all I can say is that, like the Duke in *Patience*, you "will have to be contented with our heart-felt sympathy"! [See Note (C), p. 1174.]

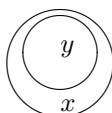
Quoted from *If Saphir I choose to marry* from *Patience* by Gilbert and Sullivan

§ 5. Euler's Method of Diagrams. Diagrams seem to have been used, at first, to represent *Propositions* only. In Euler's well-known Circles, each was supposed to contain a class, and the Diagram consisted of two circles, which

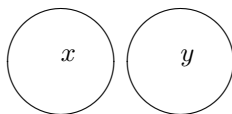
exhibited the relations, as to inclusion and exclusion, existing between the two Classes.



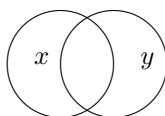
Thus, the Diagram, here given, exhibits the two Classes, whose respective Attributes are x and y , as so related to each other that the following Propositions are all simultaneously true:—"All x are y ", "No x are not- y ", "Some x are y ", "Some y are not- x ", "Some not- y are not- x ", and, of course, the Converses of the last four.



Similarly, with this Diagram, the following Propositions are true:—"All y are x ", "No y are not- x ", "Some y are x ", "Some x are not- y ", "Some not- x are not- y ", and, of course, the Converses of the last four.



Similarly, with this Diagram, the following are true:—"All x are not- y ", "All y are not- x ", "No x are y ", "Some x are not- y ", "Some y are not- x ", "Some not- x are not- y ", and the Converses of the last four.



Similarly, with this Diagram, the following are true:—"Some x are y ", "Some x are not- y ", "Some not- x are y ", "Some not- x are not- y ", and of course, their four Converses.

Note that *all* Euler's Diagrams assert "Some not- x are not- y ." Apparently it never occurred to him that it might *sometimes* fail to be true!

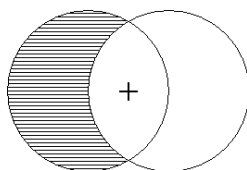
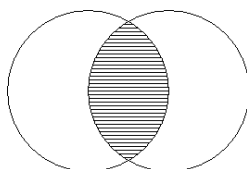
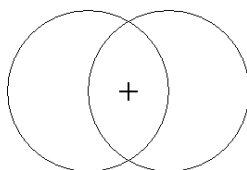
Now, to represent "All x are y ", the *first* of these Diagrams would suffice. Similarly, to represent "No x are y ", the *third* would suffice. But to represent any *Particular* Proposition, at least *three* Diagrams would be needed (in order to include all the possible cases), and, for "Some not- x are not- y ", all the *four*.

§ 6. **Venn's Method of Diagrams.** Let us represent "not- x " by " x' ".

Mr. Venn's Method of Diagrams is a great advance on the above Method.

He uses the last of the above Diagrams to represent *any* desired relation between x and y , by simply shading a Compartment known to be *empty*, and placing a $+$ in one known to be *occupied*.

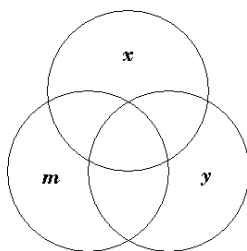
Thus, he would represent the three Propositions "Some x are y ", "No x are y ", and "All x are y ", as follows:—



It will be seen that, of the *four* Classes, whose peculiar Sets of Attributes are xy , xy' , $x'y$, and $x'y'$, only *three* are here provided with closed Compartments, while the *fourth* is allowed the rest of the Infinite Plane to range about in!

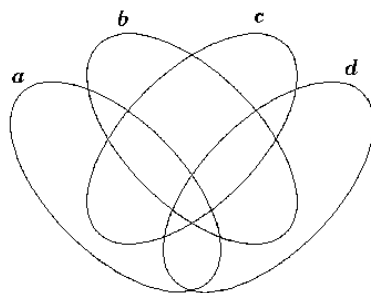
This arrangement would involve us in very serious trouble, if we ever attempted to represent "No x' are y' ." Mr. Venn *once* (at p. 281) encounters this awful task; but evades it, in a quite masterly fashion, by the simple foot-note "We have not troubled to shade the outside of this diagram!"

To represent *two* Propositions (containing a common Term) *together*, a *three*-letter Diagram is needed. This is the one used by Mr. Venn.

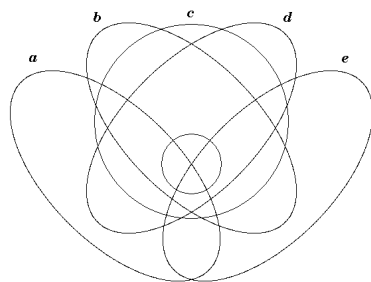


Here, again, we have only *seven* closed Compartments, to accommodate the *eight* Classes whose peculiar Sets of Attributes are xym , xym' , &c.

“With four terms in request,” Mr. Venn says, “the most simple and symmetrical diagram seems to me that produced by making four ellipses intersect one another in the desired manner”. This, however, provides only *fifteen* closed compartments.



For *five* letters, “the simplest diagram I can suggest,” Mr. Venn says, “is one like this (the small ellipse in the centre is to be regarded as a portion of the *outside* of c ; i. e. its four component portions are inside b and d but are no part of c). It must be admitted that such a diagram is not quite so simple to draw as one might wish it to be; but then consider what the alternative is of one undertakes to deal with five terms and all their combinations—nothing short of the disagreeable task of writing out, or in some way putting before us, all the 32 combinations involved.”



This Diagram gives us 31 closed compartments.

For *six* letters, Mr. Venn suggests that we might use *two* Diagrams, like the above, one for the f -part, and the other for the not- f -part, of all the other combinations. “This”, he says, “would give the desired 64 subdivisions.” This, however, would only give 62 closed Compartments, and *one* infinite area, which the two Classes, $a'b'c'd'e'f$ and $a'b'c'd'e'f'$, would have to share between them.

Beyond *six* letters Mr. Venn does not go.

§ 7. My Method of Diagrams. My Method of Diagrams *resembles* Mr. Venn’s, in having separate Compartments assigned to the various Classes, and in marking these Compartments as *occupied* or as *empty*; but it *differs* from his Method,

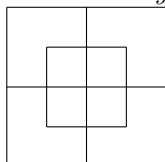
in assigning a *closed* area to the *Universe of Discourse*, so that the Class which, under Mr. Venn's liberal sway, has been ranging at will through Infinite Space, is suddenly dismayed to find itself "cabin'd, cribb'd, confined", in a limited Cell like any other Class! Also I use *rectilinear*, instead of *curvilinear*, Figures; and I mark an *occupied* Cell with a 'I' (meaning that there is at least *one* Thing in it), and an *empty* Cell with a 'O' (meaning that there is *no* Thing in it).

Quoted from *Macbeth*
by William
Shakespeare

For *two* letters, I use this Diagram, in which the North Half is assigned to 'x', the South to 'not-x' (or 'x'), the West to *y*, and the East to *y'*. Thus the N.W. Cell contains the *xy*-Class, the N.E. Cell the *xy'*-Class, and so on.

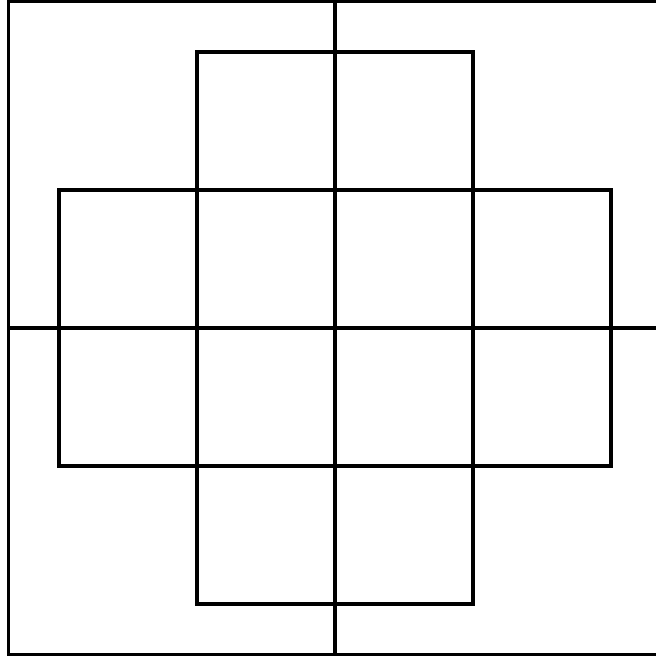


For *three* letters, I subdivide these four Cells, by drawing an *Inner Square*, which I assign to *m*, the *Outer Border* being assigned to *m'*. I thus get *eight* Cells that are needed to accommodate the eight Classes, whose peculiar Sets of Attributes are *xym*, *xym'*, &c.

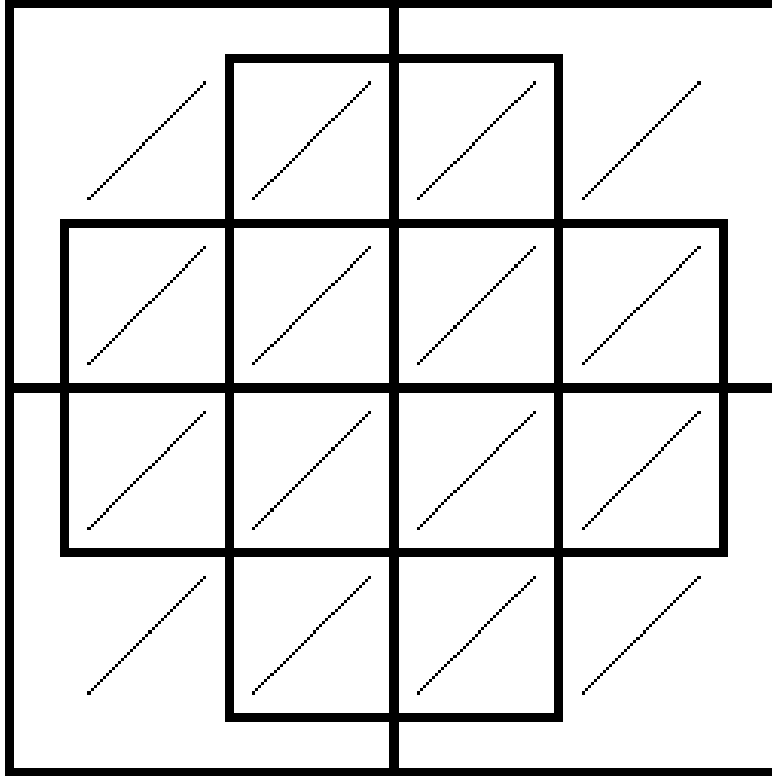


This last Diagram is the most complex that I use in the *Elementary* Part of my 'Symbolic Logic.' But I may as well take this opportunity of describing the more complex ones which will appear in Part II.

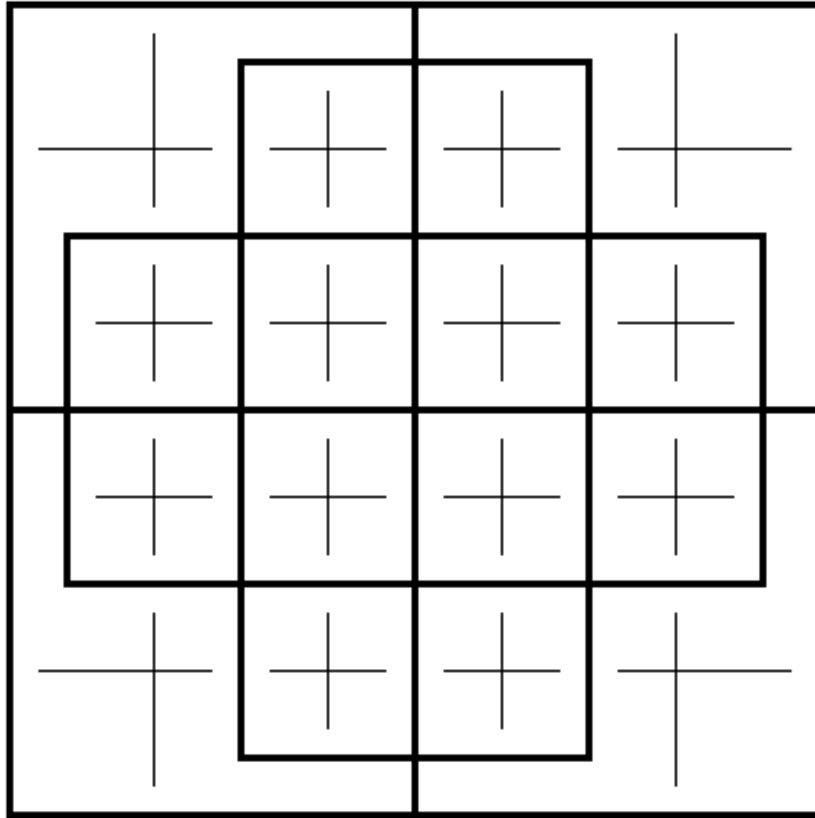
For *four* letters (which I call *a*, *b*, *c*, *d*) I use this Diagram; assigning the North Half to *a* (and of course the *rest* of the Diagram to *a'*), the West Half to *b*, the Horizontal Oblong to *c*, and the Upright Oblong to *d*. We have now got 16 Cells.



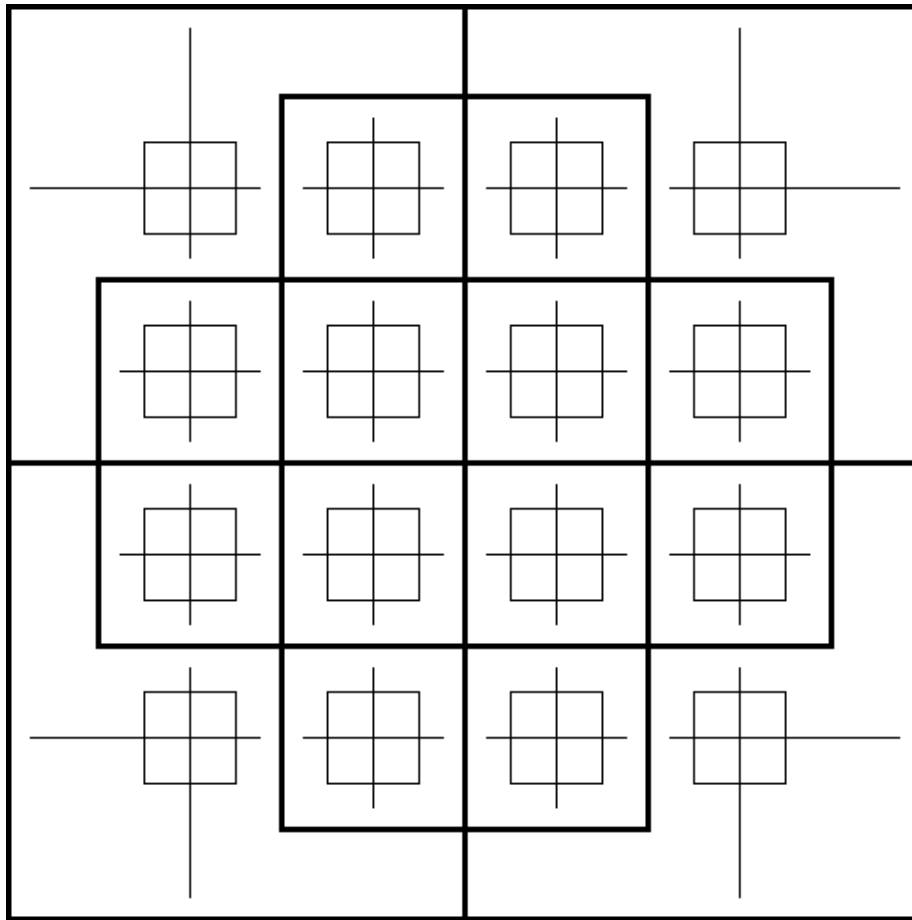
For *five* letters (adding *e*) I subdivide the 16 Cells of the previous Diagram by *oblique* partitions, assigning all the *upper* portions to *e*, and all the *lower* portions to *e'*. Here, I admit, we lose the advantage of having the *e*-Class all *together*, “in a ring-fence”, like the other 4 Classes. Still, it is very easy to find; and the operation, of erasing it, is nearly as easy as that of erasing any other Class. We have now got 32 Cells.



For *six* letters (adding *h*, as I avoid *tailed* letters) I substitute upright crosses for the oblique partitions, assigning the 4 portions, into which each of the 16 Cells is thus divided, to the four Classes *eh*, *eh'*, *e'h*, *e'h'*. We have now got 64 Cells.

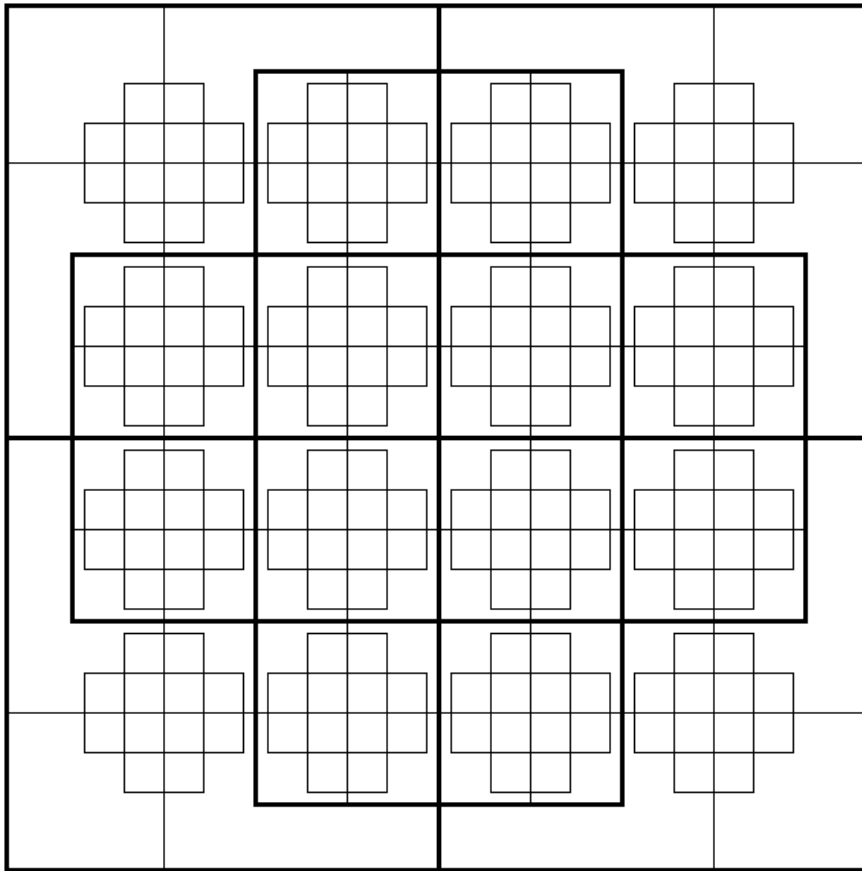


For *seven* letters (adding *k*) I add, to each upright cross, a little inner square. All these 16 little squares are assigned to the *k*-Class, and all outside them to the *k'*-Class; so that 8 little Cells (into which each of the 16 Cells is divided) are respectively assigned to the 8 Classes *ehk*, *ehk'*, &c. We have now got 128 Cells.



For *eight* letters (adding *l*) I place, in each of the 16 Cells, a *lattice*, which is a reduced copy of the whole Diagram; and, just as the 16 large Cells of the whole Diagram are assigned to the 16 Classes *abcd*, *abcd'*, &c., so the 16 little Cells of each lattice are assigned to the 16 Classes *ehkl*, *ehkl'*, &c. Thus, the lattice in the N.W. corner serves to accommodate the 16 Classes *abc'd'ehkl*, *abc'd'eh'kl'*, &c. This Octoliteral Diagram (see next page) contains 256 Cells.

For *nine* letters, I place 2 Octoliteral Diagrams side by side, assigning one of them to *m*, and the other to *m'*. We have now got 512 Cells.



Finally, for *ten* letters, I arrange 4 Octoliteral Diagrams, like the above, in a square, assigning them to the 4 Classes mn , mn' , $m'n$, $m'n'$. We have now got 1024 Cells.

§ 8. Solution of a Syllogism by various Methods. The best way, I think, to exhibit the differences between these various Methods of solving Syllogisms, will be to take a concrete example, and solve it by each Method in turn. Let us take, as our example, No. 29 (see p. 1108).

“No philosophers are conceited;
 Some conceited persons are not gamblers.
 \therefore Some persons, who are not gamblers, are not philosophers.”

(1) Solution by ordinary Method.

These Premisses, as they stand, will give no Conclusion, as they are both negative.

If by ‘Permutation’ or ‘Obversion’, we write the Minor Premiss thus,

‘Some conceited persons are not-gamblers,’

we can get a Conclusion in *Fresison*, viz.

“No philosophers are conceited;
Some conceited persons are not-gamblers.
∴ Some not-gamblers are not philosophers”

This can be proved by reduction to *Ferio*, thus:—

“No conceited persons are philosophers;
Some not-gamblers are conceited.
∴ Some not-gamblers are not philosophers”.

The validity of *Ferio* follows directly from the Axiom ‘*De Omni et Nullo*’.

(2) Symbolic Representation.

Before proceeding to discuss other Methods of Solution, it is necessary to translate our Syllogism into an *abstract* form.

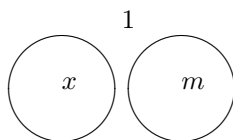
Let us take “persons” as our ‘Universe of Discourse’; and let x = “philosophers”, m = “conceited”, and y = “gamblers.”

Then the Syllogism may be written thus:—

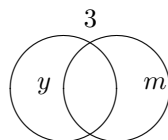
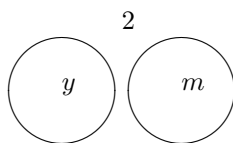
“No x are m ;
Some m are y' .
∴ Some y' are x' .”

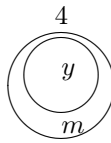
(3) Solution by Euler’s Method of Diagrams.

The Major Premiss requires only *one* Diagram, viz.



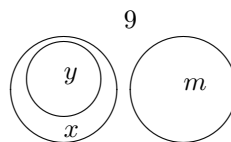
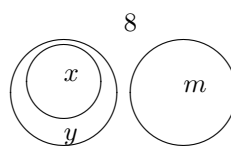
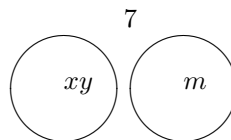
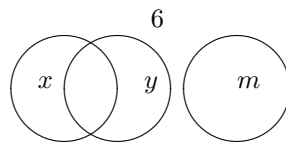
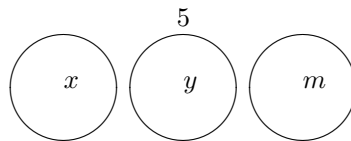
The Minor requires *three*, viz.



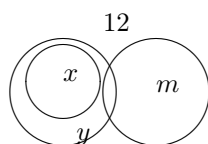
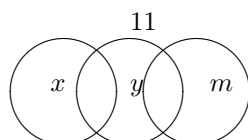
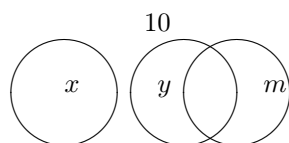


The combination of Major and Minor, in every possible way requires *nine*, viz.

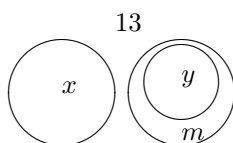
Figs. 1 and 2 give



Figs. 1 and 3 give

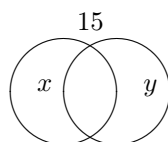
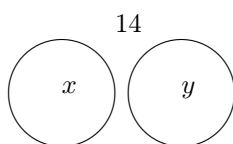


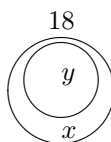
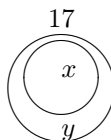
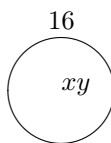
Figs. 1 and 4 give



From this group (Figs. 5 to 13) we have, by disregarding m , to find the relation of x and y . On examination we find that Figs. 5, 10, 13 express the relation of entire mutual exclusion; that Figs. 6, 11 express partial inclusion and partial exclusion; that Fig. 7 expresses coincidence; that Figs. 8, 12 express entire inclusion of x in y ; and that Fig. 9 expresses entire inclusion of y in x .

We thus get five Biliteral Diagrams for x and y , viz.



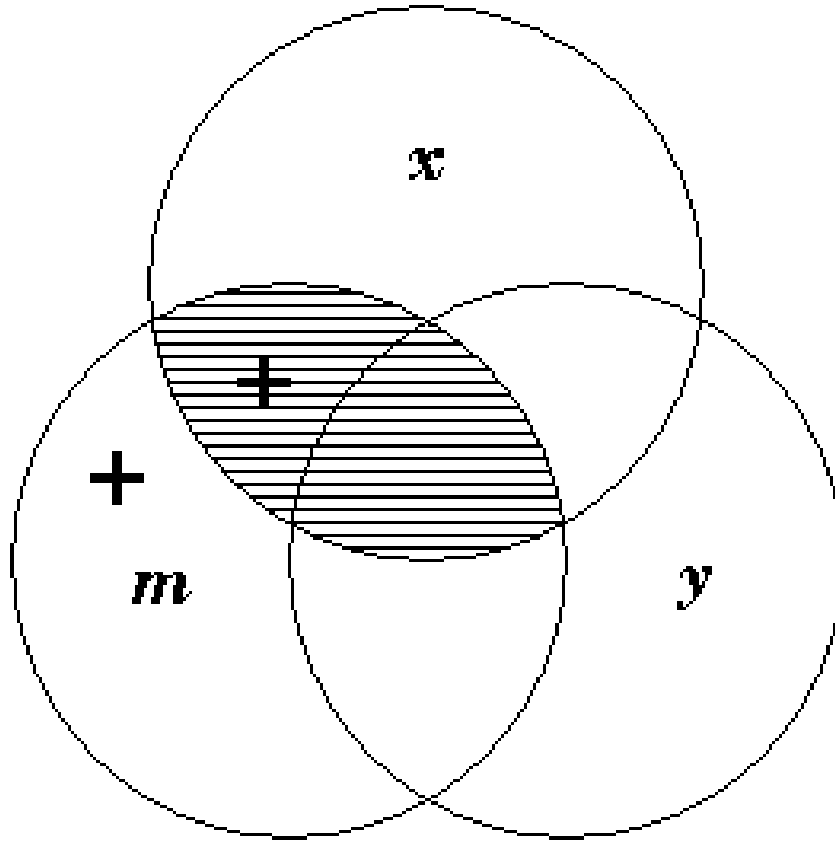


where the only Proposition, represented by them all, is “Some not- y are not- x ,” i. e. “Some persons, who are not gamblers, are not philosophers”—a result which Euler would hardly have regarded as a *valuable* one, since he seems to have assumed that a Proposition of this form is *always* true!

(4) Solution by Venn’s Method of Diagrams.

The following Solution has been kindly supplied to me Mr. Venn himself.

”The Minor Premiss declares that some of the constituents in my' must be saved: mark these constituents with a cross.



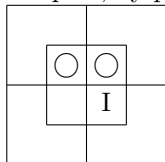
The Major declares that all xm must be destroyed; erase it.
 Then, as some my' is to be saved, it must clearly be $my'x'$. That is, there must exist $my'x'$; or eliminating $m, y'x'$. In common phraseology,

‘Some y' are x' ,’ or, ‘Some not-gamblers are not-philosophers.’”

(5) Solution by my Method of Diagrams.

The first Premiss asserts that no xm exist: so we mark the xm -Compartment as empty, by placing a ‘O’ in each of its Cells.

The second asserts that some my' exist: so we mark the my' -Compartment as occupied, by placing a ‘I’ in its only available Cell.



The only information, that this gives us as to x and y , is that the $x'y'$ -Compartment is *occupied*, i. e. that some $x'y'$ exist.

Hence “Some x' are y' ”: i. e. “Some persons, who are not philosophers, are not gamblers”.

(6) Solution by my Method of Subscripts.

$$xm_0 \dagger my'_1 \mathbb{P} x'y'_1$$

i. e. “Some persons, who are not philosophers, are not gamblers.”

§ 9. My Method of treating Syllogisms and Sorites. Of all the strange things, that are to be met with in the ordinary text-books of Formal Logic, perhaps the strangest is the violent contrast one finds to exist between their ways of dealing with these two subjects. While they have elaborately discussed no less than *nineteen* different forms of *Syllogisms*—each with its own special and exasperating Rules, while the whole constitute an almost useless machine, for practical purposes, many of the Conclusions being incomplete, and many quite legitimate forms being ignored—they have limited *Sorites* to *two* forms only, of childish simplicity; and these they have dignified with special *names*, apparently under the impression that no other possible forms existed!

As to *Syllogisms*, I find that their nineteen forms, with about a score of others which they have ignored, can all be arranged under *three* forms, each with a very simple Rule of its own; and the only question the Reader has to settle, in working any one of the 101 Examples given at p. 1107 of this book, is “Does it belong to Fig. I., II., or III.?” As to *Sorites*, the only two forms, recognised by the text-books, are the *Aristotelian*, whose Premisses are a series of Propositions in *A*, so arranged that the Predicate of each is the Subject of the next, and the *Goclenian*, whose Premisses are the very same series, written backwards. Goclenius, it seems, was the first who noticed the startling fact that it does not affect the force of a Syllogism to invert the order of its Premisses, and who applied this discovery to a Sorites. If we assume (as surely we may?) that he is the *same* man as that transcendent genius who first noticed that 4 times 5 is the same thing as 5 times 4, we may apply to him what somebody (Edmund Yates, I think it was) has said of Tupper, viz., “here is a man who, beyond all others of his generation, has been favoured with Glimpses of the Obvious!”

These puerile—not to say infantine—forms of a Sorites I have, in this book, ignored from the very first, and have not only admitted freely Propositions in *E*, but have purposely stated the Premisses in random order, leaving to the Reader the useful task of arranging them, for himself, in an order which can be worked as a series of regular Syllogisms. In doing this, he can begin with *any one* of them he likes.

I have tabulated, for curiosity, the various orders in which the Premisses of the Aristotelian Sorites

1. All *a* are *b*;
 2. All *b* are *c*;
 3. All *c* are *d*;
 4. All *d* are *e*;
 5. All *e* are *h*.
- ∴ All *a* are *h*.

may be syllogistically arranged, and I find there are no less than *sixteen* such orders, viz., 12345, 21345, 23145, 23415, 23451, 32145, 32415, 32451, 34215,

34251, 34521, 43215, 43251, 43521, 45321, 54321. Of these the *first* and the *last* have been dignified with names; but the other *fourteen*—first enumerated by an obscure Writer on Logic, towards the end of the Nineteenth Century—remain without a name!

§ 10. Some account of Parts II, III. In Part II. will be found some of the matters mentioned in this Appendix, viz., the “Existential Import” of Propositions, the use of a *negative* Copula, and the theory that “two negative Premises prove nothing.” I shall also extend the range of Syllogisms, by introducing Propositions containing *alternatives* (such as “Not-all x are y ”), Propositions containing 3 or more Terms (such as “All ab are c ”, which, taken along with “Some bc are d ”, would prove “Some d are a ”), &c. I shall also discuss Sorites containing Entities, and the *very* puzzling subjects of Hypotheticals and Dilemmas. I hope, in the course of Part II., to go over all the ground usually traversed in the text-books used in our Schools and Universities, and to enable my Readers to solve Problems of the same kind as, and far harder than, those that are at present set in their Examinations.

In Part III. I hope to deal with many curious and out-of-the-way subjects, some of which are not even alluded to in any of the treatises I have met with. In this Part will be found such matters as the Analysis of Propositions into their Elements (let the Reader, who has never gone into this branch of the subject, try to make out for himself what *additional* Proposition would be needed to convert “Some a are b ” into “Some a are bc ”), the treatment of Numerical and Geometrical Problems, the construction of Problems, and the solution of Syllogisms and Sorites containing Propositions more complex than any that I have used in Part II.

I will conclude with eight Problems, as a taste of what is coming in Part II. I shall be very glad to receive, from any Reader, who thinks he has solved any one of them (more especially if he has done so *without* using any Method of Symbols), what he conceives to be its complete Conclusion.

It may be well to explain what I mean by the *complete* Conclusion of a Syllogism or a Sorites. I distinguish their Terms as being of two kinds—those which *can* be eliminated (e. g. the Middle Term of a Syllogism), which I call the “Eliminands,” and those which *cannot*, which I call the “Retinends”; and I do not call the Conclusion *complete*, unless it states *all* the relations among the Retinends only, which can be deduced from the Premises.

1.

All the boys, in a certain School, sit together in one large room every evening. They are of no less than *five* nationalities—English, Scotch, Welsh, Irish, and German. One of the Monitors (who is a great reader of Wilkie Collins’ novels) is very observant, and takes MS. notes of almost everything that happens, with the view of being a good sensational witness, in case any conspiracy to commit a murder should be on foot. The following are some of his notes:—

- (1) Whenever some of the English boys are singing “Rule Britannia”, and some not, some of the Monitors are wide-awake;
- (2) Whenever some of the Scotch are dancing reels, and some of the Irish fighting, some of the Welsh are eating toasted cheese;

Other versions:

→ 6.8, p. 1010

→ 6.7, p. 1009

- (3) Whenever all the Germans are playing chess, some of the Eleven are *not* oiling their bats;
- (4) Whenever some of the Monitors are asleep, and some not, some of the Irish are fighting;
- (5) Whenever some of the Germans are playing chess, and none of the Scotch are dancing reels, some of the Welsh are *not* eating toasted cheese;
- (6) Whenever some of the Scotch are *not* dancing reels, and some of the Irish *not* fighting, some of the Germans are playing chess;
- (7) Whenever some of the Monitors are awake, and some of the Welsh are eating toasted cheese, none of the Scotch are dancing reels;
- (8) Whenever some of the Germans are *not* playing chess, and some of the Welsh are *not* eating toasted cheese, none of the Irish are fighting;
- (9) Whenever all the English are singing "Rule Britannia," and some of the Scotch are *not* dancing reels, none of the Germans are playing chess;
- (10) Whenever some of the English are singing "Rule Britannia", and some of the Monitors are asleep, some of the Irish are *not* fighting;
- (11) Whenever some of the Monitors are awake, and some of the Eleven are *not* oiling their bats, some of the Scotch are dancing reels;
- (12) Whenever some of the English are singing "Rule Britannia", and some of the Scotch are *not* dancing reels, * * * *

Here the MS. breaks off suddenly. The Problem is to complete the sentence, if possible.

[N.B. In solving this Problem, it is necessary to remember that the Proposition "All x are y " is a *Double* Proposition, and is equivalent to "Some x are y , and none are y' ." See p. 1053.]

2.

- (1) A logician, who eats pork-chops for supper, will probably lose money;
- (2) A gambler, whose appetite is not ravenous, will probably lose money;
- (3) A man who is depressed, having lost money and being likely to lose more, always rises at 5 a. m.;
- (4) A man, who neither gambles nor eats pork-chops for supper, is sure to have a ravenous appetite;
- (5) A lively man, who goes to bed before 4 a. m., had better take to cab-driving;
- (6) A man with a ravenous appetite, who has not lost money and does not rise at 5 a. m., always eats pork-chops for supper;
- (7) A logician, who is in danger of losing money, had better take to cab-driving;
- (8) An earnest gambler, who is depressed though he has not lost money, is in no danger of losing any;

- (9) A man, who does not gamble, and whose appetite is not ravenous, is always lively;
- (10) A lively logician, who is really in earnest, is in no danger of losing money;
- (11) A man with a ravenous appetite has no need to take to cab-driving, if he is really in earnest;
- (12) A gambler, who is depressed though in no danger of losing money, sits up till 4 a. m.
- (13) A man, who has lost money and does not eat pork-chops for supper, had better take to cab-driving, unless he gets up at 5 a. m.
- (14) A gambler, who goes to bed before 4 a. m., need not take to cab-driving, unless he has a ravenous appetite;
- (15) A man with a ravenous appetite, who is depressed though in no danger of losing, is a gambler.

Univ. “men”; a = earnest; b = eating pork-chops for supper; c = gamblers; d = getting up at 5; e = having lost money; h = having a ravenous appetite; k = likely to lose money; l = lively; m = logicians; n = men who had better take to cab-driving; r = sitting up till 4.

[N.B. In this Problem, clauses, beginning with “though”, are intended to be treated as *essential* parts of the Propositions in which they occur, just as if they had begun with “and”.]

3.

- (1) When the day is fine, I tell Froggy “You’re quite the dandy, old chap!”;
- (2) Whenever I let Froggy forget that £10 he owes me, and he begins to strut about like a peacock, his mother declares “He shall *not* go out a-wooing!”;
- (3) Now that Froggy’s hair is out of curl, he has put away his gorgeous waistcoat;
- (4) Whenever I go out on the roof to enjoy a quiet cigar, I’m sure to discover that my purse is empty;
- (5) When my tailor calls with his little bill, and I remind Froggy of that £10 he owes me, he does *not* grin like a hyæna;
- (6) When it is very hot, the thermometer is high;
- (7) When the day is fine, and I’m not in the humour for a cigar, and Froggy is grinning like a hyæna, I never venture to hint that he’s quite the dandy;
- (8) When my tailor calls with his little bill and finds me with an empty purse, I remind Froggy of that £10 he owes me;
- (9) My railway-shares are going up like anything!
- (10) When my purse is empty, and when, noticing that Froggy has got his gorgeous waistcoat on, I venture to remind him of that £10 he owes me, things are apt to get rather warm;
- (11) Now that it looks like rain, and Froggy is grinning like a hyæna, I can do without my cigar;
- (12) When the thermometer is high, you need not trouble yourself to take an umbrella;

- (13) When Froggy has his gorgeous waistcoat on, but is *not* strutting about like a peacock, I betake myself to a quiet cigar;
- (14) When I tell Froggy that he's quite the dandy, he grins like a hyæna;
- (15) When my purse is tolerably full, and Froggy's hair is one mass of curls, and when he is *not* strutting about like a peacock, I go out on the roof;
- (16) When my railway-shares are going up, and when it is chilly and looks like rain, I have a quiet cigar;
- (17) When Froggy's mother lets him go a-wooing, he seems nearly mad with joy, and puts on a waistcoat that is gorgeous beyond words;
- (18) When it is going to rain, and I am having a quiet cigar, and Froggy is *not* intending to go a-wooing, you had better take an umbrella;
- (19) When my railway-shares are going up, and Froggy seems nearly mad with joy, *that* is the time my tailor always chooses for calling with his little bill;
- (20) When the day is cool and the thermometer low, and I say nothing to Froggy about his being quite the dandy, and there's not the ghost of a grin on his face, I haven't the heart for my cigar!

4.

- (1) Any one, fit to be an M.P., who is not always speaking, is a public benefactor;
- (2) Clear-headed people, who express themselves well, have had a good education;
- (3) A woman, who deserves praise, is one who can keep a secret;
- (4) People, who benefit the public, but do not use their influence for good purpose, are not fit to go into Parliament;
- (5) People, who are worth their weight in gold and who deserve praise, are always unassuming;
- (6) Public benefactors, who use their influence for good objects, deserve praise;
- (7) People, who are unpopular and not worth their weight in gold, never can keep a secret;
- (8) People, who can talk for ever and are fit to be Members of Parliament, deserve praise;
- (9) Any one, who can keep a secret and who is unassuming, is a never-to-be-forgotten public benefactor;
- (10) A woman, who benefits the public, is always popular;
- (11) People, who are worth their weight in gold, who never leave off talking, and whom it is impossible to forget, are just the people whose photographs are in all the shop-windows;
- (12) An ill-educated woman, who is not clear-headed, is not fit to go into Parliament;
- (13) Any one, who can keep a secret and is not for ever talking, is sure to be unpopular;

- (14) A clear-headed person, who has influence and uses it for good objects, is a public benefactor;
- (15) A public benefactor, who is unassuming, is not the sort of person whose photograph is in every shop-window;
- (16) People, who can keep a secret and who use their influence for good purposes, are worth their weight in gold;
- (17) A person, who has no power of expression and who cannot influence others, is certainly not a *woman*;
- (18) People, who are popular and worthy of praise, either are public benefactors or else are unassuming.

Univ. "persons"; *a* = able to keep a secret; *b* = clear-headed; *c* = constantly talking; *d* = deserving praise; *e* = exhibited in shop-windows; *h* = expressing oneself well; *k* = fit to be an M.P.; *l* = influential; *m* = never-to-be-forgotten; *n* = popular; *r* = public benefactors; *s* = unassuming; *t* = using one's influence for good objects; *v* = well-educated; *w* = women; *z* = worth one's weight in gold.

5.

Six friends, and their six wives, are staying in the same hotel; and they all walk out daily, in parties of various size and composition. To ensure variety in these daily walks, they have agreed to observe the following Rules:—

Other version:
→ 6.8, p. 1010

- (1) If Acres is with (i. e. is in the same party with) his wife, and Barry with his, and Eden with Mrs. Hall, Cole must be with Mrs. Dix;
- (2) If Acres is with his wife, and Hall with his, and Barry with Mrs. Cole, Dix must *not* be with Mrs. Eden;
- (3) If Cole and Dix and their wives are all in the same party, and Acres *not* with Mrs. Barry, Eden must *not* be with Mrs. Hall;
- (4) If Acres is with his wife, and Dix with his, and Barry *not* with Mrs. Cole, Eden must be with Mrs. Hall;
- (5) If Eden is with his wife, and Hall with his, and Cole with Mrs. Dix, Acres must *not* be with Mrs. Barry;
- (6) If Barry and Cole and their wives are all in the same party, and Eden *not* with Mrs. Hall, Dix must be with Mrs. Eden.

The Problem is to prove that there must be, every day, at least *one* married couple who are not in the same party.

6. After the six friends, named in Problem 5, had returned from their tour, three of them, Barry, Cole, and Dix, agreed, with two other friends of theirs, Lang and Mill, that the five should meet, every day, at a certain *table d'hôte*. Remembering how much amusement they had derived from their code of rules for walking-parties, they devised the following rules to be observed whenever beef appeared on the table:—

- (1) If Barry takes salt, then either Cole or Lang takes *one* only of the two condiments, salt and mustard: if he takes mustard, then either Dix takes neither condiment, or Mill takes both.

- (2) If Cole takes salt, then either Barry takes only *one* condiment, or Mill takes neither: if he takes mustard, then either Dix or Lang takes both.
- (3) If Dix takes salt, then either Barry takes neither condiment or Cole take both: if he takes mustard, then either Lang or Mill takes neither.
- (4) If Lang takes salt, then Barry or Dix takes only *one* condiment: if he takes mustard, then either Cole or Mill takes neither.
- (5) If Mill takes salt, then either Barry or Lang takes both condiments: if he takes mustard, then either Cole or Dix takes only *one*.

The Problem is to discover whether these rules are *compatible*; and, if so, what arrangements are possible.

[N.B. In this Problem, it is assumed that the phrase “if Barry takes salt” allows of *two* possible cases, viz. (1) “he takes salt *only*”; (2) “he takes *both* condiments”. And so with all similar phrases.

It is also assumed that the phrase “either Cole or Lang takes *one* only of the two condiments” allows *three* possible cases, viz. (1) “Cole takes *one* only, Lang takes both or neither”; (2) “Cole takes both or neither, Lang takes *one* only”; (3) “Cole takes *one* only, Lang takes *one* only”. And so with all similar phrases.

It is also assumed that every rule is to be understood as implying the words “and *vice versâ*.” Thus the first rule would imply the addition “and, if either Cole or Lang takes only *one* condiment, then Barry takes salt.”]

7.

- (1) Brothers, who are much admired, are apt to be self-conscious;
- (2) When two men of the same height are on opposite sides in Politics, if one of them has his admirers, so also has the other;
- (3) Brothers, who avoid general Society, look well when walking together;
- (4) Whenever you find two men, who differ in Politics and in their views of Society, and who are not both of them ugly, you may be sure that they look well when walking together;
- (5) Ugly men, who look well when walking together, are not both of them free from self-consciousness;
- (6) Brothers, who differs in Politics, and are not both of them handsome, never give themselves airs;
- (7) John declines to go into Society, but never gives himself airs;
- (8) Brothers, who are apt to be self-conscious, though not *both* of them handsome, usually dislike Society;
- (9) Men of the same height, who do not give themselves airs, are free from self-consciousness;
- (10) Men, who agree on questions of Art, though they differ in Politics, and who are not both of them ugly, are always admired;
- (11) Men, who hold opposite views about Art and are not admired, always give themselves airs;
- (12) Brothers of the same height always differ in Politics;
- (13) Two handsome men, who are neither both of them admired nor both of them self-conscious, are no doubt of different heights;

- (14) Brothers, who are self-conscious, and do not both of them like Society, never look well when walking together.

[N.B. See Note at end of Problem 2.]

8.

- (1) A man can always master his father;
- (2) An inferior of a man's uncle owes that man money;
- (3) The father of an enemy of a friend of a man owes that man nothing;
- (4) A man is always persecuted by his son's creditors;
- (5) An inferior of the master of a man's son is senior to that man;
- (6) A grandson of a man's junior is not his nephew;
- (7) A servant of an inferior of a friend of a man's enemy is never persecuted by that man;
- (8) A friend of a superior of the master of a man's victim is that man's enemy;
- (9) An enemy of a persecutor of a servant of a man's father is that man's friend.

The Problem is to deduce some fact about great-grandsons.

[N.B. In this Problem, it is assumed that all the men, here referred to, live in the same town, and that every pair of them are either "friends" or "enemies," that every pair are related as "senior and junior", "superior and inferior", and that certain pairs are related as "creditor and debtor", "father and son", "master and servant", "persecutor and victim", "uncle and nephew".]

9.

"Jack Sprat could eat no fat:
 His wife could eat no lean:
 And so, between them both,
 They licked the platter clean."

Quoted from nursery rhyme

Solve this as a Sorites-Problem, taking lines 3 and 4 as the Conclusion to be proved. It is permitted to use, as Premisses, not only all that is here *asserted*, but also all that we may reasonably understand to be *implied*.

Notes to Appendix.

(A) [See p. 1147.] It may, perhaps, occur to the Reader, who has studied Formal Logic that the argument, here applied to the Propositions *I* and *E*, will apply equally well to the Propositions *I* and *A* (since, in the ordinary text-books, the Propositions "All *xy* are *z*" and "Some *xy* are not *z*" are regarded as Contradictories). Hence it may appear to him that the argument might have been put as follows:—

"We now have *I* and *A* 'asserting.' Hence, if the Proposition 'All *xy* are *z*' be true, some things exist with the Attributes *x* and *y*: i. e. 'Some *x* are *y*.'

"Also we know that, if the Proposition 'Some *xy* are not-*z*' be true the same result follows.

“But these two Propositions are Contradictories, so that one or other of them *must* be true. Hence this result is always true: i. e. the Proposition ‘Some x are y ’ is *always* true!

“*Quod est absurdum*. Hence I cannot assert.”

This matter will be discussed in Part II; but I may as well give here what seems to me to be an irresistible proof that this view (that A and I are Contradictories), though adopted in the ordinary text-books, is untenable. The proof is as follows:—

With regard to the relationship existing between the Class ‘ xy ’ and the two Classes ‘ z ’ and ‘not- z ’, there are *four* conceivable states of things, viz.

- | | | | | |
|-----|-----------|-----------|----------|----------------|
| (1) | Some xy | are z , | and some | are not- z ; |
| (2) | ” | ” | none | ” |
| (3) | No xy | ” | some | ” |
| (4) | ” | ” | none | ” |

Of these four, No. (2) is equivalent to “All xy are z ”, No. (3) is equivalent to “All xy are not- z ”, and No. (4) is equivalent to “No xy exist.”

Now it is quite undeniable that, of these *four* states of things, each is, *a priori*, *possible*, some *one must* be true, and the other three *must* be false.

Hence the Contradictory to (2) is “Either (1) or (3) or (4) is true.” Now the assertion “Either (1) or (3) is true” is equivalent to “Some xy are not- z ”; and the assertion “(4) is true” is equivalent to “No xy exist.” Hence the Contradictory to “All xy are z ” may be expressed as the Alternative Proposition “Either some xy are not- z , or no xy exist,” but *not* as the Categorical Proposition “Some y are not- z .”

(B) [See p. 1150, at end of Section 2.] There are yet *other* views current among “The Logicians”, as to the “Existential Import” of Propositions, which have not been mentioned in this Section.

One is, that the Proposition “some x are y ” is to be interpreted, neither as “Some x exist and are y ”, nor yet as “If there *were* any x in existence, some of them *would* be y ”, but merely as “Some x can be y ; i. e. the Attributes x and y are *compatible*”. On *this* theory, there would be nothing offensive in my telling my friend Jones “Some of your brothers are swindlers”; since, if he indignantly retorted “What do you *mean* by such insulting language, you scoundrel?”, I should calmly reply “I merely mean that the thing is *conceivable*—that some of your brothers *might possibly* be swindlers”. But it may well be doubted whether such an explanation would *entirely* appease the wrath of Jones!

Another view is, that the Proposition “All x are y ” *sometimes* implies the actual *existence* of x , and *sometimes* does *not* imply it; and that we cannot tell, without having it in *concrete* form, *which* interpretation we are to give to it. *This* view is, I think, strongly supported by common usage; and it will be fully discussed in Part II: but the difficulties, which it introduces, seem to me too formidable to be even alluded to in Part I, which I am trying to make, as far as possible, easily intelligible to mere *beginners*.

(C) [See p. 1151, § 4.] The three Conclusions are

- “No conceited child of mine is greedy”;
- “None of my boys could solve this problem”;

“Some unlearned boys are not choristers.”

6.25 Symbolic Logic. Part II

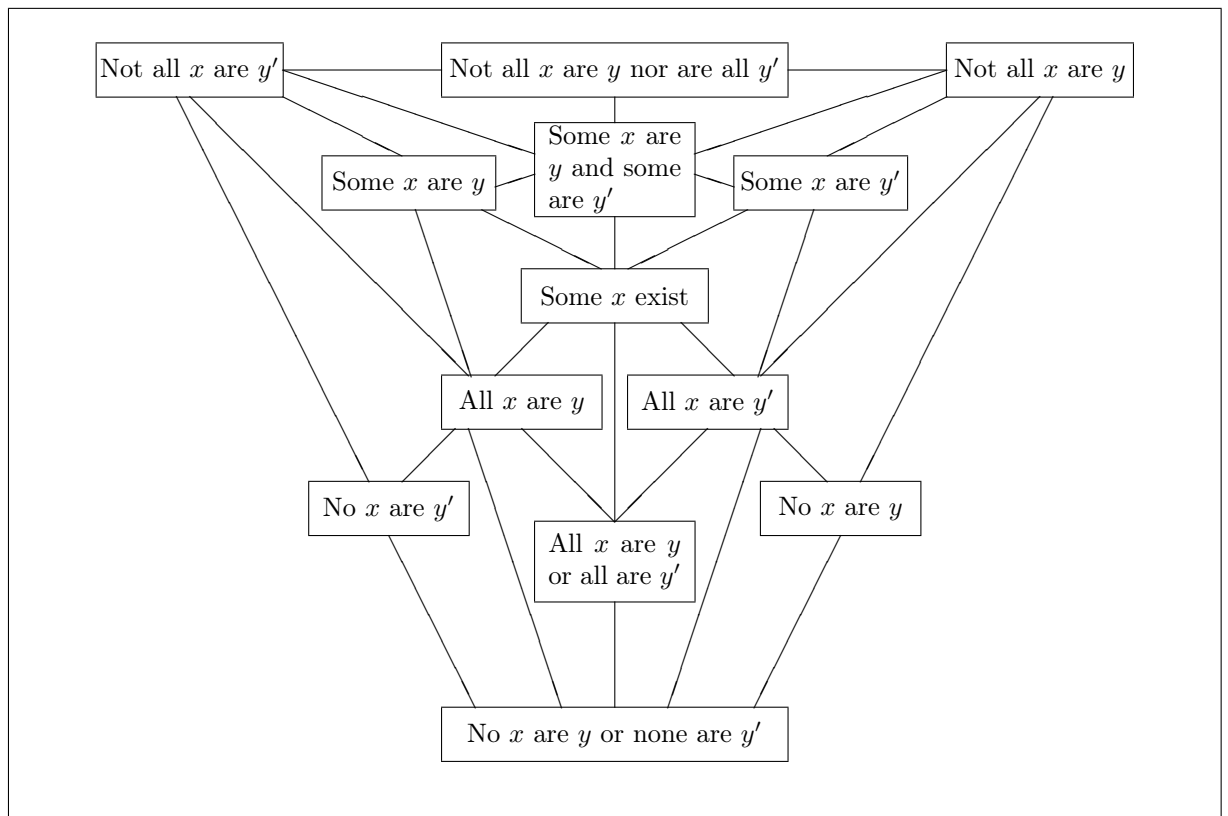
Source: unpublished proofs written 1896/1897

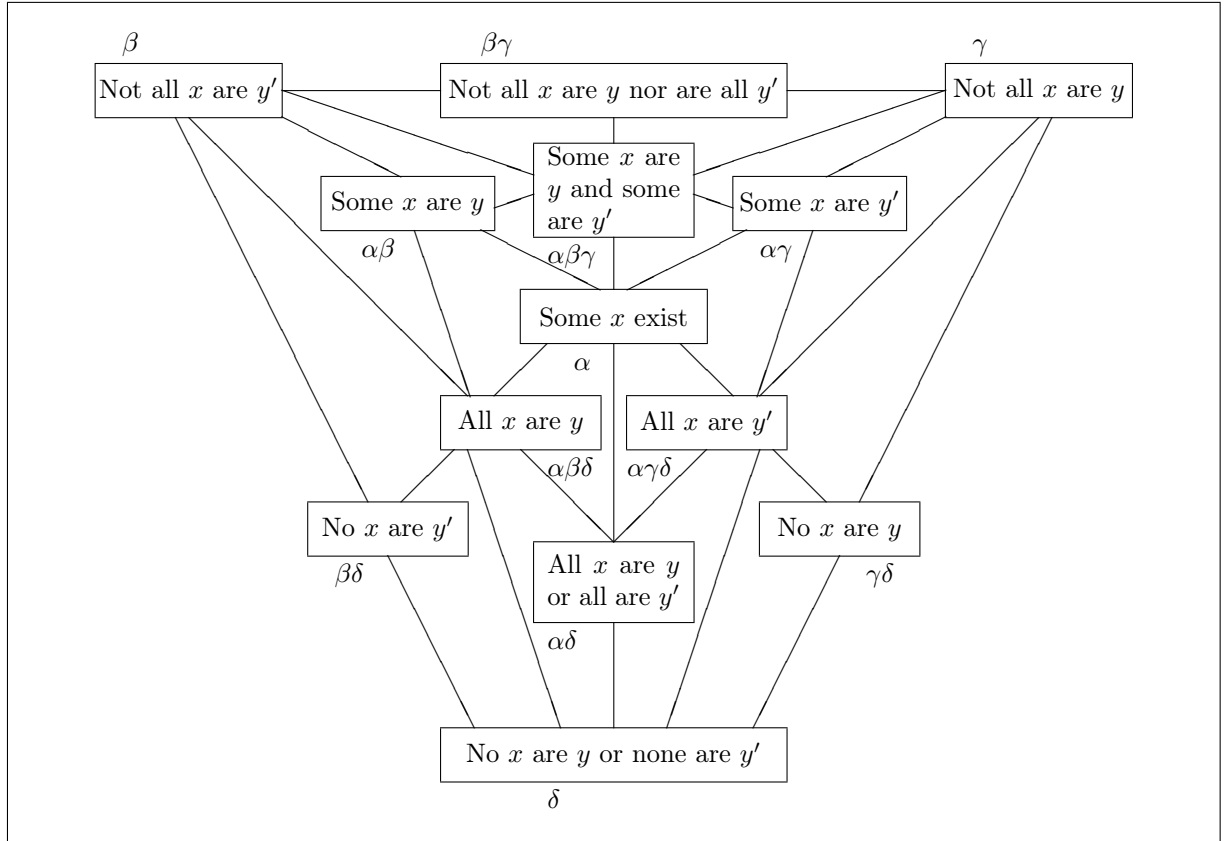
Not all content that survived is reproduced here. Omitted is the book on *Examples* (several of them reprinted with minor changes from the Papers on Logic, the others similar in style, see also <https://www.grahamhawker.net/logic/index.html>), and from *Book XXI: Logical Puzzles* the slightly amended version of “A Logical Paradox” from *Mind*. Additionally, there are many manuscripts probably intended for inclusion, containing classifications of syllogisms and fallacies, an additional diagram (*The Four Syllogisms. Analytical, Logic Pamphlets*, item 3), and more. Some of these are available at <https://www.chch.ox.ac.uk/other-works-lewis-carroll>.

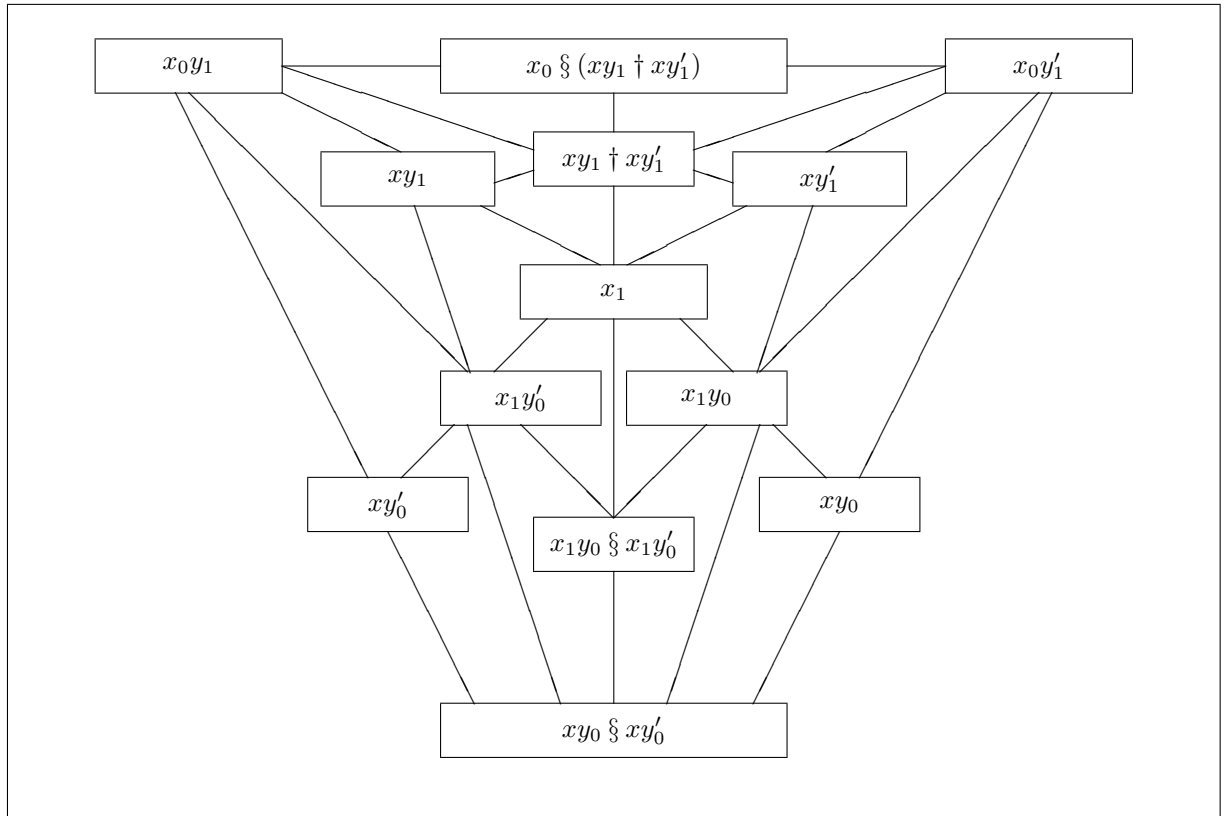
Even if fragmentary, most of the content can be understood easily. One notion is explained in a manuscript: “A ‘Cosmophase’ is the state of the Universe at some particular moment: and I regard any Proposition, which is true at that moment, as an *Attribute* of that Cosmophase.” Also note that \S is the symbol for “or”.

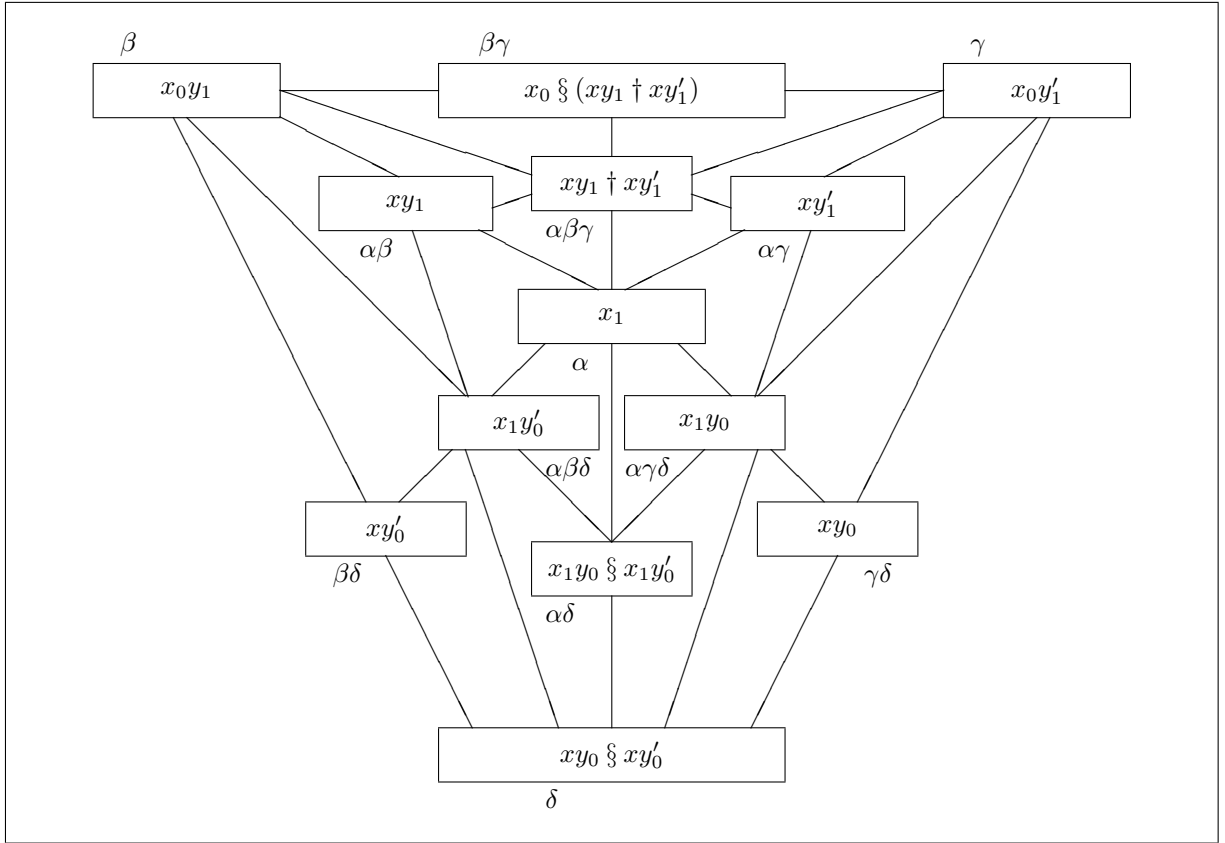
Diagrams

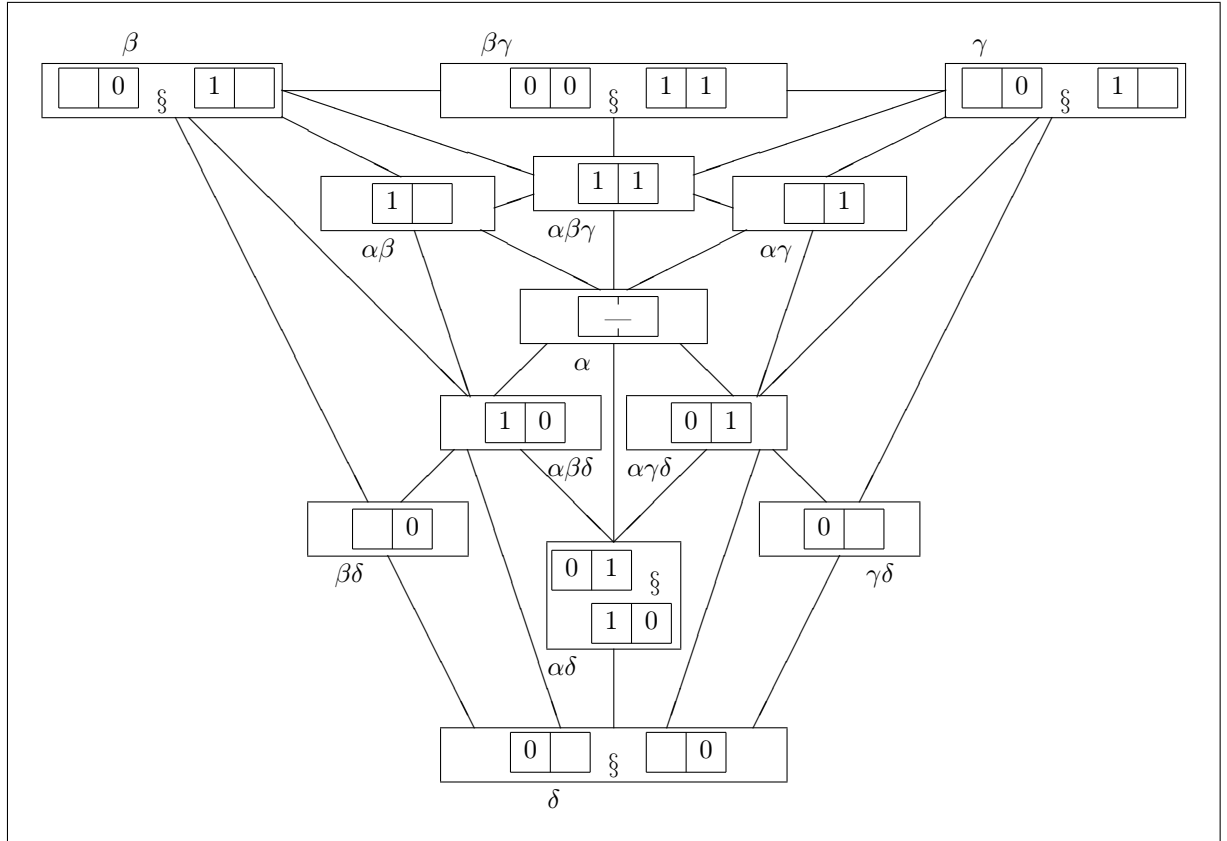
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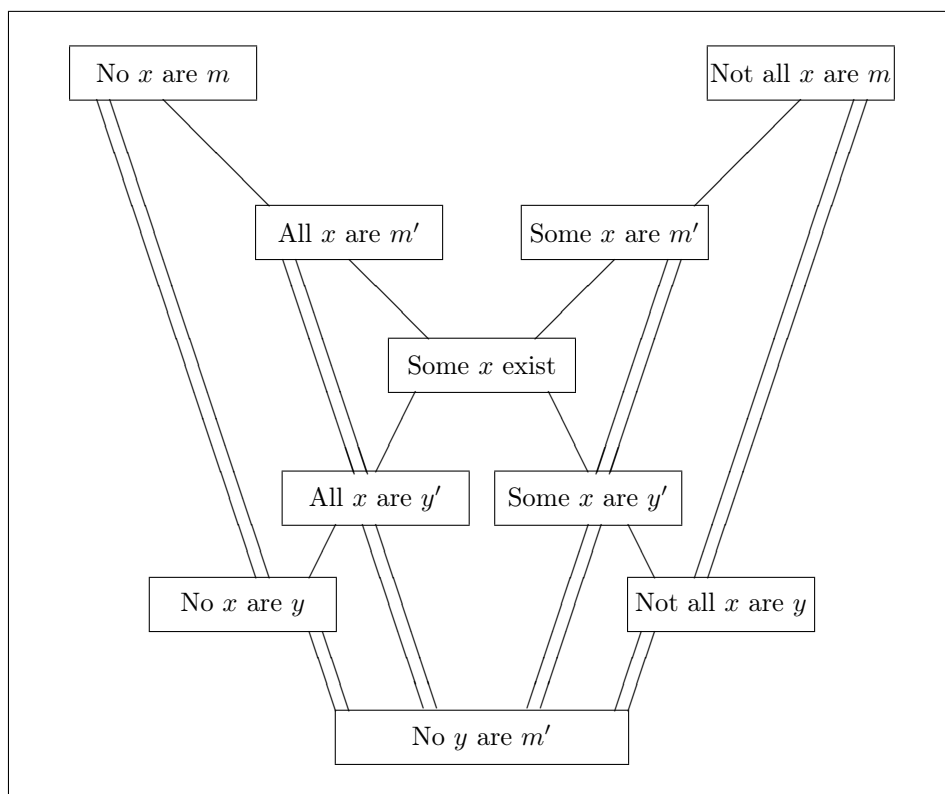




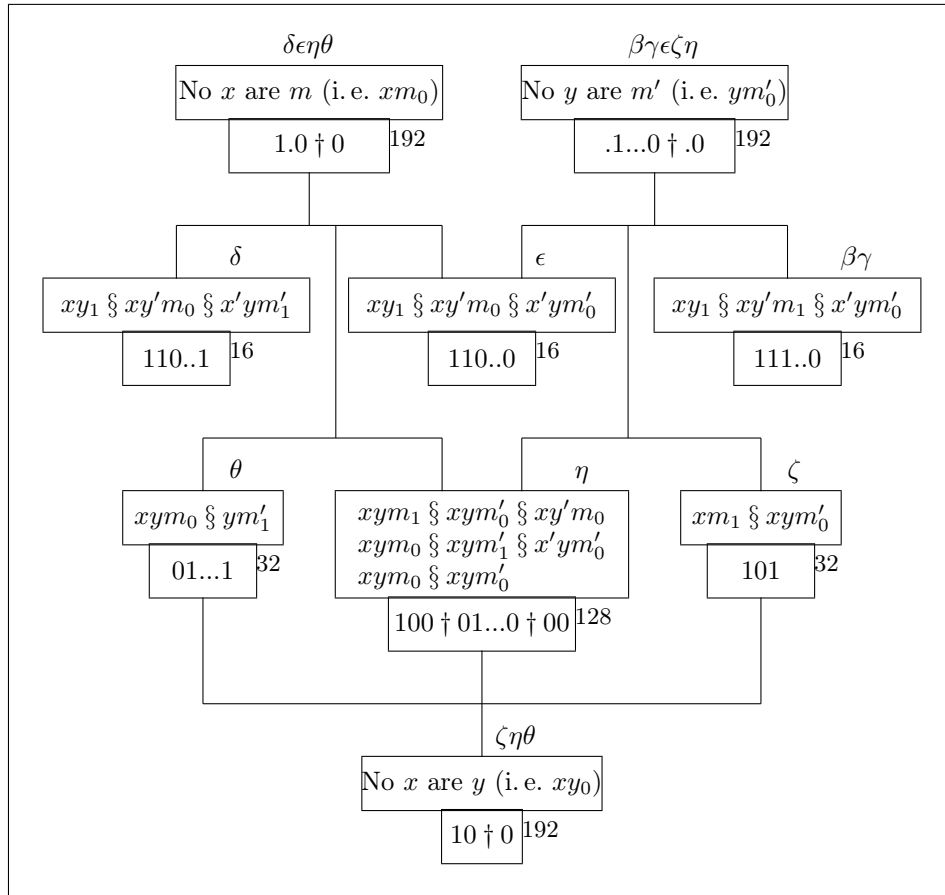


Charts 1 to 5 can be interpreted as tetrahedra, with terms at all vertices, at the centers of all edges, and at the the centers of all sides. Only the fourth side is not visible, the term for it is “No x exist.”

Where terms are connected by lines, the middle one is the conjunction of the outer ones. Since the four terms at the vertices together are contradictory, any term is the invers of the opposite term.



As before, where three terms are connected by a line, the middle one is derived from the two outer ones. Single line indicate bilateral connections, double line trilateral ones. The left side illustrates syllogisms of Figure I, the right side Figure II.



Note that the 0-1-sequences express the terms above them in the following way: The first digit stands for xym , the next for xym' , and so on. Missing terms are shown by dots or omitted (if at the end). So for example $01\dots 1$ stands for $xym_0 \S xym'_1 \S x'y'm'_1 = xym_0 \S ym'_1$. This excludes from the 2^8 possible states (as to which compartments of the trilateral diagram are empty and which are filled) 32 ones, which is the number next to it.

The greek letters show how the terms may be combined, though it is not clear how exactly the terms are split, and why $\beta\gamma$ are combined, or how the syllogism (from top to bottom) is worked.

The Method of Trees

Chapter I. Introductory

The essential character of an ordinary Sorites-Problem may be described as follows. Our *Data* are certain Nullities, involving Attributes, some of which occur both in the *positive* and in the *negative* form, and are the *Eliminands*; while others occur in *one* form only, and are the *Retinoids*. And our *Quaesitum* is to *annul* the aggregate of the Retinoids (i. e. to prove it to be a *Nullity*).

Hitherto we have done this by a *direct* Process: that is, we have begun with two of the given Nullities, containing a pair of Eliminands differing only in *sign* (e. g. a and a'), and we have treated them as the Premisses of a Syllogism in Fig. I, and have combined them so as to form a new Nullity, not containing the Eliminands: This *Partial Conclusion* we have then combined, in the same way, with some other given Nullity: and in this way we have proceeded, gradually turning out the Eliminands, till finally we have proved, as our *Complete Conclusion*, a Nullity consisting of the aggregate of the *Retinoids*.

In the *Method of Trees* this process is *reversed*. Its essential feature is that it involves a *Reductio ad Absurdum*. That is, we begin by assuming, *argumenti gratia*, that the aggregate of the Retinoids (which we wish to prove to be a *Nullity*) is an *Entity*: from this assumption we deduce a certain result: this result we show to be *absurd*: and hence we infer that our original assumption was *false*, i. e. that the aggregate of the Retinoids is a *Nullity*.

Chapter II. Sorites-Problems with Biliteral Premisses

As the simplest possible example of this Method, let us take the original typical Syllogism in Fig. I, viz.

$$xm_0 \dagger ym'_0 \mathbb{P} xy_0$$

Here our *Data* are the two Nullities, xm_0 and ym'_0 involving the Attribute m both in the *positive* and in the *negative* form: and our *Quaesitum* is the Nullity xy_0 .

We begin by assuming that the aggregate xy is an *Entity*: i. e. we assume that some existing Thing has *both* the Attributes x and y .

Now the *first* Premiss tells us that x is incompatible with m . Hence the “Thing” under consideration, which is assumed to have the Attribute x , *cannot* have the Attribute m . But it is bound to have one of the two m or m' , since these constitute an *Exhaustive Division* of the whole Universe. Hence it *must* have the Attribute m' .

Similarly, from the *second* Premiss, we can prove, as our *second* result, that the “Thing” under consideration has the Attribute m .

These two results, taken together, give us the startling assertion that this “Thing” has *both* the Attributes, m and m' , *at once*; i. e. we get

$$xy_1 \mathbb{P} xym'm_1$$

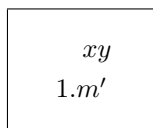
Now we know that m and m' are *Contradictories*: hence this result is evidently *absurd*: so we go back to our original assumption (that the aggregate xy was an Entity), and we say “hence xy *cannot* be an *Entity*: that is, it is a *Nullity*.”

Now let us arrange this argument in the form of a *Tree*.

I must explain, to begin with, that all the Trees, in this system, grow *head-downwards*: the Root is at the *top*, and the Branches are *below*. If it be objected that the name “Tree” is a misnomer, my answer is that I am only following the example of all writers on *Genealogy*. A *Genealogical* “Tree” *always* grows *downwards*: then why may not a *Logical* “Tree” do likewise?

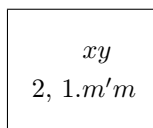
Well, then, I put the *Root* of my Tree at the top. It consists of the aggregate *xy*: and the mere writing down of these two Letters is to be understood to mean (using the regular form of a *Reductio ad Absurdum*) “The aggregate *xy* shall be a *Nullity*: for, if not, let it be an *Entity*; that is, let a certain existing Thing have the two Attributes, *x* and *y*.”

Underneath this *xy* I then place the Letter *m'* (this is part of the *Stem* of our Tree): and on its left-hand side I place the Number 1, followed by a full-stop, so that our Tree is now



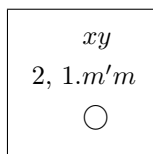
The meaning of this is, that the “Thing,” which is assumed to have the two Attributes *x* and *y*, *must also* have the Attribute *m'*: and the Number 1 refers you to the *first* Premiss as my authority for this assertion.

Next, I place the Letter *m* on the right-hand side of *m'*, and the Number 2, followed by a comma, on the *left*-hand side of the 1, so that our Tree now is



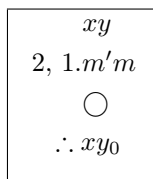
This means that the Thing *must also* have the Attribute *m* (i. e. that *xym'm* is an *Entity*), and that my authority, for asserting this, is the *second* Premiss. (Observe that the two *Letters*, in the lower line, are to be read *from left to right*, but the two *Reference-Numbers* *from right to left*.)

Now we know that *m'* and *m* are *Contradictories*: hence it is impossible for an Aggregate, which contains them *both*, to be an *Entity*, hence it is a *Nullity*. And *this* fact I indicate by drawing a little *circle* (representing a *nought*) underneath, so that our Tree now is



The meaning of the circle is “The aggregate of Attributes, beginning at the Root, down to this point, is a *Nullity*.”

Next, I place, underneath the little circle, the Conclusion $\therefore xy_0$, so that the Tree now is



The meaning of the last line is “We have now proved, from the assumption that xy was an *Entity*, that this aggregate, $xym'm$, must be an *Entity*. But it is evidently a *Nullity*. Which is *absurd*. Hence our assumption was *false*. Hence we have a right to say “Therefore xy is a *Nullity*.”

I will now exhibit, in one view, the whole Tree, bit by bit, with the meaning of each bit set against it.

xy	If possible, let xy be an <i>Entity</i> : i. e., let some existing Thing have the two Attributes x and y .
2, 1. $m'm$	Then, by Premisses 1, 2, this Thing must <i>also</i> have the Attributes m' and m ; i. e., $xym'm$ must be an <i>Entity</i> .
○	Now this aggregate ($xym'm$) is a <i>Nullity</i> (since it contains m' and m , which we know to be <i>Contradictories</i>).
$\therefore xy_0$	This result, that $xym'm$ is both an <i>Entity</i> and a <i>Nullity</i> , is absurd. Hence our original assumption was <i>false</i> . Therefore xy is a <i>Nullity</i> .

All this magnificent machinery, used to prove one single Syllogism, may perhaps remind the Reader of the proverbial absurdity of using a Nasmyth-hammer to crack a nut: but we shall find, when we get a little further in the subject, and begin to deal with more complex Problems, that our machinery is none too costly for the purpose.

My next example shall be a Sorites-Problem, with *five* Premisses, but still keeping to that childishly simple kind of Premiss (the *only* kind, as I pointed out in Part I, p. 1166, with which the ordinary Logical textbooks venture to deal), the *Bilateral Nullity*. I will take, from Book VIII, Chapter III, §3, 8 of Part I, the twenty-third Example, viz.

$$\begin{array}{ccccccccc} 1 & & 2 & & 3 & & 4 & & 5 \\ b'_1a_0 & \dagger & de'_0 & \dagger & h_1b_0 & \dagger & ce_0 & \dagger & d'_1a'_0 \end{array}$$

Here we can easily see, by inspection, that a, b, d, e , are the four *Eliminands*, and that c and h are *Retinends*. (As the Reader already knows, we cannot have more than *four* Eliminands, with *five* Premisses, though of course the number of *Retinends* is unlimited.)

I begin by placing ch at the top of the paper, as the *Root*. And I then look through the Premisses for the Letter c . I find it in No. 4, which tells me that c and e are *incompatible*. Hence the Thing which I have assumed to have the Attributes c and h , *cannot* have the Attribute e . Hence it *must* have the

Attribute e' . And this I express by placing e' underneath with the Reference-Number 4 on the left.

The Tree is now

$$\begin{array}{c} ch \\ 4.e' \end{array}$$

Next, I look for h among the Premises. I find it in No. 3, which authorises me to say that b' is *another* Attribute that the Thing *must* have (since it cannot have b). So I place b' in the same line with e' , and its Reference-Number 3, followed by a comma, away to the left.

The Tree is now

$$\begin{array}{c} ch \\ 3, 4.e'b' \end{array}$$

Next, I look for e' and b' among the Premises. I find them in Nos. 2 and 1, which authorise me to assert that d' and a' are *also necessary* Attributes of the Thing; that is, to assert that the whole aggregate $che'b'd'a'$ is an *Entity*.

The Tree is now

$$\begin{array}{c} ch \\ 3, 4.e'b' \\ 1, 2.d'a' \end{array}$$

Next, I look for d' and a' among the Premises. I find them *together*, in No. 5, which asserts that the pair $d'a'$ is a *Nullity*, and therefore authorises me to assert that the whole aggregate $che'b'd'a'$ is a *Nullity*.

The tree is now

$$\begin{array}{c} ch \\ 3, 4.e'b' \\ 1, 2.d'a' \\ 5.\bigcirc \end{array}$$

Hence I may write underneath this, $\therefore ch_0$, and the Tree is complete.

I now examine the Premises, to see whether either c or h is given as *existing*. I find that, in No. 3, h is so given. So I write the full Conclusion thus:

$$\therefore ch_0 \dagger h_1; \text{ i. e. } h_1c_0$$

I will now exhibit, in one view, the whole Tree, in the same form as in the previous example.

ch	If possible let ch be an <i>Entity</i> : i.e. let some existing Thing have the two Attributes c and h .
3, 4. $e'b'$	Then, by Premises 4, 3, this Thing must <i>also</i> have the Attributes e' and b' .
1, 2. $d'a'$	Hence, by Premises 2, 1, it must <i>also</i> have the Attributes d' and a' : the aggregate $che'b'd'a'$ must be an <i>Entity</i> .
5.○ ∴ $ch_0 \dagger h_1$; i.e. h_1c_0	Now, by Premiss 5, this aggregate $che'b'd'a'$ is a <i>Nullity</i> (since it contains the aggregate $d'a'$, which we know, by Premiss 5, to be a <i>Nullity</i>). (This result, that $che'b'd'a'$ is both an <i>Entity</i> and a <i>Nullity</i> , is <i>absurd</i> . Hence our original assumption was <i>false</i> .) Therefore ch is a <i>Nullity</i> . And we also know that h <i>exists</i> . Hence "All h are c ."

Here it will be well to pause for a moment in order to point out the beautiful fact that this "Tree" argument may be *verified*, by converting the *Tree* into a *Sorites*. And this may be done by the extremely simple rule of beginning at the *lower* end, and taking the rows of Reference-numbers *upwards* instead of *downwards*, viz. in the order 5, 2, 1, 4, 3. The result will be

$$\begin{array}{cccccc} 5 & & 2 & & 1 & & 4 & & 3 \\ d'a' & \dagger & de' & \dagger & b'a & \dagger & ce & \dagger & hb \end{array}$$

which proves ch_0 , as the Reader will see for himself, if he will take the trouble to copy it out, and to underscore the Eliminands.

Chapter III. Sorites-Problems with Triliteral and Multiliteral Premises

The Sorites-Problems, hitherto discussed, have involved *Bilateral* Premises only: the admission of *Triliteral*, and *Multiliteral*, Premises introduces a new feature in the construction of Trees, which needs some preliminary explanation.

Suppose we are in the course of constructing a Tree, and have just proved that the existing “Thing,” which we have assumed to possess the Retinends, must also possess the Attribute a . If, on looking up a in the Register, we find a Premiss containing it along with only *one* other Eliminand, b , of course we conclude, as in the previous Chapter, that, since the “Thing” *cannot* have the Attribute b , it *must* have the Contradictory of b , i. e. b' . But suppose there is no such Premiss: suppose the only one we can find, containing a , contains *two* other Eliminands, b and c , what conclusion can we draw from *this* Nullity? We may say, of course, “Since the Thing *cannot* have the Pair of Attributes bc , it *must* have the *Contradictory* to it.” But what is the Contradictory to a *Pair* of Attributes? The simplest way, I think, of answering this question, is to imagine our Univ. divided, by two successive Dichotomies, for these two Attributes. We know that this will give us the *four* Classes, bc , bc' , $b'c$, $b'c'$; and that in *one* of these four the Thing is bound to be; and that it is barred, by the Nullity we have just found, from being in the *first* of these four Classes. Hence it *must* be in some one of the other *three*, which together constitute the *Contradictory* to the Class bc : i. e. it *must* have some one of the *three* Pairs of Attributes, bc' , $b'c$, $b'c'$.

Now we might, if we liked, state the result in this way, and proceed to consider what would happen in each of these *three* events. But it would be a cumbrous process. If we were to treat a *Quadrilateral* Nullity on the same principle, we should have to allow the Thing the choice of *seven* different events, each of which we should have to investigate separately; and, with a *Quintilateral* Nullity there would be *fifteen*!

But we may easily *group* these *three* Classes under two headings: and the simplest way of doing so is to remember that bc is the *only* one, of these four Pairs of Attributes, which contains neither b' nor c' : i. e., every *other* Pair contains either b' or c' . Hence we are authorised to say the Thing *must* have either b' or c' . In other words we may say the Thing must have either the Contradictory of b or the Contradictory of c .

[Similarly, if the Nullity contained $ab'c$, we should say the Thing must have either b or c' . If the Nullity contained $ab'c'$, we should say the Thing *must* have either b or c .]

The Reader will easily see that the *three* possible Pairs, bc' , $b'c$, $b'c'$, can be grouped under these *two* headings. Under b' we can place $b'c$ and $b'c'$; and under c' we can place bc' and $b'c'$.

This is, of course, a case of *overlapping*, or what is called “Cross Division,” since $b'c'$ appears under *both* headings. Now there is no reason to be so lavish of accommodation for this pampered Class $b'c'$: it ought to be quite content with *one* appearance. So we may fairly say it shall *not* appear under the heading b' : *that* heading shall contain the Class $b'c$ *only*. This result we can secure by tacking on to b' the Letter c ; so that the two headings will be $b'c$ and c' . Or we may, if we prefer it, say it shall *not* appear under the heading c' : *that* heading shall contain the Class bc' *only*. And *this* result we can secure by tacking on c' the Letter b ; so that the two headings will be b' and $c'b$. It is worthwhile to note that, in *each* case, we tack on, to *one* of the single Letters, the *Contradictory* of the *other*: this fact should be remembered as a *rule*.

[Thus, if we found a Premiss proving that the Thing *could not* have the Pair of Attributes $b'c$, we might say it *must* have b or c' . And we might afterwards tack on, at pleasure, either c to b , making the two headings bc and c' , or b' to c' , making them

b and $c'b'$.]

We have now got a Rule of Procedure, to be observed whenever we are obliged to *divide* our Tree into *two* Branches, and, instead of saying the Thing *must* have this *one* Attribute, we say it *must* have one or other of these *two* Attributes.

I will now take some Sorites-Problems containing “Barred” Premisses. We shall find that the Method of Trees saves us a great deal of the trouble entailed by the earlier process. In that earlier process we were obliged to keep a careful watch on all the Barred Premisses, so as to be sure not to use any such Premiss until all its “Bars” had appeared in that Sorites. In this new Method, the Barred Premisses all take care of themselves: and we shall see, when we come to “verify” our Tree, by translating it into Sorites-form that no Barred Premiss will venture to make its appearance until all its Bars have been duly accounted for.

My first example shall be

1	2	3	4	5	6	7	8
$d'n'_1m'_0$	$\dagger ka'_1c'_0$	$\dagger le_1m_0$	$\dagger dh_1k'_0$	$\dagger h'la'_0$	$\dagger hm'_1b'_0$	$\dagger a'bn_0$	$\dagger am'_1e_0$

Here we see that some of the Letters occur more than once: for instance, h occurs in Nos. 4 and 6, in the *positive* form, and in No. 5 in the *negative* form. Hence, when we ask the question, as to any particular Letter, “In *which* of the Premisses does it occur?”, we should have to interrupt the construction of our Tree, in order to hunt through the whole Set of Premisses. To avoid this necessity, it will be convenient to draw up, once for all, a “Register of Attributes,” from which we get, at a glance, the required information. The rule, for making such a Register, is as follows:

At the left margin of the paper draw a short vertical line, and above it, a little to the right, place the letter a : and under it place *two* rows of numbers, the *upper* row referring to the Premisses where a occurs in the *positive* form, and the *lower* to those where it occurs in the *negative* form: then draw another short vertical, to divide the a 's from the b 's, write b over the next space, and proceed as before.

Thus, in the present example, after drawing the first vertical and writing a above, we look through the Premisses, to see which of them contain a or a' . In No. 2, we find a' : so we write 2 in the *lower* line: in Nos. 5 and 7, we find two more: so we write 5, 7, still in the *lower* line: lastly, in No. 8, we find a : so we write 8 in the *upper* line: then we draw another vertical, and write b over the

next space. The beginning of the Register will now be

a	b
8	|
2, 5, 7	|

I recommend my Reader to copy out these seven Premisses at the top of a large sheet of paper, and underneath them to construct a Register of Attributes for himself, which he can then compare with the one here given, to satisfy himself that he has made no mistake. The Register is as follows:

a	b	c	d	e	h	k	l	m	n
8	7	|	4	3, 8	4, 6	2	3, 5	3	7
2, 5, 7	6	2	1	|	5	4	|	1, 6, 8	1

This result we had better *verify*, before going further, by the following rule:

Name the Letters in No. 1, in alphabetical order: then look them up in the Register, and see that 1 occurs in its proper place under each. Then name the Letters in No. 2: and so on.

Thus, in this example, we look at No. 1, and say (naming the letters in alphabetical order) “*d*-dash, *n*-dash, *m*-dash.” Then we look up *d*, *n*, and *m* in the Register, and satisfy ourselves that *each* of them has a 1 under it in the *lower* line. Then we look at No. 2, and say “*a*-dash, *c*-dash, *k*,” and proceed as before.

This Register not only enables us to see, at a glance, in *which* Premisses any particular Letter occurs; but it also tells us that this Sorites-Problem contains *seven* Eliminands (every Letter, that has numbers under it in *both* rows, is an Eliminand), and *three* Retinends. It also tells us that there are *three* Barred Premisses; since, under *a*, we see that No. 8 is barred by Nos. 2, 5, and 7; under *h*, that No. 5 is barred by Nos. 4 and 6; and, under *m*, that No. 3 is barred by Nos. 1, 6, and 8. But these are *now* trifles, about which we need not trouble ourselves!

In working this Tree, I shall adopt a new plan, which I think the Reader will find beautifully clear and intelligible. Instead of exhibiting the Tree, piecemeal, as I proceed, I shall simply give my *soliloquy* as I work it out, with the “stage-directions” (given in italics, between square brackets) showing what I *do*: and, if the Reader will simply take a piece of paper, and pen and ink, and will copy, at the top of his paper, the eight Premisses and the Register, and will then, while reading my soliloquy, follow the stage-directions, and thus *do all the things himself*, he will find that he has constructed the Tree for himself: and he can *then*, for his own satisfaction, compare his finished result with mine. (Note that the letters [R.R.] will be used to represent the stage-direction *I refer to Register*.)

My soliloquy is as follows:

“So! *Eight* Premisses, and every one of them *trilateral*! However, there are *seven* Eliminands: so there ca’n’t be any superfluous Premisses. Well, the Conclusion *ought* to be *c’el₀*, of course.”

[*I write, under the Register, “There are 8 Premisses, 7 Eliminands, and 3 Retinends.” Then, under that in the middle, I write c’el.*]

“Now, what can we do with *c’*?”

[R.R.]

“It occurs in 2 only: and *that* tells me that it ca’n’t be *ka’*: so of course it *must* be (taking them in alphabetical order) *a* or *k’*. That would force me to divide the Tree at the very Root! Let’s try *e*.”

[R.R.]

“It occurs in 3 and 8: and in 3 it is kind enough to have *another* Retinend with it, and only *one* Eliminand! Well, *this* Premiss tells us that *el* ca’n’t be *m*: so of course it *must* be *m’*. Well, there’s *one* Letter for the Stem, at any rate!”

[*I place m’ underneath c, and the Reference-Number 3, followed by a full-stop, on its left.*]

“Let’s see if *l* gives us any other *certainty* for the second row.”

[R.R.]

“No! No. 5 is the only other Premiss: and *that* would ‘divide’ between *a* and *h*. We must go on to the third row. What will *m’* do for us?”

[R.R.]

“*Hm!* There’s good choice here! Nos. 1, 6, and 8. No. 1 divides between d and n . No. 6 divides between b and h' . No. 8 is more gracious: we’ve got both m' and e already: so this gives us a' .”

[*I place a' under m' with 8 on the left.*]

“Well, now, what will a' do for us?”

[R.R.]

“*Again* we have ample choice! No. 2 does beautifully, as we’ve got c upstairs: so *that* gives k' for the fourth row.”

[*I place k' under a' with 2 on the left.*]

“Any more results from a' ?”

“Yes. No. 5, $h'la'_0$, and we’ve got l upstairs: so *that* gives us h .”

[*I place h on the right of k' , and 5, followed by a comma, away to the left!*]

“Any more? No. 7 is the other one: and *that* would have to divide, as we haven’t got either b or n upstairs: so we’ll let it alone. Now for the *fifth* row. What will k' do for us?”

[R.R.]

“No. 4 is the only one: and that will do grandly, as we’ve got both h and k' : so it gives us d' as a *certainty*.”

[*I place d' under k' , and 4 on the left.*]

“And what will h do for us?”

[R.R.]

“It occurs in Nos. 4 and 6. But we’ve just *used* No. 4. Let’s try No. 6. Yes, that gives us b , as we have m' upstairs.”

[*I place b to the right of d' , and 6 away on the left.*]

“Now for the *sixth* row. What will d' do?”

[R.R.]

“No. 1’s the only one: *that* gives us n to follow, as we’ve got m' upstairs.”

[*I place n under d' , with 1 on the left.*]

“And will b do us any good?”

[R.R.]

“Yes, b gives us n' , as we’ve got a' upstairs.”

[*I place n' on the right of n , with 7 away to the left.*]

“Come! that finishes the thing: nn' is an absurdity!”

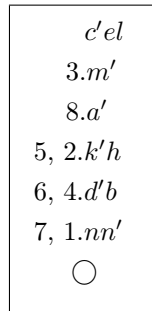
[*I draw a little circle under nn' .*]

“So now we’ve proved $c'el_Q$. The next thing is to examine the Premisses, and see if any of these three are given as *existing*.”

[*I inspect the Premisses, by the help of the Register.*]

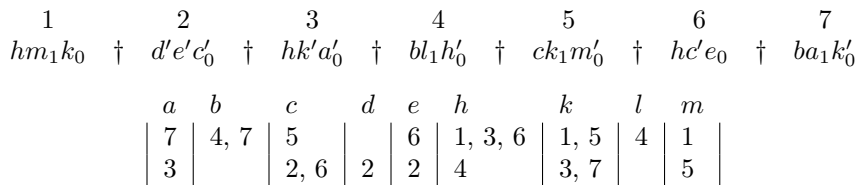
“ c' occurs in No. 2 only—*non-existent*: e occurs in Nos. 3 and 8—and *exists* in No. 3, along with l . So we get $c'el_0 \dagger le_1$; that is, $le_1c'_0$; that is, All le are c ; and my task is done!”

[*I write, underneath the little circle, $\therefore c'el_0 \dagger le_1$; i. e. $le_1c'_0$; i. e. All le are c .*]



Here ends my soliloquy. If the Reader will now turn to the image above, he will see what the Tree *ought* to look like: and, between *that* and the Tree he has constructed for himself, I *hope* he will find a considerable family-likeness! He should then *verify* his Tree, by writing out the eight Premisses in the *reverse* order (i. e. in the order 1, 7, 4, 6, 2, 5, 8, 3), omitting all subscripts, and underscoring whatever letters he can eliminate: and the final result *ought* to be $c'el_0$.

My second example shall be



I will now construct the Tree, soliloquising as I do so.

“*Six* Eliminands, are there? And *seven* Premisses—none too many. And *three* Retinends, b , d' , and l . Well, those will make the *Root*.”

[*I take a piece of paper, and write $bd'l$ in the middle at the top.*]

“Now, then, what will b do for us?”

[R.R.]

“No. 4—why, that gives us a certainty at once! b and l are *both* of them *Retinends*.”

[*I place h under b , with 4 on the left.*]

“No. 7?”

[R.R.]

“Divides. Now for d' . No. 2?”

[R.R.]

“Divides. And now for l . No. 4? We’ve got it already. So that ends our *second* row. Now for the *third*. What will h do? No. 1?”

[R.R.]

“Divides. No. 3?”

[R.R.]

“Ditto. No. 6?”

[R.R.]

“Ditto. We *must* divide, this time: let’s go back to No. 1: ‘first come, first served,’ you know.”

[*I draw a short line (say $\frac{1}{8}$ inch long) downwards from h ; and, across the lower end of it, I draw a horizontal line (say 3 inches long); under it I write 1, and, from its ends, I draw two more short downward lines; and under them I write k' and m' .*]

“Now, shall we tack an m on to the k' ? Or shall we tack a k on to the m' ? Let's see if either of them would be of any future use.”

[R.R.]

“Well, m only occurs in No. 1, and *that* we've just used: so m' can be of no further use: but k occurs in No. 5 *also*: so perhaps it *may* be of use, further down.”

[I tack on k to m' .]

Here I cease to soliloquise, for a moment, in order to inform my Reader that the *meaning* of this division of the Tree into two Branches is to assert that the (supposed) existing “Thing,” which has the Attributes $bd'lh$, *must also* have *either* the single Attribute k' (which it may follow up with m or with m' , whichever it likes), *or else* the Pair of Attributes $m'k$. I resume my soliloquy.

“Now, in the left-hand branch, what will k' do for us?”

[R.R.]

“It occurs in No. 3. That'll do very nicely: we've got h and k' already, down this Branch: so that gives us a .”

[I place a under k' , with 3 on the left.]

“It also occurs in No. 7: and this gives us *another* certainty, as we've got b upstairs: so this gives us a' .”

[I tack on a' to a , and place a 7, followed by a comma, to the left of the 3.]

“Well, *that* Branch is annulled, anyhow!”

[I draw a circle under the aa' .]

“Now for the right-hand Branch. What will m' do for us?”

[R.R.]

“It occurs in No. 5 only. However, that gives us a *certainty*, as we've got both k and m' : so we *must* have c' to follow.”

[I place c' under the m' , with 5 on its left.]

“Now, what will c' lead to?”

[R.R.]

“It occurs in No. 2, and in No. 6. In No. 2, it gives us e to follow, as we've got d' upstairs; and, in No. 6, it gives us e' to follow, as we've got h upstairs.”

[I write ee' under c' , with 6, 2 on the left.]

“Well, that annuls the *right-hand* Branch: so the Tree is finished!”

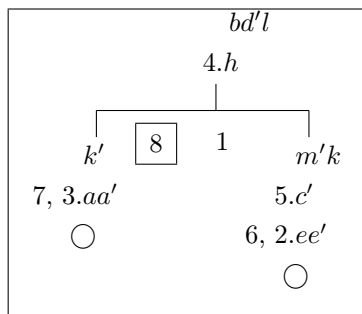
[I draw a circle under the ee' .]

“So now we've got $bd'l_0$: let's see which of them *exist* in the Premisses.”

[I refer to the Premisses, the Register telling me where the Retinends occur.]

“No. 4 gives us bl as *existing*: that'll do very well.”

[I write, underneath the Tree, $\therefore bd'l_0 \dagger bl_1$; *i. e.* $bl_1d'_0$; *i. e.* All bl are d .]



My reader may now refer to the Tree, given above, and see if he has drawn his correctly.

Observe that this Tree, though not containing a single word of English, expresses *symbolically* the whole of the following argument.

If possible, let $bd'l$ be an *Entity*, i. e. let there be a certain existing Thing, which has all three Attributes. Then, by No. 4, this same Thing *must also* have the Attribute h . Hence, by No. 1, it must *also* have *either* k' or $m'k$. If it chooses k' , then, by Nos. 3 and 7, it must *also* have aa' , which is absurd: if it chooses $m'k$, then, by Nos. 5, 2, and 6, it must *also* have $c'ee'$, which is absurd.

More briefly, if an existing Thing has the Attributes $bd'l$, it *must also* have *either* $hk'aa$ or $hm'kc'ee'$. But each of these aggregates is impossible.

Hence $bd'l$ cannot be an *Entity*.

Therefore it is a *Nullity*.

Here ends my soliloquy; and there is no logical *necessity* to do anything more: still it is very *satisfactory* to “verify” the Tree, by translating it into Sorites-form. There will be *two* Partial Conclusions, which I shall number as 9 and 10. But I must pause here, to instruct my Reader how to deal with *Branches*, in verifying a Tree. The simple Rule is, when there are two Branches, of which *one* is headed by a *single* Letter, and the *other* by a *Pair*, to take the *single* Letter first, turn it into a Sorites, and record its Partial Conclusion: then take the *double*-Letter Branch: turn it also into a Sorites—but there’s no need to *record* its result, as we may go on at once with the Premiss used in the Branching: then take the recorded result of the *single*-Letter Branch: then we can go “upstairs,” if there is any *Stem* leading down to the Branching. Thus, in the present instance, of the two main Branches, we take k' first. So our *first* Sorites consists of 3 and 7. So we draw a small square against k' , on the right side of it; and in that square we write 8. Our final Sorites will begin, in the $m'k$ -Branch, with Nos. 2, 6, and 5. This takes us up to $m'k$. Then we cross the bridge, by means of No. 1: then take in No. 8: then we can go upstairs, and take No. 4: and that *ought* to give us the desired Conclusion.

The following summary exhibits these two Soriteses in a handy form:

$$3, 7 \text{ P } hk'b_0 \dots (8); \quad 2, 6, 5, 1, 8, 4 \text{ P } d'bl_0$$

The Reader should satisfy himself that this is correct, by copying the above, substituting, for the reference-numbers, the actual Premisses, and underscoring all the Eliminands. The result ought to be as follows:

$$\begin{array}{ccc} 3 & & 7 \\ hk'a' & \dagger & \underline{ba}k' \text{ P } hk'b_0 \dots (8); \end{array}$$

$$\begin{array}{ccccccccc} 2 & & 6 & & 5 & & 1 & & 8 & & 4 \\ d'e'c' & \dagger & \underline{h}c'e & \dagger & \underline{c}k'm' & \dagger & \underline{h}m\underline{k} & \dagger & \underline{h}k'b & \dagger & \underline{bl}h' \text{ P } d'bl_0 \end{array}$$

I will now work out a rather harder Problem.

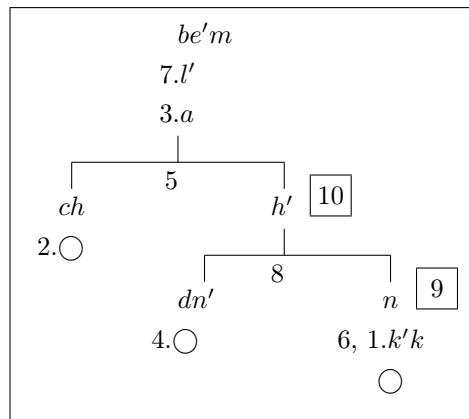
Let us take the Sorites,

$$\begin{array}{cccccccc} 1 & & 2 & & 3 & & 4 & & 5 & & 6 & & 7 & & 8 \\ knl'_0 & \dagger & ch_1e'_0 & \dagger & bl'a'_0 & \dagger & d_1e'n'_0 & \dagger & ahc'_0 & \dagger & nb_1k'_0 & \dagger & le'_1m_0 & \dagger & d'h'n'_0 \end{array}$$

a	b	c	d	e	h	k	l	m	n
5	3, 6	2	4		2, 5	1	7	7	1, 6
3		5	8	2, 4, 7	8	6	1, 3		4, 8

There are eight Premisses, seven Eliminands, and three Retinends.
My soliloquy is as follows:
“No superfluous Premisses, *this* time. *Two* Barred Premisses, and a Barred Group! But no matter: the *Tree* will take care of all *that!*”
[I write be'm as the Root.]
“Now, what will *b* do for us?”
[R.R.]
“*In 3* it divides: and *in 7* it divides. Let's try *e'*.”
[R.R.]
“*In 2* it divides; but *7* suits us better: both *e'* and *m* are Retinends: so the Thing, that's got *all* the Retinends, ca'n't be *l*, and therefore *must* be *l'*.”
[I write l' under b, with a 7 on the left.]
“Will *m* give us any more certainties?”
[R.R.]
“*No*: it only occurs in *7*, which we've just used. Now, what will *l'* do for us?”
[R.R.]
“*It* occurs in *1* and *3*. *In 1*, it divides: but we've better luck in *3*, as *b*'s a Retinend. So that gives us *a* to go on with.”
[I write a under l', with a 3 on the left.]
“*Now* for *a*.”
[R.R.]
“*It* occurs in *5* only: and that divides. Well, there's no help for it, *this* time! We must divide between *c* and *h'*.”
[I draw a short line downwards from a: across the lower end of it I draw a horizontal line: under the middle of this line I write a 5: from its ends I draw two short downward lines: and under them I write c and h'.]
“*Now*, we've got the right to tack on *c'* to the *h'*, or *h* to the *c*, whichever we like. Shall we do either? Let's see if either of them would be of any use, further down.”
[R.R.]
“*c'* is no use: it only occurs in *5*, the one we're using. But *h* occurs also in *2*: so we'd better tack it on.”
[I tack on h to the c.]
“*Now* what will *c*, or *h*, do for us?”
[R.R.]
“*c* occurs in *2*—and *h* along with it: and *e'* is a Retinend: so that gives us a Nullity at once.”
[I draw a small circle under ch, with 2 on the left.]
“*Now*, what can we do with *h'*?”
[R.R.]
“*Well* it divides in *8*; and I'm afraid there's no help for it, as that's the *only* one it occurs in.”
[I make a Branching under h', with 8 under the middle of it, and d and n under the ends.]
“*Now* shall we tack on *d'* to *n*? Or *n'* to *d*? Let's see if *d'* could be of any use further down.”

[R.R.]
 “No, it couldn’t. Could n' ?”
 [R.R.]
 “Yes, it *might*. Very well, then we’ll tack it on, on the chance.”
[I tack on n' to d .]
 “Well, there’s no use going back to the left-hand Branch: it’s extinct. So we must go on with *this* one. Will d help us at all?”
 [R.R.]
 “Yes! It occurs in 4, along with n' and a Retinend. So here we get *another Nullity!*”
[I draw a small circle under dn' , with 4 on the left.]
 “Now there’s only *one* Branch left to attend to. What can we do with n ?”
 [R.R.]
 “ n occurs in 1 and 6. In 1 it gives us k' , as we’ve got l' upstairs: and in 6 it gives us k , as we’ve got b upstairs. And $k'k$ is an obvious *absurdity*. So this brings the whole thing to an end.”
[I write $k'k$ under n , with 6, 1 on the left.]
 “Well, that proves $be'm$ to be a *Nullity*. But do any of them exist *separately*?”
 [R.R.]
 “Yes, each *one* exists, by itself: but we’re not told that any *two* exist together. Well, let’s make b exist, then.”
[I write, underneath the Tree, $\therefore be'm_0 \dagger b_1$; i. e. $b_1e'm_0$; i. e. All b are e or m' .]
 “So now the Tree is in full leaf!”



The Reader can now look above, and compare his Tree with the one there depicted.

The Verification of this tree shall now be given in a second soliloquy:

“Well, now to *verify* our result. Where are the Partial Conclusions to come? At the first Branching, of course we must take h' first: and, at the second Branching, we must take n first. So the first Partial Conclusion must be at n : and it must be No. 9, as we’ve got eight Premisses.”

[I draw a small square on the right side of n , and in it I write 9.]

“That first Sorites consists of Nos. 1 and 6. Then, for the second Sorites, we must take the *two*-Letter Branch—the dn' -Branch. So we take No. 4: then cross the bridge with 8: then take in 9: then we go upstairs, and record the result as No. 10.”

[I draw a small square against h' , and in it I write 10.]

“Then, for the final Sorites, we must begin with 2: then cross the bridge with 5: then take in 10; then we go upstairs, and take 3 and 7: and that *ought* to prove $be'm_0$.”

The Reader should now write out these three Soriteses, in full according to the following summary, and do all the necessary underscoring, and thus satisfy himself that they really *do* prove the Conclusion.

1, 6 \mathbb{P} $nl'b_0 \dots$ (9); 4, 8, 9 \mathbb{P} $e'h'l'b_0 \dots$ (10); 2, 5, 10, 3, 7 \mathbb{P} $e'bm_0$

I will now take a still harder Problem, and solve it in the same way.

1	2	3	4	5	6	7							
$an_1b'_0$	\dagger	$wm_1l'_0$	\dagger	csn_0	\dagger	$ar_1v'_0$	\dagger	$e_1c'l'_0$	\dagger	$mh_1t'_0$	\dagger	$k_1n'_0$	
8	9	10	11	12	13	14							
\dagger	$dr_1a'e'_0$	\dagger	$rl_1w'_0$	\dagger	$el'_1n'_0$	\dagger	$a's'_0$	\dagger	$db_1m'_0$	\dagger	$v_1e'k'_0$	\dagger	$bw'_1h'_0$

a	b	c	d	e	h	k	l
| 1, 4	| 12, 14	| 3	| 8, 12	| 5, 10	| 6	| 7	|
| 8, 11	| 1	| 5	|	| 8, 13	| 14	| 13	| 2, 5, 10

m	n	r	s	t	v	w
| 2, 6	| 1, 3	| 4, 8, 9	| 3	| 9	| 13	| 2
| 12	| 7, 10	|	| 11	| 6	| 4	| 9, 14

There are fourteen Premisses, twelve Eliminands, and three Retinends.

The Reader should now take a large sheet of paper, and copy the above fourteen Premisses at the top: then put the book aside, and make and verify his own Register: then compare it with mine: then copy the words, “There are fourteen &c.”: and *then* he will be able to understand the following soliloquy:

“Fourteen Premisses, and only *twelve* Eliminands? There *may* be a superfluous Premiss. And *three* Retinends.”

[I write $dl'r$ underneath the words “There are &c.,” in the middle.]

“Now for d . No. 8? It occurs there, along with *another* Retinend, l ; but, even with that help, it has to divide. Let’s try the other Premisses containing Retinends. They are Nos. 12, 2, 5, 10, 4, 8, and 9. No, it’s no use! They all divide! So let’s go back to No. 8.”

[I make a Branching under d , with 8 under the middle of the horizontal, and a and e under the ends.]

“Now, we may tack on a' to e , or e' to a , whichever we like. Will either of them do any good? Well, a' might be used further down—and so might e' . Then it doesn’t matter *which* we take. Let’s move *from left to right*—moving the other way would seem like writing *backwards!*”

[I tack on a' to e .]

“Now, what does a give us? It occurs in 1 and 4. In 1, it divides. But, in 4, it gives us v , as we’ve got r upstairs.”

[I write v under a , with 4 on the left.]

“Now for the right-hand Branch. Is e of any use? It’s in 5, and 10. In 5, it gives us c , in 10, it gives us n .”

[I write cn under ea' , with 10, 5, on the left.]

“And will its partner, a' , help us? It occurs in 8 and 11; but of course 8 is no good, as we’ve used it in the Branching. However, 11 gives us another Letter s : so we’ve actually landed *three* fish in one haul *this* time!”

[I place s on the right of cn , with 11 away on the left.]

“Now we go back to v . Well, *that* only occurs in 13: so it’s got to divide, I’m afraid!”

[I make a Branching under v with 13 under the middle of it, and e and k under the ends.]

“Now, is it worthwhile tacking on an e' or a k' ? I see e' occurs in 8; but we couldn’t use 8, down *this* Branch, as it would want a' , and we’ve got an a upstairs: so *that’s* no good. Where does k' occur? Nowhere else, besides 13, I see. Then there’s no use tacking on *either*. So we’ll let them alone. Now we go back to our grand haul, cns . Where does c occur? No. 3? Why, that actually slays all three at once!”

[I draw a circle under cns , with 3, as its authority, on the left.]

“Now we return to e . Let’s see: we’ve had e somewhere before. Oh, there it is, in the right-hand Branch! So this e can *perhaps* make use of the annulment of the earlier one, *provided that* the other e didn’t need its partner, a' , to help to annul it, since *this* e has got a as a partner. *Did* it need it? What Premisses does a' occur in? Nos. 8 and 11. And was either of them used in the annulment? Yes, we used 11. Then I’m afraid this new e ca’n’t get any help from the old one. It must manage its own annulment. What can we do with it? It occurs in 5 and 10. In 5, it gives us c : in 10, it gives us n .”

[I write cn under e with 10, 5, on the left.]

“But we ca’n’t tack on an s , *this* time, as we haven’t got an a' to help us! Let’s go to the k -Branch. What will k do? It occurs in 7 only: and *that* gives us n .”

[I write n under k , with 7 on the left.]

“Now back to the left-hand again. What will c do? It occurs in 3—along with n luckily: so that gives us s' .”

[I write s' under c , with 3 on the left.]

“And will c ’s partner, n , do anything for us? Yes in 1, it gives us b , as we’ve got an a upstairs.”

[I write b after s' , with 1, away to the left of the 3.]

“Now back to the k -Branch. What can we do with n ? Why, we’ve got another n , on the same level, in the e -Branch! So this one had better *wait* on the chance of being able to avail itself of the annulment of the other.”

[I place a dot under n , to indicate that it is “waiting.”]

“Now to the left again. What can we do with $s'b$? Well, s' only occurs in 11, and *that* needs an a' : so s' gives us no assistance. Will b do any good? It occurs in 12 and 14. In 12, it gives us m : in 14, it divides.”

[I write m under $s'b$, with 12, on the left.]

“Any other Branch to go to? No, the other one is waiting: we must stick to this one till it’s finished. What can we do with m ? Well, it occurs in 2 and 6. In 2, it gives us w' : in 6, it divides.”

[I write w' under m , with 2 on the left.]

“Now for w' . It occurs in 9 and 14. In 9, it gives us t' : in 14, it gives us h .”

[I write $t'h$ under w' , with 14, 9, on the left.]

“Now, what will t' do? It occurs in 6 only: but *there* it comes along with h , and we’ve got m upstairs: so *that* annuls this Branch.”

[I draw a circle under *t'h*, with 6, on the left.]

“Now, we’ve got an *n* in the other Branch, patiently waiting to learn the fate of its namesake on *this* Branch. So, now that *this n* has got itself annulled, the question is whether the waiting *n* can use the *same* annulment, in which case we need only *refer* to it, without taking the trouble to write it out again. Now this new *n* has the same ancestors as the old *n*, with the exception of its brother *c*, and its father *e*. So, if the left-hand *n* managed to get *annulled* without using either of these two kinsmen, then its annulment will serve for the right-hand one: if not I’m afraid the new *n* must devise an annulment of its own. Now, *was c* or *e* used in that annulment?”

[R.R.]

“Yes! *c* was used in the very next row! it gave us *s'n*. So *this n* will have to devise an annulment for itself—no, stay! That *s'* was of no further use! So, after all, *c* was *not* used in the annulment. Well, then, *was e* used?”

[R.R.]

“No, *e* only occurs in 5 and 10; and neither of those was used in the annulment. So, after all this new *n* can use the old annulment.”

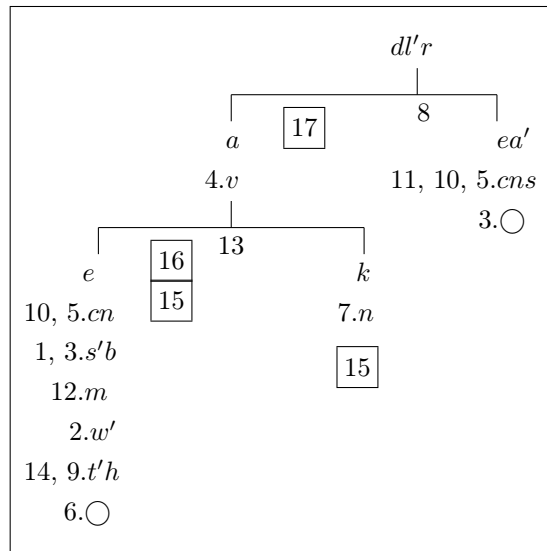
[I draw a little square against the *cn* in the *e*-Branchy and another little square under the *n* in the *k*-Branch, just where I placed the dot.]

“So now the Tree is complete, and we’ve proved the Nullity $dl'r_0$. Now, are any of these Letters given as *existent*? Let’s see.”

[I examine the Premisses containing them.]

“Yes, *dr* exist, *together*, in No. 8.”

[I write, under the Tree, $\therefore dl'r_0 \dagger dr_1$; *i. e.* $dr_1l'_0$; *i. e.* All *dr* are *l*.]



Here ends my soliloquy. But we had better *verify* our result, by translating our Tree into Sorites-form. This shall be done in a supplementary soliloquy.

“Well, now to *verify* this Tree. And first, what *reference-number* must be put under the *n* that we kept waiting so long? To answer this question, we must first settle in what *order* we’re going to take the Soriteses that are to prove our Partial Conclusions. Let’s see. At the first Branching, of course it’s the *a*-Branch that must be proved first, as it’s a *single*-Letter one, and the other

is a *double*-Letter one. At the second branching, *both* are single-Letters: but of course we must take the *e*-Branch first, as it's the only one we can *prove*, to begin with, since it ends in a *circle*. So the first Sorites must run up as far as *cn*, and then record its result, for the benefit of the waiting *n*: that Sorites will consist of Nos. 6, 9, 14, 2, 12, 3, and 1. But wait a moment! *Will* it contain No. 3? No, of course it wo'n't! No. 3 only served to give us *s'*, and *s'* turned out to be useless! Then the first Sorites will simply be 6, 9, 14, 2, 12, and 1. And we must call its result No. 15, as there are fourteen Premisses."

[I write 15 in the little square against *cn*, in the *e*-Branch, and another 15 in the little square under *n*, in the *k*-Branch.]

"Then the *second* Sorites had better take in the whole of the *e*-Branch, and record its result at the top. So *it* will be a *very* short one—merely containing 15 and 10: of course missing 5, as *that* was only wanted for the useless *c*."

[I draw a little square against *e*, and in it I write 16.]

"Then the third Sorites will have to work its way up the *k*-Branch. That is, it must begin with 15: then take 7: then cross the bridge, by means of 13: then take in 16: then go upstairs and take 4: and then we shall have to record its result."

[I draw a little square against the *a*, at the top of the great left-hand Branch, and in it I write 17.]

"And the *final* Sorites must of course run up the *ea'*-Branch. So it will begin with 3, 5, 10, 11: then cross the 8 bridge: then take in 17: and *that* ought to finish the thing, as there's no stem above that first Branching. So the four Soriteses will run as follows:

6, 9, 14, 2, 12, 1 P 15; 15, 10 P 16; 15, 7, 13, 16, 4 P 17; 3, 5, 10, 11, 8, 17 P *dl'r*₀."

The Reader should now write out these Soriteses, *in full*, and do all the necessary underscoring, and satisfy himself that they do really prove the desired Conclusion.

I will now go through a really long and hard Problem of this kind, soliloquy fashion, and I think that the Reader, if he has the patience to work it through, taking my soliloquy as his guide, will then find himself fully competent to solve any *ordinary* Sorites-Problem: those, that have *special* features, will be considered in subsequent chapters.

The twenty-four Premisses of this Problem are as follows:

1	2	3	4	5
$Cl_1E'_0$	$\dagger Av'_1D_0$	$\dagger k_1m'_0$	$\dagger lC'_1(b'n')'_0$	$\dagger dsb_1t'_0$
6	7	8	9	10
$tD_1w'_0$	$\dagger dr'a'_1A'_0$	$\dagger vw_1B_0$	$\dagger em'_1(r'b')'_0$	$\dagger Ha_1c'_0$
11	12	13	14	15
$dtmav'_0$	$\dagger dst_1A'_0$	$\dagger Dn'r'b'_1z_0$	$\dagger cE'z_0$	$\dagger bs'_1l'e'_0$
16	17	18	19	20
$atE_1v'_0$	$\dagger rDh'_1e'_0$	$\dagger mt'_1D_0$	$\dagger Anl'_1c'_0$	$\dagger rdk'_1h_0$
21	22	23	24	
ztB'_1d_0	$\dagger nl'_1H'_0$	$\dagger Et'_1z_0$	$\dagger dzrA'_1a'_0$	

Before making the Register, it may be well to point out that No. 4 means "All *lC'* are *b'n*"; i. e. "All *lC'* are *b'*, and all *lC'* are *n'*." Hence this Premiss really contains *two* distinct Propositions, which we might, if we chose, symbolise as $lC'_1b_0 \dagger lC'_1n_0$ (so that *b* and *n* must be reckoned as appearing in the *positive*

form in this Premiss). If I have to use the *whole* Premiss at once, I shall refer to it as 4, simply; but, if I have to use either part *by itself*, I shall refer to it as 4*, or as 4**. Similar remarks will apply to No. 9. Hence the *actual* number of Premisses is twenty-six.

I recommend the Reader to copy these Premisses at the top of a large sheet of paper, and then to make the Register for himself, without looking at mine; then to verify it, by the method he has already learned (see p. 1187); and lastly to compare it with the Register here given.

a	b	c	d	e		
$\left| \begin{array}{l} 10, 11, 16 \\ 7, 24 \end{array} \right|$	$\left| \begin{array}{l} 4, 5, 9, 15 \\ 13 \end{array} \right|$	$\left| \begin{array}{l} 14 \\ 10, 19 \end{array} \right|$	$\left| \begin{array}{l} 5, 7, 11, 12, 20, 21, 24 \\ 9 \end{array} \right|$	$\left| \begin{array}{l} 15, 17 \end{array} \right|$		
$\left| \begin{array}{l} 20 \\ 17 \end{array} \right|$	$\left| \begin{array}{l} 3 \\ 20, 15, 19, 22 \end{array} \right|$	$\left| \begin{array}{l} 1, 4 \\ 3, 9 \end{array} \right|$	$\left| \begin{array}{l} 11, 18 \\ 13 \end{array} \right|$	$\left| \begin{array}{l} 4, 19, 22 \\ 7, 13 \end{array} \right|$	$\left| \begin{array}{l} 9, 17, 20, 24 \\ 15 \end{array} \right|$	$\left| \begin{array}{l} 5, 12 \end{array} \right|$
$\left| \begin{array}{l} 6, 11, 12, 16, 21 \\ 5, 18, 23 \end{array} \right|$	$\left| \begin{array}{l} 8 \\ 2, 11, 16 \end{array} \right|$	$\left| \begin{array}{l} 8 \\ 6 \end{array} \right|$	$\left| \begin{array}{l} 13, 14, 21, 23, 24 \end{array} \right|$			
$\left| \begin{array}{l} 2, 19 \\ 7, 12, 24 \end{array} \right|$	$\left| \begin{array}{l} 8 \\ 21 \end{array} \right|$	$\left| \begin{array}{l} 1 \\ 4 \end{array} \right|$	$\left| \begin{array}{l} 2, 6, 13, 17, 18 \end{array} \right|$	$\left| \begin{array}{l} 16, 23 \\ 1, 14 \end{array} \right|$	$\left| \begin{array}{l} 10 \\ 22 \end{array} \right|$	

My soliloquy is as follows:

“Twenty-six Premisses, nineteen Eliminands, and three Retinends, *d*, *z*, and *D*. So there are *six* extra Premisses. Looks as if there *might* be some superfluous ones: and perhaps a *Retinend* might be spared: let’s try.”

[*I ascertain, taking each Retinend in turn, what Premisses would be lost by its omission: but I find they go faster than the Eliminands, and so give up the quest.*]

“No: there seems no chance of getting rid of a Retinend. So now for our Tree.”

[*I write dzD at top of available space in middle.*]

“Now what can we do with *d*? It occurs in 5, 7, 11, 12, 20, 21, 24. Alas, they *all* divide! And so do the *z*’s: and so do the great *D*’s. Well, there’s no help for it: we must divide at the very first start! Let’s get a *biliteral* division, if we *can*. No. 21 is the first I can find, as it contains *two* Retinends: so it merely divides for *t* and *B*’.”

[*I make a wide Branching under d: under the middle of the horizontal line I write 21, and under the two ends I write t' and B.*]

“Now, is there any use tacking on *t* or *B*’? Let’s see. Yes, *t* *can* be of further use, but *B*’ of none.”

[*I tack on t to B.*]

“Now, for the *t*’-Branch. 5 divides, but 18 doesn’t: it gives us *m*’. And 23 gives us *E*’. That’s a good beginning.”

[*I write m'E' under t', with 23, 18 on the left.*]

“Now for the *Bt*-Branch. *B* only occurs in 8; and *that* divides. However, *t* helps us in 6, and gives us *w*: in all the other Premisses it divides.”

[*I write w under Bt, with 6 on the left.*]

“Now we go back to the t' -Branch. What will m' and E' do for us? m' occurs in 3, and that gives us k' . In 9 it divides, even if we take 9 piecemeal. E' divides in 1, but in 14 it gives us c' . That'll do capitally.”

[I write $k'c'$ under $m'E'$, with 14, 3 on the left.]

“Now for the Bt -Branch again. What will w do? It occurs in 8, and gives us v' .”

[I write v' under w , with 8 on the left.]

“Now we go back to the t' -Branch again. What can we do with k' and c' ? k' only occurs in 20, and *that* divides, c' occurs in 10 and 19, but they both divide. Then we will take k' : *that* will give us h' and r' for our Branches.”

[I make a Branching under $k'c'$: under the middle of it I write 20, and under the ends I write h' and r' .]

“Now would either h or r be of any further use? h wo'n't, but r occurs in *three* other Premisses.”

[I tack on r to h' .]

“Now back to the Bt -Branch. What will v' do? It occurs in 2, 11, and 16. In 2 it gives us A' . In 11 and 16 it divides.”

[I write A' under v' , with 2 on the left.]

“Now back to that last Branching. What will $h'r$ do? h' occurs in 17; and that gives us e at once, as we've got *three* of the four letters already. And r occurs in 9 (which we must break up, and take $em'r_0$ by itself), and that gives us e' . No use troubling about 24: we've got our Nullity already.”

[I write ee' under $h'r$, with 9*, 17 on the left. And under ee' I draw a little circle.]

“Come, there's *one* Branch annulled already! The r' -Branch is the only one we have to go on with, at present. Let's see what r' does for us. It occurs in 7 and 13, and *both* divide. Let's take 7.”

[I make a Branching under r' : under the middle I write 7, and under the ends I write a and A .]

“Now, would a' or A' be of further use? Well, a' occurs in 24; but *there* it wants A' as a partner, which of course it can't have: so *it's* no use. Great A' occurs in 12 and 24; but in 12 it wants t , which it can't have; and 24 we *know* to be useless. So there's no tacking on to be done, *this* time! Now we go back to A' . In 7 it divides: in 12 it gives us s' : in 24 it divides.”

[I write s' under A' , with 12 on the left.]

“Now back to the left again. What will a do for us? In 10 it gives us H' , as we've got c' upstairs. We can't use 11, as it wants t , and we've got t' upstairs: and 16 wants E , and we've got E' upstairs: so 10's the only one.”

[I write H' under a , with 10 on the left.]

“Now for the A -Branch. A gives us v in 2: in 19 it divides: a' occurs only in 24 (besides 7, which made the Branching) and there it wants A' : so we can't use it.”

[I write v under A , with 2 on the left.]

“Now away to the right again. What will s' do?”

[R.R.]

“It occurs *only* in 15, and there, alas, it divides into *three* Branches! That's a very cumbrous process, and a thing to be avoided as long as possible. So let's draw a double-line under s' , to show that we've rejected its guidance for the present, and ‘hark back’ for something that will divide into *two* Branches.”

[I draw a double-line under s' .]

“Now, will A' serve our purpose? Yes, that'll do very well: in 7 it divides into a and r . And we must remember, in case we succeed in annulling this Branch, to examine whether we've used this s' anywhere below; for, if not, No. 12 will be a superfluous Premiss—unless it happens to be used in the left-hand Branch.”

[I write A' under the double-line: and under A' I make a Branching, with 7 under the middle of it, and a and r under the ends.]

“Now, would a' , or r' , be of any further use? Yes, a' could be used in 24: that will do.”

[I tack on a' to r .]

“And r' could be used in 13. Which will be best? I see that a has appeared before. Now we go back to the left. What will H' do? It occurs *only* in 22; and *there* it divides. This is a *very* branchy Tree!”

[I make a Branching under H' with 22 under the middle of it, and l and n' under the ends.]

“Now, will l' or n be of further use? Yes, *each* of them might. l' occurs in 15 and 19; and neither of those demand impossible partners. And n occurs in 4 and 19. In 4 we could use it, as it wants l for a partner; but not in 19, as *there* it demands l' . Well, it's arbitrary *which* we tack on: let's keep l as the *single* Letter.”

[I tack on l' to n .]

“Now for the other Branch. What can we do with v ? Well, it occurs *only* in 8. So we've no choice.”

[I make a Branching under v , with 8 under the middle of it, and w' and B' under the ends.]

“Would w or B be of further use? No, *neither* of them. So we go away to the right again, and try our luck with the *Bt*-Branch. What can we do with a ? It occurs in 10, 11, and 16. In 10, it divides: but in 11 it gives us m' : and in 16 it gives us E' .”

[I write $m'E'$ under a , with 16, 11 on the left.]

“Now for ra' . What will r do? In 9 it divides: in 17, ditto: in 20, ditto: but in 24 it gives us a Nullity!”

[I draw a small circle under ra' , with 24 on the left.]

“Now we go back to the extreme left-hand again, and take the first Branch we find, that's still growing. What will l do for us? In 1, it gives us C' . No. 4 we ca'n't use, *yet*; though we shall be able to, *next* time we come this way.”

[I write C' under l , with 1 on the left.]

“Now for $n'l'$. n' occurs in 13, which *looks* alarming, it's so full of Letters: however, we've got all but *one*, upstairs! So that gives us b : l' occurs in 15; but *that* would divide. It also occurs in 19; but *there* it wants n for a partner. Well, we've got *one* Letter, anyhow!”

[I write b under $n'l'$, with 13 on the left.]

“Now for w' . Well, w' occurs *only* in 6: and *there* it wants t for a partner, and ca'n't have it! So *this* Branch wo'n't grow any further. Will the B' -Branch be more vigorous? No, not a bit of it! It only occurs in 21, and there it demands t for a partner! So *both* these Branches come to a deadlock. Well, there's nothing for it but to draw a double-line under each, and 'hark back' for some ancestor that will give us a Branching (for of course it ca'n't give us any *single* Letter) that we've not yet used.”

[I draw a double-line under w' , and another under B' .]

“Now, to hark back. Will *v* do? No. Will *A*? Yes, it will: we’ve not used 19 yet. So of course No. 2 would be a superfluous Premiss, were it not that it happens to be used in the *other* Branch.”

[In the open space under the two double lines I repeat A, and under it I make afresh Branching, with 19 under the middle of it, and l and n' under the two ends.]

“But stay! We’ve had *both* these Letters before! There they are, away on the left, supplied by No. 22, and calling *H'* their father! Well, these are *very* affectionate children: they don’t seem to mind *who* is to be called their father, so long as *somebody* will own them! Well, *one* of the two sets must wait, anyhow, and see what happens to the other set. Which shall it be? This new set? Well, it could only utilise the experiences of the *other* *l* and *n'*, *provided* that they don’t use, in their annulment, either *a* or *H'*, for those do *not* occur in the ancestral line of this new set. This we must look into. I see that *a* occurs in 10, 11, and 16. It ca’n’t use 10 again, as it used *that* before we got down to *l* and *n'*. No. 11 it ca’n’t use, because that wants *t*: and No. 16 it ca’n’t use, because it wants *E*. Well, *a* is safe, then. And *H'* occurs *only* in 22, which it uses in branching. So this new set of *l* and *n'* *may* wait.”

[I place dots under them.]

“Now we go back to the *Bt*-Branch. What will *m'* do for us? It occurs in 3 and 9. In 3 it gives us *k'*: in 9 it divides. And what will *E'* do? In 1 it divides: but in 14 it gives us *c'*.”

[I write k'c' under m'E', with 14, 3 on the left.]

“Now we return to the extreme left. What will *C'* do? *C'* occurs only in 4; but that’s very helpful, as it gives us *two* fresh Letters at once, *b'* and *n'*.”

[I write b'n' under C', with 4 on the left.]

“Now for *b*. Well, *b* occurs in no less than *four* Premisses. It ca’n’t use 4, as *that* would want *l* as a partner: but it *can* use 5; and that gives us *s'*. Also it *can* use 9 (or rather the second *bit* of 9); and *that* gives us *e'*. No. 15 it ca’n’t use *yet*.”

*[I write s'e' under b, with 9**, 5 on the left.]*

“Now we return to the *Bt*-Branch. What can we do with *k'*? It only occurs in 20, and *that* divides. Is *c'* of any use? Yes, in 10 it gives us *H'*: 19 it ca’n’t use.”

[I write H' under k'c', with 10 on the left.]

“Now we return to the extreme left. What can we do with *b'n'*? Well, *b'* occurs in 13, along with *n'*, and also with *D*, *r'*, and *z*, *all* of which we’ve got upstairs! So here’s *another* Nullity!”

[I draw a small circle under b'n', with 13 on the left.]

“Now for *s'e'*. Well, *s'* occurs in 15, which gives us *another* Nullity!”

[I draw a small circle under s'e', with 15 on the left.]

“Come! That finishes up *all* the branches on this side, except the two that are waiting, *l* and *n'*; and those we *know* are all right: we’ve discussed *that* matter already.”

[I draw two little squares, to hold reference-numbers, on the right-hand sides of the l and n'l which stand at the tops of the two branches just annulled: and under the new l and n' I draw two similar little squares, which will contain the same two reference-numbers.]

“Now there’s nothing left but the *Bt*-Branch. What can we do with *H'*? Can we utilise, for its benefit, the *H'* that has already appeared, higher up, in the left-hand Branch? I must examine the Branches dependent from the earlier

H' , and refer to the List of Premisses, to see whether all these, used in its annulment, can lawfully be used *here*.”

[*I do so.*]

“No, I find that the earlier uses 13 in *both* the Branches dependent from it: and that requires r' : and *that* we haven't got *here*. So *this* H' must get annulled in some other way. What can we do with it? Well, we must divide *here*.”

[*I make a Branching under H' , with 22 under the middle of it, and l and n' under the ends.*]

“Now, would l' or n be of any further use? Yes, l' would.”

[*I tack on l' to n .*]

“Now what will l do? In 1 it gives us C' : 4 it ca'n't use *yet*.”

[*I write C' under l , with 1 on the left.*]

“Now for $n'l'$. What will n' do? It only occurs in 13, and there it divides. Let's try l' . In 15 it divides: 19 it can't use—nor 22. Well, then, we *must* divide. Let's do it with 13.”

[*I make a Branching under $n'l'$, with 13 under the middle of it, and b and r under the ends.*]

“Now, would b' or r' be of any further use? No, neither of them: so there's no tacking on to be done. Now for C' . In 4 it gives us two Letters at once, b' and n' .”

[*I write $b'n'$ under C' , with 4 on the left.*]

“Now for that Branching. What will b do? It ca'n't use 4—nor 5, since we've got s' upstairs: in 9 it gives us e' : and in 15 it gives us e . So we've finished *that* Branch.”

[*I write $e'e$ under b , with 15, 9 on the left, and a small circle underneath.*]

“Now for r . In 9 it gives us e' : 17 it ca'n't use yet: in 20 it gives us h' : 24 it ca'n't use.”

[*I write $e'h'$ under r , with 20, 9 on the left.*]

“Now back to the l -Branch. Our last entry was $b'n'$. What will b' do? In 13 it gives us r : that's all it will do.”

[*I write r under $b'n'$, with 13 on the left.*]

“Now back to the extreme right. What will e' do? In 15 it gives b' ; but in 17 it gives us a *Nullity!* So we needn't trouble about 15.”

[*I draw a small circle under $e'h'$, with 17 on the left.*]

“Now there's nothing left but the l -Branch. Our last entry was r : and, as we've just annulled an r on the extreme right, we may as well utilise it, if possible. Let's see if this new r can lawfully use 9, 20, and 17.”

[*I examine them.*]

“Yes, it *can*.”

[*I draw a small square against the r at the top of the right-hand Branch, and another one, to hold the same reference-number, under the new r .*]

“So now the Tree is finished! And we've proved dzD to be a *Nullity*. Let's see if any of them exist *separately*.”

[*I examine the List of Premisses.*]

“Yes, dz exists in 24. So now for our Conclusion.”

[*I write, in the space below the Tree, $\therefore dzD_0 \dagger dz_1$; i. e. dz_1D_0 ; i. e. All dz are D' .*]

“Now, was No. 12 superfluous, after all?”

[*I examine the Tree.*]

“No, it wasn't: we had to use that s' in order to bring in No. 15. So, 'now

Quoted from *Comus*
by John Milton

my task is fairly done, I can fly or I can run'—only, I *ca'n't* fly, and, on the whole, I prefer *not* to run!"

Here ends my long (and, I fear, tedious) soliloquy. But does not my exhausted Reader, who has patiently obeyed all its instructions, feel a certain glow of pride at having constructed so splendid a Tree—such a veritable Monarch of the Forest?

We have now completed the *Solution* of this Problem. But it is always desirable to *verify* every such Tree, by translating it into Sorites-form: this will require a supplementary soliloquy, with stage-directions as before.

"Now let's *verify* this Tree. At Branching 21 I take the t' -Branch first: and in it, at Branching 20, I take r' first. Under r' , at Branching 7, a and A are *both* single Letters. Well, let's take a first. Under a , of course I take l first: and, as that ends with a circle, we can begin with that Branch, which must be numbered 25, as there are 24 Premisses."

[I write 25 in the little square placed against l , in the South-West corner, and another 25 in the little square placed under the l which belongs to Branching 19.]

"Now, which Partial Conclusion shall we take for 26? Best take the other part of Branching 22."

[I write 26 in the little square placed against $n'l'$, under Branching 22, in the South-West corner, and another 26 in the little square placed under the n' belonging to Branching 19.]

"Then of course we go up this Branch for 27. The Sorites will begin with 26: then cross by bridge 22: then take in 25: then upstairs, and take in 10—and there you are!"

[I draw a little square against the a under Branching 7, which depends from r' : and in it I write 27.]

"Then, for 28, of course we must work up to r' , just above. The Sorites will be—we must take the A -Branch first, as it isn't yet worked up to the top—the Sorites will be 26 (we *must* take the n' -Branch *first*, as it refers to the *biliteral* Branch $n'l'$): then cross by 19: then take in 25: then, upstairs and take in 2. Now we've got to A . Then cross by the 7-bridge: then take in 27: that finishes it."

[I draw a little square against the r' , that stands over Branching 7, and in it I write 28.]

"Then, 29 must come at the top of the t' -Branch. The sorites must begin with the circle at the foot of the $h'r$ -Branch. So it will be 17, 9*: then the 20-bridge: then take in 28: then upstairs, and take 3, 14, 18, and 23. That gives us 29."

[I draw a little square against the t' , at the top of the left-hand Branch, and in it I write 29.]

"Now for the great Bt -Branch. At Branching 7 of course we take a : and, under it, at Branching 22, we take l : and that ends in a circle: so let's begin there. But we mustn't do it all at once: a Partial Conclusion must be recorded at r , for the benefit of the r -Branch just to the right, so the Sorites will be 17, 9*, and 20."

[I write 30 in the little square placed against r , and another 30 in the little square placed below the r -Branch on the right.]

"Then we had better have 31 at the top of this same Branch: and the Sorites will be 30, 13, 4, and 1."

[I draw a little square against the l at the top of this Branch, and in it I write 31.]

“Well, now for the $n'l'$ -Branch. It doesn't matter *which* we take first, b or r : both are *single* Letters: but b wants working up: so of course we begin *there*. Our Sorites will be 9^{**} , 15: then bridge 13: then take in 30: that brings us up to $n'l'$: then bridge 22: then take in 31: then upstairs, taking 10, 3, 14, 11, 16: then we must record, as a is the *single*-Letter Branch.”

[I draw a little square against the a , and in it I write 32.]

“Now, there's only *one* more Sorites wanted: so there'll be no more recording to do. Our final Sorites must begin with 24, to take in the ra' -Branch: then cross by the bridge 7: then take in 32: then—do we go up to A' at once? Or do we take in s' ? Oh, I remember! We are *not* to miss s' : it's used down below. Well, then, the Sorites goes on with 12, 2, 8, 6: then bridge 21: then take in 29: and that *ought* to give us our final Nullity dzD_0 !”

[I write out these nine Soriteses, and do all the underscoring, and at last reach the desired Conclusion, when I smile a satisfied smile, and lay down my pen with a sigh of relief.]

...¹

Book XXI. Logical Puzzles

Chapter I. Introductory

Under this general heading I shall discuss various arguments, which are variously described by Logical writers. Some have been classified as ‘**Sophisms**’, that is, according to etymology, “cunning arguments”, whose characteristic Attribute seems to be that they are intended to *confuse*: others as ‘**Paradoxes**’, that is, according to etymology, “things contrary to expectation”, whose characteristic Attribute seems to be that they seem to prove what we know to be false: but all may be described by the general name “Puzzles.”

Chapter II. Classical Puzzles

§ 1. **Introductory** I shall here enunciate five certain well-known Puzzles, which have come down to us from ancient times, and which the Reader will no doubt like to know by their classical titles.

§ 2. **Pseudomenos** This may also be described as “*Mentiens*”, or “*The Liar*”. In its simplest form it runs thus:—

“If a man says ‘I am telling a lie’, and speaks truly, he *is* telling a lie, and therefore speaks falsely: but, if he speaks falsely, he is *not* telling a lie, and therefore speaks truly.”

§ 3. **Crocodilus** That is, “*The Crocodile*”. This tragical story runs as follows:—

“A Crocodile had stolen a Baby off the banks of the Nile. The Mother implored him to restore her darling. “Well”, said the Crocodile, ‘if you say truly what I shall do, I will restore it: if not, I will devour it.’ “You will devour it!” cried the distracted Mother. “Now”, said the wily Crocodile, “I *cannot* restore your Baby: for, if I do, I shall make you speak *falsely*: and I warned you that,

¹Remark: The tree for this problem is not reproduced here, it looks as described in the text.

if you spoke *falsely*, I would *devour* it.” “On the contrary”, said the yet wiler Mother, “you cannot *devour* my Baby: for, if you do, you will make me speak *truly*, and you promised me that, if I spoke *truly*, you would *restore* it!” (We assume, of course, that he was a Crocodile of his word; and that his sense of honour outweighed his love of Babies.)

§ 4. Antistrephon That is “The Retort”. This is a tale of the law-courts.

“Protagoras had agreed to train Euathius for the profession of a barrister, on the condition that half his fee should be paid at once, and that the other half should be paid, or not paid, according as Euathius should win, or lose, his first case in Court. After a time, Protagoras, becoming impatient, brought an action against his pupil, to recover the second half of his fee. It seems that Euathius decided to plead his own cause. “Now, if I *win* this action”, said Protagoras, “you will have to pay the money by the decision of the Court: if I *lose* it, you will have to pay by our agreement. Therefore, in any case, you must pay it.” “On the contrary”, retorted Euathius, “if you *win* this action, I shall be released from payment by our agreement: if you *lose* it, I shall be released by the decision of the Court. Therefore, in any case, I need not pay the money.”

§ 5. Achilles This may be described, more fully, as “*Achilles and the Tortoise*”. The legend runs as follows:—

Achilles and the Tortoise were to run a race on a circular course; and, as it was known that Achilles could run ten times as fast as the Tortoise, the latter was allowed 100 yards’ start. There was no winning-post, but the race was to go on until Achilles either overtook the Tortoise or resigned the contest. Now it is evident that, by the time Achilles had run the 100 yards, the Tortoise would have got 10 yards further; and so on for ever. Hence, in order to overtake the Tortoise, he must pass over an *infinite* number of successive distances. Hence, Achilles can never overtake the Tortoise.

§ 6. Raw Meat

The meat that I eat at dinner is meat that I buy in the market;
The meat that I buy in the market is raw meat.
Therefore, the meat that I eat at dinner is raw meat.

Chapter III. Other Puzzles

§ 1. About Less

He, who says that 5 is less than 10, speaks truly;
He, who says that 5 is less than 10 and more than 6, says that 5 is less than 10.
Therefore, he who says that 5 is less than 10 and more than 6, speaks truly.

§ 2. Men Tall and Numerous

Men over 5 feet high are numerous;
Men over 10 feet high are not numerous.
Therefore, men over 10 feet high are not over 5 feet high.

§ 3. **The Socialist Orator and the Irish Mob** “Isn’t one man as good as another?” demanded a Socialist orator, addressing an Irish mob. “Av *coorse* he is”, was the eager response, “*and a great deal betther!*”

§ 4. **Death at Any Moment** “You *may* die at any moment, and probably *will*.” (See *The Mystery of Ms. E. Drood*, by Orpheus C. Kerr, p. 136/217.)

The *first* part of this statement seems reasonable enough: the *second* is obviously absurd. Yet how can it be absurd to assert that you *will* do what it is quite reasonable to assert that you *may* do?

§ 5. **The Small Girl and Her Sympathetic Friend** *Small Girl*: I’m so glad I don’t like asparagus!

Sympathetic Friend: Why, my dear?

Small Girl: Because, if I did, I should have to eat it—and I ca’n’t bear it!

Examine the reasoning process, if any, which has taken place in the mind of the Small Girl.

A Notice at the Seaside The blue ensign denotes that all boats, licensed to carry from two to four persons, are prohibited from putting off, and no other boat must put to sea without a licensed boatman.

The red ensign denotes that only large rowing-boats carrying from five to seven persons, and sailing boats, can put to sea with boatmen.

[N.B. The above Notice is exhibited at a certain seaside-place not 100 miles from the Needles.]

What boats, if any, *can* put to sea when one of these two ensigns is hoisted, but *cannot* when the other is *hoisted*?

Chapter IV. Solutions of Classical Puzzles

§ 1. **Introductory** The following Solutions have *not* come down to us from ancient times, but are merely modern speculations, which the Reader can take or reject “at his own sweet will.”

§ 2. **Pseudomenos** This Puzzle might be described as a “Paradox”, since it seems to prove that the man in question is speaking both truly and falsely at the same moment.

The best way out of the difficulty seems to be to raise the question whether the Proposition “I am telling a lie” can reasonably be supposed to refer to *itself* as its own subject-matter: to which the answer seems to be that it can *not*, since its doing so would lead to an absurdity.

Symbolically, it may be solved as follows:

Let Univ. be “Cosmophases”; a = the man speaks truly; b = the Proposition, stated by the man, can be its own subject-matter.

Then we have $a \text{ P } a'b$, and $a'b \text{ P } a$; i. e. $aba_0 \dagger a'ba'_0$; i. e. $ab_0 \dagger a'b_0$, which together prove b_0 : i. e. the Proposition can *not* be its own subject-matter.

Let us now consider what result would have followed if the man’s statement had been “I am telling the truth” instead of “I am telling a lie.”

Here, if we assume that the Proposition can be its own subject-matter, it evidently follows that, if he speaks truly, he *is* telling the thruth, and that, if he

Quoted from
Composed upon
Westminster Bridge
by William
Wordsworth

speaks falsely, he is *not* telling the truth. In either case, the supposition does *not* lead to any absurdity.

Symbolically, it would run as follows, using the same Dictionary as before: $ab \mathbb{P} a$, and $a'b \mathbb{P} a'$; i. e. $aba'_0 \dagger a'ba_0$; each of which Nullities is a truism, and proves nothing as to the existence, or non-existence, of b . Hence there is nothing in the *Data* to prevent the Proposition from being its own subject-matter, and nothing to tell us whether the man is speaking truly or falsely.

In short, such Data lends to no result at all, and it is not worth while to discuss them.

This Puzzle is sometimes given in a more complex form, viz.

Epimenides the Cretan asserted that Cretans were *always* liars. If he spoke truly, they *were* always liars, and therefore he, being a Cretan, was lying at that moment, and therefore spoke falsely. Hence he did *not* speak truly; that is, he *must* have been lying.

Here we cannot show that, if he spoke falsely, he also spoke truly. Hence no absurdity follows from the supposition that the Proposition can be its own subject-matter; and the conclusion, however unwelcome to Epimenides, is correct.

Symbolically, it runs thus:

Let Univ. be "Cosmophases"; a = Epimenides speaks truly; b = the Proposition, stated by him, can be its own subject-matter.

Then we have $ab \mathbb{P} a'$; i. e. aba_0 ; i. e. ab_0 ; i. e. $b \mathbb{P} a'$; i. e. On the supposition that the Proposition, stated by Epimenides, *could* be its own subject-matter, he was certainly lying.

If the statement made by Epimenides had been "The Cretans always speak the truth," there would have been nothing in the *Data* to prevent the Proposition from being its own subject-matter, and nothing to tell us whether Epimenides was speaking truly or falsely.

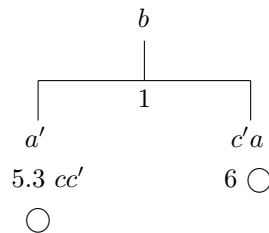
§ 3. Crocodilus On this Sophism Lotze makes the discouraging remark, "There is no way out of this dilemma." I think, however, that we shall find the machinery of Symbolic Logic sufficient for its solution.

Let Univ. be "Cosmophases"; a = the Mother speaks truly; b = the Crocodile keeps his word; c = the Crocodile devours the Baby.

Then we have, as *Data*,

$$\begin{array}{cccccc} 1 & 2 & 3 & 4 & 5 & 6 \\ ab_1c_0 \dagger & ab'_1c'_0 \dagger & a'b_1c'_0 \dagger & a'b'_1c_0 \dagger & c_1a'_0 \dagger & c'_1a_0 \end{array}$$

Here we may ignore 2, 4, as being contained in 6, 5; and we see, by inspection, that b is the only Retinend.



∴ b_0 ; i. e. Whatever the Crocodile does, he *breaks* his word.

Thus, if he devours the Baby, he makes her speak truly, and so *breaks* his word; and if he restores it, he makes her speak falsely, and so *breaks* his word. His sense of honour being thus hopeless of satisfaction, we cannot doubt that he would act in accordance with his *second* ruling passion, his love of *Babies!*

[The Reader will find it an interesting exercise to work out for himself the result which would have followed if the Mother's first statement had been "You will *restore* the Baby." He will find that, in that case, whatever the Crocodile does, he *keeps his* word. Hence his sense of honour is entirely satisfied, whatever he does: so that, again, his only guide is his *second* ruling passion—and the result to the Baby would, I fear, be much the same as before.]

§ 4. Antistropheon The best way out of this Paradox must seem to be to demand an answer to the question "*Which* of the two things, the agreement and the decision of the Court, is to over-rule the other, in case they should come into collision?"

- (1) Let us suppose that the *agreement* is to be supreme. In this case, if Protagoras *wins* his action, he *loses* the money; and, if he *loses* his action, he *wins* the money.
- (2) Let us suppose the *decision of the Court* to be supreme. In this case, if Protagoras *wins* his action, he *wins* the money; and, if he *loses* his action, he *loses* the money.

The *Data* do not enable us to answer this question. Protagoras naturally makes one, or the other, supreme, as best suits his purpose: and his docile pupil follows his example.

The right decision of the Court would obviously be *against* Protagoras, seeing that the terms of the agreement were still unfulfilled. And, when that decision had been pronounced, the practical result would be that, if the *agreement* was to be supreme, Euathius would have to pay the money: if the *decision of the Court* was to be supreme, he would be released from payment.

§ 5. Achilles This is a *mathematical* Fallacy, and involves the false assumption that a series of distances, infinite as to *number*, is also infinite as to *total length*.

Here the assumption is that

$$\left(111 + \frac{1}{10} + \frac{1}{10^2} + \frac{1}{10^3} + \&c. \right)$$

of a mile, where the number of terms can be made greater than any assigned *number*, can be made greater than any assigned *length*. But the above series is the circulating decimal 111.1 which as the Reader probably knows, can never reach the limit $111\frac{1}{9}$. Hence, by the time Achilles has run $111\frac{1}{9}$ yards, he must necessarily have overtaken the Tortoise.

§ 6. Raw Meat The best way of escaping from this savage Paradox seems to be to introduce the Dated Copula. *Two* epoches have to be taken into consideration, viz.

- (a) The time (say 10 A.M.) at which I purchased the meat;
- (b) The time (say 7 P.M.) at which I dine.

At epoche (a), the *second* Premiss is true; and the piece of meat in question possesses, at that moment, the Pair of Attributes, "bought by me in the market" and "raw."

At epoche (b), the *first* Premiss becomes true, and the second ceases to be true. That is to say, the piece of meat possesses, at that moment, the Pair of Attributes, "eaten by me at dinner" and "bought by me in the market," but it has ceased to possess the Attribute "raw".

Hence, we cannot assert that the two Premisses are true *at the same moment*. Hence there is no Conclusion.

[Professor DeMorgan (in his *Formal Logic*, p. 251/336) says that this Puzzle involves the Fallacy *a dicto simpliciter ad dictum secundum quid*, which consists, he tells us, "in inferring of the subject with an accident that which was premissed of the subject only."

Mr. J. Welton (in his *Manual of Logic*, Vol. II, p. 244/292) takes the same view, and adds that "the fallacy lies in not making clear that the 'rawness' in not regarded in the second Premiss as a relevant circumstance, and then assuming it to be relevant in the Conclusion."]

Chapter V. Solutions of Other Puzzles

§ 1. About Less This (apparently valid) Syllogism belongs to the Class "Paradoxes," since it seems to prove that 5 *is* less than 10 and more than 6.

The first thing to be said about it is that its second Premiss is mere tautology, being of the form "All *xy* are *x*." Hence, if the Conclusion follows at all, it must follow as an *Immediate Inference* from the first Premiss.

But such an Inference would involve the Fallacy of *Vox Ambigua*, since the phrase "speaks truly" is capable of *two* interpretations, viz.

- (a) Says what is wholly true;
- (b) Says what contains a truth.

With (a), the first Premiss cannot be accepted as true, unless we are assured that the speaker *says no more*.

With (b), the Inference is a valid one, and the Conclusion true.

[Professor DeMorgan (in his *Formal Logic*, p. 242/336) explains this Puzzle as follows. (He treats of another example: so, in quoting him, I have had to make some verbal alterations.) "The middle term is 'He who says that 5 is *one* among all numbers less than 10.' He speaks truth; and he, who says that 5 is less than 10 and more than 6, certainly says that 5 is *one* among all numbers less than 10. The equivocation is in the two different uses of the word 'one': in the first Premiss, it is an entirely indefinite 'one'; in the second it is a less indefinite 'one.' The 'one' is not attached to the quantity of the middle term, which is universal in the first Premiss, and particular in the second; but it is part of the middle term itself."]

§ 2. Men Tall and Numerous This involves the Fallacy of *Vox Ambigua*. The phrase "men over 5 feet high" may be taken to mean, either "*every* man over 5 feet high," or "the *Class* composed of men over 5 feet high" regarded as *one single Thing*. (See Part I, Book I, Chapter II.)

With the *first* interpretation, the Premises are not true: the Attribute “numerous” cannot be applied to an individual man.

With the *second* interpretation, the Subject of each Premiss is a *single Thing*: and what the Conclusion asserts is that one of these two single Things in *not* the other. In this case, the Syllogism is valid, and the Conclusion is true.

§ 3. The Socialist Orator and the Irish Mob At first sight, this reply might be thought to *support* the position taken by the orator: but, on further examination, it is seen to *contradict* it. The Paradox, here involved, may be logically stated as follows:

The orator’s implied assertion is that, in *every* Pair of men, *each* is *not less good* than the other: from which it may easily be proved that *every* Pair of men possesses the Attribute “*equal* in merit.”

Pat’s ready reply asserts that, in *every* Pair of men, *each* is better than the other; i. e. that *every* Pair of men possesses the Attribute “*unequal* in merit.” This not only contradicts the previous assertion, but also contradicts *itself*, since it may easily be shown to involve the assertion that *each* is at once *better*, and *worse*, than the other. But *self-contradiction*, in a Proposition, is not an Attribute that would for a moment discredit it in the Emerald Isle!

§ 4. Death at Any Moment The best explanation I can find, for this bewildering Paradox, does not altogether satisfy me; and I shall be grateful to any Reader who will suggest a better. My solution is as follows:

This is a *mathematical* Paradox. The first clause of it asserts that, at any given moment during a certain period (say the next ten years), the death of Mr. E. Drood *possibly may* occur: Now, if we take n to represent the number of moments in the period, and assume that the event is equally likely at each moment, the probability of its occurrence is $1/n$ th of certainty, and therefore is *not* (what the word “probable” usually implies) *greater than one-half* of certainty. Hence the Proposition is necessarily *false*, even if we assign to n the *minimum* possible value, viz. 2. If, however, we re-word the Proposition thus, “At any given moment, during the next period of n moments, your death *possibly may* occur, and there is a probability, amounting to $1/n$ th of certainty, that it *will* occur,” we make it logically correct. But it is to be feared that it has lost, during the corrective process, all the sparkle and humour with which it came from the pen of its ingenious author!

Book XXII. Solutions of Problems Set by Other Writers

Chapter I. Problems

The books, from which the following twenty-five Problems are quoted, are as follows:

- [A] *An Investigation of the Laws of Thought*. By George Boole, LL.D. London, 1854, Demy 8vo.
- [B] *Formal Logic*. By Augustus DeMorgan. London, 1847, Demy 8vo.
- [C] *Memoir of Augustus DeMorgan*. London, 1882, Demy 8vo.

- [D] Article, by Augustus DeMorgan, published in *Notes and Queries*, 2nd Series, Vol. IX, p. 25. London, 1860.
- [E] Articles, by W. B. Grove, B.A., published in *The Educational Times*. London, 1881.
- [F] *The Principles of Science*. By W. Stanly Jevons, M.A., F.R.S. London, 1874. Demy 8vo.
- [G] *Studies and Exercises in Formal Logic*. By John Neville Keynes, M.A., Sc.D. Second Edition, London, 1887, Crown 8vo.
- [H] The same. Third Edition, London, 1894, Demy 8vo.
- [J] *Symbolic Logic*. By John Venn, Sc.D., F.R.S. Second Edition, London, 1894. Crown 8vo.
- [K] *Studies in Logic*. By Members of the John Hopkins University. Boston, 1883, Demy 12vo.

1. [F] Vol. I, p. 77

All planets are subject to gravity;
Fixed stars are not planets.

Let a = planets; b = fixed stars; c = subject to gravity. The Reader will try in vain to produce from these Premisses, by legitimate substitution, any relation between b and c .

[Nevertheless I recommend him to try!]

2. [B] p. 124. Quoted in [H] p. 432 Every A is one only of the two B or C . Every D is both B and C , except when B is C , and then it is neither.

[The Problem is to prove that no A is D .]

3. [J] p. 342 If x that is not- a is the same as b , and a that is not- x is the same as c , what is x in terms of a , b , and c ?

4. [J] p. 340 At a certain town where an examination is held, it is known that

- (1) Every candidate is either a junior who does not take Latin, or a senior who takes Composition;
- (2) Every junior candidate takes either Latin or Composition;
- (3) Every candidate, who takes Composition, also takes Latin, and is a junior.

Show that, if this be so, there can be no candidates.

5. [F] Vol. I, p. 191 For every man in the house there is a person who is aged: some of the men are not aged.

[The Problem is to prove that some persons in the house are not men.]

6. [J] p. 336. Quoted in [H] p. 433 There is a certain Class of Things, from which A picks out all the x that are z and all the y that are not- z ; and B picks out from the remainder the z which are y and the x that are not- y . It is then found that what is left exactly comprises the Class of z that are not- x . What can be determined as to the original Class?

7. [J] p. 350. Quoted in [H] p. 437, and [K] p. 53 Given $xy = a$, $yz = c$: find xz in terms of a and c .

8. [C] p. 209

- (1) For every Z there is an X which is not Y ;
 - (2) Some Y 's are Z 's.
- Required is the inference.

9. [J] p. 345 There are four girls at school, Anna, Bertha, Cora, and Dora. It has been observed that

- (1) When Anna or Bertha (or both) stopped at home, Cora stopped at home;
- (2) When Bertha went out, Anna went out;
- (3) When Cora stopped at home, Anna stopped at home.

What information is here conveyed concerning Dora?

10. [D] p. 25 A Question in Logic. A great many persons think that without any systematic study it is in their power to see at once all the relations of Propositions to one another. With some persons this is nearer the truth than with others: with some it is all but the truth; that is, as to all such relations as frequently occur. I propose a case which does not frequently occur; and I shall be curious to see whether you receive more than one answer; for I am satisfied, by private trial, that you will not receive many.

Take the following assertions:

- (1) A master of a parent is a superior;
- (2) A servant of an inferior is not a parent;
- (3) An inferior of a child is not a master.

It is to be understood that *absolute* equality between two persons is supposed impossible; so that, any two persons being named, one of them is the superior of the other. Is either of these Propositions a consequence of another? Is either a contradiction of another? Are any two of them indifferent?

[The wording of these Propositions is a little confusing. The writer's meaning may, I think, be more clearly expressed as follows:

- (1) The master of a man's father is that man's superior;
- (2) A man-servant of a man's inferior is not that man's father;
- (3) An inferior of a man's son is not that man's master.

It is evident, from the writer's own solution of this Problem, that he does not regard these Premises as asserting the *existence* of their Subjects.]

11. [G] p. 209 "To say nothing of those who succeeded by effort, there were some who owed all to fortune, for they gained the end without any attempt whatever, if indeed it be not more correct to say that the end gained them. But for every one who was successful with or without effort, at least one could be pointed out who began, but abandoned the trial before the result was declared. And yet, so strangely is desert rewarded in this world, there was none of these

faint-hearted men but was as fortunate as any of those who used their best endeavours.”

I will answer for it that, if this were presented to any writer on Logic without warning, he would pass it over as not self-contradictory at least. But, for all that, it contains the same error as the following: “All men are animals and some are not.”

12. [J] p. 343 If every xy is zw , does it follow that the Class, in which every z is x , is the same as that in which every y is w ?

13. [G] p. 418 At a certain examination it was observed that (i) All candidates, who took Greek, took Latin also; (ii) All, who did not take Greek, took English and French, and if they took Latin, they took German also; (iii) All, who took Latin and Greek, but not English, did not take French; (iv) All, who took Latin and Greek but not French, did not take German.

Show that (1) All took either English or else both Latin and Greek; (2) All took either Latin or else both English and French; (3) All, who took French, took English also; (4) All, who took German, also took both English and French; (5) All, who did not take English, did not take either French or German, but took both Latin and Greek; (6) All, who did not take French, took Latin and Greek but not German; (7) All, who took Latin, and also either took German or did not take Greek, took English, French, and German; (8) All, who took both Greek and German, took English, Latin, and French; (9) All, who took neither Greek nor German, took English and French but not Latin; (10) Every candidate took at least two languages, and no candidate, who took only two, took German.

14. [G] p. 408 A given Class is made up of those who are not either male guardians, or female rate-payers, or lodgers who are neither guardians nor rate-payers. How can we simplify the description of this Class, if we know that all guardians are rate-payers, that every person who is not a lodger is either a guardian or a rate-payer, and that all male rate-payers are guardians?

15. [G] p. 410 If thriftlessness and poverty are inseparable, and virtue and misery are incompatible, and if thrift be a virtue, can any relation be proved to exist between misery and poverty? If moreover all thriftless people are either virtuous or not miserable, what follows?

[The writer evidently means the phrase “thrift is a virtue” to be regarded as equivalent to “all thrifty people are virtuous.”]

16. [G] p. 380, and [H] p. 413 Given that whatever is hk or ah is $b'cd$ or $a'b'd'e$ or $a'bcd'e$ or $ab'c'd'$, shew that (1) All $a'b'h$ is cd or $d'e$ or k' ; (2) All dh is $b'c$ or $a'k'$; (3) All b or cd' or $c'd$ is a' or h' ; (4) All b is c or h' or $a'k'$; (5) All cd' is a' or h' ; (6) All ab is h' ; (7) All $a'e'$, that is c' or d' , is h' or k' ; (8) All bh , that is c' or d , is $a'k'$.

17. [A] p. 146. Quoted in [H] p. 434, [J] p. 351, and [K] p. 82 Let the observation of a class of natural productions be supposed to have led to the following general results.

First, that, in whichever of these productions the properties A and C are missing, the property E is found, together with one of the properties B and D , but not with both.

Second, that, wherever the properties A and D are found, while E is missing, the properties B and C will either both be found or both be missing.

Third, that, wherever the property A is found in conjunction with either B or E or both of them, there either the property C or the property D will be found, but not both of them. And conversely, wherever the property C or D is found singly, there the property A will be found in conjunction with either B or E or both of them.

[The inference which Mr. Boole proposes, to be proved from these *Data*, are as follows:]

In whatever substances the property A is found, there will also be found either the property C , or the property D , but not both, or else the properties B , C , and D will all be missing. And conversely, wherever either the property C or the property D is found singly, or the properties B , C , and D are together missing, there the property A will be found.

Wherever the property A is absent and C is present, the property D is present.

Wherever the property B is present, either the properties A , C , and D are all absent, or else some one alone of them is absent. And conversely, wherever they are all absent, the property B is present.

Wherever the properties A and C are both present or both absent, the property D is absent.

[Mr. Venn says, in reference to the above Problem, that it is, he thinks, “the most intricate of any given by Boole.”]

18. [K] p. 52 What are the precise points of agreement and difference between two disputants, A and B , if A asserts that “space = three-way spread with points as elements,” while B asserts that “space = three-way spread,” and at the same time admits that “space has points as elements”?

19. [K] p. 53. Quoted in [H] p. 438 From the Premises, (1) ax' is not $c'(d'$ or $y')$; (2) bx is not $c'(d'$ or $y')e'$; (3) $a'b'$ is not $x'(d'$ or $e)c'$; (4) a or b or c is not $x'y'$, deduce a Proposition containing neither x nor y .

20. [A] p. 134

- (1) Virtue is either a passion or a faculty or a habit;
- (2) Passions are neither things according to which we are praised or blamed, nor things in which we exercise deliberate preference;
- (3) Faculties are not things according to which we are praised or blamed, and which are accompanied by deliberate preference;
- (4) Virtue is something according to which we are praised or blamed, and which is accompanied by deliberate preference;
- (5) Whatever art or science makes its work to be in a good state avoids extremes, and keeps the mean in view relative to human nature;
- (6) Virtue is more exact and excellent than any art or science.

[What can be inferred concerning virtue? The writer evidently regards Premisses (5) and (6) as equivalent to “Every thing human, which makes its work to be in a good state, keeps the mean in view relative to human nature“ and “Virtue makes its work to be in a good state.”]

21. [E] Feb. 1, 1881. Quoted in [H] p. 439, and [K] p. 54 The Members of a scientific Society are divided into three sections, which are denoted by a , b , c . Every Member must join one, at least, of these sections, subject to the following conditions:

- (1) Any one, who is member of a but not of b , of b but not of c , or of c but not of a , may deliver a lecture to the other members, if he has paid his subscription, but otherwise not;
- (2) Any one, who is a member of a but not of c , of c but not of a , or of b but not of a , may exhibit an experiment to the other members, if he has paid his subscription, but otherwise not;
- (3) Every Member of the Society must either deliver a lecture or exhibit an experiment every year.

Find the least possible addition to these rules which will compel every Member of the Society to pay his subscription or forfeit his Membership.

22. [E] Ap. 1, 1881. Quoted in [A] p. 237 A number of pieces of cloth, striped with different colours, were submitted to inspection, and the following two observations were made upon them:

- (1) Every piece, striped with white and green, was also striped with black and yellow; and *vice versâ*.
- (2) Every piece, striped with red and orange, was also striped with blue and yellow; and *vice versâ*.

It is required to eliminate yellow, and to express the conclusions in terms of green.

23. [K] p. 58. Quoted in [G] p. 423, and [H] p. 440 Six children, A , B , C , D , E , F , are required to obey the following rules:

- (1) On Monday and Tuesday no four can go out;
- (2) On Thursday, Friday, and Saturday, no three can stay in;
- (3) On Tuesday, Wednesday, and Saturday, if B and C are together (i. e. if both go out, or both stay in), then the other four must be together;
- (4) On Monday and Saturday, B cannot go out, unless either D stays in or A , C , and E stay in.

A and B are first to decide what they will do; and C makes his decision before the other three.

Find (1) when C must go out, (2) when he must stay in, (3) when he may do as he pleases.

24. [F] Vol. II, p. 368 Let us suppose that eight objects are presented to us, which exhibit the following combinations of the five properties a, b, c, d, e .

- | | |
|---------------|----------------|
| 1. $abcd'e$ | 5. $a'bcd'e$ |
| 2. $abc'd'e$ | 6. $a'bc'd'e'$ |
| 3. $ab'cde$ | 7. $a'b'cde$ |
| 4. $ab'c'de'$ | 8. $a'b'c'de'$ |

[The Problem is to discover certain “laws of correlation” which must be as few and as simple as possible, which shall make these combinations the *only possible ones*.]

25. [F] Vol. II, p. 369 If the reader entertains any doubt as to the difficulty of classifying combinations so as to disclose their relations, let him test the matter practically upon the following series of combinations. They involve only six properties, which are subject to four laws of correlation of no great complexity.

I shall be happy to receive the solution of this problem from any reader who thinks he has solved it.

- | | |
|---------------|-------------------|
| 1. $abcdeh$ | 7. $abc'de'h'$ |
| 2. $abcde'h$ | 8. $ab'c'd'eh'$ |
| 3. $abcde'h'$ | 9. $a'bc'deh$ |
| 4. $abcd'eh'$ | 10. $a'bc'de'h$ |
| 5. $abc'deh$ | 11. $a'bc'de'h'$ |
| 6. $abc'de'h$ | 12. $a'b'c'd'eh'$ |

[See preceding Problem.]

Part 7

Alternative Methods of Computation

Carroll developed several alternative methods of computation that in some situations are more efficient than the standard ones.

7.1 Condensation of Determinants

Source: Proceedings of the Royal Society of London, 1866/1867

being a new and brief Method for computing their arithmetical values

*By the Rev. C. L. DODGSON, M.A., Student of Christ Church, Oxford.
Communicated by the Rev. BARTHOLOMEW PRICE, M.A., F.R.S. Received
May 15, 1866.*

If it be proposed to solve a set of n simultaneous linear equations, not being all homogeneous, involving n unknowns, or to test their compatibility when all are homogeneous, by the method of determinants, in these, as well as in other cases of common occurrence, it is necessary to compute the arithmetical values of one or more determinants—such, for example, as

$$\begin{vmatrix} 1, & 3, & -2 \\ 2, & 1, & 4 \\ 3, & 5, & -1 \end{vmatrix}.$$

Now the only method, so far as I am aware, that has been hitherto employed for such a purpose, is that of multiplying each term of the first row or column by the determinant of its complemental minor, and affecting the products with the signs + and – alternately, the determinants required in the process being, in their turn, broken up in the same manner until determinants are finally arrived at sufficiently small for mental computation.

This process, in the above instance, would run thus:—

Other version:
→ 9.4, p. 1370

$$\begin{vmatrix} 1, & 3, & -2 \\ 2, & 1, & 4 \\ 3, & 5, & -1 \end{vmatrix} = 1 \times \begin{vmatrix} 1, & 4 \\ 5, & -1 \end{vmatrix} - 2 \times \begin{vmatrix} 3, & -2 \\ 5, & -1 \end{vmatrix} + 3 \times \begin{vmatrix} 3, & -2 \\ 1, & 4 \end{vmatrix} = -21 - 14 + 42 = 7.$$

But such a process, when the block consists of 16, 25, or more terms, is so tedious that the old method of elimination is much to be preferred for solving simultaneous equations; so that the new method, excepting for equations containing 2 or 3 unknowns, is practically useless.

The new method of computation, which I now proceed to explain, and for which "Condensation" appears to be an appropriate name, will be found, I believe, to be far shorter and simpler than any hitherto employed.

In the following remarks I shall use the word "Block" to denote any number of terms arranged in rows and columns, and "interior of a block" to denote the block which remains when the first and last rows and columns are erased.

The process of "Condensation" is exhibited in the following rules, in which the given block is supposed to consist of n rows and n columns:—

(1) Arrange the given block, if necessary, so that no ciphers occur in its interior. This may be done either by transposing rows or columns, or by adding to certain rows the several terms of other rows multiplied by certain multipliers.

(2) Compute the determinant of every minor consisting of $\overline{\text{four}}$ adjacent terms. These values will constitute a second block, consisting of $\overline{n-1}$ rows and $\overline{n-1}$ columns.

(3) Condense this second block in the same manner, dividing each term, when found, by the corresponding term in the interior of the first block.

(4) Repeat this process as often as may be necessary (observing that in condensing any block of the series, the r th for example, the $\overline{\text{terms}}$ so found must be divided by the corresponding terms in the interior of the $\overline{r-1}$ th block), until the block is condensed to a single term, which will be the required value.

As an instance of the foregoing rules, let us take the block

$$\begin{vmatrix} -2 & -1 & -1 & -4 \\ -1 & -2 & -1 & -6 \\ -1 & -1 & 2 & 4 \\ 2 & 1 & -3 & -8 \end{vmatrix}.$$

By rule (2) this is condensed into $\begin{vmatrix} 3 & -1 & 2 \\ -1 & -5 & 8 \\ 1 & 1 & -4 \end{vmatrix}$; this, again, by rule

(3), is condensed into $\begin{vmatrix} 8 & -2 \\ -4 & 6 \end{vmatrix}$; and this, by rule (4), into -8 , which is the required value.

The simplest method of working this rule appears to be to arrange the series of blocks one under another, as here exhibited; it will then be found very easy to pick out the divisors required in rules (3) and (4).

$$\begin{vmatrix} -2 & -1 & -1 & -4 \\ -1 & -2 & -1 & -6 \\ -1 & -1 & 2 & 4 \\ 2 & 1 & -3 & -8 \end{vmatrix}$$

$$\begin{vmatrix} 3 & -1 & 2 \\ -1 & -5 & 8 \\ 1 & 1 & -4 \end{vmatrix}$$

$$\begin{vmatrix} 8 & -2 \\ -4 & 6 \end{vmatrix}$$

−8.

This process cannot be continued when ciphers occur in the interior of any one of the blocks, since infinite values would be introduced by employing them as divisors. When they occur in the given block itself, it may be rearranged as has been already mentioned; but this cannot be done when they occur in any one of the derived blocks; in such a case the given block must be rearranged as circumstances require, and the operation commenced anew.

The best way of doing this is as follows:—

Suppose a cipher to occur in the *h*th row and *k*th column of one of the derived blocks (reckoning both row and column from the *nearest* corner of the block); find the term in the *h*th row and *k*th column of the given block (reckoning from the corresponding corner), and transpose rows or columns cyclically until it is left in an outside row or column. When the necessary alterations have been made in the derived blocks, it will be found that the cipher now occurs in an outside row or column, and therefore need no longer be used as a divisor.

The advantage of *cyclical* transposition is, that most of the terms in the new blocks will have been computed already, and need only be copied; in no case will it be necessary to compute more than *one* new row or column for each block of the series.

In the following instance it will be seen that in the first series of blocks a cipher occurs in the interior of the third. We therefore abandon the process at that point and begin again, rearranging the given block by transferring the top row to the bottom; and the cipher, when it occurs, is now found in an exterior row. It will be observed that in each block of the new series, there is only *one* new row to be computed; the other rows are simply copied from the work already done.

$$\begin{vmatrix} 2 & -1 & 2 & 1 & -3 \\ 1 & 2 & 1 & -1 & 2 \\ 1 & -1 & -2 & -1 & -1 \\ 2 & 1 & -1 & -2 & -1 \\ 1 & -2 & -1 & -1 & 2 \end{vmatrix} \begin{vmatrix} 1 & 2 & 1 & -1 & 2 \\ 1 & -1 & -2 & -1 & -1 \\ 2 & 1 & -1 & -2 & -1 \\ 1 & -2 & -1 & -1 & 2 \\ 2 & -1 & 2 & 1 & -3 \end{vmatrix}$$

$$\begin{vmatrix} 5 & -5 & -3 & -1 \\ -3 & -3 & -3 & 3 \\ 3 & 3 & 3 & -1 \\ -5 & -3 & -1 & -5 \end{vmatrix} \begin{vmatrix} -3 & -3 & -3 & 3 \\ 3 & 3 & 3 & -1 \\ -5 & -3 & -1 & -5 \\ 3 & -5 & 1 & 1 \end{vmatrix}$$

$$\begin{vmatrix} -30 & 6 & -12 \\ 0 & 0 & 6 \\ 6 & -6 & 8 \end{vmatrix} \begin{vmatrix} 0 & 0 & 6 \\ 6 & -6 & 8 \\ -17 & 8 & -4 \end{vmatrix}$$

$$\begin{vmatrix} 0 & 12 \\ 18 & 40 \end{vmatrix}$$

The fact that, whenever ciphers occur in the interior of a derived block, it is necessary to recommence the operation, may be thought a great obstacle to the use of this method; but I believe it will be found in practice that, even though this should occur several times in the course of one operation, the whole amount of labour will still be much less than that involved in the old process of computation.

I now proceed to give a proof of the validity of this process, deduced from a well-known theorem in determinants; and in doing so, I shall use the word “adjugate” in the following sense:—if there be a square block, and if a new block be formed, such that each of its terms is the determinant of the complementary minor of the corresponding term of the first block, the second block is said to be *adjugate* to the first.

The theorem referred to is the following:—

“If the determinant of a block = R , the determinant of any minor of the m th degree of the adjugate block is the product of R^{m-1} and the coefficient which, in R , multiplies the determinant of the corresponding minor.”

Let us first take a block of 9 terms,

$$\begin{vmatrix} a_{1,1} & a_{1,2} & a_{1,3} \\ a_{2,1} & a_{2,2} & a_{2,3} \\ a_{3,1} & a_{3,2} & a_{3,3} \end{vmatrix} = R;$$

and let $\alpha_{1,1}$ represent the determinant of the complementary minor of $a_{1,1}$, and so on.

If we “condense” this, by the method already given, we get the block $\begin{Bmatrix} \alpha_{3,3} & \alpha_{3,1} \\ \alpha_{1,3} & \alpha_{1,1} \end{Bmatrix}$, and, by the theorem above cited, the determinant of this, viz.

$$\begin{vmatrix} \alpha_{3,3} & \alpha_{3,1} \\ \alpha_{1,3} & \alpha_{1,1} \end{vmatrix} = R \times a_{2,2}.$$

Hence $R = \frac{\begin{vmatrix} \alpha_{3,3} & \alpha_{3,1} \\ \alpha_{1,3} & \alpha_{1,1} \end{vmatrix}}{a_{2,2}}$, which proves the rule.

Secondly, let us take a block of 16 terms:

$$\begin{vmatrix} a_{1,1} & \cdots & a_{1,4} \\ \vdots & & \vdots \\ a_{4,1} & \cdots & a_{4,4} \end{vmatrix} = R.$$

If we “condense” this, we get a block of 9 terms; let us denote it by $\begin{Bmatrix} b_{1,1} & \cdots & b_{1,3} \\ \vdots & & \vdots \\ b_{3,1} & \cdots & b_{3,3} \end{Bmatrix}$,

in which $b_{1,1} = \begin{vmatrix} a_{1,1} & a_{1,2} \\ a_{2,1} & a_{2,2} \end{vmatrix}$, &c.

If we “condense” this block again, we get a block of 4 terms, each of which, by the preceding paragraph, is the determinant of 9 terms of the original block;

that is to say, we get the block $\begin{Bmatrix} \alpha_{4,4} & \alpha_{4,1} \\ \alpha_{1,4} & \alpha_{1,1} \end{Bmatrix}$; but, by the theorem already

quoted, $\begin{vmatrix} \alpha_{4,4} & \alpha_{4,1} \\ \alpha_{1,4} & \alpha_{1,1} \end{vmatrix} = R \times b_{2,2}$; therefore $R = \frac{\begin{vmatrix} \alpha_{4,4} & \alpha_{4,1} \\ \alpha_{1,4} & \alpha_{1,1} \end{vmatrix}}{b_{2,2}}$; that is, R may be obtained by “condensing” the block $\begin{Bmatrix} \alpha_{4,4} & \alpha_{4,1} \\ \alpha_{1,4} & \alpha_{1,1} \end{Bmatrix}$.

This proves the rule for a block of 16 terms; and similar proofs might be given for larger blocks.

I shall conclude by showing how this process may be applied to the solution of simultaneous linear equations.

If we take a block consisting of n rows and $\overline{n+1}$ columns, and “condense” it, we reduce it at last to 2 terms, the first of which is the determinant of the first n columns, the other of the last n columns.

Hence, if we take the n simultaneous equations,

$$\begin{aligned} a_{1,1}x_1 + a_{1,2}x_2 + \cdots + a_{1,n}x_n + a_{1,n+1} &= 0, \\ &\dots \\ a_{n,1}x_1 + a_{n,2}x_2 + \cdots + a_{n,n}x_n + a_{n,n+1} &= 0; \end{aligned}$$

and if we condense the whole block of coefficients and constants, viz.

$$\begin{Bmatrix} a_{1,1} & \cdots & a_{1,n+1} \\ \vdots & & \vdots \\ a_{n,1} & \cdots & a_{n,n+1} \end{Bmatrix},$$

we reduce it at last to 2 terms: let us denote them by S , T , so that $S =$

$$\begin{vmatrix} a_{1,1} & \cdots & a_{1,n} \\ \vdots & & \vdots \\ a_{n,1} & \cdots & a_{n,n} \end{vmatrix}, \text{ and } T = \begin{vmatrix} a_{1,2} & \cdots & a_{1,n+1} \\ \vdots & & \vdots \\ a_{n,2} & \cdots & a_{n,n+1} \end{vmatrix}.$$

Now we know that $x_1 = (-)^n \frac{T}{S}$, which may be written in the form $(-)^n S \cdot x_1 = T$.

Hence the 2 terms obtained by the process of condensation may be converted into an equation for x_1 , by multiplying the first of them by x_1 , affected with + or −, according as n is even or odd. The latter part of the rule may be simply expressed thus:—“place the signs + and − alternately over the several columns, beginning with the last, and the sign which occurs over the column containing x_1 is the sign with which x_1 is to be affected.”

When the value of x_1 has been thus found, it may be substituted in the first $\overline{n-1}$ equations, and the same operation repeated on the new block, which will now consist of $\overline{n-1}$ rows and n columns. But in calculating the second series of blocks, it will be found that most of the work has been already done; in fact, of the 2 determinants required in the new block, one has been already computed correctly, and the other so nearly so that it only requires the *last* column in each of the derived blocks to be corrected.

In the example given opposite, after writing + and − alternately over the columns, beginning with the last, we first condense the whole block, and thus obtain the 2 terms 36 and −72. Observing that the x -column has the sign −

placed over it, we multiply the 36 by $-x$, and so form the equation $-36x = -72$, which gives $x = 2$.

Hence the x -terms in the first four equations become respectively 2, 2, 4, and 2; adding these values to the constant terms in the same equations, we obtain a

block of which we need only write down the last two columns, viz.
$$\begin{vmatrix} 2 & 4 \\ -1 & -2 \\ -1 & -2 \\ 2 & 6 \end{vmatrix}.$$

We then condense these into the column $\begin{vmatrix} 0 \\ 0 \\ 2 \end{vmatrix}$, and, supplying from the

second block of the first series the column $\begin{vmatrix} 3 \\ -1 \\ -5 \end{vmatrix}$, we obtain $\begin{vmatrix} 3 & 0 \\ -1 & 0 \\ -5 & 2 \end{vmatrix}$ as the

last two columns of the *second* block of the new series; and proceeding thus we ultimately obtain the two terms 12, 12. Observing that the y -column has the sign + placed over it, we multiply the first 12 by $+y$, and so form the equation $12y = 12$, which gives $y = 1$. The values of z , u , and v are similarly found.

It will be seen that when once the given block has been successfully condensed, and the value of the first unknown obtained, there is no further danger of the operation being interrupted by the occurrence of ciphers.

$$\begin{array}{rcccccc} - & & + & & - & & + & & - & & + \\ x & + & 2y & + & z & - & u & + & 2v & +2 & = 0 \\ x & - & y & - & 2z & - & u & - & v & -4 & = 0 \\ 2x & + & y & - & z & - & 2u & - & v & -6 & = 0 \\ x & - & 2y & - & z & - & u & + & 2v & +4 & = 0 \\ 2x & - & y & + & 2z & + & u & - & 3v & -8 & = 0 \end{array}$$

$$\begin{vmatrix} 1 & 2 & 1 & -1 & 2 & 2 \\ 1 & -1 & -2 & -1 & -1 & -4 \\ 2 & 1 & -1 & -2 & -1 & -6 \\ 1 & -2 & -1 & -1 & 2 & 4 \\ 2 & -1 & 2 & 1 & -3 & -8 \end{vmatrix} \begin{vmatrix} 2 & 4 \\ -1 & -2 \\ -1 & -2 \\ 2 & 6 \end{vmatrix} \begin{vmatrix} 2 & 6 \\ -1 & -3 \\ -1 & -1 \end{vmatrix} \begin{vmatrix} 2 & 5 \\ -1 & -1 \end{vmatrix} \begin{vmatrix} 2 & 4 \end{vmatrix} \therefore -2v = 4 \dots v = -2$$

$$\begin{vmatrix} -3 & -3 & -3 & 3 & -6 \\ 3 & 3 & 3 & -1 & 2 \\ -5 & -3 & -1 & -5 & 8 \\ 3 & -5 & 1 & 1 & -4 \end{vmatrix} \begin{vmatrix} 3 & 0 \\ -1 & 0 \\ -5 & -2 \end{vmatrix} \begin{vmatrix} 3 & 0 \\ -1 & -2 \end{vmatrix} \begin{vmatrix} 3 & 3 \end{vmatrix} \therefore 3u = 3 \dots u = 1$$

$$\begin{vmatrix} 0 & 0 & 6 & 0 \\ 6 & -6 & 8 & -2 \\ -17 & 8 & -4 & 6 \end{vmatrix} \begin{vmatrix} 6 & 0 \\ 8 & -2 \end{vmatrix} \begin{vmatrix} 6 & 6 \end{vmatrix} \therefore -6z = 6 \dots z = -1$$

$$\begin{vmatrix} 0 & 12 & 12 \\ 18 & 40 & -8 \end{vmatrix} \begin{vmatrix} 12 & 12 \end{vmatrix} \therefore 12y = 12 \dots y = 1$$

$$\begin{vmatrix} 36 & -72 \end{vmatrix} \therefore -36x = -72 \dots x = 2$$

$$\begin{array}{rccccrcr}
& - & & + & & - & & + \\
5x & + & 2y & - & 3z & +3 & = & 0 \\
3x & - & y & - & 2z & +7 & = & 0 \\
2x & + & 3y & + & z & -12 & = & 0
\end{array}$$

$$\left| \begin{array}{cccc} 5 & 2 & -3 & 3 \\ 3 & -1 & -2 & 7 \\ 2 & 3 & 1 & -12 \end{array} \right| \quad \left| \begin{array}{cc} -3 & 8 \\ -2 & 10 \end{array} \right| \quad | -3 \quad 12 | \quad \therefore 3z = 12 \dots z = 4$$

$$\left| \begin{array}{ccc} -11 & -7 & -15 \\ 11 & 5 & 17 \end{array} \right| \quad | -7 \quad -14 | \quad \therefore -7y = -14 \dots y = 2$$

$$| -22 \quad 22 | \quad \therefore 22x = 22 \dots x = 1$$

The Society then adjourned over the Whitsuntide Recess to Thursday, May 31.

7.2 Practical Hints on Teaching

Source: The Educational Times, November 1879

Other version:
→ 7.6, p. 1239

Long Multiplication Worked with a Single Line of Figures

To the Editor of the Educational Times

Sir,—If the following brief method of working Long Multiplication should prove to be new, I hope you may think it worth publishing:—

Suppose we wish to multiply 56248 by 3726. We set the sum in the usual way, thus:—

$$\begin{array}{r} 56248 \\ 3726 \\ \hline \end{array}$$

We then write out the upper line, *backwards*, on the lower edge of a separate slip of paper, placing a mark over the unit-digit, as a guide to the eye: with this slip we cover the upper line of the given sum, bringing the marked digit over the unit of the lower line, thus:—

$$\begin{array}{r} \bar{8}4265 \\ 3726 \\ \hline \end{array}$$

We then take the product of the digits which are in the same vertical line (viz., 8, 6); this gives us 48; we write the unit of this (viz., 8) vertically under the scored digit, and “carry” the 4, thus:—

$$\begin{array}{r} \bar{8}4265 \\ 3726 \\ \hline 8 \\ 4 \end{array}$$

We then shift the slip one place to the left, thus:—

$$\begin{array}{r} \bar{8}4265 \\ 3726 \\ \hline 8 \\ 4 \end{array}$$

We then add together the carried digit and the products of the digits which are in the same vertical lines, and write the result as before. The mental process being, “4 + 24 = 28, +16 = 44; set down 4 and carry 4.”

$$\begin{array}{r} \bar{8}4265 \\ 3726 \\ \hline 48 \\ 4 \end{array}$$

We then shift the slip again, and proceed as before; the mental process being, “4 + 12 = 16; +8 = 24; +56 = 80; set down 0 and carry 8.”

$$\begin{array}{r} \bar{8}4265 \\ 3726 \\ \hline 048 \\ 4 \end{array}$$

1227

We then shift the slip again, and so on; the last step being reached when the sum stands thus, with 5 to carry:—

$$\begin{array}{r} \bar{8}4265 \\ 3726 \\ \hline 9580048 \end{array}$$

Hence the mental process of the last step is, “5 + 15 = 20; set it down.” We then remove the slip, and the result appears thus:—

$$\begin{array}{r} 56248 \\ 3726 \\ \hline 209580048 \end{array}$$

A similar method will serve for multiplying decimals: all we have to remember is, to bring the marked digit of the slip vertically over whatever decimal place we wish to carry the working to. For example, if we wish to multiply together .63624 and .25873; and if, in order to have the answer correct to 3 places, we wish to carry the working to 4 places, we set the sum thus:—

$$\begin{array}{r} 0.63624 \\ 0.25873 \\ \hline \end{array}$$

We then write 426360 on a separate slip of paper, and place it so that its marked digit comes vertically over the 4th decimal place in the answer, thus:—

$$\begin{array}{r} 42\ 636\bar{0} \\ 0.25873 \\ \hline \end{array}$$

The mental process of the first step will be “0 + 48 = 48; + 15 = 63; + 12 = 75; set down 5 and carry 7.”

$$\begin{array}{r} 42\ 636\bar{0} \\ 0.25873 \\ \hline 5 \end{array}$$

We then shift the slip to the left and proceed as before, the last step being reached when the sum stands thus, with 1 to carry:—

$$\begin{array}{r} 42636\bar{0} \\ 0.25873 \\ \hline 635 \end{array}$$

Hence the mental process of the last step is “1 + 0 = 1; set it down.” We then remove the slip, and the result appears thus:—

$$\begin{array}{r} 0.63624 \\ 0.25873 \\ \hline .1635 \end{array}$$

Hence the answer, correct to 3 places, will be .164. This method seems to me not only to save space and time, but also to avoid the risk of mistakes involved in writing all the intermediate lines of figures required in the old method, as well as the constant risk of losing one’s place while carrying the eye obliquely from one figure to another figure several rows above it.

Your obedient servant,

*Charles L. Dodgson,
Senior Student and Mathematical Lecturer of Christ Church, Oxford.*

7.3 Divisibility by Seven

Source: Knowledge, July 4, 1884

[1324]—Mr. Askew, in 1274, May 30, asks for a proof of a method for ascertaining the divisibility of a number by 7, which he states to have been discovered by Mr. Rickard, of Birmingham. Probably many have discovered it: my father did, for one, and taught it to me some thirty years ago. The test-number is equally useful for 7, 11, and 13. The method, as worked by my father, gives, in the case of a number divisible by all three factors, the other factor as well, without further labour: and in this respect it has an advantage over that of Mr. Rickard.

If a number, N , be marked off from the right-hand end in periods of three digits; and if $a, b, c, \&c.$, be the periods; and if M be the difference between the sums of the alternate periods; we have, writing r for 1000,

$$N = a + br + cr^2 + dr^3 + \&c.$$

$$M = a - b + c - d + \&c.$$

$$\therefore N - M = b(r + 1) + c(r^2 - 1) + d(r^3 + 1) + \&c.$$

and is divisible by $(r + 1)$; hence, if M be divisible by $(r + 1)$ or any factor of it, so also is N . And in this case $r + 1 = 1001 = 7 \times 11 \times 13$.

$$\begin{array}{r|l|l|l} 8 & 026 & 518 & 423 \\ \hline 931 & 095 & 423 & \\ \hline 924 & & & \end{array}$$

My father's rule was to set the right-hand period under the next, and subtract, setting the remainder under the next, and so on. In the last period, the subtraction is *downwards*

if the lower number be the larger. In this instance, since we have 1 to carry into the last period, the 931 must be read as 932. The ultimate remainder, 924, is the test-number; and, since this is divisible by 7 and 11, so also is the whole number.

If the test-number chanced to be zero, the second line would be the quotient produced by dividing the given number by 1001; *i. e.*, it is the factor remaining after dividing out 7, 11, and 13. For let us call the second line " V ;" writing three ciphers at the end, we get $1000V$; and we know that, if this be deducted from the upper line, the remainder = V . Hence $N = 1001V = 7 \times 11 \times 13 \times V$. In the above example, if the left-hand period were 932 instead of 8, the test-number would be zero.

$$\begin{array}{r} 6\ 4\ 3\ 7\ 2\ 5\ 8\ 3 \\ 0\ 5\ 8\ 5\ 2\ 0\ 5\ 3 \end{array}$$

If the periods be *single* digits, *i. e.*, if $r = 10$, we get a test for divisibility by 11, and at the same time the quotient after dividing out 11. The rule is to set

the last digit under the next, and subtract, setting the remainder under the next, and so on. In this instance the test-number = 0; hence the given number = 11×5852053 .

With periods of two digits, we get a test for divisibility by 101; and so for four or more digits.

*C. L. Dodgson.
Ch. Ch., Oxford.*

P.S.—The sum of *all* the periods gives us, for periods of 1, 2, 3, &c., digits, a test for divisibility by 9, 99, 999 (= 27×37), &c., or for any factors of these numbers. This method may also be worked by a rule analogous to that given above; *e. g.*, to test for 999, mark off in periods of three, write 000 over the

right-hand period, and subtract, writing the remainder over the next, and so on. Hence, also, if the test-number chanced to be zero, the upper line (omitting the 000) would be the quotient produced by dividing the given number by 999.

Probably similar rules may be made for most primes. I have myself made fairly simple rules for 17 and for 19; but such processes are rather curious than useful.

7.4 Brief Method of Dividing a Given Number by 9 or 11

Source: Nature, October 14, 1897

Other version:
→ 7.6, p. 1243

I shall be grateful if you will allow me to communicate, through your columns, to mathematicians generally, but specially to those engaged in teaching arithmetic, two new rules, which effect such a saving of time and trouble that I think they ought to be regularly taught in schools.

Years ago I had discovered the curious fact that, if you put a “0” over the unit-digit of a given number, which happens to be a multiple of 9, and subtract all along, always putting the remainder over the next digit, the final subtraction gives remainder “0,” and the upper line, omitting its final “0,” is the “9-quotient” of the given Number (*i. e.*, the quotient produced by dividing it by 9).

Having discovered this, I was at once led, by analogy, to the discovery that, if you put a “0” *under* the unit-digit of a given number, which happens to be a multiple of 11, and proceed in the same way, you get an analogous result.

In each case I obtained the quotient of a division-sum by the shorter and simpler process of *subtraction*: but, as this result was only obtainable in the (comparatively rare) case of the given number being an exact multiple of 9, or of 11, the discovery seemed to be more curious than useful.

Lately, it occurred to me to examine cases where the given number was *not* an exact multiple. I found that, in these cases, the final subtraction yielded a number which was sometimes the actual remainder produced by division, and which always gave materials from which that remainder could be found. But, as it did not yield the quotient (or only by a very “bizarre” process, which was decidedly longer and harder than actual division), the discovery still seemed to be of no practical use.

But, quite lately, it occurred to me to try what would happen if, after discovering the remainder, I were to put it, instead of a “0,” over or under the unit-digit, and then subtract as before. And I was charmed to find that the old result followed: the final subtraction yielded remainder “0,” and the new line, omitting its unit-digit, was the required quotient.

Now there are shorter processes, for obtaining the 9-remainder or the 11-remainder of a given number, than my subtraction-rule (the process for finding the 11-remainder is another discovery of mine). Adopting these, I brought my rule to completion on September 28, 1897 (I record the exact date, as it is pleasant to be the discoverer of a new and, as I hope, a practically useful, truth).

(1) Rule for finding the quotient and remainder produced by dividing a given number by 9.

To find the 9-remainder, sum the digits: then sum the digits of the result: and so on, till you get a single digit. If this be less than 9, it is the required remainder: if it be 9, the required remainder is 0.

To find the 9-quotient, draw a line under the given number, and put its 9-remainder under its unit-digit: then subtract downwards, putting the remainder under the next digit, and so on. If the left-hand end-digit of the given number be less than 9, its subtraction ought to give remainder “0”: if it be 9, it ought

to give remainder "1," to be put in the lower line, and "1" to be carried, whose subtraction will give remainder "0." Now mark off the 9-remainder at the right-hand end of the lower line, and the rest of it will be the 9-quotient.

Examples. $\begin{array}{r} 9/75309\ 6 \\ \underline{83677/3} \end{array}$, $\begin{array}{r} 9/94613\ 8 \\ \underline{105126/4} \end{array}$, $\begin{array}{r} 9/58317\ 3 \\ \underline{64797/0} \end{array}$.

(2) Rule for finding the quotient and remainder produced by dividing a given number by 11.

To find the 11-remainder, begin at the unit-end, and sum the 1st, 3rd, &c., digits, and also the 2nd, 4th, &c., digits; and find the 11-remainder of the difference of these sums. If the former sum be the greater, the required remainder is the number so found: if the former sum be the lesser, it is the difference between this number and 11: if the sums be equal, it is "0."

To find the 11-quotient, draw a line under the given number and put its 11-remainder under its unit-digit: then subtract, putting the remainder under the next digit, and so on. The final subtraction ought to give remainder "0." Now mark off the 11-remainder at the right-hand end of the lower line, and the rest of it will be the 11-quotient.

Examples. $\begin{array}{r} 11/73210\ 8 \\ \underline{66555/3} \end{array}$, $\begin{array}{r} 11/85347\ 1 \\ \underline{77588/3} \end{array}$, $\begin{array}{r} 11/59426\ 3 \\ \underline{54023/10} \end{array}$, $\begin{array}{r} 11/47568\ 4 \\ \underline{43244/0} \end{array}$.

These new rules have yet another advantage over the rule of actual division, viz. that the final subtraction supplies a *test* of the correctness of the result: if it does not give remainder "0," the sum has been done wrong: if it does, then either it has been done right, or there have been *two* mistakes—a rare event.

Mathematicians will not need to be told that rules, analogous to the above, will necessarily hold good for the divisors 99, 101, 999, 1001, &c. The only modification needed would be to mark off the given number in periods of 2 or more digits, and to treat each period in the same way as the above rules have treated single digits. Here, for example, is the whole of the working needed for dividing a given number of 17 digits by 999 and by 10001:—

$$\begin{array}{r} 999/75410836428139\ 214 \\ \underline{75486322750890/104} \end{array}$$

$$\begin{array}{r} 1001/75410836428139\ 214 \\ \underline{75335500927212/2} \end{array}$$

But such divisors are not in common use: and, for the purposes of school-teaching, it would not be worth while to go beyond the rules for division by 9 and 11.

Charles L. Dodgson.
Ch. Ch., Oxford.

7.5 Abridged Long Division

Source: Nature, January 20, 1898

Other version:
→ 7.6, p. 1245

A Brief Method of dividing a given Number by a Divisor of the Form $(h \cdot 10^n \pm k)$, where at least one of the two numbers, h and k , is greater than 1.

My former paper on this subject, which appeared in NATURE for October 14, 1897, dealt only with the case where $h = 1$ and $k = 1$. It elicited, from other correspondents of NATURE, several interesting letters, which the editor kindly allowed me to see. One, from Mr. Alfred Sang, quotes Mons. L. Richard's "Sténarithmie," as containing my Rule for dividing by 11. Mons. Richard's book, which I had not previously met with, does certainly contain the rule, but the author has failed to see that the test, which this Method furnishes, for the correctness of the working, is absolutely *definite*. He says "La dernière différence, ou cette différence augmontée de 1, égalera le chiffre de gauche du nombre proposé." So ambiguous a test as this would of course be useless. But the "difference" he is speaking of is really the *last but one*: the very *last* will always (as I stated in my former paper) be equal to zero. Another correspondent, Mr. Otto Sonne, says that my Rules, both for 9 and for 11, are to be found in a school-book, by a Mr. Adolph Steen, which was published at Copenhagen in 1847. So I fear I must reduce my claim, from that of being the first to discover them, to that of being the first to publish them in English.

The Method, now to be described, is applicable to three distinct cases:—

- (1) where $h > 1$, $k = 1$;
- (2) where $h = 1$, $k > 1$;
- (3) where $h > 1$, $k > 1$.

With certain limitations of the values of h , k , and n , this Method will be found to be a shorter and safer process than that of ordinary Long Division. These limitations are that neither h nor k should exceed 12, and that, when $k > 1$, n should not be less than 3; outside these limits, it involves difficulties which make the ordinary process preferable.

In this Method, two distinct processes are required—one, for dealing with cases where $h > 1$, the other, for cases where $k > 1$. The former of these processes was, I believe, first discovered by myself, the latter by my nephew, Mr. Bertram J. Collingwood, who communicated to me his Method of dealing with Divisors of the form $(10^n - k)$.

In what follows, I shall represent 10 by t .

Mr. Collingwood's Method, for Divisors of the form $(t^n - k)$, may be enunciated as follows:—

"To divide a given Number by $(t^n - k)$, mark off from it a period of n digits, at the units-end, and under it write k -times what would be left of it if its last period were erased. If this number contains more than n digits, treat it in the same way; and so on, till a number is reached which does not contain more than n digits. Then add up. If the last period of the result, *plus* k -times whatever was carried out of it, in the adding-up, be less than the Divisor, it is the required Remainder; and the rest of the result is the required Quotient. If it be not less,

find what number of times it contains the Divisor, and add that number to the Quotient, and subtract that multiple of the Divisor from the Remainder.”

For example, to divide 86781592485703152764092 by 9993 (*i. e.*, by $t^4 - 7$), he would proceed thus:—

9993	867 8159 2485 7031 5276	4092
	6074 7114 7399 9220	6932
	4 2522 9803 1799	4540
	29 7660 8622	2593
	208 3626	0354
	1458	5382
	1	0206
		7

Quot. $\overline{868\ 4238\ 2153\ 2104\ 0004} \overline{||4106} + 14 = 4120$ Rem.

The new Method will be best explained by beginning with case (3): it will be easily seen what changes have to be made in it when dealing with cases (1) and (2).

The Rule for case (3), when the sign is “-,” may be enunciated thus:—

Mark off the Dividend, beginning at its units-end, in periods of n digits. If there be an overplus, at the left-hand end, less than h , do not mark it off, but reckon it and the next n digits as one period.

To set the sum, write the Divisor, followed by a double vertical; then the Dividend, divided into its periods by single verticals, with width allowed in each space for $(n + 2)$ digits. Below the Dividend draw a single line, and, further down, a double one, leaving a space between, in which to enter the Quotient, having its units-digit below that of the last period but one of the Dividend, and also the Remainder, having its units-digit below that of the last period of the Dividend. In this space, and in the space below the double line, draw verticals, corresponding to those in the Dividend; and make the last in the upper space double, to separate the Quotient from the Remainder.

For example, if we had to divide 5984407103826 by 6997 (*i. e.*, $7.t^3 - 3$), the sum, as set for working, would stand thus:—

6997	||	5984	407	103	826	
Quot.						Rem.

To work the sum, divide the 1st period by h : enter its quotient in the 1st Column below the double line, and place its Remainder above the 2nd period, where it is to be regarded as *prefixed* to that period. To the 2nd period, with its prefix, add k -times the number in the 1st Column, and enter the result at the top of the 2nd Column. If this number *is not* less than the Divisor, find what number of times it contains the Divisor, and enter that number in the 1st Column, and k -times it in the 2nd; and then draw a line below the 2nd Column, and add in this new item, deducting from the result t^n -times the number just entered in the 1st Column; and then add up the 1st Column, entering the result in the Quotient. If the number at the top of the 2nd Column *is* less than the Divisor, the number in the 1st Column may be at once entered in the Quotient. The number entered in the Quotient, and the number at the foot of the 2nd Column, are the Quotient and Remainder that would result if the Dividend ended with its 2nd period. Now take the number at the foot of the 2nd Column

as a new 1st period, and the 3rd period as a new 2nd period, and proceed as before.

The above example, worked according to this Rule, would stand thus:—

		6	5	3	
6997||	5984	407	103	826	
Quot.	855	281	849	6373	Rem.
	854	8969	5946		
	1	3	849		
		1972			
		281			

the Mental Process being as follows:—

Divide the 5984 by 7, entering its Quotient, 854, in the 1st Column, and placing its Remainder, 6, above the 2nd period. Then add, to the 6407, 3-times the 854, entering the result in the 2nd Column, thus: “7 and 12, 19.” Enter the 9, and carry the 1. “1 and 15, 16.” Enter the 6, and carry the 1. “5 and 24, 29.” Enter the 9, and carry the 2, which, added to the prefix 6, makes 8, which also you enter. Observing that this 8969 *is not* less than the Divisor, and that it contains the Divisor *once*, enter 1 in the 1st Column, and 3-times 1 in the 2nd, and then draw a line below, and add in this new item, remembering to deduct from the result 7-times t^3 , *i. e.*, 7000: the result is 1972. Then add up the 1st Column, as far as the double line, and enter the result, 855, in the Quotient. Now take the 1972 as a new 1st period, and the 3rd period, 103, as a new 2nd period, and proceed as before.

The Rule for case (3), when the sign is “+,” may be deduced from the above Rule by simply changing the sign of k . This will, however, introduce a new phenomenon, which must be provided for by the following additional clause:—

When you add, to the 2nd period with its prefix, $(-k)$ -times the number in the 1st Column, *i. e.*, when you *subtract* k -times this number *from* the 2nd period with its prefix, it will sometimes happen that the subtrahend exceeds the minuend. In this case the subtraction will end with a *minus* digit, which may be indicated by an asterisk. Now find what number of Divisors must be added to the 2nd Column to cancel this *minus* digit, and enter that number, marked with an asterisk, in the 1st Column, and that multiple of the Divisor in the 2nd; and then draw a line below the 2nd Column, and add in this new item.

As an example, let us take a new Dividend, but retain the previous Divisor, changing the sign of k , so that it will become 7003 (*i. e.*, $7.t^3 + 3$). The sum, as set for working, would stand thus:—

7003||	6504	318	972	526	
Quot.					Rem.

After working, it would stand thus:—

		1	4	5	
7003||	6504	318	972	526	
Quot.	928	790	371	4413	Rem.
	929	2*531	2602		
		1*	7 003	371	
			5 534		
			790		

the Mental Process being as follows:—

Divide the 6504 by 7, and enter the Quotient, 929, in the 1st Column, and the Remainder, 1, above the 2nd period. Then subtract, from the 1318, 3-times the 929, entering the result in the 2nd Column, thus: “27 from 8 I ca’n’t, but 27 from 28, 1.” Enter the 1, and carry the borrowed 2. “8 from 1 I ca’n’t, but 8 from 11, 3.” Enter the 3, and carry the borrowed 1. “28 from 3 I ca’n’t, but 28 from 33, 5.” Enter the 5, and carry the borrowed 3. “3 from 1, *minus 2*.” Enter it, with an asterisk. Observing that, to cancel this *minus 2*, it will suffice to add *once* the Divisor, enter a (-1) in the 1st Column, and 7003 in the 2nd; and then draw a line below the 2nd Column, and add in this new item: the result is 5534. Then add up the 1st Column, and enter the result, 928, in the Quotient. Now take the 5534 as a new 1st period, and the third period, 972, as a new 2nd period, and proceed as before.

The Rules for case $\sphericalangle(1)^1$ may be derived, from the above, by making $k = 1$; and those for case $\sphericalangle(2)^2$ by making $h = 1$. I will give worked examples of these; but it will not be necessary to give the Mental Processes.

By making $k = 1$, we get Divisors of the form $(h \cdot t^n \pm 1)$: let us take $(11t^4 - 1)$ and $(6t^5 + 1)$

		9	10	4	
109999||	107523	8168	9662	0985	
Quot.	9774	9813	0861	41846	Rem.
	9774	107942	119474		
		9812	1		
		1	9475		
			861		

		3	3	
600001||	7239	51798	2 6004	13825
Quot.	1206	58431	9 4595	219230
		350592	4*7572	
		58432	60 0001	
		1*	56 7573	
			9 4595	

In this last example there is no need to enter the Quotient, produced by dividing the 7239 by 7, in the 1st Column: we easily foresee that the number at the top of the 2nd Column *will be* less than the Divisor, so that there will be no new item in the 1st: hence we at once enter the 1206 in the Quotient.

¹mistakenly (2)

²mistakenly (3)

By making $h = 1$, we get Divisors of the form $(t^n \pm k)$: let us take $(t^4 - 7)$ and $(t^5 + 12)$.

9993||	867	8159	2485	7031	5276	4092	
Quot.	868	4238	2153	2104	0004	4120	Rem.
	867	14228	32130	22088	19990		
	1	7	21	14	14		
		4235	2151	2102	4		
		3	2	2			

100012||	7185	6 2039	10327	53118
	7184	7 5822	00463	47562
	7185	3*5819	9*00355	
	1*	10 0012	9 00108	
		7 5831	463	
		9*		

The first of these two sums is the one I gave to illustrate Mr. Collingwood's Method of working with Divisors of the the form $(t^n - k)$.

It may interest the reader to see the 3 Methods of working the above example—ordinary Division, Mr. Collingwood's Method, and my version of it—compared as to the amount of labour which each entails in the working:—

	Ordinary Division.	Mr. C's Method.	My version of it.
Digits written:	202	82	44
Additions, or Subtractions:	204	97	25
Multiplications:	0	70	22

I am assuming that any one, working this example by ordinary Division, would begin by making a table of Multiples of 9993 for reference: so that he would have *no* Multiplications to do. Still, the great number of digits he would have to write, and of Additions and Subtractions he would have to do, involving a far greater risk of error than either of the other Methods, would quite outweigh this advantage.

By whatever process a Question in Long Division has been worked, it is very desirable to be able to test, easily and quickly, the correctness of the Answer. The ordinary test is to multiply together the Divisor and Quotient, add the Remainder, and observe whether these together make up the given Number, as they ought to do.

Thus, if N be the given Number, D the given Divisor, Q the Quotient, and R the Remainder, we ought to have

$$N = D \cdot Q + R.$$

This test is specially easy to apply, when $D = (h \cdot t^n \pm k)$, for then we ought to have

$$\begin{aligned} N &= (h \cdot t^n \pm k) \cdot Q + R; \\ &= (h \cdot Q \cdot t^n + R) \pm kQ. \end{aligned}$$

Now $hQ \cdot t^n$ may be found by multiplying Q by h , and tacking on n ciphers. Hence $(hQ \cdot t^n + R)$ may be found by making R occupy the place of the n

ciphers. If R contains less than n digits it must have ciphers prefixed; if more, the overplus must be carried on into the next period, and added to hQ .

Having found our "Test," viz. $(hQ \cdot t^n + R)$, we can write it on a separate slip of paper, and place it below the working of the example, so as to come vertically below N , which is at the top. When the sign in D is '-', we must add kQ to N , and see if the result = T ; when it is '+,' we must add kQ to T , and see if the result = N .

Now it has been already pointed out that when, in the new Method, the 1st and 2nd Columns have been worked, the 1st period of the Quotient and the number at the foot of the 2nd Column are the Quotient and Remainder that would result if the Dividend ended with its 2nd period. Hence the Test can be at once applied, before dealing with the 3rd Column. This constitutes a very important new feature in my version of Mr. Collingwood's Method. Every two adjacent Columns contain a separate Division-sum, which can be tested *by itself*. Hence, in working my Method, as soon as I have entered the 1st period of the Quotient, I can test it, and, if I have made any mistake, I can correct it. But the hapless computator, who has spent, say, an hour in working some gigantic sum in Long Division—whether by the ordinary process or by Mr. Collingwood's Method—and who has chanced to get a figure wrong at the very outset, which makes every subsequent figure wrong, has no warning of the fatal error till he has worked out the whole thing "to the bitter end," and has begun to test his Answer. Whereas, if working by *my* Method, he would have been warned of his mistake almost as soon as he made it, and would have been able to set it right before going any further.

As an aid to the Reader, I will give the Mental Process in full, for the 2nd and 3rd Columns of the first of the examples worked above.

The Divisor is 6997 (where $h = 7, k = 3$). Here you are supposed to have just entered the 281 in the Quotient. The Dividend, for these 2 columns, is 1972 | 103; the Quotient is 281, and the Remainder 5946. The Test is $hQ \cdot t^n + R$ (*i. e.*, $7 \times 281000 + 5946$), the Mental Process being as follows. You write, on a separate slip of paper, the last 3 digits of R , viz., 946, and carry the 5 into the next period, adding it to the 7×281 : thus, "5 and 7, 12." Enter the 2, and carry the 1. "1 and 56, 57." Enter the 7, and carry the 5. "5 and 14, 19." Enter it. Having got your Test, try whether $(N + kQ)$ is equal to it. This you compute, comparing it with your Test, digit by digit, as you go on, thus, "3 and 3, 6." Observe it in the Test. "0 and 24, 24." Observe the 4, and carry the 2. "3 and 6, 9." Observe it. "1972 and 0, 1972." Observe it. The Test is satisfied.

	6	5
	407	103
	281	
	8969	5946
	3	
	1972	
	281	
Test	1972	946

For Divisors of the form $(t^n \pm k)$ there is no need to write out the Test: the numbers, which compose it, already occur in the working, and may be used as they stand.

Charles L. Dodgson.
Ch. Ch., Oxford, December 21, 1897.

7.6 Curiosa Mathematica. Part III

Book II. Brief Methods of Performing Some Processes in Arithmetic.

Source: unpublished proof written 1897

Chapter I. Long Multiplication

Other version:

→ 7.2, p. 1227

The principle of this Method occurred to me on the 19th of September, 1879. I had been thinking of the great inconvenience arising, in the ordinary process of Long Multiplication, from the distance which often separates the two digits that are to be multiplied together, and what an advantage it would be if the sum could be so arranged that they should be close together. Then came the lucky thought that, by writing the lesser Number *backwards*, and moving it along above the other Number, we should have, at each stage of its progress, visible all at once, the set of pairs of digits, whose products have to be added together to make one column of working in the ordinary way.

The Method, which I evolved from this idea, may be enunciated as follows:—

Write down the 2 given Numbers, placing the lesser, if they are of unequal lengths, above the other, and bringing their units-digits into a vertical line. Draw a line below. On a separate slip of paper write the upper Number *backwards*, putting a mark over the units-digit. With this slip cover up the upper given Number, bringing the two units-digits into a vertical line. Looking at this pair of digits, write the units-digit of their product just below the line and vertically below the mark, and its tens-digit further down and one place to the left. Shift the slips one place to the left. Looking at the 2 pairs of digits, which now stand in vertical lines, sum their products, beginning with the right-hand pair, and write the units-digit of the result just below the line and vertically below the mark, and its tens-digit further down and one place to the left. Shift the slip again, and proceed as before.

An example will make this clear. Let the given Numbers be 574, 3819. Write them as here shown, drawing a line below, and write the 574, backwards, on a separate slip, with a mark above the 4.

$$\begin{array}{r} \boxed{475} \\ 574 \\ 3819 \\ \hline \end{array}$$

With this slip cover the upper Number, so that the mark stands vertically above the units-digit of the lower Number.

$$\begin{array}{r} \boxed{475} \\ 3819 \\ \hline \end{array}$$

Looking at the pair of digits, which stand in a vertical line, say “36,” and write the 6 just below the line and vertically below the mark, and the 3 further down and one place to the left.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 6 \\
 3
 \end{array}$$

Shift the slip one place to the left.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 6 \\
 3
 \end{array}$$

Looking at the 2 vertical pairs of digits, say "63 and 4, 67." Enter it.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 76 \\
 63
 \end{array}$$

Shift the slip one place to the left.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 76 \\
 63
 \end{array}$$

Looking at the 3 vertical pairs of digits, say "45 and 7, 52; and 32, 84." Enter it.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 476 \\
 863
 \end{array}$$

Shift the slip as before.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 476 \\
 863
 \end{array}$$

Looking at the 3 vertical pairs of digits, say "5 and 56, 61; and 12, 73." Enter it.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 3476 \\
 7863 \\
 \\
 1240
 \end{array}$$

Shift the slip as before.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 3476 \\
 7863
 \end{array}$$

Looking at the 2 vertical pairs of digits, say "40 and 21, 61." Enter it.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 13476 \\
 67863
 \end{array}$$

Shift the slip as before.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 13476 \\
 67863
 \end{array}$$

Looking at the vertical pair of digits, say "15." Enter it.

$$\begin{array}{r}
 \boxed{475} \\
 3819 \\
 \hline
 513476 \\
 167863
 \end{array}$$

Now remove the slip, draw a line below, and add together the 2 lines of working.

$$\begin{array}{r}
 574 \\
 3819 \\
 \hline
 513476 \\
 167863 \\
 \hline
 2192106
 \end{array}$$

The Reader will notice that the working, for each position of the slip, is a distinct thing, and can be done *by itself*, without reference to the rest of the work. Hence, if there is a doubt as to any particular digit in the answer, the digits, whose sum it is, can be tested *by themselves*, *e. g.*, if it were suspected that the 9 was wrong, we might test the 7, which stands vertically above it, by placing the slip in the position of the 8th diagram; and then the 1, which stands above the 7, by placing it in the position of the 10th diagram.

When the upper given Number does not contain more than 4 or 5 digits, the above Rule can be easily worked; but, with a really *large* upper given Number, it

will be found convenient to go along each series of products *twice* first summing their *units*-digits, and entering the units-digit of the result in the upper line of the working, and then summing their *tens*-digits. Thus, the Mental Process for the 6th diagram might be as follows: "5 and 7, 12; and 2, 14." Enter the 4, and carry the 1. "5 and 3, 8." Enter it.

In working this form of the Method, the following Rules should be borne in mind:—

In collecting the *units*-digits of a set of products of pairs of digits, remember that, if *one* member of a pair is 1, the units-digit is the *other*: if *one* is 5, the units-digit is 5 or 0, according as the *other* is odd or even: if *one* is 9, the units-digit is 10 *minus* the *other*.

In collecting the *tens*-digits, remember that, if *one* member of a pair is 1, or if the sum of the two members is less than 7, there is *no* tens-digit; if one is 5, the tens-digit is the number of 2's contained in the *other*: if one is 9, the tens-digit is the *other minus* 1.

Many of these Long Multiplication sums will need only *two* lines of working: when a set of products occurs, whose sum contains 3 digits, a *third* line will be needed: when it contains 4, a *fourth*—but this can only happen when the lesser Number contains at least 13 digits: and, when it contains 5, a *fifth* will be needed—but *this* can only happen when the lesser Number contains at least 124 digits, and therefore exceeds a trillion of sextillions!

This Method can easily be applied to the Multiplication of Decimals: all that is needed is to place the slip, to begin with, so that the mark comes vertically above that decimal place to which we wish to carry the working. I will give two examples, exhibiting, in each, first, the sum as set, ready for working; secondly, the state of things just before the slip is shifted for the first time; thirdly, the final state, just before the slip is removed; fourthly, the sum added up.

730·0	341·86
·037	68·143
·2156	2379·5
—	—

730·0	341·86
·2156	2379·5
—	—
3	5
5	1

730·0	341·86
·2156	2379·5
—	—
·006723	24817·6275
125	136228·641
	11

.037	68-143
.2156	2379-5
.006723	24817-6275
125	136228-641
.007973	11
	162146-2685

Hence the Answer to the first sum, correct to 4 places, is .0080; and the Answer to the second, correct to 2 places, is 162146-27.

Chapter II. Long Division, Where Both Quotient and Remainder are Required.

§ 1. Divisors of the form $(10^n \pm 1)$.

Other version:
→ 7.4, p. 1231

Years ago I had discovered the curious fact that, if you put a “0” over the unit-digit of a given Number, which happens to be a multiple of 9, and subtract all along, always putting the remainder over the next digit, the final subtraction gives remainder “0,” and the upper line, omitting its final “0,” is the “9-Quotient” of the given Number (*i. e.*, the Quotient produced by dividing it by 9).

Having discovered this, I was at once led, by analogy, to the discovery that, if you put a “0” *under* the unit-digit of a given Number, which happens to be a multiple of 11, and proceed in the same way, you get an analogous result.

In each case I obtained the Quotient of a Division-sum by the shorter and simpler process of *subtraction*: but, as this result was only obtainable in the (comparatively rare) case of the given Number being an exact multiple of 9, or of 11, the discovery seemed to be more curious than useful.

Lately, it occurred to me to examine cases where the given Number was *not* an exact multiple. I found that, in these cases, the final subtraction yielded a Number which was sometimes the actual Remainder produced by Division, and which always gave materials from which that Remainder could be found. But, as it did not yield the Quotient (or only by a very “bizarre” process, which was decidedly longer and harder than actual Division), the discovery still seemed to be of no practical use.

But, quite lately, it occurred to me to try what would happen if, after discovering the Remainder, I were to put it, instead of a “0,” over or under the unit-digit, and then subtract as before. And I was charmed to find that the old result followed: the final subtraction yielded remainder “0,” and the new line, omitting its units-digit, was the required Quotient.

Now, there are shorter processes for obtaining the 9-Remainder or the 11-Remainder of a given Number, than my subtraction-rule (the process for finding the 11-Remainder is another discovery of mine). Adopting these, I brought my rule to completion on September 28, 1897.

(1) Rule for finding the Quotient and Remainder produced by dividing a given Number by 9.

To find the 9-Remainder, sum the digits; then sum the digits of the result: and so on till you get a single digit. If this be less than 9, it is the required

Remainder: if it be 9, the required Remainder is 0. Throughout this process, 9's may be "cast out" *ad libitum*.

To find the 9-Quotient, draw a line below the given Number and put its 9-Remainder under its unit-digit; then subtract downwards, putting the remainder under the next digit, and so on. If the left-hand end-digit of the given Number be less than 9, its subtraction ought to give remainder "0": if it be 9, it ought to give remainder "1," to be put in the lower line, and "1" to be carried, whose subtraction will give remainder "0." Now mark off the 9-Remainder at the right-hand end of the lower line, and the rest of it will be the 9-Quotient.

Examples:—

$$\begin{array}{r} 9//75309 \quad 6 \\ \hline 83677//3 \end{array} \quad \begin{array}{r} 9//94613 \quad 8 \\ \hline 105126//4 \end{array} \quad \begin{array}{r} 9//58317 \quad 3 \\ \hline 64797//0 \end{array}$$

(2) Rule for finding the Quotient and Remainder produced by dividing a given Number by 11.

To find the 11-Remainder, begin at the units-end, and sum the 1st, 3rd, &c., digits, and also the 2nd, 4th, &c., digits; and find the 11-Remainder of the difference of these sums. If the former sum be the greater, the required Remainder is the number so found: if the former sum be the lesser, it is the difference between this number and 11: if the sums be equal, it is "0."

To find the 11-Quotient, draw a line below the given Number and put its 11-Remainder under its units-digit: then subtract, putting the remainder under the next digit, and so on. The final subtraction ought to give remainder "0." Now mark off the 11-Remainder at the right-hand end of the lower line, and the rest of it will be the 11-Quotient.

Examples:—

$$\begin{array}{r} 11//73210 \quad 8 \\ \hline 66555//3 \end{array} \quad \begin{array}{r} 11//85347 \quad 1 \\ \hline 77588//3 \end{array} \\ \begin{array}{r} 11//59426 \quad 3 \\ \hline 54023//10 \end{array} \quad \begin{array}{r} 11//47568 \quad 4 \\ \hline 43244//0 \end{array}$$

These new Rules have yet another advantage over the Rule of actual Division, viz., that the final subtraction supplies a *test* of the correctness of the result: if it does not give remainder "0," the sum has been done wrong: if it does, then either it has been done right, or there have been *two* mistakes—a rare event.

Mathematicians will not need to be told that rules, analogous to the above, will necessarily hold good for the divisors 99, 101, 999, 1001, &c. The only modification needed would be to mark off the given Number in periods of 2 or more digits, and to treat each period in the same way as the above rules have treated single digits. Here, for example, is the whole of the working needed for dividing 2 given Numbers by 999 and by 10001:—

$$\begin{array}{r|l|l|l|l|l} & & & 2 & | & 437 \\ 999//73 & | & 201 & | & 584 & | & 668 & | & 902 \\ \hline & 73 & | & 283 & | & 868 & | & 537 & // & 439 \end{array}$$

$$\begin{array}{r|l|l|l|l|l} & & & & & 1 & | & 1383 \\ 10001//547 & | & 2915 & | & 0836 & | & 9354 \\ \hline & 547 & | & 2367 & | & 8469 & // & 885 \end{array}$$

In the first of these examples, the $2 \mid 437$, written above, is the sum of the periods. As this contains 2 periods, it is treated in the same way; and the final result, 439, is the 999-Remainder.

In the second, the $1 \mid 2269$, written above, is the sum of the 1st and 3rd periods: the 1383 is the sum of the 2nd and 4th. The difference of these sums is 10886, whose 10001-Remainder is 885.

§ 2. Divisors of the form $(h \cdot 10^n \pm k)$, where at least one of the two numbers, h and k , is greater than 1.

The Method, now to be described, is applicable to three distinct cases:—

Other version:
→ 7.5, p. 1233

- (1) Where $h > 1, k = 1$;
- (2) Where $h = 1, k > 1$;
- (3) Where $h > 1, k > 1$.

With certain limitations of the values of h, k , and n , this Method will be found to be a shorter and safer process than that of ordinary Long Division. These limitations are that neither h nor k should exceed 12, and that, when $k > 1, n$ should not be less than 3; outside these limits, it involves difficulties which make the ordinary process preferable.

In this Method, two distinct processes are required—one, for dealing with cases where $h > 1$, the other, for cases where $k > 1$. The former of these processes was, I believe, first discovered by myself, the latter by my nephew, Mr. Bertram J. Collingwood, who communicated to me his Method of dealing with Divisors of the form $(10^n - k)$.

In what follows, I shall represent 10 by t .

Mr. Collingwood's Method, for Divisors of the form $(t^n - k)$, may be enunciated as follows:—

“To divide a given Number by $(t^n - k)$, mark off from it a period of n digits, at the units-end, and under it write k -times what would be left of it if its last period were erased. If this number contains more than n digits, treat it in the same way; and so on, till a number is reached which does not contain more than n digits. Then add up. If the last period of the result, *plus* k -times whatever was carried out of it, in the adding up, be less than the Divisor, it is the required Remainder; and the rest of the result is the required Quotient. If it be not less, find what number of times it contains the Divisor, and add that number to the Quotient, and subtract that multiple of the Divisor from the Remainder.”

For example, to divide 86781592485703152764092 by 9993 (*i. e.*, by $t^4 - 7$), he would proceed thus:—

9993//	867 8159 2485 7031 5276	4092
	6074 7114 7399 9220	6932
	4 2522 9803 1799	4540
	29 7660 8622	2593
	208 3626	0354
	1458	5382
	1	0206
		7

Quot. $\overline{868\ 4238\ 2153\ 2104\ 0004} // 4106 + 14 = 4120$ Rem.

This new Method will be best explained by beginning with case (3): it will be easily seen what changes have to be made in it when dealing with cases (1) and (2).

The Rule for case (3), when the sign is “-,” may be enunciated thus:—

Mark off the Dividend, beginning at its units-end, in periods of n digits. If there be an overplus, at the left-hand end, less than h , do not mark it off, but reckon it and the next n digits as one period.

To set the sum, write the Divisor, followed by a double vertical; then the Dividend, divided into its periods by single verticals, with width allowed in each space for $(n + 2)$ digits. Below the Dividend draw a single line, and, further down, a double one, leaving a space between, in which to enter the Quotient, having its units-digit below that of the last period but one of the Dividend, and also the Remainder, having its units-digit below that of the last period of the Dividend. In this space, and in the space below the double line, draw verticals, corresponding to those in the Dividend; and make the last in the upper space double, to separate the Quotient from the Remainder.

For example, if we had to divide 5984407103826 by 6997 (*i. e.*, $7.t^3 - 3$), the sum, as set for working, would stand thus:—

6997//	5984	407	103	826	
Quot.					Rem.

To work the sum, divide the 1st period by h ; enter its quotient in the 1st Column below the double line, and place its remainder above the 2nd period, where it is to be regarded as *prefixed* to that period. To the 2nd period, with its prefix, add k -times the number in the 1st Column, and enter the result at the top of the 2nd Column. If this number *is not* less than the Divisor, find what number of times it contains the Divisor, and enter that number in the 1st Column, and k -times it in the 2nd, and then draw a line below the 2nd Column, and add in this new item, deducting from the result t^n -times the number just entered in the 1st Column; and then add up the 1st Column, entering the result in the Quotient. If the number at the top of the 2nd Column *is* less than the Divisor, the number in the 1st Column may be at once entered in the Quotient. The number entered in the Quotient, and the number at the foot of the 2nd Column, are the Quotient and Remainder that would result if the Dividend ended with its 2nd period. Now take the number at the foot of the 2nd Column as a new 1st period, and the 3rd period as a new 2nd period, and proceed as before.

The above example, worked according to this Rule, would stand thus:—

		6	5	3	
6997||	5984	407	103	826	
Quot.	855	281	849	6373	Rem.
	854	8969	5946		
	1	3	849		
		1972			
		281			

The Mental Process being as follows:—

Divide the 5984 by 7, entering its Quotient, 854, in the 1st Column, and placing its Remainder, 6, above the 2nd period. Then add, to the 6407, 3-times the 854, entering the result in the 2nd Column, thus: "7 and 12, 19." Enter the 9, and carry the 1. "1 and 15, 16." Enter the 6, and carry the 1. "5 and 24, 29." Enter the 9, and carry the 2, which, added to the prefix 6, makes 8, which also you enter. Observing that this 8969 *is not* less than the Divisor, and that it contains the Divisor *once*, enter 1 in the 1st Column, and 3-times 1 in the 2nd, and then draw a line below, and add in this new item, remembering to deduct from the result 7-times t^3 , *i. e.*, 7000: the result is 1972. Then add up the 1st Column, as far as the double line, and enter the result, 855, in the Quotient. Now take the 1972 as a new 1st period, and the 3rd period, 103, as a new 2nd period, and proceed as before, thus: Draw a double line below the 1972, and divide it by 7, entering its Quotient, 281, below it, and its Remainder, 5, above the 3rd period. Then add, to the 5103, 3-times the 281, entering the result, 5946, in the 3rd column; and observe that this *is* less than the Divisor. Then add up the 2nd Column, as far as its lowest double line, and enter the result, 281, in the Quotient. Now take the 5946 as a new 1st period, and the final period, 826, as a new 2nd period, and proceed as before, thus: Draw a double line below the 5946, and divide it by 7, entering the Quotient, 849, below it, and the Remainder, 3, above the final period. Now add, to the 3826, 3-times the 849, entering the result, 6373, which you can foresee *will be* less than the Divisor, as the Remainder. Then add up the 3rd Column, as far as its lowest double line, and enter the result, 849, as the final period of the Quotient.

It may be well to explain the real effect of the three processes described in the 5th sentence of the preceding paragraph, *viz.*, (1) "enter 1 in the 1st Column"; (2) "enter 3 times 1 in the 2nd Column"; (3) "add in this new item, remembering to deduct from the result 7000." The effect of (2) and (3), combined, is to *increase* the 2nd Column by 3 and to *diminish* it by 7000; *i. e.*, to *diminish* it by $(7000 - 3)$, which is 6997. And the effect of (1) is to account for this 6997, which has been thus deducted from the Remainder (thus reducing it to the *true* Remainder), by adding 1 to the Quotient (thus raising it to the *true* Quotient).

The Rule for case (3), when the sign is "+," may be deduced from the above Rule by simply changing the sign of k . This will, however, introduce a new phenomenon, which must be provided for by the following additional clause:—

When you add to the 2nd period with its prefix $(-k)$ -times the number in the 1st Column, *i. e.*, when you *subtract* k -times this number *from* the 2nd period with its prefix, it will sometimes happen that the subtrahend exceeds the minuend. In this case the subtraction will end with a *minus* digit, which may be indicated by an asterisk. Now find what number of Divisors must be added to the 2nd Column to cancel this *minus* digit, and enter that number, marked with an asterisk, in the 1st Column, and that multiple of the Divisor in the 2nd; and then draw a line below the 2nd Column, and add in this new item.

As an example, let us take a new Dividend, but retain the previous Divisor, changing the sign of k , so that it will become 7003 (*i. e.*, $7 \cdot t^3 + 3$). The sum, as set for working, would stand thus:—

7003	6504	318	972	526	
Quot.	_____	_____	_____	_____	Rem.

After working, it would stand thus:—

		1	4	5	
7003||	6504	318	972	526	
Quot.	928	790	371	4413	Rem.
	929	2*531	2602		
	1*	7 003	371		
		5 534			
		790			

the Mental Process being as follows:—

Divide the 6504 by 7, and enter the Quotient, 929, in the 1st Column, and the Remainder, 1, above the 2nd period. Then subtract, from the 1318, 3-times the 929, entering the result in the 2nd Column, thus: “27 from 8 I can’t, but 27 from 28, 1.” Enter the 1, and carry the borrowed 2. “8 from 1 I can’t, but 8 from 11, 3.” Enter the 3, and carry the borrowed 1. “28 from 3 I can’t, but 28 from 33, 5.” Enter the 5, and carry the borrowed 3. “3 from 1, *minus* 2.” Enter it, with an asterisk. Observing that, to cancel this *minus* 2, it will suffice to add *once* the Divisor, enter a (–1) in the 1st Column, and 7003 in the 2nd; and then draw a line below the 2nd Column, and add in this new item: the result is 5534. Then add up the 1st Column, and enter the result, 928, in the Quotient. Now take the 5534 as a new 1st period, and the third period, 972, as a new 2nd period, and proceed as before, thus: Draw a double line below the 5534, and divide it by 7, entering the Quotient, 790, below it, and the Remainder, 4, above the 3rd period. Then subtract, from the 4972, 3-times the 790, entering the result, 2602, in the 3rd Column; and observe that this *does not* contain a *minus* digit. Then add up the 2nd Column, as far as its lowest double line, and enter the result, 790, in the Quotient. Now take the 2602 as a new 1st period, and the final period, 526, as a new 2nd period, and proceed as before, thus. Draw a double line below the 2602, and divide it by 7, entering the Quotient, 371, below it, and the Remainder, 5, above the final period. Then subtract, from the 5526, 3-times the 371, entering the result, 4413, which you can foresee will be less than the Divisor, as the Remainder. Then add up the 3rd Column, as far as its lowest double line, and enter the result, 371, as the final period of the Quotient.

The Rules for case $\lfloor(1)\rfloor^1$ may be derived, from the above, by making $k = 1$; and those for case $\lfloor(2)\rfloor^2$ by making $h = 1$. I will give worked examples of these; but it will not be necessary to give the Mental Processes.

By making $k = 1$, we get Divisors of the form $(h \cdot t^n \pm 1)$: let us take $(11t^4 - 1)$ and $(6t^5 + 1)$

		9	10	4	
109999||	107523	8168	9662	0985	
Quot.	9774	9813	0861	41846	Rem.
	9774	107942	119474		
		9812	1		
		1	9475		
			861		

¹mistakenly (2)

²mistakenly (3)

600001||		3	7239	51798	2 6004	13825	
Quot.			1206	58431	9 4595	219230	Rem.
				350592			
				58432			
				1*			

In this last example there is no need to enter the Quotient, produced by dividing the 7239 by 7, in the 1st Column; we easily foresee that the number at the top of the 2nd Column *will be* less than the Divisor, so that there will be no new item in the 1st: hence we at once enter the 1206 in the Quotient.

By making $h = 1$, we get Divisors of the form $(t^n \pm k)$: let us take $(t^4 - 7)$ and $(t^5 + 12)$.

9993||	867	8159	2485	7031	5276	4092	
Quot.	868	4238	2153	2104	0004	4120	Rem.
	867	14228	32130	22088	19990		
	1	7	21	14	14		
		4235	2151	2102	4		
		3	2	2			

100012||	7185	6 2039	10327	53118
	7184	7 5822	00463	47562
	7185	3*5819	9*00355	
	1*	10 0012	9 00108	
		7 5831	463	
		9*		

The first of these two sums is the one I gave to illustrate Mr. Collingwood's Method of working with Divisors of the the form $(t^n - k)$.

It may interest the reader to see the three methods of working the above example—ordinary Division, Mr. Collingwood's Method, and my version of it—compared as to the amount of labour which each entails in the working:—

	Ordinary Division.	Mr. C's Method.	My version of it.
Digits written	202	82	44
Additions, or Subtractions	204	97	25
Multiplications	0	70	22

I am assuming that any one, working this example by ordinary Division, would begin by making a table of Multiples of 9993 for reference: so that he would have *no* Multiplications to do. Still, the great number of digits he would have to write, and of Additions and Subtractions he would have to do, involving a far greater risk of error than either of the other Methods, would quite outweigh this advantage.

By whatever process a Question in Long Division has been worked, it is very desirable to be able to test, easily and quickly, the correctness of the Answer. The ordinary test is to multiply together the Divisor and Quotient, add the Remainder, and observe whether these together make up the given Number, as they ought to do.

Thus, if N be the given Number, D the given Divisor, Q the Quotient, and R the Remainder, we ought to have

$$N = D \cdot Q + R.$$

This test is specially easy to apply, when $D = (h \cdot t^n \pm k)$, for then we ought to have

$$\begin{aligned} N &= (h \cdot t^n \pm k) \cdot Q + R; \\ &= (h \cdot Q \cdot t^n + R) \pm kQ. \end{aligned}$$

Now $hQ \cdot t^n$ may be found by multiplying Q by h , and tacking on n ciphers. Hence $(hQ \cdot t^n + R)$ may be found by making R occupy the place of the n ciphers. If R contains less than n digits it must have ciphers prefixed; if more, the overplus must be carried on into the next period, and added to hQ .

Having found our "Test," viz. $(hQ \cdot t^n + R)$, we can write it on a separate slip of paper, and place it below the working of the example, so as to come vertically below n , which is at the top. When the sign in D is " $-$," we must add kQ to N , and see if the result = T ; when it is " $+$ " we must add kQ to T , and see if the result = N .

Now it has been already pointed out that when, in the new Method, the 1st and 2nd Columns have been worked, the 1st period of the Quotient and the number at the foot of the 2nd Column are the Quotient and Remainder that would result if the Dividend ended with its 2nd period. Hence the Test can be at once applied, before dealing with the 3rd Column. This constitutes a very important new feature in my version of Mr. Collingwood's Method. Every two adjacent Columns contain a separate Division-sum, which can be tested *by itself*. Hence, in working my Method, as soon as I have entered the 1st period of the Quotient, I can test it, and, if I have made any mistake, I can correct it. But the hapless computator, who has spent, say, an hour in working out some gigantic sum in Long Division—whether by the ordinary process or by Mr. Collingwood's Method—and who has chanced to get a figure wrong at the very outset, which makes every subsequent figure wrong, has no warning of the fatal error till he has worked out the whole thing "to the bitter end," and has begun to test his Answer. Whereas, if working by *my* Method, he would have been warned of his mistake almost as soon as he made it, and would have been able to set it right before going any further.

As an aid to the reader, I will give the Mental Process in full, for the 2nd and 3rd Columns of the first of the examples worked above.

The Divisor is 6997 (where $h = 7$, $k = 3$). Here you are supposed to have just entered the 281 in the Quotient. The Dividend, for these two columns, is 1972 | 103; the Quotient is 281, and the Remainder 5946. The Test is $hQ \cdot t^n + R$ (*i. e.*, $7 \times 281000 + 5946$), the Mental Process being as follows: Write down, on a separate slip of paper, the last three digits of R , viz., 946, and carry the 5 into the next period, adding it to the 7×281 , thus, "5 and 7, 12." Enter the 2, and carry the 1. "1 and 56, 57." Enter the 7, and carry the 5. "5 and 14, 19." Enter it. Having got your Test, try whether $(N + kQ)$ is equal to it. This you compute, comparing it with your Test, digit by digit, as you go on, thus, "3 and 3, 6." Observe it in

	6	5
	407	103
	281	
	8969	5946
	3	
	1972	
	281	
Test	1972	946

the Test. “0 and 24, 24.” Observe the 4, and carry the 2. “3 and 6, 9.” Observe it. “1972 and 0, 1972.” Observe it. The Test is satisfied.

For Divisors of the form $(t^n \pm k)$ there is no need to write out the Test: the numbers, which compose it, already occur in the working, and may be used as they stand.

Chapter III.

Long Division, Where Remainder is Required, but not Quotient.

§ 1. Divisors of the form $(t^n \pm 1)$.

The Methods here required were described in the last Chapter, § 1, as processes preliminary to that of finding the Quotient.

For Divisors of the other forms there discussed, the methods, for finding Quotient and Remainder, can of course be used for finding Remainder only: the only cases which we need consider here are those in which, owing to the Quotient *not* being required, these Methods are capable of abridgment.

§ 2. Divisors of the form $(ht \pm 1)$.

Here the Methods, described in the last Chapter, § 2, may be abridged by leaving out all the written work below the double line.

As examples of this abridged Method, let us take 27910385642558361 as our Dividend, and find its 29-Remainder, and its 71-Remainder.

The first, when worked, stands thus:—

$$29 \parallel \underline{279103856425583611} \text{ Rem. } 2,$$

the Mental Process being as follows: Begin by dividing 27 by 3, and adding its quotient, 9, to the number made up by prefixing its remainder, 0, to the next digit, 9: *i. e.*, you say “9 and 9, 18.” Then divide this 18 by 3, and add its quotient, 6, to the number made up by prefixing its remainder, 0, to the next digit, 1: *i. e.*, say, “6 and 1, 7.” Then say, “2 and 10, 12; 4 and 3, 7; 2 and 18, 20; 6 and 25, 31.” Here you “cast out” a 29, and say “which gives 2.” To this you tack on the next digit, 6, and proceed thus: “8 and 24, 32; which gives 3; 1 and 2, 3; 1 and 5, 6; 2 and 5, 7; 2 and 18, 20; 6 and 23, 29: which gives 0; 2 and 1, 3; 1 and 1, 2.”

The second, when worked, stands thus:—

$$71 \parallel \underline{279103856425583611} \text{ Rem. } 68,$$

the Mental Process being as follows: Begin by dividing 27 by 7, and subtracting its quotient, 3, from the number made up by prefixing its remainder, 6, to the next digit, 9: *i. e.*, you say “3 from 69, 66.” Then divide this 66 by 7, and subtract its quotient, 9, from the number made up by prefixing its remainder, 3, to the next digit, 1; *i. e.*, say “9 from 31, 22.” Then say “3 from 10, 7; 1 from 3, 2; 0 from 28, 28; 4 from 5, 1; 0 from 16, 16; 2 from 24, 22; 3 from 15, 12; 1 from 55, 54; 7 from 58, 51; 7 from 23, 16; 2 from 26, 24; 3 from 31, 28; 4 from 1, I can’t, but” (here you throw in an extra Divisor) “4 from 72, 68.”

§ 3. Powers of 10.

The 10-Remainder is the last digit: the 10^2 -Remainder is the number composed of the last 2 digits; and so on.

These Remainders will serve as trial-dividends for all numbers whose factors are powers of the factors of 10, viz., 2 and 5. Thus the 32-Remainder may be found by taking the number composed of the last 5 digits, and dividing by 32. Similarly, 80 is $2^4 \times 5$: hence the 10^4 -Remainder will serve for it.

§ 4. Factors of Divisors of the form $(ht \pm 1)$.

The 21-Remainder will serve as a trial-dividend for 7 (the factor, 3, is also a factor of 9). But this Remainder is (owing to the small value of h , which constantly gives a subtrahend greater than the minuend) so troublesome to find, that I should prefer to find the 7-Remainder by ordinary Division.

The 39-Remainder will serve for 13; the 51 for 17; the 69 for 23.

Part 8

Collections of Formulæ

See also *The Formulæ of Plane Trigonometry* (\rightarrow 4.3, p. 696) and *Notes on the First Part of Algebra* (\rightarrow 9.1, p. 1269).

8.1 Algebraical Formulæ

Source: printed 1868

for the Use of Candidates for Resposions

Meaning of indices	a^x	= $a \times a \times a \times \&c.$ (x factors).
” ”	a^1	= $a.$
Multiplication	$a^x \times a^y$	= $a^{x+y}.$
Division	$a^x \div a^y$	= $a^{x-y}.$
	hence a^0	= 1.
	a^{-x}	= $\frac{1}{a^x}.$
	a^{-1}	= $\frac{1}{a}.$
Involution (single term)	$(a^x)^y$	= $a^{xy}.$
Evolution ”	$\sqrt[y]{a^x}$	= $a^{x/y}.$
” ”	$\sqrt[y]{a}$	= $a^{1/y}.$
Involution (two terms)		
(1) $(a + b)^2$		= $a^2 + 2ab + b^2.$
(2) $(a - b)^2$		= $a^2 - 2ab + b^2.$
(3) $(a + b)^3$		= $a^3 + 3a^2b + 3ab^2 + b^3.$
(4) $(a - b)^3$		= $a^3 - 3a^2b + 3ab^2 - b^3.$
(5) $(a + b)^n$		= $a^n + na^{n-1}b + \&c.,$ where the index of a continually decreases by unity, while that of b increases, and where the coefficient of each term is formed from the preceding by the rule “Multiply together the coefficient and the index of a and divide by the place of the term.”
(6) $(a - b)^n$		= $a^n - na^{n-1}b + \&c.,$ where each term is formed as in the last case, and the signs are alternately + and -.
Resolution into factors		

- (1) $a^2 + b^2$
 (2) $a^2 - b^2$
 (3) $a^3 + b^3$
 $a^5 + b^5$
 and generally, if n be an odd prime,
 $a^n + b^n$

- (4) $a^3 - b^3$
 $a^5 - b^5$
 and generally, if n be an odd prime,
 $a^n - b^n$

If T be a power of 2,

- (5) $a^T + b^T$
 (6) $a^T - b^T$

If N contain odd prime factors only,

- (7) $a^N + b^N$
 (8) $a^N - b^N$

If M be even and contain an odd prime factor,

- (9) $a^M + b^M$
 (10) $a^M - b^M$

If x, y be commensurable,

- (11) $a^x + b^y$ }
 (12) $a^x - b^y$ }

has no factors.

$$= (a + b). (a - b).$$

$$= (a + b). (a^2 - ab + b^2).$$

$$= (a + b). (a^4 - a^3b + a^2b^2 - ab^3 + b^4).$$

$= (a + b). (a^{n-1} - a^{n-2}b + \dots)$, where the index of a continually decreases by unity, while that of b increases, and the signs are alternately + and -.

$$= (a - b). (a^2 + ab + b^2).$$

$$= (a - b). (a^4 + a^3b + a^2b^2 + ab^3 + b^4).$$

$= (a - b). (a^{n-1} + a^{n-2}b + \dots)$, where the indices are as in the former case, and the signs are all +.

cannot be resolved.

can be resolved by form (2).

can be resolved by form (3).

” ” (4).

can be resolved by form (3).

” ” (2) or (4).

can be put into one of the first four forms, according to the nature of the G. C. M.

8.2 Formulæ in Algebra

Source: printed 1868?

Involution.

$$\begin{aligned} &(a + b)^2 \\ &(a - b)^2 \\ &(a + b)^3 \\ &(a - b)^3 \\ &(a + b)^n \end{aligned}$$

$$(a - b)^n$$

Resolution into rational factors.

$$\begin{aligned} (1) &a^2 + b^2 \\ (2) &a^2 - b^2 \end{aligned}$$

If n be an odd prime,

$$\begin{aligned} (3) &a^n + b^n \\ (4) &a^n - b^n \end{aligned}$$

If T be a power of 2,

$$\begin{aligned} (5) &a^T + b^T \\ (6) &a^T - b^T \end{aligned}$$

If N contain odd prime factors only,

$$\begin{aligned} (7) &a^N + b^N \\ (8) &a^N - b^N \end{aligned}$$

If M be even and contain an odd prime factor,

$$\begin{aligned} (9) &a^M + b^M \\ (10) &a^M - b^M \end{aligned}$$

If x, y be commensurable,

$$\begin{aligned} (11) &a^x + b^y \\ (12) &a^x - b^y \end{aligned}$$

Rationalising binomial surds.

If r be odd,

$$\begin{aligned} (1) &\sqrt[r]{a} + \sqrt[r]{b} \text{ is submultiple of} \\ (2) &\sqrt[r]{a} - \sqrt[r]{b} \text{ is } \quad \quad \quad \text{"} \end{aligned}$$

If s be even,

$$\begin{aligned} (3) &\sqrt[s]{a} + \sqrt[s]{b} \text{ is submultiple of} \\ (4) &\sqrt[s]{a} - \sqrt[s]{b} \text{ is } \quad \quad \quad \text{"} \end{aligned}$$

Quadratic equation (one Variable).

If $x^2 - px + q = 0$,

the values of the coefficients, in terms of the roots, are

$$\text{If } Ax^2 + Bx + C = 0,$$

$$= a^2 + 2ab + b^2.$$

$$= a^2 - 2ab + b^2.$$

$$= a^3 + 3a^2b + 3ab^2 + b^3.$$

$$= a^3 - 3a^2b + 3ab^2 - b^3.$$

$= a^n + n \cdot a^{n-1}b + \&c.$, where the index of a continually decreases by unity, and that of b increases, and where the coefficient of each term is formed from the preceding by the rule "Multiply together the coefficient and the index of a and divide by the place of the term."

$= a^n - n \cdot a^{n-1}b + \&c.$, where each term is formed as in the former case, and the signs are alternately $+$ and $-$.

cannot be resolved.

$$= (a + b) \cdot (a - b).$$

$$= (a + b) \cdot (a^{n-1} - a^{n-2}b + \dots).$$

$$= (a - b) \cdot (a^{n-1} + a^{n-2}b + \dots).$$

cannot be resolved.

can be resolved by form (2).

$$\text{" } \quad \text{"} \quad \quad (3).$$

$$\text{" } \quad \text{"} \quad \quad (4).$$

$$\text{" } \quad \text{"} \quad \quad (3).$$

$$\text{" } \quad \text{"} \quad \quad (2) \text{ or } (4).$$

can be put into one of the first four forms, according to the nature of the G. C. M.

$$a + b$$

$$a - b$$

$$a - b$$

"

p = sum of roots

q = product of roots.

- the roots are
and the test for
- (1) roots equal with opposite signs
 - (2) roots real
 - (3) " imaginary
 - (4) " identical
 - (5) " rational

Simultaneous Equations (two Variables).

If $A_1x + B_1y + C_1 = 0$,

$A_2x + B_2y + C_2 = 0$,

the roots are

and test for Equations being

- (1) consistent
- (2) inconsistent
- (3) identical

Summation of Series.

Arithmetical.

- If a = first term,
 b = common difference,
 n = number of terms,
 l = last term,
 S = sum;

the formula connecting

(1) a, b, n, S

(2) a, l, S

Geometrical.

- If a = first term,
 r = common ratio,
 n = number of terms,
 S = sum;

the formula connecting

(1) a, r, n, S

(2) a, r, S (where n is infinite)

Arithmetical Mean, &c.

If α, β , be two terms having one between them,

- (1) the Arithmetical Mean
- (2) the Geometrical Mean
- (3) the Harmonical Mean

Binomial Theorem.

$$x = \frac{-B \pm \sqrt{B^2 - 4AC}}{2A}.$$

$B = 0.$

$B^2 - 4AC \neq 0.$

" $< 0.$

" $= 0.$

" $\neq 0$, and is a square.

$$\begin{aligned} \frac{x}{\begin{vmatrix} B_1 & C_1 \\ B_2 & C_2 \end{vmatrix}} &= \frac{-y}{\begin{vmatrix} A_1 & C_1 \\ A_2 & C_2 \end{vmatrix}} \\ &= \frac{1}{\begin{vmatrix} A_1 & B_1 \\ A_2 & B_2 \end{vmatrix}}. \end{aligned}$$

$$\begin{vmatrix} A_1 & B_1 \\ A_2 & B_2 \end{vmatrix} \neq 0.$$

$$\begin{vmatrix} A_1 & B_1 \\ A_2 & B_2 \end{vmatrix} = 0, \text{ and either}$$

$$\begin{vmatrix} A_1 & C_1 \\ A_2 & C_2 \end{vmatrix} \text{ or } \begin{vmatrix} B_1 & C_1 \\ B_2 & C_2 \end{vmatrix} \neq 0.$$

$$\begin{vmatrix} A_1 & B_1 & C_1 \\ A_2 & B_2 & C_2 \end{vmatrix} = 0.$$

$$S = (2a + \overline{n-1}.b) \cdot \frac{n}{2}.$$

$$S = (a + l) \cdot \frac{n}{2}.$$

$$S = a \cdot \frac{r^n - 1}{r - 1}.$$

$$S = \frac{a}{1 - r}.$$

$$\frac{\alpha + \beta}{2}.$$

$$\sqrt{\alpha\beta}.$$

$$\frac{2\alpha\beta}{\alpha + \beta}.$$

$$(a \pm b)^n$$

the sum of the coefficients

Permutations and Combinations.

Permutation of n things

(1) taken r together

(2) taken all together

Combinations of n things taken r together

Permutations of n things taken all together, when there are p of one kind, q of another kind, &c.

Total number of combinations of n things

Interest, Discount, &c.

If P = Principal,

r = interest of £1 for 1 year,

n = number of years,

I = total interest,

M = amount,

D = discount,

A = annuity,

Simple interest:

formula connecting P, r, n, I

" " P, r, n, M

" " M, r, n, D

Compound interest:

formula connecting P, r, n, M

Terminable annuities:

formula connecting A, r, n, M

" " A, r, n, V

Perpetual annuity:

formula connecting A, r, V

Deferred terminable annuity:

If d = number of years for which it is deferred,

n = number of years for which it is to continue,

formula connecting A, r, d, n, V

Deferred perpetual annuity:

formula connecting A, r, d, V

Logarithms.

If $a, b, \&c.$, = the bases used

$M, N, \&c.$, = any numbers,

(1) $\log 1$

(2) $\log a$

(3) $\log_a M \times N \times \&c.$

(4) $\log_a \frac{M}{N}$

(5) $\log_a M^x$

(6) $\log_b M$ (in terms of logs to base a)

$$= a^n \pm na^{n-1}b + \frac{n(n-1)}{2}a^{n-2}b^2 \pm \frac{n(n-1)(n-2)}{3}a^{n-3}b^3 + \dots = 2^n.$$

$$n(n-1)\dots(n-r+1).$$

$$\frac{|n|}{\frac{n(n-1)\dots(n-r+1)}{|r|}}.$$

$$\frac{|n|}{|p \cdot q \dots|} = 2^n - 1.$$

$$I = Pnr.$$

$$M = P + Pnr.$$

$$D = \frac{Mnr}{1+nr}.$$

$$M = P(1+r)^n.$$

$$M = A \cdot \frac{(1+r)^n - 1}{r}.$$

$$V = A \cdot \frac{(1+r)^n - 1}{r(1+r)^n}.$$

$$V = \frac{A}{r}.$$

$$V = A \cdot \frac{(1+r)^n - 1}{r(1+r)^{d+n}}.$$

$$V = A \cdot \frac{1}{r(1+r)^d}.$$

$$= 0.$$

$$= 1.$$

$$\log_a M + \log_a N + \&c.$$

$$= \log_a M - \log_a N.$$

$$x \cdot \log_a M.$$

$$\frac{\log_a M}{\log_a b}.$$

Exponential and Logarithmic Series.

e (the Napierian base)

a^x (in a series of ascending powers of x)

hence e^x

$\log_e(1+x)$

$\frac{1}{\log_e 10}$

$\log_{10}(n+1)$

$$= 1 + 1 + \frac{1}{\sqrt{2}} + \frac{1}{\sqrt{3}} + \dots \text{ ad infin.}$$

$$= 2.7182, \text{ \&c.}$$

$$= 1 + (\log_e a) \cdot x + \frac{(\log_e a)^2}{\sqrt{2}} \cdot x^2 + \dots$$

$$= 1 + x + \frac{x^2}{\sqrt{2}} + \dots$$

$$= x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \dots$$

$$= .43429, \text{ \&c.}$$

$$= \log_{10} n + \frac{2}{\log_e 10} \cdot \left(\frac{1}{2n+1} + \frac{1}{3(2n+1)^3} + \frac{1}{5(2n+1)^5} + \dots \right).$$

8.3 Algebraical Formulæ and Rules

Source: printed 1870

for the Use of Candidates for Responsions

<p>Meaning of a^x hence a^1 =</p> <p>Addition, when terms containing same powers of same letters are added:—</p> <p>(α) two terms only:—</p> <p style="padding-left: 20px;">(1) with same sign (2) with different signs</p> <p>(β) many terms</p> <p>Subtraction, when a term is taken from another containing same powers of same letters:—</p> <p>(α) when minuend is greatest, and signs are same</p> <p>(β) otherwise</p> <p>Brackets, to put on or take off:—</p> <p>(α) when sign outside is “+” (β) is “-”</p> <p>Multiplication:—</p> <p>(α) as to indices, when two or more powers of same letter are multiplied</p> <p style="padding-left: 40px;">e. g. $x^a \cdot x^b \cdot x^c$. &c. =</p> <p>(β) as to signs, when two terms are multiplied:—</p> <p style="padding-left: 20px;">(1) signs like (2) signs unlike</p> <p>Division:—</p> <p>(α) as to indices, when a power of a letter is divided by another power of the same letter</p> <p style="text-align: right; padding-right: 20px;">e. g. $x^a \div x^b =$ hence $x^0 =$ $x^{-a} =$ $x^{-1} =$</p> <p>(β) as to signs, when one term is divided by another</p> <p>Involution:—</p> <p>(α) a monomial:—</p> <p style="padding-left: 20px;">(1) as to indices</p> <p style="text-align: right; padding-right: 20px;">e. g. $(x^a \cdot y^b \cdot z^c \cdot \&c.)^n =$</p> <p>(2) as to signs:—</p>	<p>$a \cdot a \cdot a$. &c. (x factors). a</p> <p>add coefficients, and repeat sign. take difference of coefficients, with sign of greater. collect coefficients of + terms into one, and those of - terms into one, and proceed as before.</p> <p>subtract, and repeat sign. change sign of subtrahend, and proceed as in addition.</p> <p>keep signs within unchanged. change signs within.</p> <p>add indices. $x^{a+b+c+\&c.}$</p> <p>sign of answer is “+”. is “-”.</p> <p>subtract index of divisor from index of dividend. x^{a-b}. 1. $\frac{1}{x^a}$. $\frac{1}{x}$.</p> <p>same rules as in multiplication.</p> <p>multiply each index by index of required power. $x^{an} \cdot y^{bn} \cdot z^{cn}$. &c.</p>
---	---

(a) when index of required power is even

(b) when it is odd

(β) a binomial:—

1. $(a + b)^2 =$
2. $(a - b)^2 =$
3. $(a + b)^3 =$
4. $(a - b)^3 =$
5. $(a + b)^n =$

6. $(a - b)^n =$

(γ) a quantity of 3 or more terms

Evolution of a monomial:—

(α) as to indices

e. g. $\sqrt[n]{x^a \cdot y^b \cdot z^c \cdot \&c.} =$
hence $\sqrt[n]{x} \dots\dots\dots =$

(β) as to signs:—

(1) when index of required root is even:—

(a) sign “+”

(b) sign “-”

(2) when it is odd

Resolution of binomials, &c., into factors:—

general rule

(α) a binomial:—

1. $a^2 + b^2 \dots\dots\dots =$
2. $a^2 - b^2 \dots\dots\dots =$
3. $a^3 + b^3 \dots\dots\dots =$
4. $a^3 - b^3 \dots\dots\dots =$
5. $a^n + b^n$, (where n is an odd prime) =

6. $a^n - b^n$, (where n is an odd prime) =

(β) a trinomial:—

1. $a^2 + 2ab + b^2 \dots\dots\dots =$
2. $a^2 - 2ab + b^2 \dots\dots\dots =$
3. $Ax^2 + Bxy + Cy^2$, where $B^2 - 4AC$ is a positive square (call it K^2)

G. C. M. and L. C. M. of any number of monomials:—

(α) G. C. M.

(β) L. C. M.

sign “+”.

sign same as given quantity.

$a^2 + 2ab + b^2.$

$a^2 - 2ab + b^2.$

$a^3 + 3a^2b + 3ab^2 + b^3.$

$a^3 - 3a^2b + 3ab^2 - b^3.$

$a^n + n \cdot a^{n-1}b + \&c.$ Index of a decreases while that of b increases. Coefficient of each term is formed from preceding by multiplying together coefficient and index of a and dividing by place of term. Signs all “+”.

$a^n - n \cdot a^{n-1}b + \&c.$, as before. Signs alternately “+” and “-”.

collect the terms into 2 brackets, and proceed as before.

divide each index by index of required root.

$x^{\frac{a}{n}} \cdot y^{\frac{b}{n}} \cdot z^{\frac{c}{n}} \cdot \&c..$
 $x^{\frac{1}{n}}.$

sign of answer is “+” or “-”.

root does not really exist.

sign same as given quantity.

divide out all monomial factors, placing them outside a bracket. For the factor within the bracket try the following formulæ.

has no factors.

$(a + b) \cdot (a - b).$

$(a + b) \cdot (a^2 - ab + b^2).$

$(a - b) \cdot (a^2 + ab + b^2).$

$(a + b) \cdot (a^n - a^{n-1}b + \&c.)$ Index of a decreases while that of b increases. Signs alternately “+” and “-”.

$(a - b) \cdot (a^n + a^{n-1}b + \&c.)$, as before. Signs all “+”.

$(a + b)^2.$

$(a - b)^2.$

$A \cdot (x + \frac{B+K}{2A} \cdot y) \cdot (x + \frac{B-K}{2A} \cdot y).$

take each factor that occurs in *all*, with *lowest* index it bears.

take each factor that occurs, with *highest* index it bears.

G. C. M. of binomials, &c.:—

(α) two quantities:—

(1) general rule

(2) particular rules:—

(a) when a factor is observed in *one* of the quantities

(b) when in *both*

(c) when first term of divisor will not exactly divide that of dividend

(β) three or more quantities

L. C. M. of binomials, &c.:—

(α) two quantities

(β) three or more quantities

arrange both in order of indices of some one letter, bracketing coefficients of any terms which contain the same power of it: then divide greater by less, and divisor by remainder, and so on till there is no remainder: the last divisor is the G. C. M.

divide it out.

divide out, and multiply the answer by it

find L. C. M. of their coefficients, and multiply dividend by such a number as will raise coefficient of first term to this L. C. M.: but first try whether this multiplier, or any factor of it, will divide divisor.

find G. C. M. of the first two; then G. C. M. of answer and third quantity, and so on.

product divided by G. C. M.

find L. C. M. of first two; then L. C. M. of answer and third quantity, and so on.

8.4 Arithmetical Formulæ and Rules

Source: printed 1870

for the Use of Candidates for Responsions

G. C. M.:—

(α) two numbers

(β) three or more numbers

L. C. M.:—

(α) two numbers

(β) three or more numbers

Vulgar Fractions:—

(α) to multiply by integer

(β) to divide by integer

(γ) to multiply by fraction

(δ) to divide by fraction

Decimal Fractions:—

(α) to multiply together:—

(1) rule for multiplying

(2) rule for pointing answer

(β) to divide one by another:—

(1) rule for dividing

(2) rule for pointing answer:—

(a) if dividend has *more* decimal places than divisor

(b) if *as many*

(c) if *less*

Circulating Decimals, to reduce to vulgar Fractions

divide greater by less, and divisor by remainder, and so on till there is no remainder. The last divisor is the G. C. M. find G. C. M. of first two; then G. C. M. of answer and third number; and so on.

product divided by G. C. M.

divide out all primes which are factors of 2 or more of them; then multiply together remaining numbers and primes so divided out.

multiply numerator.

multiply denominator.

multiply numerators for new numerator, and denominators for new denominator. invert divisor, and proceed as in multiplication.

multiply as in whole numbers.

mark off in answer so many decimal places as there are in all the factors together.

divide as in whole numbers, annexing ciphers to decimal part of dividend if necessary.

mark off in answer so many places as difference denotes.

answer is integer.

answer is integer; annex so many ciphers as difference denotes.

for numerator, take to end of first circulating period, subtracting from it non-circulating period; for denominator, take so many nines, as there are figures that circulate, and so many ciphers as there are figures that do not.

Tables of Weights, &c.

Avoirdupois Weight:—

|

Dram (*dr.*)

16	Drams	= 1 Ounce (<i>oz.</i>)
16	Ounces	= 1 Pound (<i>lb.</i>)
28	Pounds	= 1 Quarter (<i>qr.</i>)
4	Quarters	= 1 Hundredweight (<i>cwt.</i>)
20	Hundredweights	= 1 Ton.

Troy Weight:—

		Grain (<i>gr.</i>)
24	Grains	= 1 Pennyweight (<i>dwt.</i>)
20	Pennyweights	= 1 Ounce (<i>oz.</i>)
12	Ounces	= 1 Pound (<i>lb.</i>)

Apothecaries' Weight:—

		Grain (<i>gr.</i>)
20	Grains	= 1 Scruple (<i>scr.</i>) = 1 _
3	Scruples	= 1 Dram (<i>dr.</i>) = 1 _
8	Drams	= 1 Ounce (<i>oz.</i>) = 1 _
12	Ounces	= 1 Pound (<i>lb.</i>)

Miscellaneous Weight:—

14	Pounds (Avoird.)	= 1 Stone (<i>st.</i>)
7000	Grains (Troy)	= 1 Pound (Avoird.)
<i>gr., oz., lb.</i>		are same in Troy and Apoth. Weight.

Length:—

		Barleycorn.
3	Barleycorns	= 1 Inch (<i>in.</i>)
12	Inches	= 1 Foot (<i>ft.</i>)
3	Feet	= 1 Yard (<i>yd.</i>)
220	Yards	= 1 Furlong.
8	Furlongs, or	} = 1 Mile (<i>m.</i>)
1760	Yards	
3	Miles	= 1 League.

Surface:—

		Square Inch.
12 × 12	Square Inches	= 1 Square Foot.
3 × 3	Square Feet	= 1 Square Yard.
4840	Square Yards	= 1 Acre.
640	Acres, or	} = 1 Square Mile
1760 × 1760	Square Yards	

Solid Contents:—

$12 \times 12 \times 12$ $3 \times 3 \times 3$	Cubic Inch. Cubic Inches = 1 Cubic Foot. Cubic Feet = 1 Cubic Yard.
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Miscellaneous Lengths:—

4	Inches = 1 Hand.
2	Yards, or
6	Feet } = 1 Fathom.
$5\frac{1}{2}$	Yards = 1 Rod, Pole, or Perch.
40	Poles = 1 Furlong.

Proportion:—

if $a : b :: c : d$,
 values of a, b, c, d , each in terms of the other three, are

Proportional parts: to divide a given number into parts which shall be proportional to certain other given numbers

$$\frac{bc}{d}, \frac{ad}{c}, \frac{ad}{b}, \frac{bc}{a}.$$

divide by sum of given numbers and multiply by each separate.

Simple Interest, and Discount:—

let P = Principal, or Present value of future debt,

T = Time (in years),

R = Rate per cent,

D = Interest on principal, or Discount on future debt,

F = Future amount of Principal, or Future debt;

then,

(α) Interest on £100=

(β) Amount of £100=

(γ) formula connecting P, D, F

(δ) P, T, R, D

(ε) P, T, R, F

$$T \times R.$$

$$£100 + T \times R.$$

$$P + D = F.$$

$$\text{as } £100 : P :: T \times R : D.$$

$$\text{as } £100 : P :: £100 + T \times R : F.$$

Compound Interest:—

given Principal, Time and Rate:

(α) to find Amount

(β) Interest

=

find Amount of £1 in one year: multiply Principal by this so many times as there are years.
Amount minus Principal.

Stocks:—

let S = amount of Stock,

R = Rate per cent.,

Y = Yearly income,

M = Market price of £100 Stock,

C = Cash value of amount of Stock,

formula connecting these

as £100 : S :: R : Y :: M : C

8.5 Formulæ

Source: cyclostyled 1878

e, as series.....	$1 + 1 + \frac{1}{2} + \frac{1}{3} + \dots$
in decimals.....	2·718281828...
e^x , as series.....	$1 + x + \frac{x^2}{2} + \frac{x^3}{3} + \dots$
$\log_e a$, do.	$(a - 1) - \frac{(a-1)^2}{2} + \frac{(a-1)^3}{3} - \dots$
a^x , do.	$1 + \log_e a x + \frac{(\log_e a)^2 \cdot x^2}{2} + \dots$
$\log_e(a + 1)$, do.	$a - \frac{a^2}{2} + \frac{a^3}{3} - \dots$
$\log_e(a + 1) - \log_e a$...	$2 \left\{ \frac{1}{2a+1} + \frac{1}{3 \cdot (2a+1)^3} + \frac{1}{5 \cdot (2a+1)^5} + \dots \right.$
$\log_e 10$, in decimals ...	2·3025851
$\log_{10} e$, do. ...	·4342945
<hr/>	
$\cos \theta$, in terms of θ ...	$1 - \frac{\theta^2}{2} + \frac{\theta^4}{4} - \dots$
$\sin \theta$, do.	$\theta - \frac{\theta^3}{3} + \frac{\theta^5}{5} - \dots$
$\cos \theta$, exponential value	$\frac{e^{\theta i} + e^{-\theta i}}{2}, [i = \sqrt{-1}]$
$\sin \theta$, do.	$\frac{e^{\theta i} - e^{-\theta i}}{2i}$
$\tan^{-1} x$, in terms of x	$x - \frac{x^3}{3} + \frac{x^5}{5} - \dots$
<hr/>	
π , approximate values	$\frac{22}{7}, \frac{355}{113}$
in decimals.....	3·1415927
$\frac{\pi}{180}$, do.	·0174533
$\frac{180}{\pi}$, do.	57·2957795

Mar. 19, 1878.

8.6 Formulæ (Group C)

Source: cyclostyled 1878?

N.B. The pupil need not commit to memory the formulæ marked thus “[”]; but he should be able to work them out readily.

Other version:
→ 4.3, p. 703

Formula connecting E, F	$E : F :: 9 : 10$
E, Θ	$E : \Theta :: 180 : \pi$
Approximative values of π	$\frac{22}{7}, \frac{355}{113}, 3.14159\&c.$
Reciprocal ratios	sin, cosec; cos, sec; tan, cot
Formula connecting sin, cos	$\sin^2 + \cos^2 = 1$
” tan, sin, cos	$\tan = \frac{\sin}{\cos}$
sec, tan	$\sec^2 = \tan^2 + 1$
Sin, cos, tan, of	
0°	0, 1, 0
90°	1, 0, $\frac{1}{0}$
180°	0, -1, 0
$[270^\circ$	-1, 0, $\frac{1}{0}$
45°	$\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}, 1$
60°	$\frac{\sqrt{3}}{2}, \frac{1}{2}, \sqrt{3}$
30°	$\frac{1}{2}, \frac{\sqrt{3}}{2}, \frac{1}{\sqrt{3}}$
Sin($A + B$)	$\sin A \cos B + \cos A \sin B$
” ($A - B$)	” - ”
Cos($A + B$)	$\cos A \cos B - \sin A \sin B$
” ($A - B$)	” + ”
Tan($A + B$)	$\frac{\tan A + \tan B}{1 - \tan A \tan B}$
” ($A - B$)	$\frac{\tan A - \tan B}{1 + \tan A \tan B}$
Sin $2A$	$2 \sin A \cos A$
Cos $2A$	
in terms of cos, sin	$\cos^2 A - \sin^2 A$
of cos only	$2 \cos^2 A - 1$
of sin only	$1 - 2 \sin^2 A$
Tan $2A$	$\frac{2 \tan A}{1 - \tan^2 A}$
[Cos $\frac{A}{2}$, in terms of cos A	$\sqrt{\frac{1 + \cos A}{2}}$
[Sin $\frac{A}{2}$, ”	$\sqrt{\frac{1 - \cos A}{2}}$
Tan $^{-1} t_1 + \tan^{-1} t_2$	$\tan^{-1} \frac{t_1 + t_2}{1 - t_1 t_2}$
” - ”	$\tan^{-1} \frac{t_1 - t_2}{1 + t_1 t_2}$
[Hence $2 \tan^{-1} t$	$\tan^{-1} \frac{2t}{1 - t^2}$
Sin $A + \sin B$	$2 \sin \frac{A+B}{2} \cdot \cos \frac{A-B}{2}$
” - ”	$2 \cos \frac{A+B}{2} \cdot \sin \frac{A-B}{2}$
Cos $A + \cos B$	$2 \cos \frac{A+B}{2} \cdot \cos \frac{A-B}{2}$
” - ”	$-2 \sin \frac{A+B}{2} \cdot \sin \frac{A-B}{2}$

Triangles

Formulæ of sines

$$\left| \frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c} \right.$$

” sides	$\cos A = \frac{b^2+c^2-a^2}{2bc}$
” tangents	$\tan \frac{B-C}{2} = \frac{b-c}{b+c} \cdot \cot \frac{A}{2}$
$\cos \frac{A}{2}$, in terms of sides	$\sqrt{\frac{s(s-a)}{bc}}$
$\sin \frac{A}{2}$, ”	$\sqrt{\frac{(s-b)(s-c)}{bc}}$
$\tan \frac{A}{2}$, ”	$\sqrt{\frac{(s-b)(s-c)}{s(s-a)}}$
$[\sin A$, ”	$\frac{2}{bc} \sqrt{s(s-a)(s-b)(s-c)}$
a , in terms of b, c, B, C	$b \cdot \cos C + c \cdot \cos B$
Area, in terms of two sides and included angle	$\frac{bc}{2} \cdot \sin A$
in terms of sides	$\sqrt{s(s-a)(s-b)(s-c)}$
If Area be denoted by ‘ M ,’ and radii of inscribed, circumscribed, and escribed circles by ‘ r, R, R_a, R_b, R_c ;	
r	$\frac{M}{s}$
R	$\frac{abc}{4M}$
$[R_a, \&c.$	$\frac{M}{s-a}, \&c.$

Polygons. (n sides)

[Each angle	$180^\circ - \frac{360^\circ}{n}$
[Formula connecting r, a	$\frac{a}{2r} = \tan \frac{180^\circ}{n} \cdot 1$
[” ” R, a	$\frac{a}{2R} = \sin \frac{180^\circ}{n} \cdot 2$
[Area, in terms of sides	$\frac{na^2}{4} \cdot \cot \frac{180^\circ}{n}$
[” ” of r	$nr^2 \cdot \tan \frac{180^\circ}{n}$
[” ” of R	$\frac{nR^2}{2} \cdot \sin \frac{360^\circ}{n}$

Logarithms

If base be denoted by ‘ a ’;	
$\log a$	1
$\log 1$	0
$\log mn$	$\log m + \log n$
$\log \frac{m}{n}$	$\log m - \log n$
$\log m^n$	$n \cdot \log m$
$\log \sqrt[n]{m}$	$\frac{\log m}{n}$

¹ changed from $\cot \frac{180^\circ}{n} = \frac{2r}{a}$
² changed from $\operatorname{cosec} \frac{180^\circ}{n} = \frac{2R}{a}$

Part 9

Other Mathematical Texts

9.1 Notes on the First Part of Algebra

Source: Notes on the First Part of Algebra

(i. e. To Simple Equations Inclusive.)

Designed for Candidates for Responsions.

Preface

The following List of Subjects with its accompanying Cycle has been drawn up as a guide to the Student in choosing examples to work. They are so arranged as to secure his giving the most attention to those which are most important. Space has been left at the end of the Cycle for recording, at the close of each day's work, the point reached in it.

To illustrate the use of this Cycle, we will suppose 40 to be the last entry made in this space. Looking to No. 41 in the Cycle, the Student finds 8ξ , which the List explains as "simplifying continued fractions:" he turns to his book of examples for some of this kind, and, after working one or two, goes on to No. 42 of the Cycle, against which he finds 13α , which the List explains as "Involution of single term: integral coefficient," and so on till he has reached (say) No. 47 of the Cycle. He then enters 47 in the space at the end, to serve as a guide in beginning work next time.

If this List and Cycle be thought to be too complicated for convenient use, they may be simplified by disregarding the small Greek letters, and attending to the numerals only. In this case the Student may begin the Cycle again after reaching No. 113.

A few Rules, which ought to be committed to memory, are added at the end.

N.B. The Student is recommended to draw a line down the margin of the "List of Subjects," to mark how far he has got in learning the subject; and in using the Cycle, he will of course select only those examples which fall within the range so marked.¹

¹Remark: "List of Subjects" and "Cycle for Working Examples" omitted here

Rules to be Committed to Memory

N.B. By covering the lower part of the page, the Student may test for himself his recollection of these rules.

- Addition,
 when all the signs are alike. (2)
 when some are +, and some -. (3)
- Subtraction,
 when the signs are alike, and the upper quantity largest. (4)
 when this is not the case. (5)
- Brackets, to put on or take off.
 when the sign outside the bracket is +. (6)
 when it is -. (7)
- Multiplication and Division,
 as to indices:
 $a^m \times a^n =$ (8)
 $a^m \div a^n =$ (9)
 as to signs:
 when the signs of the 2 quantities are alike. (10)
 when they are different. (11)
- Resolving into factors,
 when the quantity is of the form $(a^2 - b^2)$. (12)
 $(a^2 + b^2)$. (13)
 $(a^3 - b^3)$. (14)
 $(a^3 + b^3)$. (15)
 $(a^2 + 2ab + b^2)$. (16)
 $(a^2 - 2ab + b^2)$. (17)
- G. C. M. (particular cases,)
 when a factor is observed which will divide one of the quantities,
 but not the other. (18)
 when a factor is observed which will divide both quantities.
 (19)

²add all the terms together, and bring down the sign.

³add all the + terms together, and add all the - terms together: and set down the *difference* of the 2 results, with the sign of the *greater*.

⁴subtract, and bring down the sign.

⁵change the sign of the lower quantity, and proceed as in Addition.

⁶leave the signs of all terms within the bracket unchanged.

⁷change the signs of all terms within the bracket.

⁸ $= a^{m+n}$.

⁹ $= a^{m-n}$.

¹⁰the sign of the result is +.

¹¹the sign of the result is -.

¹²it $= (a + b) \cdot (a - b)$.

¹³it cannot be resolved.

¹⁴it will divide by $(a - b)$.

¹⁵is will divide by $(a + b)$.

¹⁶it $= (a + b)^2$.

¹⁷it $= (a - b)^2$.

¹⁸divide it out of that quantity.

¹⁹divide it out of both, and multiply the answer by it.

when the first term of the divisor will not exactly divide the first term of the dividend. (20)

Theory of negative indices, and of a^0

$$a^{-m} = \tag{21}$$

$$a^0 = \tag{22}$$

Involution and Evolution,

$$a^{m^n} = \tag{23}$$

$$\text{the } n\text{th root of } a^m, \text{ i. e. } \sqrt[n]{a^m} = \tag{24}$$

$$\text{hence, the } n\text{th root of } a, \text{ i. e. } \sqrt[n]{a} \tag{25}$$

²⁰find the L. C. M. of coefficients of these 2 terms, and multiply the dividend by such a quantity as will raise the coefficient of its first term to this L. C. M.

²¹ $= \frac{1}{a^m}$.

²² $= 1$.

²³ $= a^{mn}$.

²⁴ $= a^{\frac{m}{n}}$.

²⁵ $= a^{\frac{1}{n}}$.

9.2 A Guide to the Mathematical Student

Source: General List of Subjects (without preface); A Guide to the Mathematical Student

Preface

The object of the following pages is twofold:—

First, to exhibit, in a compendious form, the whole subject-matter of Pure Mathematics, arranged in the order in which it would usually be advisable that the student should go through it. This Syllabus may be useful as an aid in laying out plans of reading and reviewing, and in shewing the student at a glance where he is on his course, how much is done, and how much remains to be done.

Secondly, to furnish a guide for working examples in the whole subject, so arranged as to secure that the most important subjects shall have the largest share of attention. The Cycle intended for this purpose consists of two columns: one containing the numbers from 1 to 1702, the other, references to the Syllabus. It is intended that the student using it should turn to the Syllabus for each reference, and work two or three examples in the subject there indicated, (of course passing over all references to subjects he has not read,) and at the end of each day's work mark what point in the Cycle he has reached.

In the Syllabus, the small figures to the left of the line indicate how often each subject is referred to in the Cycle: so that if the teacher should consider that the examples assigned to any subject are either too many or too few, he can remedy the defect by erasing references in the Cycle, or by inserting additional ones.

The present attempt is, no doubt, deficient and faulty in many respects: and any suggestions from Mathematical teachers for remedying its defects will be gratefully received by the compiler.

*Christ Church, Oxford,
December, 1864.*

General List of Subjects

30	A. Arithmetic.
20	B. Euclid I, II.
75	C. Algebra; to Quadratic Equations.
23	D. Euclid III, IV.
45	E. Algebra; from Quadratic Equations to Binomial Theorem. ¹
16	F. Euclid V, VI.
114	G. Linear Algebraical Geometry. Plane do. to end of Trigonometry (1st time).
45	H. Geometrical Conic Sections.
100	I. Algebra; from Binomial Theorem to Theory of Equations.
45	J. Higher Plane Pure Geometry.
110	K. Plane Algebraical Geometry; from end of Trigonometry to Quadratic Loci (constructed from Geometrical prop- erties).
24	L. Plane Algebraical Geometry; Trigonometry (2nd time).

120	M. Plane Algebraical Geometry; Quadratic Loci (constructed from Equations).
135	N. Differential Calculus (1st time).
19	O. Calculus of Finite Differences (1st time).
20	P. Euclid XI, XII, and higher Solid Pure Geometry.
22	Q. Solid Algebraical Geometry; to end of Stereometry.
65	R. Solid Algebraical Geometry; from end of Stereometry to Quadratic Superficial Loci (constructed from Geometrical properties).
37	S. Higher Plane Algebraical Geometry.
135	T. Integral Calculus (1st time).
45	U. Solid Algebraical Geometry; Quadratic Superficial Loci (constructed from Equations).
77	V. Higher Algebra.
145	W. Differential Calculus (2nd time).
102	X. Integral Calculus (2nd time).
25	Y. Calculus of Finite Differences (2nd time).
35	Z. Calculus of Variations.

Subjects Subdivided

A.

Arithmetic.

1	1. Addition, Subtraction, Multiplication, and Division; (Simple.)
2	2. Greatest Common Measure and Least Common Multiple.
2	3. Square root and Cube root.
3	4. Vulgar Fractions; addition, subtraction, multiplication, and division.
3	5. Decimal Fractions; addition, subtraction, multiplication, and division.
2	6. Circulating Decimals.
1	7. Reduction from one denomination to another.
1	8. Addition, Subtraction, &c. (Compound).
3	9. Reduction of Fractions (vulgar and decimal) of higher denomination to lower; and of lower denomination to fractions (vulgar and decimal) of higher.
1	10. Practice.
2	11. Mensuration, Superficial and Solid.
1	12. Duodecimals.
2	13. Rule of Three; Direct, Inverse, and Double. Proportional parts.
3	14. Interest, Simple and Compound. Discount. Equation of payments. Stocks.
4	15. Miscellaneous, viz.: Exchange. Profit and Loss. Partnership, &c.

B.

Euclid I, II.

	1. Book I.
	2. Book II.
6	3. Deductions from Book I. Problems.
7	4. do. do. Theorems.
3	5. Book II. Problems.
4	6. do. do. Theorems.

C.

Algebra; to Quadratic Equations.

2	1. Addition, Subtraction, Multiplication, and Division.
2	2. Greatest Common Measure and Least Common Multiple.
5	3. Fractions.
3	4. Involution and Evolution.
4	5. Fractional Indices.
9	6. Equations, one unknown quantity; Simple.
10	7. do. do. Quadratic.
6	8. do. two or more unknown quantities; Simple.
6	9. do. do. Quadratic.
	Problems leading to Equations,
5	10. One unknown quantity; Simple.
6	11. do. Quadratic.
5	12. Two or more unknown quantities; Simple.
6	13. do. Quadratic.
2	14. Theory of Equations (1st time).
4	15. Miscellaneous.

D.

Euclid III, IV.

	1. Book III.
	2. Book IV.
6	3. Deductions from Book III. Problems.
8	4. do. do. Theorems.
4	5. do. Book IV. Problems.
5	6. do. do. Theorems.

E.

Algebra; from Quadratic Equations to Binomial Theorem.

2	1. Inequalities.
6	2. Ratio, Proportion, and Variation.
9	3. Series; Arithmetical, Geometrical, and Harmonical.
9	4. Permutations and Combinations.
5	5. Binomial Theorem.

- 6 | 6. Logarithms, use of.
- 4 | 7. Chances (1st time).
- 4 | 8. Miscellaneous.

F.

Euclid V, VI.

- 1. Book V.
- 2. Book VI.
- 8 | 3. Deductions from Book VI. Problems.
- 8 | 4. do. do. Theorems.

G.

Linear Algebraical Geometry.

Plane do. to end of Trigonometry (1st time).

Linear Algebraical Geometry.

- 5 | 1. Representation and discussion of lengths absolute.
- 2. do. do. do. with direction.
- 3. do. of positions of Points by means of lengths; and discussion of such lengths.
- 3 | 4. Interpretation of Equations; and discussion of Points.

Plane Algebraical Geometry.

- 5 | 5. Representation and discussion of magnitudes absolute.
- 6. do. do. do. with direction.
- 7. Goniometry: i. e., representation of angles, with direction, by means of ratios; and discussion of such ratios.
- 12 | 8. Angles; relations between goniometrical ratios of an angle.
- 6 | 9. do. goniometrical ratios of particular angles.
- 18 | 10. do. relations between goniometrical ratios of two or more angles.
- 7 | 11. Angles; inverse function.
- 5 | 12. do. elimination of goniometrical ratios.
- 13. Theory of Projection (Plane).
- 18 | 14. Trigonometry; properties of Triangles.
- 6 | 15. do. do. Quadrilateral Figures inscribed in Circles.
- 5 | 16. do. do. regular Polygons.
- 16 | 17. Heights and distances.
- 8 | 18. Miscellaneous, viz., Subsidiary angles, &c.

H.*Geometrical Conic Sections.*

- | | |
|---|--|
| | 1. Ellipse. |
| | 2. Hyperbola. |
| | 3. Parabola. |
| 4 | 4. Problems on Parabola. |
| 5 | 5. Theorems do. |
| 5 | 6. Problems on Ellipse. |
| 8 | 7. Theorems do. |
| 5 | 8. Problems on Hyperbola. |
| 8 | 9. Theorems do. |
| 5 | 10. Miscellaneous, viz., mechanical methods of tracing curves, &c. |

I.*Algebra; from Binomial Theorem to Theory of Equations.*

- | | |
|----|---|
| 6 | 1. Evolution of Binomial Surds. |
| 12 | 2. Indeterminate Coefficients. |
| 6 | 3. Continued Fractions. |
| 10 | 4. Indeterminate Equations, (1st and 2nd degree). |
| 7 | 5. Partial Fractions. |
| 3 | 6. Scales of Notation. |
| 7 | 7. Properties of Numbers. |
| 7 | 8. Vanishing Fractions. |
| 6 | 9. Converging and diverging Series. |
| 4 | 10. Logarithms, construction of. |
| 7 | 11. Interest, Discount, and Annuities. |
| 6 | 12. Chances (2nd time), and Life-Annuities. |
| 11 | 13. Theory of Equations (2nd time). |
| 6 | 14. Miscellaneous. |

J.*Higher Plane Pure Geometry.*

- | | |
|---|--|
| 4 | 1. Anharmonic and Harmonic Proportion. |
| 5 | 2. Anharmonic ratio of a Pencil. Harmonic Pencils. |
| 5 | 3. Geometrical Involution. |
| 4 | 4. Poles and Polars in relation to Circles. |
| 4 | 5. Methods of Reciprocation. |
| 5 | 6. Radical Axis and Centres of Similitude. |
| 5 | 7. Principle of Continuity. |
| 5 | 8. Projection. |
| 8 | 9. Miscellaneous. |

K.

*Plane Algebraical Geometry; from end of Trigonometry to Quadratic Loci
(constructed from Geometrical properties).*

- | | | | |
|----|-----|--|--|
| | 1. | Determination of positions of Points, Lines, and Circles, by means of magnitudes; and discussion of such magnitudes. | |
| | 2. | Interpretation and classification of simple Equations. | |
| 4 | 3. | Interpretation of Pairs of Equations. Representation and discussion of Points. | |
| | 4. | Investigation of Locus of single Simple Equations. Representation of Lines. | |
| 10 | 5. | Lines; Problems. | |
| 3 | 6. | do. Theorems. | |
| 7 | 7. | Rectilinear Figures; Problems. | |
| 2 | 8. | do. Theorems. | |
| 3 | 9. | Pencils; Problems. | |
| 9 | 10. | do. Theorems. | |
| 7 | 11. | Representation of Loci of Points fulfilling certain conditions. | |
| | 12. | Representation of Pairs of Lines. Criterion that Quadratic Equation should represent Pair of Lines. | |
| 3 | 13. | Pairs of Lines; Problems. | |
| 2 | 14. | do. Theorems. | |
| | 15. | Representation of Circles. Criterion that Quadratic Equation should represent Circle. | |
| 12 | 16. | Circles; Problems. | |
| 6 | 17. | do. Theorems. | |
| | 18. | Representation of Parabola. Criterion that Quadratic Equation should represent Parabola. | |
| 4 | 19. | Parabola; easy Problems. | |
| 4 | 20. | do. Theorems. | |
| | 21. | Representation of Ellipse. Criterion that Quadratic Equation should represent Ellipse. | |
| 6 | 22. | Ellipse; easy Problems. | |
| 8 | 23. | do. Theorems. | |
| | 24. | Representation of Hyperbola. Criterion that Quadratic Equation should represent Hyperbola. | |
| 6 | 25. | Hyperbola; easy Problems. | |
| 8 | 26. | do. Theorems. | |
| 6 | 27. | Miscellaneous. | |

L.

Plane Algebraical Geometry; Trigonometry (2nd time).

- | | | |
|---|----|---|
| 4 | 1. | Circular measure. Area of Circle, &c. |
| 6 | 2. | Demoivre's Theorem; and theorems involving powers of goniometrical ratios. |
| 4 | 3. | Summation of series of goniometrical ratios. |
| 4 | 4. | Relation between angle and its goniometrical ratios. Gregorie's Series. Euler's and Machin's Series for π . |

6 | 5. Miscellaneous; viz., resolution of $\sin \theta$ and $\cos \theta$ into factors, &c.

M.

Plane Algebraical Geometry; Quadratic Loci (constructed from Equations).

6	1. Interpretation and classification of Quadratic Equations.	
	Quadratic Locus;	
8	2. General.	Problems.
6	3. do.	Theorems.
12	4. do. when $B^2 - 4AC \neq 0$, i. e. Central Locus;	Problems.
8	5. do. do.	Theorems.
16	6. Central, when $B^2 - 4AC < 0$, i. e. Ellipse.	Problems.
10	7. do. do.	Theorems.
12	8. do. when $B^2 - 4AC > 0$, i. e. Hyperbola.	Problems.
8	9. do. do.	Theorems.
16	10. General, when $B^2 - 4AC = 0$, i. e. Non-central Locus, or Parabola.	Problems.
10	11. do. do.	Theorems.
8	12. Miscellaneous.	

N.

Differential Calculus (1st time).

	1. Elements of subject.
3	2. Differentiation from first principles.
3	3. Differentiation of functions connected by addition, &c.
9	4. do. algebraical functions.
8	5. do. compound functions.
8	6. do. circular functions.
5	7. do. functions of many variables.
4	8. Successive differentiation. Leibnitz's Theorem.
4	9. Maclaurin's Theorem.
4	10. Theory of equicrescent variable. Taylor's Theorem.
6	11. Elimination of constants and functions by differentiation (1st time).
	12. Relation between functions and derived functions; viz. $\frac{F(x_0+h)-F(x_0)}{f(x_0+h)-f(x_0)} = \frac{F'(x_0+\theta h)}{f'(x_0+\theta h)}$, &c.
6	13. Order of Infinitesimals.
7	14. Evaluation of quantities of the form $\frac{0}{0}$, &c.
8	15. Maxima and minima of explicit functions of <i>one</i> variable.
11	16. Geometrical application to end of do.
	17. Symbols of direction extended.
8	18. Cissoid, Witch, &c.
10	19. Tangents &c. of plane curves.
5	20. Direction of curvature. Hessian.
5	21. Multiple points.
6	22. Tracing curves.

- 4 | 23. Curvature of plane curves.
- 5 | 24. Evolutes and involutes.
- 6 | 25. Miscellaneous.

O.

Calculus of Finite Differences (1st time).

- 2 | 1. Differentiation of functions.
- 2 | 2. Integration of functions by indeterminate coefficients.
- 3. do. product of n terms in *A.P.*, and of reciprocal of the same.
- 2 | 4. Resolution of rational algebraical functions into these 2 forms.
- 2 | 5. Supplying deficient factors.
- 5 | 6. Integration of circular, exponential, and other functions.
- 6 | 7. Summation of Series by general methods.

P.

Euclid XI, XII, and higher Solid Pure Geometry.

- 1. Book XI.
- 2. Book XII.
- 2 | 3. Deductions from Book XI. Problems.
- 3 | 4. do. do. Theorems.
- 1 | 5. Deductions form Book XII. Problems.
- 2 | 6. do. do. Theorems.
- 7. Sections of Cone.
- 2 | 8. Problems on do.
- 3 | 9. Theorems on do.
- 10. Higher Solid Pure Geometry.
- 3 | 11. Problems on do.
- 4 | 12. Theorems on do.

Q.

Solid Algebraical Geometry; to end of Stereometry.

- 2 | 1. Representation and discussion of volumes absolute.
- 2. do. of magnitudes with direction.
- 3. Theory of Projection in Space.
- 6 | 4. Spherical Trigonometry; i. e., properties of solid angles.
- 5. Napier's Analogies.
- 6. Gauss' Theorems.
- 5 | 7. Solution of spherical Triangles; inscribed Circles; area of triangle and lune, &c.
- 8. Cagnolis's Theorem. Lhuillier's Theorem.
- 4 | 9. Stereometry; i. e. properties of plane-sided Solids; inscribed Spheres; volume and diagonal of Parallelepipedon, &c.

R.

Solid Algebraical Geometry; from end of Stereometry to Quadratic Superficial Loci (constructed from Geometrical properties).

- | | |
|---|--|
| | 1. Determination of position, in Space, of Points, Lines, Planes, Spheres, and Cylinders, by means of certain magnitudes; and discussion of such magnitudes. |
| | 2. Interpretation and classification of Simple Equations. |
| | 3. do. do. Pairs of Equations. |
| | 4. do. of sets of 3 Equations. |
| 4 | 5. Representation and discussion of Points. |
| | 6. Investigation of Locus of single Simple Equations. Representation of Planes. |
| 6 | 7. Planes. Problems. |
| 6 | 8. do. Theorems. |
| 3 | 9. Plane-sided Solids. Problems. |
| 4 | 10. do. Theorems. |
| 3 | 11. Representation of Superficial Loci of Points fulfilling certain conditions. |
| | 12. Representation of Pairs of Planes. Criterion that Quadratic Equation should represent Pair of Planes. |
| 2 | 13. Pairs of Planes. Problems. |
| 2 | 14. do. Theorems. |
| | 15. Investigation of Locus of Pairs of Simple Equations. Representation of Lines. |
| 6 | 16. Lines. Problems. |
| 4 | 17. do. Theorems. |
| | 18. Representation of Spheres. Criterion that Quadratic Equation should represent Sphere. |
| 4 | 19. Spheres. Problems. |
| 5 | 20. do. Theorems. |
| | 21. Representation of Cylinders. Criterion that Quadratic Equation should represent Cylinder. |
| 2 | 22. Cylinders. Easy Problems. |
| 3 | 23. do. Theorems. |
| | 24. Representation of Cones. Criterion that Quadratic Equation should represent Cones. |
| 2 | 25. Cones. Easy Problems. |
| 3 | 26. do. Theorems. |
| 6 | 27. Miscellaneous. |

S.

Higher Plane Algebraical Geometry.

- | | |
|---|----------------------------|
| 2 | 1. Eccentric angles. |
| 2 | 2. Similar Conic Sections. |

- 4 | 3. Contact of Conics. Osculating circle. Centre of curvature,
and Evolutes.
- 5 | 4. Anharmonic properties of Conics.
- 4 | 5. Method of reciprocal Polars.
- 4 | 6. Involution.
- 7. Pascal's Theorem.
- 8. Tangential coordinates.
- 9. Discussion of Locus of n th degree.
- 10. Interpretation and classification of Cubic Equations.
- 3 | 11. Discussion of Cubic Loci.
- 12. Interpretation and classification of Biquadratic Equations.
- 3 | 13. Discussion of Biquadratic Loci.
- 4 | 14. Discussion of Transcendental Loci.
- 6 | 15. Miscellaneous.

T.

Integral Calculus (1st time).

- 1. Elements of subject.
- 4 | 2. Integration from first principles.
- 8 | 3. Definite integration.
- 12 | 4. Integration of rational algebraical functions.
- 14 | 5. do. irrational do.
- 8 | 6. do. do. do. by rationalization.
- 7 | 7. do. do. do. by reduction.
- 9 | 8. do. exponential and logarithmic functions.
- 10 | 9. do. circular functions.
- 15 | 10. Definite integrals and their properties.
- 10 | 11. Rectification of plane curves.
- 10 | 12. Quadrature of plane surfaces.
- 8 | 13. do. surfaces of revolution.
- 8 | 14. Cubature of solids of revolution.
- 12 | 15. Miscellaneous.

U.

Solid Algebraical Geometry; Quadratic Superficial Loci (constructed from Equations).

- 1. Interpretation and classification of Single Quadratic Equations.
- 4 | 2. General Quadratic Superficial Locus. Problems.
- 3 | 3. do. Theorems.
- 3 | 4. Reduced Quadratic Locus, $(Px^2 + Qy^2 + Rz^2 + Sx + Ty + Vz + W = 0)$,
when neither P , Q , nor $R = 0$; i. e. Central Quadratic Locus.
 $(Px^2 + Qy^2 + Rz^2 + H = 0)$. Problems.
- 3 | 5. do. Theorems.
- 2 | 6. Central Quadratic Locus, when $H = 0$, i. e. Cone. Problems.
- 2 | 7. do. Theorems.

3	8. Central Quadratic Locus, when $P, Q, R,$ and H have the same sign; i. e. Ellipsoid, and Prolate and Oblate Spheroid.	Problems.
3	9.	do. Theorems.
1	10. Central Quadratic Locus, when one of them has a different sign from the other three; i. e. Hyperboloid of one sheet.	Problems.
1	11.	do. Theorems.
1	12. Central Quadratic Locus, when two of them have a different sign from the other two; i. e. Hyperboloid of two sheets.	Problems.
1	13.	do. Theorems.
2	14. Central Quadratic Locus, when either $P, Q,$ or $R = 0$; i. e. the Axicentral Locus, or Central Cylinder.	Problems.
2	15.	do. Theorems.
2	16. Reduced Quadratic Locus, when one or more of the three, $(P, Q,$ and $R,) = 0$; i. e. Non-central Locus.	Problems.
2	17.	do. Theorems.
2	18. Non-central Locus, when <i>one</i> of the three, $(P, Q,$ and $R,) = 0$; i. e. Paraboloid.	Problems.
2	19.	do. Theorems.
1	20. Non-central Locus, when <i>two</i> of the three, $(P, Q,$ and $R,) = 0$; i. e. Parabolic Cylinder.	Problems.
1	21.	do. Theorems.
2	22. Miscellaneous, (e. g. Cono-cuneus).	Problems.
2	23.	do. Theorems.

V.

Higher Algebra.

4	1. Theory of equations (3rd time).
3	2. Transformation of equations.
2	3. Equal roots.
3	4. Limits of roots. Separation of roots.
2	5. Commensurable roots.
2	6. Depression of equations.
1	7. Reciprocal equations.
2	8. Binomial do.
3	9. Cubic do.
3	10. Biquadratic do.
2	11. Sturm's Theorem. Fourier's Theorem.
2	12. Lagrange's and Newton's methods of approximation.
1	13. Horner's method.
3	14. Symmetrical functions of roots.
1	15. Sums of powers of roots.
6	16. Determinants.
5	17. Elimination.
4	18. Expansion of functions in series.
5	19. Invariants. Covariants. Emanants. Evectants.
2	20. Contravariants.
3	21. Hyperdeterminant Calculus. Hermite's Law of Reciprocity.

2	22. Canonizants.
2	23. Binary Quantics, Qudrics, &c.
2	24. Ternary Quantics, Qudrics, &c.
3	25. Discriminants, &c.
2	26. Commutants.
5	27. Miscellaneous.

W.

Differential Calculus (2nd time).

3	1. Trigonometrical expressions. Roots of +1 and -1. Imaginary logarithms.
2	2. Limits of Maclaurin's and Taylor's Theorems.
5	3. Change of euicrescent variable.
4	4. Successive differentiation of functions of many independent variables.
2	5. Euler's Theorem of homogeneous functions.
3	6. Successive differentiation of implicate functions.
2	7. Bernoulli's Numbers.
2	8. Lagrange's Theorem.
2	9. Laplace's Theorem.
	10. Extension of Maclaurin's Theorem.
10	11. Elimination of constants and functions (2nd time).
5	12. Transformation of differential expressions into their equivalents in terms of other variables.
	13. Expansion of functions of one variable. Accurate proofs of Maclaurin's and Taylor's Theorems.
4	14. Expansion of functions of two or more variables. Maxima and minima.
6	15. Of implicate functions of 2 independent variables.
7	16. Of explicite do. do. do.
5	17. Of functions of 3 or more do. do.
5	18. do. do. not independent do.
5	19. Properties of Curves of the <i>n</i> th degree.
3	20. Contact of curves (plane).
6	21. Envelopes do.
2	22. Theory of reciprocation.
3	23. Caustics.
10	24. Curved surfaces, tangent planes, &c.
4	25. Singular points of curved surfaces.
3	26. Curves in space, tangents, &c.
3	27. Geodesic lines, &c.
2	28. Curved surfaces generated by right lines. Ruled surfaces.
2	29. do. do. Conical do.
2	30. do. do. Cylindrical do.
2	31. do. do. Developable do.
2	32. do. do. Skew do.
2	33. do. do. Conoidal do.
2	34. do. by circles. Surfaces of revolution.

2	35.	do.	do.	Tubular do.
1	36.	Curves in space.	Curvature-angle of contingence.	
1	37.	do.	Torsion.	
1	38.	do.	The polar surface.	
1	39.	do.	The osculating sphere.	
1	40.	do.	Complex flexure.	
1	41.	do.	The osculating surface.	
1	42.	do.	The rectifying surface and line.	
1	43.	Curved surfaces.	Curvature. Euler's Theorem.	
1	44.	do.	Umbilics.	
1	45.	do.	Lines of curvature.	
1	46.	do.	Dupin's Theorem.	
1	47.	do.	Osculating surfaces.	
	48.	Calculus of operations,	Elements of.	
	49.	Laws of commutation,	distribution, and iteration.	
	50.	Law of total differentiation.		
6	51.	Miscellaneous.		

X.

Integral Calculus (2nd time).

3	1.	Successive integration.
3	2.	Rectification of non-plane curves.
2	3.	Determination of the equation to a curve by means of a relation between the length and the coordinates to any point on it.
3	4.	Involutes of plane curves.
3	5.	Quadrature of curved surfaces.
3	6.	Cubature of solids bounded by any curved surface.
2	7.	Properties of multiple integrals.
1	8.	Transformation of multiple integrals.
2	9.	Curvilinear co-ordinates. Gauss' System. Lamé's System and Jacobi's modification.
2	10.	Variation of definite integrals due to variation of parameters involved in element-function.
2	11.	Variation of definite integrals due to variation of parameters involved in element-function and in the limits. Differential equations. ²
	12.	General principles. First order.
4	13.	Exact total differential equations.
4	14.	Homogeneous equations of 2 variables.
4	15.	The first linear differential equation.
4	16.	Partial differential equations of 1st degree.
2	17.	Integrating factors of differential equations.
2	18.	Singular solutions of do.
4	19.	Differential equations of higher degrees.
3	20.	Particular processes. Higher orders;

- | | | |
|---|-----|--|
| | 21. | First degree; general properties. |
| 3 | 22. | do. linear differential equations. |
| 3 | 23. | do. do. with constant coefficients. |
| 3 | 24. | do. do. with variable coefficients. |
| 3 | 25. | Higher degrees; total differential equations. |
| 3 | 26. | do. partial do. |
| 4 | 27. | Geometrical Problems involving diff. equations. 1st order. |
| 4 | 28. | do. do. 2nd do. |
| | 29. | Simultaneous differential equations. General principles. |
| 3 | 30. | do. Linear. 1st order. |
| 2 | 31. | do. do. Higher orders. |
| | | Integration of differential equation by series. |
| 2 | 32. | Application of Taylor's and Maclaurin's Theorems. |
| 2 | 33. | Method of undetermined coefficients. |
| 2 | 34. | Solution of Riccati's Equation. |
| 4 | 35. | Application of Integral Calculus to Theory of Probabilities. |
| 5 | 36. | Elliptic Integrals. |
| 6 | 37. | Miscellaneous. |

Y.

Calculus of Finite Differences (2nd time).

- | | | |
|---|-----|--|
| 2 | 1. | Solution of equations of differences. 1st order. |
| 2 | 2. | do. do. 2nd order. |
| 1 | 3. | do. do. <i>n</i> th order. |
| 2 | 4. | do. mixed differences. |
| 3 | 5. | Summation of Series; by particular assumptions. |
| 2 | 6. | do. by differentiation. |
| 2 | 7. | do. of recurring Series. |
| 3 | 8. | Interpolation of Series. |
| 2 | 9. | Generating functions. |
| 6 | 10. | Miscellaneous. |

Z.

Calculus of Variations.

- | | | |
|---|----|--|
| | 1. | General principles. |
| 2 | 2. | Variation of $\int_0^1 F(x, dx, d^2x, \dots, y, dy, d^2y, \dots)$. |
| 2 | 3. | Variation of $\int_0^1 F(x, y, y', y'', \dots)$. |
| 2 | 4. | do. $\int_0^1 F(x, dx, d^2x, \dots, y, dy, d^2y, \dots, z, dz, d^2z, \dots)$. |
| 2 | 5. | do. $\int_0^1 F(x, y, y', y'', \dots, z, z', z'', \dots)$. |
| 1 | 6. | Variation of a variation. |
| 1 | 7. | do. of a product of differentials. |
| 1 | 8. | do. of a definite double integral due to the variations of the limits. |
| | | Maxima and minima. |
| | 9. | Critical values of definite integrals, whose element-functions |

		involve variables and their differentials; general principles.
3	10.	do. relative max. and min.
2	11.	do. absolute do.
3	12.	Geodesic lines; equations to.
2	13.	do. properties of.
	14.	Critical values of definite integrals, whose element-functions involve derived functions; general principles.
3	15.	do. particular cases.
	16.	Discriminating conditions; general principles.
	17.	do. requisite data.
	18.	do. proof that $\delta H u dx$ is an exact differential: its integral, &c.
2	19.	do. particular cases.
	20.	Critical values of a double definite integral; necessary criteria.
3	21.	do. application of.
6	22.	Miscellaneous.

Cycle for Working Examples

1	M	6
2	W	16
3	L	3
...
1700	M	12
1701	I	4
1702		11

9.3 The Science of Betting

November 19, 1866

Source: Pall Mall Gazette, November 19, 1866 (also reprinted in the *Times*, November 20, 1866,

<https://www.thetimes.co.uk/archive/article/1866-11-20/9/12.html>)

A similar letter to *Bell's Life* in May 1857 was not published, just acknowledged.

To the EDITOR *of the* PALL MALL GAZETTE

SIR,—The magical system of betting, the secret of which Messrs. H. and J. Smith offer to the world on such reasonable terms, has probably been known, and practised, ever since betting has been in existence. It is applicable to almost every event on which bets are made, and it may be mathematically demonstrated that, provided all the bets are paid, winning is a certainty. I chanced upon the principle myself some years ago, and, in the hope that it may serve to deter some from throwing away their money, I now beg to offer it to your readers gratis.

The rule may be stated thus:—“Write all possible events in a column, placing opposite to each the odds offered against it: this will give two columns of figures. For the third column add together the odds in each case, and find the least common multiple of all the numbers in this column. For the fourth column divide this least common multiple by the several numbers in the third column. For the fifth and sixth columns multiply the original odds by the several numbers in the fourth column. These odds are to be given, or taken, according as the sum total of the sixth column is greater or less than the least common multiple.” The last two columns give the *relative amounts* to be invested in each bet.

	1	2	3	4	5	6
A	2	to 3	5	12	24	to 36
B	4	to 1	5	12	48	to 12
C	5	to 1	6	10	50	to 10
D	9	to 1	10	6	54	to 6
The Field	14	to 1	15	4	56	to 4

An example will make this clear. Suppose that in a race about to be run there are four horses in the betting, the odds being 3 to 2 *on* the favourite, which is equivalent to 2 to 3 *against*. The least common multiple of the third column is 60, and the sum total of the last 68, and as this is *greater* than 60, the odds in this case are all to be *given* in the *relative amounts* given in the fifth and sixth columns. Suppose, for example, that I multiply these columns by 10, and make the bets in pounds; that is, I *take* £360 to £240 on A., I *give* £480 to £120 against B., and so on. Now suppose C. to win the race; in this case I lose £500, and win £(360 + 120 + 60 + 40) = £580. It will be found on trial that I win the same sum, £80, in each of the five events.

If all betting men tried to work this system, they would either be all offering odds or all taking odds on each event, and so no bets could be made. But the fact that this system of winning is *ever* possible arises from the odds being unevenly adjusted, so that they do not represent the real chances of the several events. Supposing this system to be applied only in cases where the odds were evenly adjusted, the sum total of the sixth column would always be equal to

the least common multiple, and thus, whether the odds were given or taken, the concluding entry in every betting-book would be “Gain=Loss=Nil”—a most desirable result,—I am, Sir, your obedient servant,

*Charles L. Dodgson,
Mathematical Lecturer, Christ Church, Oxford.*

Nov. 15, 1866.

November 20, 1866

Source: Pall Mall Gazette, November 20, 1866

To the EDITOR of the PALL MALL GAZETTE

SIR,—In the arithmetical example of the rule which I sent you on this subject, 30 should have been given instead of 60 as the least common multiple. The mistake does not affect the validity of the rule, as *any* common multiple will serve the purpose.—I am your obedient servant,

*Charles L. Dodgson,
Ch. Ch., Oxford.*

Nov. 19, 1866.

November 21, 1866

Source: The Times, November 21, 1866

To the Editor of the Times

Sir,—As you have thought my communication to the *Pall-mall Gazette* on the above subject worth republishing in your columns, will you allow me to correct a mistake in the arithmetical example? It should stand thus:—

	1.		2.		3.		4.		5.		6.
A	2	to	3	...	5	...	6	...	12	to	18
B.....	4	to	1	...	5	...	6	...	24	to	6
C.....	5	to	1	...	6	...	5	...	25	to	5
D.....	9	to	1	...	10	...	3	...	27	to	3
The Field	14	to	1	...	15	...	2	...	28	to	2

The least common multiple of the third column is 30, not 60. The truth of the rule is not affected by this, as any common multiple would serve the purpose. I am, Sir, your obedient servant,

*Charles L. Dodgson.
Christ Church, Oxford, Nov. 20.*

9.4 An Elementary Treatise on Determinants

Source: An Elementary Treatise on Determinants

with Their Application to Simultaneous Linear Equations and Algebraical Geometry

Preface

Of the seventy Propositions contained in the following treatise, ten are substantially taken from Baltzer's treatise on Determinants; also the Geometrical Tests, given in Chapter VIII, are to be found in most works on Algebraical Geometry: the rest of the matter is, so far as I know, original, and consists of a series of Propositions which the object I had in view obliged me to introduce. That object was to present the subject as a continuous chain of argument, separated from all accessories of explanation or illustration, a form which I venture to think better suited for a treatise on exact science than the semi-colloquial semi-logical form often adopted by Mathematical writers. I say 'semi-logical' advisedly, for nothing is more easy than to forget, in an argument thus interwoven with illustrative matter, what has, and what has not, been proved.

With this object in view I have introduced all such explanation and illustration as seemed necessary for a beginner, either in the form of footnotes, or, where that would have occupied too much room, of Appendices.

New words and symbols are always a most unwelcome addition to a Science, especially to one already burdened with an enormous vocabulary, yet I think the Definitions given of them will be found to justify their introduction, as the only way of avoiding tedious periphrasis. The symbols employed to represent the single elements of a Determinant, $(1)2, (1)3, \&c.$ require perhaps a word of apology, and it may be well to enumerate those already in use, and to point out what seem to be their chief defects.

We may commence with $\left\{ \begin{matrix} a_1, b_1, \dots \\ a_2, b_2, \dots \end{matrix} \right\}$, where the change of *letter* indicates a change of *column*, and the change of *subscript* a change of *row*. Now the properties of Determinants, relating to columns, being always convertible into properties relating to rows, and vice versa, it was a sufficient objection to this system of notation, that it represented things distinctly analogous by methods so different, and it was properly superseded by the notation introduced by Leibnitz, $\left\{ \begin{matrix} a_{1,1}, a_{1,2}, \dots \\ a_{2,1}, a_{2,2}, \dots \end{matrix} \right\}$, where the changes, both of column and row, are alike denoted by subscripts. But it seems a fatal objection to this system that most of the space is occupied by a number of *a*'s, which are wholly superfluous, while the only important part of the notation is reduced to minute subscripts, alike difficult to the writer and the reader. It was almost an obvious improvement on this system to raise the subscripts into the line, and omit the *a*'s altogether, as suggested by Baltzer, thus— $\left\{ \begin{matrix} (1, 1), (1, 2), \dots \\ (2, 1), (2, 2), \dots \end{matrix} \right\}$ and this system, though tedious for writing, might serve very well, were it not for its liability to be confused with the notation, common in Plane Algebraical Geometry, by which $(1, 1)$ denotes the Point $x = 1, y = 1$. The symbol $1)1$, which I have ventured to suggest as an

emendation on this last, will be found, I have great hopes, sufficiently simple, distinct, and easy to be written. I have turned the symbol towards the left, in order to avoid all chance of confusion with \int , the symbol for integration.

I proceed to make a few introductory remarks on the various portions of the book, taken in order.

Chap. II. Def. I. I am aware that the word ‘Matrix’ is already in use to express the very meaning for which I use the word ‘Block’; but surely the former word means rather the mould, or form, into which algebraical quantities may be introduced, than an actual assemblage of such quantities; for instance, $\frac{(\quad) \times (\quad)}{(\quad)}$ would deserve the name, rather than $\frac{(a+b) \times (c+d)}{(e+f)}$.

Chap. II. Def. I, VIII. Those who have read the chapters on Determinants in Mr. Todhunter’s ‘Theory of Equations’ will notice that the meanings of the words ‘Element’ and ‘Constituent’ are here transposed: as to the former, I have only returned to Baltzer’s nomenclature; and the word ‘Constituent’ seems to me more expressive than his word ‘Term’.

Chap. III. A complete analysis of a system of simultaneous Linear Equations has always appeared to me to be a desideratum in Algebra: the subject is only touched on in Baltzer; a more complete attempt will be found in Peacock’s Algebra, but I have nowhere seen anything like an exhaustive analysis. This chapter aims at furnishing this, but it has been so often altered and re-written that I put it forth at last, hoping, rather than expecting, that it will be found complete and satisfactory.

Chap. VII. This chapter will also, I hope, fulfil my aim at furnishing an *exhaustive* analysis of such properties of the Loci here considered, as can be conveniently exhibited in the form of Determinants. I had added propositions concerning the Line in Solid Geometry, but these I omit, believing that its properties are more simply investigated by other methods.

Appendix II. Section 4. This process, though extremely convenient where no ciphers, or where one or two at most, occur in the interior of a Block, nevertheless fails entirely, it must be admitted, where they occur in larger numbers: I therefore offer it merely as a fanciful addition to the processes already in use, which may in some cases lessen the labour of computation.

Appendix V. I am doubtful whether this process will ever prove of much practical use: still I think cases might arise, where in the course of a problem an algebraical function is proved to vanish, and where, by throwing it into the form of a Determinant, and so forming a set of simultaneous Equations, whose consistency depends on its vanishing, new and curious properties of the function under consideration might be evolved.

The formulæ given at the end of the book are so arranged that the student may, by covering one or more of the columns on the right hand, test for himself his knowledge of the theorems from which they are taken.

*Ch. Ch. Oxford.
Oct. 31, 1867.*

Chapter I. Laws of Arrangement

Definitions

I. A set of different numerals, arranged in an ascending order, is said to be **orderly arranged**: but if there be among them 2, of which the second is less

than the first, the set is said to contain a **derangement**.¹

II. If 2 numbers be both even, or both odd, they are said to be **similar**; if otherwise, **dissimilar**.

Proposition I. Th.

If there be a set of different numerals, arranged in any order, and if one of them be made to pass over the next r of them, either way: the number of derangements is increased, or diminished, by a number similar to r .

If it be made to pass over *one*, the number is increased or diminished, by unity;

\therefore if over *two*, by an even number;

\therefore if over *three*, by an odd number; and so on.

Therefore, if there be a set, &c. Q. E. D.²

Proposition II. Th.

If there be a set of different numerals, and if 2 of them be interchanged: the number of derangements is increased, or diminished, by an *odd* number.

Call the 2 numerals, α , β ; and let there be r numerals between them;

firstly, let α be made to pass over these r numerals;

then the number of derangements is increased, or diminished, by a number similar to r ; (PROP. I.

secondly, let β be made to pass over α and over these r numerals;

then the number of derangements is thereby increased, or diminished, by a number similar to $r + 1$; (PROP. I.

\therefore it is ultimately increased, or diminished, by the sum or difference of 2 dissimilar numbers;

i. e. it is increased, or diminished, by an *odd* number.

Therefore, if there be a set, &c. Q. E. D.³

Proposition III. Th.

If there be a set of pairs of numerals, in which the antecedents are all different, as also are the consequents; and if they be arranged, firstly in order of antecedents, and secondly in order of consequents: the number of derangements

¹Def. I. Thus the set 12346789 is *orderly* arranged; but the same set placed thus, 43186972, contains one derangement on account of the 4 and 3, another on account of the 4 and 1, another on account of the 8 and 7, and so on.

²Prop. I. In the set 43186972, let us make the 7 pass over the preceding 3 numerals. By passing it over the 9, a derangement is lost, i. e. the number of derangements is diminished by unity; by passing it over the 6, a derangement is gained, i. e. the number is what it was at first, i. e. it is increased by zero, which is *even*; by passing it over the 8, a derangement is lost, i. e. the number is diminished by unity, which is *odd*; and so on.

³Prop. II. In the set 43186972, let us interchange the 1 and the 7. By passing the 1 over the intermediate 3 numerals, 3 derangements are gained, i. e. the number of derangements is increased by a number similar to 3; and the set now stands thus, 43869172; by passing the 7 over the 1 and over the same 3 numerals, two derangements are gained and two lost, i. e. the number is increased by zero, which is similar to $(3 + 1)$; hence it is on the whole increased by a number similar to the *sum* of 3 and $(3 + 1)$, and, as these are *dissimilar* numbers, their sum is *odd*.

among the consequents in the first case, and the number of derangements among the antecedents in the second case, are equal.

Let the pairs be so placed that the antecedents are orderly arranged, and let 2 of them be selected, and call them (H, r) , (K, s) ;

$\therefore H < K$;

now, if these 2 pairs contain a derangement of consequents, $r > s$;

\therefore when the pairs are re-arranged in order of consequents, these 2 will stand in the order ... (K, s) ... (H, r) ...;

\therefore they will then contain a derangement of antecedents;

but if these 2 pairs do not contain a derangement of consequents, $r < s$;

\therefore when the pairs are re-arranged in order of consequents, these 2 will stand in the order ... (H, r) ... (K, s) ...;

\therefore they will then not contain a derangement of antecedents.

And the same thing may be proved for every other 2 pairs.

Therefore, if there be, &c. Q. E. D.⁴

Definition III.

If there be a set of pairs of numerals, in which the antecedents are all different, as also are the consequents; and if, when they are arranged in order of antecedents, the number of derangements among the consequents be *even*, or (which is the same thing) if, when they are arranged in order of consequents, the number of derangements among the antecedents be *even*: the set is said to be **of the even class**; if otherwise, **of the uneven class**.⁵

Proposition IV. Th.

If there be a set of pairs of numerals, in which the antecedents are all different, as also are the consequents; and if 2 of the antecedents, or 2 of the consequents, be interchanged: the class, to which the set belongs, is changed.

Let the set be arranged in order of antecedents, and let 2 of the consequents be interchanged;

then the number of derangements among them is increased, or diminished, by an *odd* number; (PROP. II.

⁴*Prop. III.* Let the set be $(1, 3)$, $(3, 8)$, $(4, 6)$, $(7, 5)$, $(8, 2)$, which is arranged in order of antecedents: if this be rearranged in order of consequents, it will stand thus:— $(8, 2)$, $(1, 3)$, $(7, 5)$, $(4, 6)$, $(3, 8)$. Now let us select 2 of these pairs, $(1, 3)$ and $(7, 5)$; these, as they stand in the first arrangement, contain no derangement of consequents; hence, in the second arrangement, they preserve the same relative order, and so contain no derangement of antecedents. Again, let us select $(3, 8)$ and $(7, 5)$; these, as they stand in the first arrangement, contain a derangement of consequents; hence, in the second arrangement, they take the order $(7, 6)$, ... $(3, 8)$, and so contain a derangement of antecedents. And so for every other 2.

⁵*Def. III.* Taking the set $(1, 3)$, $(3, 8)$, $(4, 6)$, $(7, 5)$, $(8, 2)$, let us ascertain, by counting the derangements among the consequents, to which class it belongs. This may be conveniently done by observing, for each consequent in turn, how many of its predecessors are *greater* than it, since every instance of this will constitute a derangement: thus the 3 gives none, the 8 gives none, the 6 gives one, the 5 gives two, and the 2 gives four; hence there are seven derangements among the consequents. Again, let us arrange the set in order of consequents, $(8, 2)$, $(1, 3)$, $(7, 5)$, $(4, 6)$, $(3, 8)$, and count the derangements among the antecedents: thus the 8 gives none, the 1 gives one, the 7 gives one, the 4 gives two, and the 3 gives three; hence there are now seven derangements among the antecedents. Thus the set of pairs of numerals, tried by either test, is of the uneven class.

It should be observed that the class, to which a set of pairs of numerals belongs, is unaffected by the order in which they happen to be given.

i. e. if even, it becomes odd; if odd, even;
 \therefore the class, to which the set belongs, is changed;
 hence, if the set be arranged in any order, and 3 of the consequents be interchanged, the class, to which the set belongs, is changed.
 Similarly, if 2 of the antecedents be interchanged.
 Therefore, if there be, &c. Q. E. D.⁶

Proposition V. Th.

If there be a set of n pairs of numerals, in which the antecedents are a certain permutation of the numbers from 1 to n , as also are the consequents; and if one pair be erased: the class, to which the remaining set belongs, is the same as that of the original set, or different, according as the numerals in the erased pair are similar or dissimilar.

Let the set be arranged in order of antecedents; and call the pair that is to be erased (H, k) ;

firstly, let it be brought to the first place, by making it pass over the preceding $\overline{H - 1}$ pairs;

then the number of derangements among the consequents is increased, or diminished, by a number similar to $\overline{H - 1}$; (PROP. I.

and, since the consequent k now precedes the $\overline{k - 1}$ consequents which are less than it, there are now, by reason of this pair, $\overline{k - 1}$ derangements among the consequents;

secondly, let the pair (H, k) be erased;

then the number of derangements among the consequents is thereby diminished by a number similar to $\overline{k - 1}$;

\therefore it is ultimately increased, or diminished, by a number similar to the sum or difference of $\overline{H - 1}$ and $\overline{k - 1}$;

i. e. it is ultimately increased, or diminished, by an even, or odd, number, according as $\overline{H - 1}$ and $\overline{k - 1}$ are similar or dissimilar;

i. e. according as H and k are similar or dissimilar.

Therefore, if there be a set, &c. Q. E. D.⁷.

⁶Prop. IV. In the set (arranged, for convenience, in order of antecedents), (1, 3), (3, 8), (4, 6), (7, 5), (8, 2), let us interchange the two consequents, 8 and 5; the set will thus become (1, 3), (3, 5), (4, 6), (7, 8), (8, 2). Now, by this interchange, the number of derangements among the consequents is diminished by three; i. e. from being *odd*, it becomes *even*; and the set of numerals is therefore transferred from the *uneven* to the *even* class.

⁷Prop. V. Let us take the following set, (arranged, for convenience, in order of antecedents), (1, 2), (2, 4), (3, 1), (4, 5), (5, 6), (6, 3); and let us select (4, 5) as the pair to be erased, in which the numerals are dissimilar. Firstly, let us bring it to the first place, so that the set now stands thus:— (4, 5), (1, 2), &c.; in doing this, we have made the consequent 5 pass over the preceding (4 - 1) consequents, and have thus increased, or diminished, the number of derangements among the consequents, by a number similar to (4 - 1). And since this consequent 5 now precedes all the lesser consequents, 1, 2, 3, 4, there are now, by reason of it, (5 - 1) derangements among the consequents. Next, let the pair (4, 5) be erased; then these (5 - 1) derangements are done away with, and the number of derangements is, on the whole, increased, or diminished, by a number similar to the sum, or difference, of (4 - 1) and (5 - 1), i. e. to the sum, or difference, of 4 and 5, and since they are *dissimilar* numbers, their sum, or difference, is *odd*; hence the class, to which the set belongs, is *changed*.

In this instance it will be found that the given set contains 5 derangements of consequents, and so is of the uneven class; and that the new set, (1, 2), (2, 4), (3, 1), (5, 6), (6, 3), contains 4, and so is of the even class.

Chapter II. Analysis of Determinants

Definitions.

I. If mn quantities be so placed as to form m rows and n columns: they are said to form a **Block**; and the mn quantities are called the **Elements** of such a Block.

II. A square Block of n^2 Elements is said to be **of the n^{th} degree**.

III. An oblong Block containing m rows and n columns, or m columns and n rows, where m is greater than n , is said to be **of the length m** , and **of the breadth n** .

IV. In an oblong Block, the rows, if they be longer than the columns, or the columns, if they be longer than the rows, are called the **longitudinals** of the Block: and the others, its **laterals**.

V. If, in a given Block, any rows, and as many columns, be selected: the square Block formed of their common Elements is called a **Minor** of the given Block⁸.

Hence any single Element of a Block, being common to one row and one column, is a Minor of it.

VI. If n be that dimension of a Block which is not greater than the other: its Minors of the n^{th} degree are called its **principal Minors**; those of the $n - 1^{\text{th}}$ degree its **secondary Minors**, and so on⁹.

Hence a square Block is its own principal Minor.

VII. If, in a square Block, any rows, and as many columns, be selected: the Minor formed of their common Elements, and the Minor formed of the Elements common to the other rows and columns, are said to be **complemental** to each other¹⁰.

⁸Def. V. Thus, in the Block $\begin{Bmatrix} d & b & m & s \\ f & c & g & d \\ e & h & r & l \end{Bmatrix}$, if we select the 2nd and 3rd rows, and the 2nd and 4th columns, we obtain the Minor $\begin{Bmatrix} c & d \\ h & l \end{Bmatrix}$.

⁹Def. VI. Thus, in the same Block, the Minors $\begin{Bmatrix} d & b & m \\ f & c & g \\ e & h & r \end{Bmatrix}$, $\begin{Bmatrix} d & m & s \\ f & g & d \\ e & r & l \end{Bmatrix}$, &c., are *principal* Minors; while $\begin{Bmatrix} d & m \\ f & g \end{Bmatrix}$, $\begin{Bmatrix} d & s \\ f & d \end{Bmatrix}$, $\begin{Bmatrix} h & s \\ k & l \end{Bmatrix}$, &c., are *secondary* Minors.

¹⁰Def. VII. Thus, in the Block $\begin{Bmatrix} b & g & h & r \\ e & l & t & v \\ d & m & f & c \\ a & s & x & q \end{Bmatrix}$, the Minors $\begin{Bmatrix} b & g \\ e & l \end{Bmatrix}$ and $\begin{Bmatrix} f & c \\ x & q \end{Bmatrix}$ are *complemental* to each other; as also are the Minors $\begin{Bmatrix} e & v \\ a & q \end{Bmatrix}$ and $\begin{Bmatrix} g & h \\ m & f \end{Bmatrix}$. Thus, again, the single Element f and the Minor $\begin{Bmatrix} b & g & r \\ e & l & v \\ a & s & q \end{Bmatrix}$ are *complemental* to each other.

Conventions.

I. Let it be agreed to represent the Elements of a square Block by symbols of the form $h \left(k \right)$, in which the first numeral indicates the row, and the second the column, to which the Element belongs. Thus, a Block of m rows and n columns may be represented thus:—

$$\left\{ \begin{array}{ccc} 1 \left(1 \right), & 1 \left(2 \right) & \cdots & 1 \left(n \right) \\ 2 \left(1 \right), & 2 \left(2 \right) & \cdots & 2 \left(n \right) \\ \vdots & \vdots & & \vdots \\ m \left(1 \right), & m \left(2 \right) & \cdots & m \left(n \right) \end{array} \right\}.$$

II. And if it be required to represent 2 or more such Blocks, let them be distinguished by suffixing a certain letter to the symbol of each Block: e. g.:—

$$\left\{ \begin{array}{ccc} 1 \left(1 \right) & \cdots & 1 \left(n \right) \\ \vdots & & \vdots \\ m \left(1 \right) & \cdots & m \left(n \right) \end{array} \right\}_a, \left\{ \begin{array}{ccc} 1 \left(1 \right) & \cdots & 1 \left(n \right) \\ \vdots & & \vdots \\ m \left(1 \right) & \cdots & m \left(n \right) \end{array} \right\}_b.$$

III. And if it be required to represent an Element of such a Block by itself, let it be distinguished by the same suffix: e. g., $h \left(k_a \right)$ represents an Element of the Block

$$\left\{ \begin{array}{ccc} 1 \left(1 \right) & \cdots & 1 \left(n \right) \\ \vdots & & \vdots \\ m \left(1 \right) & \cdots & m \left(n \right) \end{array} \right\}_a;$$

$h \left(k_b \right)$ represents the corresponding Element of the Block

$$\left\{ \begin{array}{ccc} 1 \left(1 \right) & \cdots & 1 \left(n \right) \\ \vdots & & \vdots \\ m \left(1 \right) & \cdots & m \left(n \right) \end{array} \right\}_b.$$

Definitions (continued)

VIII. If there be a square Block of the n^{th} degree, and if all possible products be made of its Elements, taken n together, so that no product contain 2 Elements of the same row or of the same column; and if, representing the Elements of the Block by the symbols

$$\left\{ \begin{array}{ccc} 1 \left(1 \right) & \cdots & 1 \left(n \right) \\ \vdots & & \vdots \\ m \left(1 \right) & \cdots & m \left(n \right) \end{array} \right\},$$

each such product be affected with + or −, according as the set of pairs of numerals, corresponding to that product, be of the even or the uneven class: the sum of these products, thus affected, is called the **Determinant** of the Block. And each of these products is called a **Constituent** of the Determinant.

IX. The Constituent represented by the product $1\{1.2\}2\dots n\}n$ is called the **Diagonal** of the Determinant¹¹.

X. If a square Block be such that its Determinant vanishes, or if an oblong Block be such that the Determinant of every one of its principal Minors vanishes: in either case the Block is said to be **evanescent**.

XI. If there be a square Block, and if one of its Elements be selected; and if all the Constituents of its Determinant, which contain that Element, be collected together and formed into 2 factors, whereof that Element is one: the other factor is called the **determinantal coefficient** of that Element.

XII. If 2 square Blocks be such that each Element of the second is equal to the determinantal coefficient of the corresponding Element of the first: the second Block is said to be **adjugate** to the first.

Conventions (continued)

IV. Let it be agreed that the Determinant of a Block shall be represented by placing a perpendicular line on each side of it. Thus the Determinant of the Block

$$\left\{ \begin{array}{ccc} a & b & c \\ d & e & f \\ g & h & k \end{array} \right\}$$

will be represented by the symbol

$$\left| \begin{array}{ccc} a & b & c \\ d & e & f \\ g & h & k \end{array} \right|.$$

¹¹Def. VIII, IX. Thus, in the Block,

$$\left\{ \begin{array}{cccc} b & g & h & r \\ c & l & t & v \\ d & m & f & e \\ a & s & x & q \end{array} \right\},$$

the Diagonal is $blfq$, and the other Constituents are $blxe$, $bmtq$, $dstr$, &c. And to determine the *sign* of each Constituent, let us take as an example $dstr$; now this corresponds to the set of general symbols $3\{1.4\}2.2\{3.1\}4$, and since this is arranged in order of consequents and there are 5 derangements among the antecedents, it is of the *uneven* class, and so must be affected with the sign −.

V. If a Block be represented by the symbol

$$\left\{ \begin{array}{ccc} 1 \left(\begin{array}{c} 1 \\ \vdots \\ n \end{array} \right) & \cdots & 1 \left(\begin{array}{c} n \\ \vdots \\ n \end{array} \right) \\ \vdots & & \vdots \\ n \left(\begin{array}{c} 1 \\ \vdots \\ n \end{array} \right) & \cdots & n \left(\begin{array}{c} n \\ \vdots \\ n \end{array} \right) \end{array} \right\}_a,$$

so that any Element of it is represented by a symbol of the form $h \left(\begin{array}{c} k_a \\ \vdots \\ n \end{array} \right)$: let it be agreed that the determinantal coefficient of that Element shall be represented by a symbol of the form $h \left(\begin{array}{c} k_A \\ \vdots \\ n \end{array} \right)$.

VI. If there be 2 equally numerous sets of terms; and if each term of the one set be multiplied by the corresponding term of the other, and the products added: let it be agreed that this operation shall be denoted by placing the sign § between the symbols denoting the 2 sets.

$$\text{Thus } (a_1, a_2, \dots, a_n) \S (b_1, b_2, \dots, b_n) = a_1 b_1 + a_2 b_2 + \dots + a_n b_n.$$

Axioms.

I. Each Constituent of the Determinant

$$\left| \begin{array}{ccc} 1 \left(\begin{array}{c} 1 \\ \vdots \\ n \end{array} \right) & \cdots & 1 \left(\begin{array}{c} n \\ \vdots \\ n \end{array} \right) \\ \vdots & & \vdots \\ n \left(\begin{array}{c} 1 \\ \vdots \\ n \end{array} \right) & \cdots & n \left(\begin{array}{c} n \\ \vdots \\ n \end{array} \right) \end{array} \right|$$

contains n pairs of numerals, such that the antecedents are a certain permutation of the numbers 1 to n , as also are the consequents.

II. If any row, or column, of a square Block be selected: each Constituent of the Determinant contains one term of that row or column.

Thus the Determinant

$$\left| \begin{array}{ccc} 1 \left(\begin{array}{c} 1 \\ \vdots \\ n \end{array} \right) & \cdots & 1 \left(\begin{array}{c} n \\ \vdots \\ n \end{array} \right) \\ \vdots & & \vdots \\ n \left(\begin{array}{c} 1 \\ \vdots \\ n \end{array} \right) & \cdots & n \left(\begin{array}{c} n \\ \vdots \\ n \end{array} \right) \end{array} \right|_a$$

$$= 1 \left(\begin{array}{c} 1_a \cdot 1 \\ \vdots \\ 1_A + 1 \end{array} \right) 1 \left(\begin{array}{c} 2_a \cdot 1 \\ \vdots \\ 2_A + \dots + 1 \end{array} \right) \dots + 1 \left(\begin{array}{c} n_a \cdot 1 \\ \vdots \\ n_A \end{array} \right) n_A;$$

$$\text{or} = 1 \left(\begin{array}{c} 1_a \cdot 1 \\ \vdots \\ 1_A + 2 \end{array} \right) 1 \left(\begin{array}{c} 1_a \cdot 2 \\ \vdots \\ 1_A + \dots + n \end{array} \right) 1_a \cdot n \left(\begin{array}{c} 1_A \\ \vdots \\ 1_A \end{array} \right);$$

$$\text{or} = h \left(\begin{array}{c} 1_a \cdot h \\ \vdots \\ 1_A + h \end{array} \right) h \left(\begin{array}{c} 2_a \cdot h \\ \vdots \\ 2_A + \dots + h \end{array} \right) \dots + h \left(\begin{array}{c} n_a \cdot h \\ \vdots \\ n_A \end{array} \right) n_A;$$

$$\text{or} = 1 \left(\begin{array}{c} k_a \cdot 1 \\ \vdots \\ k_A + 2 \end{array} \right) k_a \cdot 2 \left(\begin{array}{c} k_a \cdot 2 \\ \vdots \\ k_A + \dots + n \end{array} \right) k_a \cdot n \left(\begin{array}{c} k_A \\ \vdots \\ k_A \end{array} \right).$$

Hence if, in a square Block, the Elements of any one row, or column, be multiplied by v ; the Determinant of the new Block is equal to that of the first multiplied by v .

And if the Elements of any q rows, or q columns, or r rows and s columns, where $\overline{r+s} = q$, be multiplied by v ; the Determinant of the new Block is equal to that of the first multiplied by v^q .

And if each Element of any row, or column, be the sum of m terms: the Determinant may be expressed as the sum of m Determinants. For one Determinant may be formed, such that its corresponding row, or column, consists of the first terms of these sums; another, such that its corresponding row, or column, consists of the second terms of these sums; and so on.

Proposition I. Th.

The determinantal coefficient of any Element of a square Block is the Determinant of its complementary Minor, affected with $+$ or $-$ according as the numerals which constitute its symbol are similar or dissimilar.

Let the Block be represented by the symbol:—

$$\left\{ \begin{array}{ccc} 1 \mid 1 & \cdots & 1 \mid n \\ \vdots & & \vdots \\ n \mid 1 & \cdots & n \mid n \end{array} \right\};$$

and call the selected Element $h \mid k$;

then it is evident that the determinantal coefficient of $h \mid k$ is the aggregate of all possible products of the Elements of its complementary Minor, taken $\overline{n-1}$ together, so that no product contain 2 Elements of the same row, or of the same column;

i. e. it is the aggregate of the Constituents of the Determinant of its complementary Minor; (DEF. VIII.)

also the *sign* of each such product is $+$ or $-$, according as the corresponding set of pairs of numerals, taken along with the symbol $h \mid k$ itself, is of the even or of the uneven class; (DEF. VIII.)

but if the symbol $h \mid k$ be erased, the class, to which the remaining set belongs, is the same as that of the original set, or different, according as h and k are similar, or dissimilar; (CHAP. I. PROP. V.)

\therefore the *sign* of each such product follows the Determinant law, or reverses it, according as h and k are similar, or dissimilar;

\therefore the determinantal coefficient of any Element $h \mid k$ is the Determinant of its complementary Minor, affected with $+$ or $-$, according as h and k are similar or dissimilar.

Q. E. D¹².

¹² Prop. I. Thus the Determinant of the Block $\left\{ \begin{array}{cc} a & b \\ c & d \end{array} \right\}$ is $(ad - bc)$; and that of the Block $\left\{ \begin{array}{ccc} a & b & c \\ d & e & f \\ g & h & k \end{array} \right\}$ is $(ack - ahf - bdk + bgf + cdh - cge)$.

Here the Determinantal coefficient of e is $(ak - cg)$, i. e. $\left| \begin{array}{cc} a & c \\ g & k \end{array} \right|$; and as e corresponds to the symbol $2 \mid 2$, the numerals of which are *similar*, the sign of this Determinant ought to be $+$, and so we find it. Again, the Determinantal coefficient of f is $(-ah + bg)$, i. e. $-\left| \begin{array}{cc} a & b \\ g & h \end{array} \right|$;

Corollaries to Prop. I.

1. If, in a square Block, any row, or column, be selected: the Determinant of the Block may be resolved into terms, each consisting of one of the Elements of that row, or column, multiplied by the Determinant of its complemental Minor¹³.

2. If, in a square Block, the Elements in any one row, or column, all vanish but one: the Determinant of the Block is the product produced by multiplying the Determinant of the complemental Minor of that Element by that Element itself, affected with + or -, according as the numerals in its symbol are similar or dissimilar.

3. Hence, if that Element be unity, the Determinant of the Block is the Determinant of the complemental Minor of that Element, affected with + or -, as before.

Proposition II. Th.

If, in a square Block, 2 rows, or 2 columns, be interchanged: the Determinant of the new Block has the same absolute value as that of the first, but the opposite sign.

Let the Block be represented by

$$\left\{ \begin{array}{ccc} 1 \binom{1}{n} & \cdots & 1 \binom{1}{n} \\ \vdots & & \vdots \\ n \binom{1}{n} & \cdots & n \binom{1}{n} \end{array} \right\}_a,$$

and first let 2 rows be interchanged; call them the h^{th} and k^{th} rows; and let the new Block be represented by

$$\left\{ \begin{array}{ccc} 1 \binom{1}{n} & \cdots & 1 \binom{1}{n} \\ \vdots & & \vdots \\ n \binom{1}{n} & \cdots & n \binom{1}{n} \end{array} \right\}_b;$$

$\therefore h \binom{r_a}{r_b} = k \binom{r_a}{r_b}$, and $k \binom{r_a}{r_b} = h \binom{r_a}{r_b}$, r taking any value $1 \dots n$;

next let any Constituent of the Determinant of the original Block be selected; call it $1 \binom{a_a \dots h}{s_a \dots k} t_a \dots$; and let it = M ;

and as f corresponds to the symbol $2 \binom{3}{3}$, the numerals of which are *dissimilar*, the sign of this Determinant ought to be -, and so we find it.

¹³Prop. I. Cor. 1. This gives us a simple method for computing the value of a Determinant arithmetically. Thus, $\begin{vmatrix} 3 & 1 & 2 & 4 \\ 4 & 5 & 2 & 3 \\ 3 & 1 & 3 & 2 \\ 4 & 2 & 1 & 3 \end{vmatrix} = 3 \begin{vmatrix} 5 & 2 & 3 \\ 1 & 3 & 2 \\ 2 & 1 & 3 \end{vmatrix} - 1 \begin{vmatrix} 4 & 2 & 3 \\ 3 & 3 & 2 \\ 4 & 1 & 3 \end{vmatrix} + 2 \begin{vmatrix} 4 & 5 & 3 \\ 3 & 1 & 2 \\ 4 & 2 & 3 \end{vmatrix} - 4 \begin{vmatrix} 4 & 5 & 2 \\ 3 & 1 & 3 \\ 4 & 2 & 1 \end{vmatrix} = \left\{ 5 \begin{vmatrix} 3 & 2 \\ 1 & 3 \end{vmatrix} - 2 \begin{vmatrix} 1 & 2 \\ 2 & 3 \end{vmatrix} + 3 \begin{vmatrix} 1 & 3 \\ 2 & 1 \end{vmatrix} \right\} - \&c. = 3\{35 + 2 - 15\} - \&c. = 3 \times 22 - \&c. = 66 - \&c.$

now $1 \left\{ a_a = 1 \right\} a_b$ and so for the other factors of it, with the exception of $h \left\{ s_a \right.$ and $k \left\{ t_a \right.$ which respectively $= k \left\{ s_b \right.$ and $h \left\{ t_b \right.$;

$\therefore M = 1 \left\{ a_b \dots h \left\{ t_b \dots k \left\{ s_b \dots \right. \right.$, which is a Constituent of the new Block;

\therefore for any Constituent M in the Determinant of the original Block, there is a Constituent in that of the new Block, of the same absolute value;

and the symbol representing the one may be deduced from that representing the other by *one* interchange of consequents;

\therefore the 2 symbols are of different classes; (CH. I. PROP. IV.)

\therefore the Constituents, represented by them, have opposite signs;

\therefore the whole Determinants are equal in value, but have opposite signs.

Similarly, if 2 columns be interchanged.

Therefore, if there be &c., Q. E. D¹⁴.

Corollary to Prop. II.

If, in a square Block, a row, or a column, be made to pass over the next r rows, or columns, either way: the Determinant of the new Block has the same sign as that of the first, or the opposite sign, according as r is even or odd: that is, it is equal to the Determinant of the first Block multiplied by $(-1)^{r-1}$.

For this may be effected by interchanging it with each of these r rows, or columns, in turn; and after *one* such interchange, the sign of the Determinant is changed, after *two*, it is the same again, and so on¹⁵.

Proposition III. Th.

If, in a square Block, 2 rows, or 2 columns, be identical: the Determinant vanishes.

Call the Determinant " D ".

Now if the 2 identical rows, or columns, be interchanged, the Determinant of the new Block $= -D$; (PROP. II.)

but the new Block is identical with the first;

$\therefore D = -D$;

i. e. $D = 0$.

¹⁴Prop. II. Thus the Determinant

$$\begin{vmatrix} a & b & c \\ d & e & f \\ g & h & l \end{vmatrix} = - \begin{vmatrix} c & b & a \\ f & e & d \\ l & h & g \end{vmatrix}.$$

¹⁵Prop. II. Cor. Thus the Determinant

$$\begin{vmatrix} a & b & c \\ d & e & f \\ g & h & k \end{vmatrix} = - \begin{vmatrix} b & a & c \\ e & d & f \\ h & g & k \end{vmatrix},$$

where the first column has been passed over *one* column: but the same Determinant

$$= + \begin{vmatrix} b & c & a \\ e & f & d \\ h & k & g \end{vmatrix},$$

where the first column has been passed over *two* columns.

Therefore, if in a square Block, &c. Q. E. D¹⁶.

Corollaries to Prop. III.

1. If a square Block of the n^{th} degree be represented by

$$\left\{ \begin{array}{ccc} 1 & \cdots & 1 \\ \vdots & & \vdots \\ n & \cdots & n \end{array} \right\}_a,$$

and its adjugate Block by

$$\left\{ \begin{array}{ccc} 1 & \cdots & 1 \\ \vdots & & \vdots \\ n & \cdots & n \end{array} \right\}_A,$$

then $r \left(1_a \cdot s \left(1_A + r \right) 2_a \cdot s \left(2_A + \dots + r \right) n_a \cdot s \left(n_A \right) = 0,$

and $1 \left(r_a \cdot 1 \left(s_A + 2 \right) r_a \cdot 2 \left(s_A + \dots + n \right) r_a \cdot n \left(s_A \right) = 0,$

so long as $r \neq s$. For the quantity $s \left(1_a \cdot s \left(1_A + \dots \right) \right)$ is the Determinant of the given Block, and if, for the several terms of the s^{th} row, there be substituted terms equal to those in the r^{th} row, this may be written $r \left(1_a \cdot s \left(1_A + \dots \right) \right)$; and since the new Block, so formed, has 2 rows identical, its Determinant vanishes.

2. If, in a Block whose length exceeds its breadth by unity, the Elements of any one longitudinal be each multiplied by the Determinant of the Minor formed by erasing the lateral containing that Element: the sum of these products, affected with + and - alternately, is zero¹⁷.

3. If, in a square Block, there be added to the several Elements of any row, or column, the corresponding Elements of any other row, or column, multiplied

¹⁶ Prop. III. Thus the Determinant $\begin{vmatrix} a & b & c \\ a & b & c \\ d & e & f \end{vmatrix} = 0.$

¹⁷ Prop. III. Cor. 2. Thus, in the Block

$$\left\{ \begin{array}{cccc} a & b & c & d \\ e & f & g & h \\ k & l & m & n \end{array} \right\},$$

the sum of

$$a \cdot \begin{vmatrix} b & c & d \\ f & g & h \\ l & m & n \end{vmatrix} - b \cdot \begin{vmatrix} a & c & d \\ e & g & h \\ k & m & n \end{vmatrix} + c \cdot \begin{vmatrix} a & b & d \\ e & f & h \\ k & l & n \end{vmatrix} - d \cdot \begin{vmatrix} a & b & c \\ e & f & g \\ k & l & m \end{vmatrix}$$

is zero: for this is the same thing as the Determinant of the Block $\left\{ \begin{array}{cccc} a & b & c & d \\ a & b & c & d \\ e & f & g & h \\ k & l & m & n \end{array} \right\}$, and,

as this Block has 2 identical rows, its Determinant must vanish.

by any number: the Determinant of the new Block is the same as that of the first¹⁸.

Proposition IV. Th.

If there be a square Block, and if, retaining the first term of the first row in its place, the rows be made columns, and the columns rows: the Determinant of the new Block is equal to that of the first.

Let the Block be represented by

$$\left\{ \begin{array}{ccc} 1 \left(\begin{array}{c} 1 \\ \vdots \\ n \end{array} \right) & \dots & 1 \left(\begin{array}{c} n \\ \vdots \\ n \end{array} \right) \\ \vdots & & \vdots \\ n \left(\begin{array}{c} 1 \\ \vdots \\ n \end{array} \right) & \dots & n \left(\begin{array}{c} n \\ \vdots \\ n \end{array} \right) \end{array} \right\}_a$$

and the new Block by

$$\left\{ \begin{array}{ccc} 1 \left(\begin{array}{c} 1 \\ \vdots \\ n \end{array} \right) & \dots & 1 \left(\begin{array}{c} n \\ \vdots \\ n \end{array} \right) \\ \vdots & & \vdots \\ n \left(\begin{array}{c} 1 \\ \vdots \\ n \end{array} \right) & \dots & n \left(\begin{array}{c} n \\ \vdots \\ n \end{array} \right) \end{array} \right\}_b ;$$

and let a certain Constituent of the original Block, arranged in order of antecedents, be represented by $1 \left(\begin{array}{c} \alpha_a \\ \vdots \\ \alpha_a \end{array} \right) 2 \left(\begin{array}{c} \beta_a \\ \vdots \\ \beta_a \end{array} \right) \dots n \left(\begin{array}{c} \zeta_a \\ \vdots \\ \zeta_a \end{array} \right)$, where $\alpha, \beta, \dots, \zeta$, are a certain permutation of the numbers 1 to n ;

now $1 \left(\begin{array}{c} \alpha_a = \alpha \\ \vdots \\ \alpha_a = \alpha \end{array} \right) 2 \left(\begin{array}{c} \beta_a = \beta \\ \vdots \\ \beta_a = \beta \end{array} \right) \dots n \left(\begin{array}{c} \zeta_a = \zeta \\ \vdots \\ \zeta_a = \zeta \end{array} \right) n_b$;

hence this Constituent = $\alpha \left(\begin{array}{c} 1_b \\ \vdots \\ 1_b \end{array} \right) \beta \left(\begin{array}{c} 2_b \\ \vdots \\ 2_b \end{array} \right) \dots \zeta \left(\begin{array}{c} n_b \\ \vdots \\ n_b \end{array} \right)$;

that is, it = a certain Constituent of the new Block, arranged in order of consequents;

and the antecedents in the second case are the same permutation of the numbers 1 to n as the consequents in the first case;

\therefore the two Constituents are of the same class; (CHAP. I. DEF. III.)

\therefore they have the same sign; (CHAP. II. DEF. VIII.)

\therefore for every Constituent of the original Block, there is one of the new Block, equal to it, and with the same sign;

\therefore the two Determinants are equal.

¹⁸Prop. III. Cor. 3. Thus, in the Block

$$\left\{ \begin{array}{ccc} a & b & c \\ d & e & f \\ g & h & k \end{array} \right\},$$

let us add to the first column the Elements of the third, multiplied by m : then the Determinant

of the new Block is $\left| \begin{array}{ccc} (a + mc), & b, & c \\ (d + mf), & e, & f \\ (g + mk), & h, & k \end{array} \right|$, and this is equal to

$$\left| \begin{array}{ccc} a & b & c \\ d & e & f \\ g & h & k \end{array} \right| + m \left| \begin{array}{ccc} c & b & c \\ f & e & f \\ k & h & k \end{array} \right| = \left| \begin{array}{ccc} a & b & c \\ d & e & f \\ g & h & k \end{array} \right|,$$

since the second Determinant vanishes.

Therefore, if there be, &c. Q. E. D¹⁹.

Proposition V. Th.

If there be given 2 Blocks, each consisting of n rows and r columns; and if each row of one Block be combined with each row of the other, by the process of multiplyhig the first term of one by the first term of the other, the second by the second, and so on, and adding the products; and if the n^2 quantities, so formed, be arranged as a square Block, in such a way that the Elements of the first row of the new Block are all formed from the first row of the first Block, by combining it with the n rows of the second Block successively, and so on; then

firstly,

if $r < n$: the Determinant of the new Block vanishes:

secondly,

if $r = n$: the Determinant of the new Block is the product of the Determinants of the 2 given Blocks:

thirdly,

if $r > n$: the Determinant of the new Block is the sum of all possible products that can be made, by taking any n columns of one of the given Blocks, in the order in which they stand, and the corresponding n columns of the other Block, and multiplying together the Determinants of the 2 Blocks so formed.

Let the 2 Blocks be represented by

$$\left\{ \begin{array}{ccc} 1 & \dots & 1 \\ \vdots & & \vdots \\ n & \dots & n \end{array} \right\}_a \left(\begin{array}{ccc} 1 & \dots & 1 \\ \vdots & & \vdots \\ n & \dots & n \end{array} \right)_b ;$$

and the new Block by

$$\left\{ \begin{array}{ccc} 1 & \dots & 1 \\ \vdots & & \vdots \\ n & \dots & n \end{array} \right\}_c,$$

wherein any Element $h \left(k \right)_c = \left\{ h \left(1 \dots h \right)_a \right\} \S \left\{ k \left(1 \dots k \right)_b \right\};$

$$= \sum \left\{ h \left(\alpha_a \cdot k \right) \alpha_b \right\},$$

in which α takes all values from 1 to r ;

¹⁹*Prop. IV.* Thus the Determinant

$$\left| \begin{array}{ccc} a & b & c \\ d & e & f \\ g & h & k \end{array} \right| = \left| \begin{array}{ccc} a & d & g \\ b & e & h \\ c & f & k \end{array} \right|$$

now let a certain Constituent of the Determinant of the new Block be arranged in order of antecedents, and be represented by $1 \left(Q_c . 2 \right) R_c \dots u \left(T_c \right)$, in which $Q, R, \dots T$, are a certain permutation of the numbers 1 to n ;
then this Constituent

$$= \sum \{ 1 \left(\alpha_a . Q \right) \alpha_b \} . \sum \{ 2 \left(\beta_a . R \right) \beta_b \} \dots \sum \{ n \left(\delta_a . T \right) \delta_b \};$$

in which *each* of the quantities $\alpha, \beta, \dots \delta$, takes all values from 1 to r ;

$$\begin{aligned} \therefore \text{it} &= \sum \{ 1 \left(\alpha_a . Q \right) \alpha_b . 2 \left(\beta_a . R \right) \beta_b \dots n \left(\delta_a . T \right) \delta_b \}; \\ &= \sum \{ 1 \left(\alpha_a . 2 \left(\beta_a \dots n \left(\delta_a . Q \right) \alpha_b . R \right) \beta_b \dots T \right) \delta_b \}; \end{aligned}$$

also this Constituent is affected with $+$ or $-$, according as the series $Q, R, \dots T$, contains an even or odd number of derangements;

\therefore the Determinant of the new Block

$$= \sum \{ 1 \left(\alpha_a . 2 \left(\beta_a \dots n \left(\delta_a . Q \right) \alpha_b . R \right) \beta_b \dots T \right) \delta_b \},$$

in which not only does each of the quantities $\alpha, \beta, \dots \delta$, take all values from 1 to r , but also the series $Q, R, \dots T$, takes the values of all possible permutations of the numbers 1 to n ;

$$\therefore \text{it} = \sum \left\{ 1 \left(\alpha_a . 2 \left(\beta_a \dots n \left(\delta_a . \sum \left(Q \left(\alpha_b . R \right) \beta_b \dots T \right) \delta_b \right) \right) \right) \right\};$$

wherein, whatsoever values are assigned to $\alpha, \beta, \dots \delta$, in the outer bracket, the same are assigned to them in the inner bracket:

now the sum $\sum \left(Q \left(\alpha_b . R \right) \beta_b \dots T \right) \delta_b$, each term of which is affected with $+$ or $-$, according as the series $Q, R, \dots T$, contains an even or odd number of derangements, is the Determinant

$$\begin{vmatrix} 1 \left(\alpha \right) & \dots & 1 \left(\delta \right) \\ \vdots & & \vdots \\ n \left(\alpha \right) & \dots & n \left(\delta \right)_b \end{vmatrix};$$

that is, it is the Determinant of the square Block formed by taking from the b -Block its α^{th} column, its β^{th} column, and so on, until n columns have been taken, it being immaterial whether these be all different, or one or more of them be repeated any number of times.

\therefore the Determinant of the new Block

$$= \sum \left\{ 1 \left(\alpha_a . 2 \left(\beta_a \dots n \left(\delta . \begin{vmatrix} 1 \left(\alpha \right) & \dots & 1 \left(\delta \right) \\ \vdots & & \vdots \\ n \left(\alpha \right) & \dots & n \left(\delta \right)_b \end{vmatrix} \right) \right) \right\}.$$

Now, firstly,

let r be $< n$;

then it is not possible to take from the b -Block n different columns;

\therefore the Determinant

$$\begin{vmatrix} 1\alpha & \dots & 1\delta \\ \vdots & & \vdots \\ n\alpha & \dots & n\delta \end{vmatrix}_b$$

always contains 2 identical columns;

\therefore it always vanishes;

(PROP. III.

\therefore the Determinant of the new Block vanishes.

Secondly,

let $r = n$;

then, if the series $\alpha, \beta, \dots, \delta$, be a permutation of the numbers 1 to n , the Determinant

$$\begin{vmatrix} 1\alpha & \dots & 1\delta \\ \vdots & & \vdots \\ n\alpha & \dots & n\delta \end{vmatrix}_b = \begin{vmatrix} 11 & \dots & 1n \\ \vdots & & \vdots \\ n1 & \dots & nn \end{vmatrix}_b,$$

affected with $+$, or $-$, according as the series $\alpha, \beta, \dots, \delta$, contains an even or odd number of derangements; for either of these may be obtained from the other by interchanging columns; hence the 2 Determinants have the same absolute magnitudes, and have the same sign, or not, according as their diagonals have the same sign or not;

but if the series $\alpha, \beta, \dots, \delta$, be not such a permutation, the Determinant

$$\begin{vmatrix} 1\alpha & \dots & 1\delta \\ \vdots & & \vdots \\ n\alpha & \dots & n\delta \end{vmatrix}_b$$

vanishes as in the first case;

\therefore the Determinant of the new Block

$$\begin{aligned} & \sum \left\{ \pm 1 \alpha_a \cdot 2 \beta_a \dots n \delta_a \cdot \begin{vmatrix} 11 & \dots & 1n \\ \vdots & & \vdots \\ n1 & \dots & nn \end{vmatrix}_b \right\}; \\ & = \sum \left\{ \pm 1 \alpha_a \cdot 2 \beta_a \dots n \delta_a \right\} \cdot \begin{vmatrix} 11 & \dots & 1n \\ \vdots & & \vdots \\ n1 & \dots & nn \end{vmatrix}_b; \\ & = \begin{vmatrix} 11 & \dots & 1n \\ \vdots & & \vdots \\ n1 & \dots & nn \end{vmatrix}_a \times \begin{vmatrix} 11 & \dots & 1n \\ \vdots & & \vdots \\ n1 & \dots & nn \end{vmatrix}_b; \end{aligned}$$

that is, it is the product of the Determinants of the 2 given Blocks²⁰.

Thirdly,

let r be $> n$;

and let A, B, \dots, N , be a certain set of n different numbers, selected from the numbers 1 to r , and orderly arranged; and let $\alpha, \beta, \dots, \delta$, each take any of the values A, B, \dots, N ;

then, if the series $\alpha, \beta, \dots, \delta$, be a permutation of the numbers A, B, \dots, N , the Determinant

$$\begin{vmatrix} 1\alpha & \dots & 1\delta \\ \vdots & & \vdots \\ n\alpha & \dots & n\delta \end{vmatrix}_b = \begin{vmatrix} 1A & \dots & 1N \\ \vdots & & \vdots \\ nA & \dots & nN \end{vmatrix}_b,$$

affected with $+$ or $-$, according as the series $\alpha, \beta, \dots, \delta$, contains an even or odd number of derangements;

but if the series $\alpha, \beta, \dots, \delta$, be not such a permutation, the Determinant

$$\begin{vmatrix} 1\alpha & \dots & 1\delta \\ \vdots & & \vdots \\ n\alpha & \dots & n\delta \end{vmatrix}_b$$

vanishes as in the first case;

\therefore the Determinant of the new Block contains the quantity

$$\sum \left\{ \pm 1 \alpha_a \cdot 2 \beta_a \dots n \delta_a \cdot \begin{vmatrix} 1A & \dots & 1N \\ \vdots & & \vdots \\ nA & \dots & nN \end{vmatrix}_b \right\};$$

$$\therefore \text{it contains } \sum \left\{ \pm 1 \alpha_a \cdot 2 \beta_a \dots n \delta_a \right\} \times \begin{vmatrix} 1A & \dots & 1N \\ \vdots & & \vdots \\ nA & \dots & nN \end{vmatrix}_b;$$

$$\therefore \text{it contains } \begin{vmatrix} 1A & \dots & 1N \\ \vdots & & \vdots \\ nA & \dots & nN \end{vmatrix}_a \times \begin{vmatrix} 1A & \dots & 1N \\ \vdots & & \vdots \\ nA & \dots & nN \end{vmatrix}_b;$$

and the same thing may be proved for any other set of n different numbers, selected from the numbers 1 to r , and orderly arranged;

²⁰ Prop. V. Part 2. Thus

$$\begin{vmatrix} a & b & c \\ d & e & f \\ g & h & k \end{vmatrix} \times \begin{vmatrix} A & B & C \\ D & E & F \\ G & H & K \end{vmatrix} = \begin{vmatrix} (aA + bB + cC), & (aD + bE + cF), & (aG + bH + cK) \\ (dA + eB + fC), & (dD + eE + fF), & (dG + eH + fK) \\ (gA + hB + kC), & (gD + hE + kF), & (gG + hH + kK) \end{vmatrix}.$$

but if the series A, B, \dots, N , though selected from the numbers 1 to r , be not all *different* numbers, the Determinant

$$\begin{vmatrix} 1(A) & \dots & 1(N) \\ \vdots & & \vdots \\ n(A) & \dots & n(N) \end{vmatrix}$$

vanishes as in the first case;

\therefore the Determinant of the new Block

$$= \sum \left\{ \begin{vmatrix} 1(A) & \dots & 1(N) \\ \vdots & & \vdots \\ n(A) & \dots & n(N) \end{vmatrix}_a \times \begin{vmatrix} 1(A) & \dots & 1(N) \\ \vdots & & \vdots \\ n(A) & \dots & n(N) \end{vmatrix}_b \right\},$$

in which the series A, \dots, N , take the values of every possible set of n different numbers, selected from the numbers 1 to r , and orderly arranged;

that is, it is the sum of all possible products that can be made, by taking any n columns of one of the given Blocks, in the order in which they stand, and the corresponding n columns of the other Block, and multiplying together the Determinants of the 2 Blocks so formed.

Therefore, if there be given 2 Blocks, &c. Q. E. D.

Corollary to Prop. V.

If $r = n$: then, in each of the given Blocks, rows may be made columns, and columns rows, without altering the Determinants; (PROP. IV.)

\therefore the new Block may be such that any Element of it, $h(k_c)$, has any one of the 4 values,

$$\begin{aligned} & \{h(1 \dots h)(n)\} \S \{k(1 \dots k)(n)_b\}, \\ & \{h(1 \dots h)(n)\} \S \{1(k \dots n)(k)_b\}, \\ & \{1(h \dots n)(h)\} \S \{k(1 \dots k)(n)_b\}, \\ & \{1(h \dots n)(h)\} \S \{1(k \dots n)(k)_b\}. \end{aligned}$$

Proposition VI. Th.

If there be a square Block of the n^{th} degree: the Determinant of the adjugate Block is equal to the $\overline{n-1}^{\text{th}}$ power of the Determinant of the first Block.

Let the Block be represented by

$$\begin{Bmatrix} 1(1) & \dots & 1(n) \\ \vdots & & \vdots \\ n(1) & \dots & n(n) \end{Bmatrix}_a,$$

and the adjugate Block by

$$\left\{ \begin{array}{ccc} 1 & \dots & 1 \\ \vdots & & \vdots \\ n & \dots & n \end{array} \right\}_A ;$$

and let a Block of the n^{th} degree be formed, represented by

$$\left\{ \begin{array}{ccc} 1 & \dots & 1 \\ \vdots & & \vdots \\ n & \dots & n \end{array} \right\}_c,$$

and such that any term $h \left\{ k_c = (h \left\{ 1_a \dots h \left\{ n_a \right\} \right\} (k \left\{ 1_A \dots k \left\{ n_A \right\} \right\} \right)$;

and let their Determinants be represented by D_a, D_A, D_c .

Then $D_c = D_a \cdot D_A$;

(PROP. V.

now $h \left\{ k_c = h \left\{ 1_a \cdot k \left\{ 1_A + \dots + h \left\{ n_a \cdot k \left\{ n_A \right\} \right\} \right)$;

\therefore when $h = k, h \left\{ k_c = D_a$;

(AX. II.

and when $h \neq k, h \left\{ k_c = 0$;

(PROP. III. COR. 1.

\therefore all the Elements of D_c vanish, except $1 \left\{ 1_c, \dots, n \left\{ n_c, \right.$ each of which $= D_a$;

$\therefore D_c = D_a^n$;

i. e. $D_a \cdot D_A = D_a^n$;

$\therefore D_A = D_a^{n-1}$.

Q. E. D²¹.

Proposition VII. Th.

If there be a square Block of the n^{th} degree, and if in it any Minor of the m^{th} degree be selected: the Determinant of the corresponding Minor in the adjugate Block is equal, in absolute magnitude, to the product of the $\overline{m-1}^{\text{th}}$ power of the Determinant of the first Block, multiplied by the Determinant of the Minor complementary to the one selected.

Also, if the numerals, indicating the selected rows, be represented by α, β, \dots , and those indicating the selected columns by κ, λ, \dots ; and their respective sums by $\sum(\alpha), \sum(\kappa)$: the relationship of sign between the equal magnitudes will be secured by multiplying either of them by $(-1)^{m \cdot (\sum \alpha + \sum \kappa)}$.

²¹ Prop. VI. Thus, if the first Block be $\left\{ \begin{array}{ccc} a & b & c \\ d & e & f \\ g & h & k \end{array} \right\}$; then

$$\left| \begin{array}{cc} \left| \begin{array}{cc} e & f \\ h & k \end{array} \right|, & - \left| \begin{array}{cc} d & f \\ g & k \end{array} \right|, & \left| \begin{array}{cc} d & e \\ g & h \end{array} \right| \\ - \left| \begin{array}{cc} b & c \\ h & k \end{array} \right|, & \left| \begin{array}{cc} a & c \\ g & k \end{array} \right|, & - \left| \begin{array}{cc} a & b \\ g & k \end{array} \right| \\ \left| \begin{array}{cc} b & c \\ e & f \end{array} \right|, & - \left| \begin{array}{cc} a & c \\ d & f \end{array} \right|, & \left| \begin{array}{cc} a & b \\ d & f \end{array} \right| \end{array} \right| = \left| \begin{array}{ccc} a & b & c \\ d & e & f \\ g & h & k \end{array} \right|^2.$$

Let the Block be re-arranged, if necessary, by transposing rows and columns, so that the selected rows and columns shall stand first; and let it, when so arranged, be represented by

$$\left\{ \begin{array}{ccc} 1 \binom{1}{1} & \dots & 1 \binom{1}{n} \\ \vdots & & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n} \end{array} \right\}_a,$$

and its adjugate Block by

$$\left\{ \begin{array}{ccc} 1 \binom{1}{1} & \dots & 1 \binom{1}{n} \\ \vdots & & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n} \end{array} \right\}_A;$$

also let a Block of the n^{th} degree be formed, represented by

$$\left\{ \begin{array}{ccc} 1 \binom{1}{1} & \dots & 1 \binom{1}{n} \\ \vdots & & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n} \end{array} \right\}_b,$$

and such that its first m rows are identical with those of the A -Block, the rest of its diagonal consists of units, and all its other Elements are zero;

hence, $\left\{ \begin{array}{ccc} 1 \binom{1}{1} & \dots & 1 \binom{1}{n} \\ \vdots & & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n} \end{array} \right\}_b$ is identical with

$$\left\{ \begin{array}{cccccc} 1 \binom{1}{1_A} & \dots & 1 \binom{1}{m_A} & 1 \binom{1}{m+1_A} & \dots & 1 \binom{1}{n_A} \\ \vdots & & \vdots & \vdots & & \vdots \\ m \binom{1}{1_A} & \dots & m \binom{1}{m_A} & m \binom{1}{m+1_A} & \dots & m \binom{1}{n_A} \\ 0 & \dots & 0 & 1 & 0 \dots & 0 \\ \vdots & & \ddots & \ddots & \ddots & \vdots \\ \vdots & & & \ddots & \ddots & 0 \\ 0 & \dots & \dots & \dots & \dots 0 & 1 \end{array} \right\};$$

$$\therefore D_b = \left| \begin{array}{ccc} 1 \binom{1}{1_A} & \dots & 1 \binom{1}{m_A} \\ \vdots & & \vdots \\ m \binom{1}{1_A} & \dots & m \binom{1}{m_A} \end{array} \right|; \quad (\text{PROP. I. COR. 3.})$$

also let a Block of the n^{th} degree be formed, represented by

$$\left\{ \begin{array}{ccc} 1 \binom{1}{1} & \dots & 1 \binom{1}{n} \\ \vdots & & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n} \end{array} \right\}_c$$

and such that any term $h \left\{ k_c = (h \left\{ 1_a \dots h \left\{ n_a \right\} \right\} \right\} \left\{ k \left\{ 1_b \dots k \left\{ n_b \right\} \right\} \right\}$;

$$\therefore D_a \cdot D_b = D_c, \quad (\text{PROP. V.})$$

Now, for all values of $k \neq m$,

$$\text{if } h = k, h \left\{ k_c = D_a; \quad (\text{AX. II.})$$

$$\text{if } h \neq k, h \left\{ k_c = 0; \quad (\text{PROP. III. COR. 1.})$$

i. e. in the first m columns of the c -Block, all the Elements vanish, except $1 \left\{ 1_c, 2 \left\{ 2_c, \dots m \left\{ m_c, \right. \right. \right.$ each of which $= D_a$;

also, for all values of $k > m$,

$$h \left\{ k_c = (h \left\{ 1_a, \dots h \left\{ k_a, \dots h \left\{ n_a \right\} \right\} \right\} \right\} \left\{ 0, \dots 1, \dots 0 \right\},$$

since all the terms of the second series vanish, except $k \left\{ k_b, \right.$ which $= 1$;

$$\therefore \text{for all values of } k > m, h \left\{ k_c = h \left\{ k_a;$$

i. e. in the $\overline{m+1}^{\text{th}}$ and following columns of the c -Block, the Elements are identical with the corresponding Elements of the a -Block;

$$\text{i. e. } \left\{ \begin{array}{ccc} 1 \left\{ 1 & \dots & 1 \left\{ n \right. \\ \vdots & & \vdots \\ n \left\{ 1 & \dots & n \left\{ n \right. \end{array} \right\} \right\}_c \text{ is identical with}$$

$$\left\{ \begin{array}{ccc} D_a, 0 & \dots & 0, & 1 \left\{ m+1_a & \dots & 1 \left\{ n_a \right. \\ 0 & \ddots & \vdots & \vdots & & \vdots \\ \vdots & \ddots & 0 & \vdots & & \vdots \\ \vdots & \ddots & D_a, & m \left\{ m+1_a & \dots & m \left\{ n_a \right. \\ \vdots & & 0, & m+1 \left\{ m+1_a & \dots & m+1 \left\{ n_a \right. \\ \vdots & & \vdots & \vdots & & \vdots \\ 0 & \dots & 0, & n \left\{ m+1_a & \dots & n \left\{ n_a \right. \end{array} \right\}.$$

$$\therefore D_c = D_a^m \cdot \left| \begin{array}{ccc} m+1 \left\{ m+1_a & \dots & m+1 \left\{ n_a \right. \\ \vdots & & \vdots \\ n \left\{ m+1_a & \dots & n \left\{ n_a \right. \end{array} \right|;$$

$$\therefore D_a \cdot D_b = \text{do.}$$

$$\therefore D_a \cdot \left| \begin{array}{ccc} 1 \left\{ 1_A & \dots & 1 \left\{ m_A \right. \\ \vdots & & \vdots \\ m \left\{ 1_A & \dots & m \left\{ m_A \right. \end{array} \right| = \text{do.}$$

$$\text{i. e. } \left| \begin{array}{ccc} 1 \left\{ 1_A & \dots & 1 \left\{ m_A \right. \\ \vdots & & \vdots \\ m \left\{ 1_A & \dots & m \left\{ m_A \right. \end{array} \right| = D_a^{m-1} \cdot \left| \begin{array}{ccc} m+1 \left\{ m+1_a & \dots & m+1 \left\{ n_a \right. \\ \vdots & & \vdots \\ n \left\{ m+1_a & \dots & n \left\{ n_a \right. \end{array} \right|.$$

Now let the Determinant of the original Blocks before re-arrangement, be represented by 'D'; the Determinant of the Minor, complementary to the one selected, by 'C'; and if a Block be formed, adjugate to the original Block before re-arrangement, and if in it a Minor be taken corresponding to the one selected, let the Determinant of this Minor be represented by 'J'.

Then, having regard to absolute magnitude only,

$$D_a = D;$$

$$\begin{vmatrix} m+1 & m+1_a & \dots & m+1 & n_a \\ \vdots & & & & \vdots \\ n & m+1_a & \dots & n & n_a \end{vmatrix} = C;$$

$$\begin{vmatrix} 1 & 1_A & \dots & 1 & m_A \\ \vdots & & & & \vdots \\ m & 1_A & \dots & m & m_A \end{vmatrix} = J;$$

$$J = \pm D^{m-1} \cdot C.$$

Therefore, if there be, &c. Q. E. D²².

Secondly, the relationship of sign between these equal magnitudes will be secured by multiplying either by $(-1)^{m \cdot (\Sigma(a) + \Sigma(\kappa))}$.

Let the numeral, indicating the last of the selected rows, be represented by 'ζ'.

Now, firstly, D_a is equal to D in absolute magnitude; and it has the same, or a different, sign, according as the number of rows, over which other rows are transposed, together with the number of columns, over which other columns are transposed, is even or odd;

for each transposition over one row, or over one column, changes the sign of the Determinant; (PROP. II.

now the first of the selected rows, namely the α^{th} , is transposed over all the preceding $\alpha - 1$ rows;

the second, namely the β^{th} , is transposed over all the preceding $\beta - 1$ rows, excepting the α^{th} row itself; that is, it is transposed over $\beta - 2$ rows;

similarly the γ^{th} row is transposed over $\gamma - 3$ rows, and so on; and finally the ζ^{th} is transposed over $\zeta - m$ rows;

∴ the number of rows, over which other rows are transposed,

$$= \alpha + \beta + \dots + \zeta - (1 + 2 + \dots + m);$$

²² Prop. VII. Part I. Thus, if the Block be $\begin{Bmatrix} a & b & c & d \\ e & f & g & h \\ k & l & m & n \\ p & q & r & s \end{Bmatrix}$, and if the Minor $\begin{Bmatrix} f & g \\ q & r \end{Bmatrix}$ be

selected;

$$\text{then } \begin{vmatrix} a & c & d \\ k & m & n \\ p & r & s \\ a & c & d \\ e & g & h \\ k & m & n \end{vmatrix}, - \begin{vmatrix} a & b & d \\ k & l & n \\ p & q & s \\ a & b & d \\ e & f & h \\ k & l & n \end{vmatrix} = \pm \begin{vmatrix} a & b & c & d \\ e & f & g & h \\ k & l & m & n \\ p & q & r & s \end{vmatrix}^{(2-1)} \times \begin{vmatrix} a & d \\ k & n \end{vmatrix}$$

$$= \sum(\alpha) - \frac{m \cdot (m+1)}{2};$$

similarly, the number of columns, over which other columns are transposed,

$$= \sum(\kappa) - \frac{m \cdot (m+1)}{2};$$

\therefore their sum = $\sum(\alpha) + \sum(\kappa) - m \cdot (m+1)$;

but $m \cdot (m+1)$ is necessarily even;

$\therefore D_a$ has the same sign as D , or a different one, according as $\sum(\alpha) + \sum(\kappa)$ is even or odd.

$$\therefore D_a = D \cdot (-1)^{\sum(\alpha) + \sum(\kappa)};$$

$$\therefore D_a^{m-1} = D^{m-1} \cdot (-1)^{(\sum(\alpha) + \sum(\kappa)) \cdot (m-1)}.$$

Secondly, $\begin{vmatrix} m+1 \binom{m+1}{m+1_a} & \dots & m+1 \binom{m+1}{n_a} \\ \vdots & & \vdots \\ n \binom{m+1}{m+1_a} & \dots & n \binom{m+1}{n_a} \end{vmatrix}$ is equal to C in absolute magni-

tude, and has the same sign;

for the two Determinants contain the same Elements, arranged in the same order.

Thirdly, $\begin{vmatrix} 1 \binom{m}{1_A} & \dots & 1 \binom{m}{m_A} \\ \vdots & & \vdots \\ m \binom{m}{1_A} & \dots & m \binom{m}{m_A} \end{vmatrix}$ is equal to J in absolute magnitude, and it

has the same, or a different, sign, according as $(\sum(\alpha) + \sum(\kappa))$ is even or odd;

for the Elements of the first of these Determinants are the determinantal coefficients of the Elements of the selected Minor, after the re-arrangement of the Block; and those of the other are the same coefficients before the re-arrangement;

hence the Elements of the one Determinant have the same absolute magnitude as those of the other, and the same, or a different, sign, according as the Determinant of the Block has, after the re-arrangement, the same, or a different, sign;

$$\therefore \begin{vmatrix} 1 \binom{m}{1_A} & \dots & 1 \binom{m}{m_A} \\ \vdots & & \vdots \\ m \binom{m}{1_A} & \dots & m \binom{m}{m_A} \end{vmatrix} = J \cdot (-1)^{\sum(\alpha) + \sum(\kappa)}.$$

Hence, substituting in the Equation already established, we get

$$J \cdot (-1)^{\sum(\alpha) + \sum(\kappa)} = D^{m-1} \cdot C \cdot (-1)^{(\sum(\alpha) + \sum(\kappa)) \cdot (m-1)};$$

$$\therefore J = D^{m-1} \cdot C \cdot (-1)^{m \cdot (\sum(\alpha) + \sum(\kappa))} \text{ }^{23}$$

Therefore, if the numerals, &c. Q. E. D.

Corollary to Prop. VII.

If $D_a = 0$, the Determinant of any Minor in the adjugate Block = 0, since it contains D_a , as a factor.

²³The resulting Equation really is $J = D^{m-1} \cdot C \cdot (-1)^{(m-2) \cdot (\sum(\alpha) + \sum(\kappa))}$, but the factor $(-1)^{2(\sum(\alpha) + \sum(\kappa))} = 1$, and so may be neglected.

As a particular case of this, let $m = 2$, and let the selected Minor contain the Elements common to the h^{th} and k^{th} rows and the r^{th} and s^{th} columns;

$$\text{then } \begin{vmatrix} h \left\{ r_A, & h \right\} s_A \\ k \left\{ r_A, & k \right\} s_A \end{vmatrix} = 0;$$

$$\text{i. e. } h \left\{ r_A, k \right\} s_A = k \left\{ r_A, h \right\} s_A;$$

$$\therefore h \left\{ r_A : h \right\} s_A :: k \left\{ r_A, k \right\} s_A;$$

$$\therefore \text{the ratios } h \left\{ 1_A : h \right\} 2_A : h \left\{ 3_A : \&c. : h \right\} n_A \text{ are independent of } h.$$

Chapter III. Analysis of Equations.

N.B. The Equations Discussed in this Chapter are of the First Degree Only.

Definitions.

I. Any quantity that is not zero is called **actual**.

II. In any Equation, or set of Equations, any Algebraical quantity, which has an actual coefficient, is said to be **contained actually** in it or them.

III. In any Equation, or set of Equations, all Numbers, and all Algebraical quantities whose values are determinable independently of the Equations, are called **Constants** with reference to them: but if there be in them Algebraical quantities which may bear any values whatsoever that are consistent with the truth of the Equations, these are called **Variables** with reference to them.

IV. In an Equation containing Variables, any set of values which can be assigned to the Variables, consistently with the truth of the Equations, is called a set of **values for the Variables**.

V. If a set of Equations, containing Variables, be such that there is a set of finite values for the Variables, they are said to be **consistent**; if not, **inconsistent**.

VI. If there be an Equation, or set of consistent Equations, containing Variables, and another such Equation; and if, whatsoever values for the Variables satisfy the first Equation or set of Equations, the same also satisfy that other Equation: that other Equation is said to be **dependent** on the rest.

VII. If 2 Equations be each dependent on the other: they are said to be **identical**.

Conventions.

I. If a Block of terms be distinguished by prefixing a letter, as “the A -Block:” let $\|A\|$ represent “the Determinants of all its principal Minors,” $|A|$ “the Determinant of one of its principal Minors,” and (if the Block be square) let A represent “the Determinant of the Block.”

Thus, if a Block be square, these three symbols will bear the same meaning.

Also, in an oblong Block,

$\|A\| = 0$ may be read “all the A -Determinants vanish,” or “the A -Block is evanescent.”

$|A| = 0$ may be read “one of the A -Determinants vanishes.”

$|A| \neq 0$ may be read “one of the A -Determinants does not vanish,” or “the A -Block is not evanescent.”

$\|A\| \neq 0$ may be read “none of the A -Determinants vanish.”

II. If there be a set of Equations containing Variables: let the Block formed of the coefficients of the Variables be called “the V -Block,” and let the Block formed of these together with the constant terms be called “the B -Block.”

III. If a set of Equations be said to contain n Variables, and if, in any one of them, any Variable be not actually contained, let it be understood that, in forming the V -Block or B -Block, such Variable is introduced with a zero coefficient. And if any one of the Equations contain no actual constant term, let it be understood that, in forming the B -Block, a zero term is introduced as the constant term²⁴.

Axioms.

I. If there be a set of homogeneous Equations containing Variables: they may be satisfied by assigning to each Variable the value zero.

II. But if there be a set of values for the Variables, whereof one is actual: at least one other is actual also.

III. If there be a set of homogeneous Equations containing Variables: whatsoever values for the Variables satisfy them, any equimultiples of these values also satisfy them.

²⁴Conv. III. Thus, in the Equations

$$\begin{array}{rclcl} 3x & +2y & & -1 & = 0, \\ x & & +5z & & = 0, \\ x & -y & & +3 & = 0, \end{array}$$

the V -Block is $\left\{ \begin{array}{ccc} 3, & 2, & 0 \\ 1, & 0, & 5 \\ 1, & -1, & 0 \end{array} \right\}$, and the B -Block $\left\{ \begin{array}{cccc} 3, & 2, & 0, & -1 \\ 1, & 0, & 5, & 0 \\ 1, & -1, & 0, & 3 \end{array} \right\}$.

Again, if the Equations

$$\begin{array}{rclcl} x & +3y & +2 & = 0, \\ x & -y & -1 & = 0, \\ 2x & +y & +3 & = 0, \end{array}$$

be said to contain *two* Variables, their V -Block is $\left\{ \begin{array}{cc} 1, & 3 \\ 1, & -1 \\ 2, & 1 \end{array} \right\}$; but if they be said to contain

three, it is $\left\{ \begin{array}{ccc} 1, & 3, & 0 \\ 1, & -1, & 0 \\ 2, & 1, & 0 \end{array} \right\}$.

IV. If there be 2 identical Equations, containing m Variables: there are $\overline{m-1}$ of the Variables, to which arbitrary values may be assigned.

Section I. Consistency of Equations under given conditions of evanescence of their V -Blocks or B -Blocks.

Proposition I. Th.

If there be n Equations containing n Variables, and if $V \neq 0$: the Equations are consistent, and there is only one set of values for the Variables.

First, let $n = 2$.

Let the Equations be represented by

$$\begin{aligned} 1 \left(1. x_1 + 1 \right) 2 \left(2. x_2 + 1 \right) 3 = 0, \\ 2 \left(1. x_1 + 2 \right) 2 \left(2. x_2 + 2 \right) 3 = 0, \end{aligned}$$

and let the Determinants of the principal Minors of the B -Block, formed by successively erasing the columns containing the Variables and the column of constants, be represented by the symbols D_1, D_2, V ;

then, if the first Equation be multiplied by 2, and the second by -1 , and the 2 Equations added together, the coefficient of x_2 in the resulting Equation will be zero;

\therefore the resulting Equation is

$$x_1 \cdot (1 \left(1. 2 \right) 2 - 2 \left(1. 1 \right) 2) + (1 \left(3. 2 \right) 2 - 2 \left(3. 1 \right) 2) = 0;$$

$$\text{i. e. } x_1 \cdot \begin{vmatrix} 1 \left(1, & 1 \right) 2 \\ 2 \left(1, & 2 \right) 2 \end{vmatrix} + \begin{vmatrix} 1 \left(3, & 1 \right) 2 \\ 2 \left(3, & 2 \right) 2 \end{vmatrix} = 0;$$

$$\text{i. e. } x_1 \cdot \begin{vmatrix} 1 \left(1, & 1 \right) 2 \\ 2 \left(1, & 2 \right) 2 \end{vmatrix} - \begin{vmatrix} 1 \left(2, & 1 \right) 3 \\ 2 \left(2, & 2 \right) 3 \end{vmatrix} = 0; \quad (\text{CH. II. PROP. II. COR.})$$

$$\text{i. e. } x_1 \cdot V - D_1 = 0.$$

By a similar process it may be proved that

$$-x_2 \cdot V - D_2 = 0;$$

and, dividing these Equations throughout by V ,

$$x_1 = \frac{D_1}{V}, -x_2 = \frac{D_2}{V};$$

and since, by hypothesis, $V \neq 0$, these values are both finite.²⁵

²⁵Changed according to *Corrigenda* from:

and since, by hypothesis, $V \neq 0$, these Equations may be divided throughout by V , and written

$$x_1 = \frac{D_1}{V}, -x_2 = \frac{D_2}{V}.$$

Next, these values shall satisfy both Equations;

for let them be substituted in the first;

then its left-hand side will become $\frac{1}{V} \cdot (1 \left\{ 1. D_1 - 1 \right\} 2. D_2 + 1 \left\{ 3. V \right\})$;

and this = 0;

(CH. II. PROP. III. COR. 2.

similarly it may be proved for the second Equation;

\therefore the Equations are consistent.

Also it is evident that, whatsoever values there are for the Variables, they may be proved equal to $\frac{D_1}{V}, \frac{-D_2}{V}$;

\therefore there is only one set of values for the Variables.

Secondly, let $n > 2$.

Let the equations be represented by

$$\begin{aligned} 1 \left\{ 1. x_1 + 1 \right\} 2. x_2 + \dots + 1 \left\{ n. x_n + 1 \right\} n + 1 &= 0, \\ 2 \left\{ 1. x_1 + 2 \right\} 2. x_2 + \dots + 2 \left\{ n. x_n + 2 \right\} n + 1 &= 0, \\ &\text{\&c.} \\ n \left\{ 1. x_1 + n \right\} 2. x_2 + \dots + n \left\{ n. x_n + n \right\} n + 1 &= 0; \end{aligned}$$

and let the Determinants of the principal Minors of the B -Block be represented, as before, by $D_1, \dots D_n, V$.

Now the Block

$$\left\{ \begin{array}{ccc} 1 \left\{ 2 \dots 1 \right\} n \\ \vdots & & \vdots \\ n \left\{ 2 \dots n \right\} n \end{array} \right\}$$

contains n rows and $\overline{n-1}$ columns;

hence, if the Elements of any column in it be respectively multiplied by the Determinants of its principal Minors, affected with + and - alternately, the sum of the products is zero;

(CH. II. PROP. III. COR. 2.

hence, if the n Equations be respectively multiplied by these Determinants, thus affected, and added together, the coefficients of $x_2, \dots x_n$, in the resulting Equation will all be zero;

\therefore the resulting Equation is

$$\begin{aligned} x_1 \cdot \left\{ 1 \left\{ 1. \begin{vmatrix} 2 \left\{ 2 \dots 2 \right\} n \\ \vdots & & \vdots \\ n \left\{ 2 \dots n \right\} n \end{vmatrix} - 2 \left\{ 1. \begin{vmatrix} 1 \left\{ 2 \dots 1 \right\} n \\ 3 \left\{ 2 \dots 3 \right\} n \\ \vdots & & \vdots \\ n \left\{ 2 \dots n \right\} n \end{vmatrix} + \&c. \right\} + \left\{ 1 \left\{ n+1. \begin{vmatrix} 2 \left\{ 2 \dots 2 \right\} n \\ \vdots & & \vdots \\ n \left\{ 2 \dots n \right\} n \end{vmatrix} - 2 \left\{ n+1. \begin{vmatrix} 1 \left\{ 2 \dots 1 \right\} n \\ 3 \left\{ 2 \dots 3 \right\} n \\ \vdots & & \vdots \\ n \left\{ 2 \dots n \right\} n \end{vmatrix} \right\} \right. \\ \text{i. e. } x_1 \cdot \left. \left\{ \begin{vmatrix} 1 \left\{ 1 \dots 1 \right\} n \\ \vdots & & \vdots \\ n \left\{ 1 \dots n \right\} n \end{vmatrix} + \begin{vmatrix} 1 \left\{ n+1, 1 \right\} 2 \dots 1 \left\{ n \right\} \\ \vdots & & \vdots \\ n \left\{ n+1, n \right\} 2 \dots n \left\{ n \right\} \end{vmatrix} = 0; \right. \end{aligned}$$

(CH. II.)

$$\text{i. e. } x_1 \cdot \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n} \\ \vdots & & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n} \end{vmatrix} (-)^{n-1} \begin{vmatrix} 1 \binom{2}{2} & \dots & 1 \binom{2}{n+1} \\ \vdots & & \vdots \\ n \binom{2}{2} & \dots & n \binom{2}{n+1} \end{vmatrix} = 0;$$

PROP. II. COR.

$$\text{i. e. } x_1 \cdot V(-)^{n-1} D_1 = 0.$$

By a similar process it may be proved that

$$x_2 \cdot V(-)^{n-1} D_2 = 0, \\ \&c.;$$

and, dividing these Equations throughout by V ,

$$x_1 = \frac{(-)^n D_1}{V}, -x_2 = \frac{(-)^n D_2}{V}, \&c.;$$

and since, by hypothesis, $V \neq 0$, these values are all finite.

Next, these values shall satisfy all the Equations;
for let them be substituted in the Equation

$$h \binom{1}{1} x_1 + h \binom{2}{2} x_2 + \dots + h \binom{n}{n} x_n + h \binom{n+1}{n+1} = 0;$$

then the left-hand side of this Equation will become

$$\frac{(-1)^n}{V} \cdot \left\{ h \binom{1}{1} D_1 - h \binom{2}{2} D_2 + \dots (-)^{n-1} h \binom{n}{n} D_n (-)^n h \binom{n+1}{n+1} V \right\};$$

and this = 0; (CH. II. PROP. III. COR. 2.)

similarly it may be proved for any other of the Equations;

\therefore the Equations are consistent.

Also it is evident that, whatsoever values there are for the Variables, they may be proved equal to $\frac{(-)^n D_1}{V}$, &c.;

\therefore there is only one set of values for the Variables.

Therefore, if there be, &c. Q. E. D.

Corollary to Prop. I.

The values for the Variables may be briefly exhibited thus;—

$$x_1 : -x_2 : \&c. : (-1)^n :: D_1 : D_2 : \&c. : V;$$

or thus; $\frac{x_1}{D_1} = \frac{-x_2}{D_2} = \&c. = \frac{(-1)^n}{V}$ ²⁶;

wherein it is to be observed that, if any of the quantities D_1, D_2, \dots, D_n be zero, the value of the corresponding Variable must also be zero.

²⁶ Prop. I. Thus, in the Equations $\left. \begin{matrix} 2x + 3y + 1 = 0 \\ 5x - y - 2 = 0 \end{matrix} \right\}$, we have $\begin{vmatrix} x & 1 \\ 3 & -2 \end{vmatrix} =$

$$\begin{vmatrix} -y & 1 \\ 2 & -2 \end{vmatrix} = \begin{vmatrix} 1 & 3 \\ 2 & -1 \end{vmatrix};$$

$$\text{i. e. } \frac{x}{-5} = \frac{-y}{-9} = \frac{1}{-17}; \therefore x = \frac{5}{17}, \text{ and } y = -\frac{9}{17}.$$

Proposition II. Th.

If there be n Equations containing $\overline{n+r}$ Variables, and if $|V| \neq 0$: the Equations are consistent, and, if any non-evanescent principal Minor of the V -Block be selected, the r Variables, whose coefficients are not contained in it, may have arbitrary values assigned to them; and, for each such set of arbitrary values, there is only one value for each of the remaining Variables.

Since $|V| \neq 0$, the Equations must contain actually n at least of the Variables.

Let a non-evanescent principal Minor of the V -Block be selected, and let arbitrary values be given to the r Variables whose coefficients are not contained in it;

then there are n Equations, containing n Variables, and such that their V -Block does not vanish;

\therefore they are consistent, &c. (PROP. I.

Therefore, if there be, &c. Q. E. D²⁷.

Corollary to Prop. II.

If the Equations be homogeneous, and if $r = 1$; then, in every set of values for the Variables, the values bear to each other one and the same set of ratios.

For if the Determinants of the principal Minors of the B -Block be represented by $D_1, \dots D_{n+1}$, it may be proved, as in the last Proposition, that

$$\frac{x_1}{D_1} = \frac{-x_2}{D_2} = \&c. = \frac{(-)^n x_{n+1}}{D_{n+1}}.$$

Proposition III. Th.

If there be n Equations containing $\overline{n-1}$ Variables, and if $B \neq 0$; the Equations are inconsistent.

It is evident that the Equations cannot be all homogeneous, and that they must contain actually all the Variables.

Again, in the Equations

$$\begin{array}{cccccc} 3x & -y & +z & +4 & = & 0, \\ x & +3y & & -5 & = & 0, \\ 2x & +y & -3z & +3 & = & 0, \end{array}$$

we have

$$\begin{vmatrix} -1, & 1, & 4 \\ 3, & 0, & -5 \\ 1, & -3, & 3 \end{vmatrix} = \begin{vmatrix} -y & & \\ 3, & 1, & 4 \\ 1, & 0, & -5 \end{vmatrix} = \begin{vmatrix} z & & \\ 3, & -1, & 4 \\ 1, & 3, & -5 \end{vmatrix} = \begin{vmatrix} -1 & & \\ 3, & -1, & 1 \\ 1, & 3, & 0 \end{vmatrix} =$$

i. e. $\frac{x}{-35} = \frac{y}{70} = \frac{z}{35} = \frac{1}{35}$;
 $\therefore x = -1, y = 2, z = 1.$

²⁷ Prop. II. Thus, in the Equations

$$\begin{array}{cccccc} x & -y & -2z & +v & -4 & = & 0 \\ 3x & +2y & +4z & -2v & +3 & = & 0 \end{array}$$

we have $\begin{vmatrix} 1, & -1 \\ 3, & 2 \end{vmatrix} \neq 0$: hence we may assign arbitrary values to z and v ; let us assign to them the values 0, 2; then we have

$$x = 1, y = -1.$$

First, let $n = 2$.

Let the Equations be represented by

$$\begin{aligned} 1 \begin{vmatrix} 1 & x+1 \end{vmatrix} 2 &= Q_1 = 0, \\ 2 \begin{vmatrix} 1 & x+2 \end{vmatrix} 2 &= Q_2 = 0. \end{aligned}$$

Now the quantity $Q_1 \cdot 2 \begin{vmatrix} 1 & -Q_2 \cdot 1 \end{vmatrix} 1$

$$\begin{aligned} &= 1 \begin{vmatrix} 1 & x & 2 \end{vmatrix} 1 + 1 \begin{vmatrix} 2 & 2 \end{vmatrix} 1 \\ &\quad - 2 \begin{vmatrix} 1 & x & 1 \end{vmatrix} 1 - 2 \begin{vmatrix} 2 & 1 \end{vmatrix} 1; \end{aligned}$$

and, in this quantity, the first column = 0, and the other = $-B$;

$$\therefore Q_1 \cdot 2 \begin{vmatrix} 1 & -Q_2 \cdot 1 \end{vmatrix} 1 \neq 0;$$

\therefore the value for x , which makes $Q_1 = 0$, cannot also make $Q_2 = 0$.

Secondly, let $n > 2$.

Let the n Equations be represented by

$$\begin{aligned} 1 \begin{vmatrix} 1 & x_1 + \dots + 1 \end{vmatrix} n - 1 \begin{vmatrix} x_{n-1} + 1 \end{vmatrix} n &= Q_1 = 0, \\ &\quad \&c. \\ n \begin{vmatrix} 1 & x_1 + \dots + n \end{vmatrix} n - 1 \begin{vmatrix} x_{n-1} + n \end{vmatrix} n &= Q_n = 0; \end{aligned}$$

also let the Determinants of the principal Minors of the Block

$$\left\{ \begin{array}{ccc} 1 \begin{vmatrix} 1 & \dots & 1 \end{vmatrix} n-1 \\ \vdots & & \vdots \\ n \begin{vmatrix} 1 & \dots & n \end{vmatrix} n-1 \end{array} \right\}$$

be represented by H_1, \dots, H_n .

Now the quantity $Q_1 \cdot H_1 - Q_2 \cdot H_2 + \dots (-)^{n-1} Q_n \cdot H_n$

$$\begin{aligned} &= 1 \begin{vmatrix} 1 & x_1 & H_1 + 1 \end{vmatrix} 2 \begin{vmatrix} x_2 & H_1 + \dots + 1 \end{vmatrix} n \begin{vmatrix} H_1 \end{vmatrix} \\ &\quad - (2 \begin{vmatrix} 1 & x_1 & H_2 + 2 \end{vmatrix} 2 \begin{vmatrix} x_2 & H_2 + \dots + 2 \end{vmatrix} n \begin{vmatrix} H_2 \end{vmatrix}) \\ &\quad + \&c. \\ &\quad (-)^{n-1} (n \begin{vmatrix} 1 & x_1 & H_n + n \end{vmatrix} 2 \begin{vmatrix} x_2 & H_n + \dots + n \end{vmatrix} n \begin{vmatrix} H_n \end{vmatrix}); \end{aligned}$$

and, in this quantity, the first $\overline{n-1}$ columns vanish; (CH. II. PROP. III.

COR. 2.

and the last column is equal to $\pm B$;

$$\therefore Q_1 \cdot H_1 - Q_2 \cdot H_2 + \dots (-)^{n-1} Q_n \cdot H_n = \pm B;$$

\therefore it $\neq 0$;

\therefore whatsoever values for the Variables make Q_1, \dots, Q_{n-1} , each = 0, these cannot also make $Q_n = 0$.

Therefore, if there be, &c. Q. E. D²⁸.

Corollary to Prop. III.

If there be n Equations, not all homogeneous, containing $\overline{n-r}$ Variables, and if $|B| \neq 0$: the Equations are inconsistent.

For then there must be among them $\overline{n-r+1}$ Equations, not all homogeneous, containing $\overline{n-r}$ Variables, and such that the Determinant of their whole Block does not vanish.

Proposition IV. Th.

If there be n Equations containing n Variables, and if $V = 0$, but $|B| \neq 0$: the Equations are inconsistent.

It is evident that the Equations cannot be all homogeneous, and that they must contain actually $\overline{n-1}$ at least of the Variables.

First, let them contain actually only $\overline{n-1}$ of the Variables; (whence V must = 0).

Then, by the last Proposition, they are inconsistent.

Secondly, let them contain actually all the n Variables.

If possible, let there be a set of values for the Variables, and call them a_1, a_2 , &c.;

then it may be proved, as in Proposition I, that

$$a_1 \cdot V = (-)^n D_1, -a_2 \cdot V = (-)^n D_2, \&c.;$$

and, since $V = 0$, these Equations become

$$0 = D_1 = D_2 = \&c.;$$

$\therefore \|B\| = 0$, which is contrary to the hypothesis.

Therefore, if there be, &c. Q. E. D.

Proposition V. Th.

If there be n Equations containing $\overline{n+r}$ Variables, and if $\|V\| = 0$, but $|B| \neq 0$: the Equations are inconsistent.

It is evident that the Equations cannot be all homogeneous, and that they must contain actually $\overline{n-1}$ at least of the Variables.

First, let them contain actually only $\overline{n-1}$ of the Variables.

²⁸ Prop. III. Thus the Equations

$$\begin{array}{rclcl} x & +y & -3 & = & 0, \\ 2x & +3y & -7 & = & 0, \\ x & -y & +2 & = & 0, \end{array}$$

are inconsistent.

Then, by Proposition III, they are inconsistent.

Secondly, let them contain actually only n of the Variables.

Then, by Proposition IV, they are inconsistent.

Thirdly, let them contain actually more than n of the Variables.

Now, if possible, let them be consistent.

Since there is in the B -Block at least one principal Minor whose Determinant does not vanish, let the Variables, whose coefficients are contained in such a Minor, be placed first, and let the Equations, so arranged, be represented by

$$1 \left(1 \cdot x_1 + \dots + 1 \right) \left(n - 1 \cdot x_{n-1} + 1 \right) \left(n \cdot x_n + 1 \right) \left(n + 1 \cdot x_{n+1} + \dots + 1 \right) \left(n + r \cdot x_{n+r} + 1 \right) \left(n + r + 1 \right) = 0, \\ \text{\&c.}$$

$$n \left(1 \cdot x_1 + \dots + n \right) \left(n - 1 \cdot x_{n-1} + n \right) \left(n \cdot x_n + n \right) \left(n + 1 \cdot x_{n+1} + \dots + n \right) \left(n + r \cdot x_{n+r} + n \right) \left(n + r + 1 \right) = 0;$$

$$\text{so that } \begin{vmatrix} 1 \left(1 \dots 1 \right) \left(n - 1, \right) \left(n + r + 1 \right) \\ \vdots \qquad \qquad \qquad \vdots \qquad \qquad \qquad \vdots \\ n \left(1 \dots n \right) \left(n - 1, \right) \left(n + r + 1 \right) \end{vmatrix} \neq 0; \text{ let it} = C;$$

now let the values, belonging to the r Variables x_{n+1}, \dots, x_{n+r} , be a_{n+1}, \dots, a_{n+r} ;

then the Equations become

$$1 \left(1 \dots x_1 + \dots + 1 \right) \left(n - 1 \cdot x_{n-1} + 1 \right) \left(n \cdot x_n + (1 \left(n + 1 \cdot a_{n+1} + \dots + 1 \right) \left(n + r + 1 \right)) \right) = 0, \\ \text{\&c.}$$

$$n \left(1 \dots x_1 + \dots + n \right) \left(n - 1 \cdot x_{n-1} + n \right) \left(n \cdot x_n + (n \left(n + 1 \cdot a_{n+1} + \dots + n \right) \left(n + r + 1 \right)) \right) = 0;$$

and, in these Equations,

$$D_n = \begin{vmatrix} 1 \left(1 \dots 1 \right) \left(n - 1, \right) \left(1 \left(n + 1 \cdot a_{n+1} + \dots + 1 \right) \left(n + r + 1 \right) \right) \\ \vdots \qquad \qquad \qquad \vdots \qquad \qquad \qquad \vdots \\ n \left(1 \dots n \right) \left(n - 1, \right) \left(n \left(n + 1 \cdot a_{n+1} + \dots + n \right) \left(n + r + 1 \right) \right) \end{vmatrix},$$

$$= \begin{vmatrix} 1 \left(1 \dots 1 \right) \left(n - 1, \right) \left(n + 1 \right) \\ \vdots \qquad \qquad \qquad \vdots \qquad \qquad \qquad \vdots \\ n \left(1 \dots n \right) \left(n - 1, \right) \left(n + 1 \right) \end{vmatrix} \cdot a_{n+1} + \dots + \begin{vmatrix} 1 \left(1 \dots 1 \right) \left(n - 1, \right) \left(n + r + 1 \right) \\ \vdots \qquad \qquad \qquad \vdots \qquad \qquad \qquad \vdots \\ n \left(1 \dots n \right) \left(n - 1, \right) \left(n + r + 1 \right) \end{vmatrix};$$

(CH. II. AX. II.

and, since $\|V\| = 0$, each of these Determinants vanishes, excepting the last, which = C ;

$\therefore D_n = C$;

\therefore there are n Equations, containing n Variables, and such that, in them, $V = 0$, but $|B| \neq 0$;

\therefore they are inconsistent.

(PROP. IV.

Therefore, if there be, &c. Q. E. D.

Proposition VI. Th.

If there be 2 Equations containing Variables; and if $\|B\| = 0$: the Equations are identical.

Let the 2 Equations contain m Variables, and be represented by

$$\begin{aligned} 1 \left(1. x_1 + 1 \right) 2. x_2 + \dots + 1 \left(m. x_m + 1 \right) m + 1 &= Q_1 = 0, \\ 2 \left(1. x_1 + 2 \right) 2. x_2 + \dots + 2 \left(m. x_m + 2 \right) m + 1 &= Q_2 = 0; \end{aligned}$$

so that $\left\| \begin{array}{ccc} 1 \left(1. & \dots & 1 \right) m + 1 \\ 2 \left(1. & \dots & 2 \right) m + 1 \end{array} \right\| = 0.$

Since $\left| \begin{array}{cc} 1 \left(1. & 1 \right) 2 \\ 2 \left(1. & 2 \right) 2 \end{array} \right| = 0$

$\therefore 1 \left(1. 2 \right) 2 = 2 \left(1. 1 \right) 2;$

$\therefore 1 \left(1 : 2 \right) 1 :: 1 \left(2 : 2 \right) 2 ::$ (by symmetry) &c. $:: 1 \left(m + 1 : 2 \right) m + 1;$

$:: k : l$ (say);

\therefore whatsoever values for the Variables make $Q_1 = 0$, these also make $Q_2 = 0$; and whatsoever values make $Q_2 = 0$ these also make $Q_1 = 0$.

\therefore the Equations are identical.

Therefore, if there be, &c. Q. E. D.

Corollary to Prop. VI.

If there be n Equations containing Variables; and if there be one of them such that, when it is taken along with each of the remaining Equations successively, each pair of Equations, so formed, has its B -Block evanescent: the n Equations are identical.

Proposition VI. Th.

If there be 2 Equations containing Variables; and if $|B| \neq 0$: the Equations are not identical.

Let the Equations contain m Variables.

Now, if possible, let them be identical;

\therefore they are consistent, and there are, among the Variables, $\overline{m - 1}$ to which arbitrary values may be assigned; (AX. IV.

but, if $|V| \neq 0$, there are only $\overline{m - 2}$ Variables to which arbitrary values may be assigned; (PROP. II.

which is absurd;

and, if $\|V\| = 0$, the Equations are inconsistent; (PROPS. III, IV, V.

\therefore in either case, they are not identical.

Therefore, if there be, &c. Q. E. D.

Proposition VIII. Th.

If there be n Equations containing $\overline{n - 1}$ Variables; and if there be among them $\overline{n - 1}$ Equations, which have their V -Block not evanescent; and if $B = 0$: the Equations are consistent; and there is only one set of values for the Variables; and the remaining Equation is dependent on these $\overline{n - 1}$ Equations.

Let a set of $\overline{n - 1}$ Equations, having their V -Block not evanescent, be placed first, and let the n Equations, so arranged, be represented by

$$\begin{aligned} & 1 \left(1. x_1 + \dots + 1 \right) \left(n - 1. x_{n-1} + 1 \right) n = Q_1 = 0, \\ & \hspace{20em} \&c. \\ & n \left(1. x_1 + \dots + n \right) \left(n - 1. x_{n-1} + n \right) n = Q_n = 0; \end{aligned}$$

so that the first $\overline{n - 1}$ of these Equations are consistent; and there is only one set of values for the Variables. (PROP. I.

First, let the n Equations be all homogeneous; (whence B must = 0).

Then they may be satisfied by assigning to each Variable the value zero; (AX. I.

and these values satisfy the last Equation.

Secondly, let the n Equations be not all homogeneous.

Let the Determinants of the principal Minors of the Block

$$\begin{Bmatrix} 1 \left(1 \quad \dots \quad 1 \right) \left(n - 1 \right) \\ \vdots \\ n \left(1 \quad \dots \quad n \right) \left(n - 1 \right) \end{Bmatrix}$$

be represented by H_1, \dots, H_n ; so that $H_n \neq 0$.

Then it may be proved, as in Proposition III, that

$$Q_1. H_1 - Q_2. H_2 + \dots (-)^{n-1} Q_n. H_n = \pm B;$$

\therefore it = 0;

\therefore those values for the Variables, which make Q_1, \dots, Q_{n-1} , each = 0, the same also make $Q_n. H_n = 0$;

but $H_n \neq 0$;

\therefore these values make $Q_n = 0$;

\therefore the n Equations are consistent, and the last is dependent on the others.

Therefore, if there be, &c. Q. E. D.

Corollary to Prop. VIII.

If there be n Equations containing $\overline{n - r}$ Variables; and if there be among them $\overline{n - r}$ Equations, which have their V -Block not evanescent; and if, when these $\overline{n - r}$ Equations are taken along with each of the remaining Equations successively, each set of $\overline{n - r + 1}$ Equations, so formed, has its B -Block evanescent: the Equations are consistent; and there is only one set of values for the Variables; and the remaining Equations are dependent on these $\overline{n - 1}$ Equations.

For then those values for the Variables, which satisfy such a set of $\overline{n - r}$ Equations, satisfy also each of the remaining Equations.

Proposition IX. Th.

If there be n Equations containing n Variables; and if there be among them $\overline{n-1}$ Equations, which have their V -Block not evanescent; and if $\|B\| = 0$: the Equations are consistent; and, if any non-evanescent principal Minor of the V -Block of these $\overline{n-1}$ Equations be selected, the Variable, whose coefficients are not contained in it, may have an arbitrary value assigned to it; and, for each such arbitrary value, there is only one set of values for the other Variables; and the remaining Equation is dependent on these $\overline{n-1}$ Equations.

It is evident that the Equations must contain actually $\overline{n-1}$ at least of the Variables.

First, let them contain actually only $\overline{n-1}$ of the Variables.

Then the Equations are consistent, and there is only one set of values for the Variables. (PROP. VIII.)

Also, an arbitrary value may be given to the Variable which is not actually contained in them.

Secondly, let them contain actually all the Variables.

Let a set of $\overline{n-1}$ Equations, such as satisfy the hypothesis, be selected; and let a non-evanescent principal Minor of their V -Block be selected; and let the remaining Equation be taken along with them; and let the $\overline{n-1}$ Variables, whose coefficients are contained in this Minor, be placed first in all the n Equations, and let the n Equations, so arranged, be represented by

$$\begin{aligned} &1 \binom{1}{1} x_1 + \dots + 1 \binom{n-1}{n-1} x_{n-1} + 1 \binom{n}{n} x_n + 1 \binom{n+1}{n+1} = 0, \\ &\quad \&c. \\ &n-1 \binom{1}{1} x_1 + \dots + n-1 \binom{n-1}{n-1} x_{n-1} + n-1 \binom{n}{n} x_n + n-1 \binom{n+1}{n+1} = 0, \\ &n \binom{1}{1} x_1 + \dots + n \binom{n-1}{n-1} x_{n-1} + n \binom{n}{n} x_n + n \binom{n+1}{n+1} = 0. \end{aligned}$$

Now let an arbitrary value be assigned to the Variable x_n ; and call it " a "; then the Determinant of the B -Block of the n Equations

$$\begin{aligned} &= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{n-1}{n-1} & (1 \binom{n}{n} a + 1 \binom{n+1}{n+1}) \\ \vdots & & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{n-1}{n-1} & (n \binom{n}{n} a + n \binom{n+1}{n+1}) \end{vmatrix}; \\ &= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{n}{n} \\ \vdots & & \vdots \\ n \binom{1}{1} & \dots & n \binom{n}{n} \end{vmatrix} \cdot a + \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{n-1}{n-1} & 1 \binom{n+1}{n+1} \\ \vdots & & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{n-1}{n-1} & n \binom{n+1}{n+1} \end{vmatrix} = 0, \text{ by hypothesis;} \end{aligned}$$

\therefore there are n Equations, containing $\overline{n-1}$ Variables, and such that their B -Block is evanescent, but $\overline{n-1}$ of them have their V -Block not evanescent;

\therefore they are consistent, and there is only one set of values for the Variables, and the last Equation is dependent on the others. (PROP. VIII.)

Therefore, if there be, &c. Q. E. D.

Corollary to Prop. IX.

If there be n Equations containing $\overline{n+r}$ Variables; and if there be among them $\overline{n-1}$ Equations, which have their V -Block not evanescent; and if $\|B\| = 0$: the Equations are consistent; and, if any non-evanescent principal Minor of the V -Block of these $\overline{n-1}$ Equations be selected, the $\overline{r+1}$ Variables, whose coefficients are not contained in it, may have arbitrary values assigned to them; and, for each such set of arbitrary values, there is only one set of values for the other Variables; and the remaining Equation is dependent on these $\overline{n-1}$ Equations.

Proposition X. Th.

If there be n Equations, containing n Variables; and if there be among them $\overline{n-k}$ Equations, which have their V -Block not evanescent; and if, when these $\overline{n-k}$ Equations are taken along with each of the remaining Equations successively, each set of $\overline{n-k+1}$ Equations, so formed, has its B -Block evanescent (whence also $\|B\| = 0$): the Equations are consistent; and, if any non-evanescent principal Minor of the V -Block of these $\overline{n-k}$ Equations be selected, the k Variables, whose coefficients are not contained in it, may have arbitrary values assigned to them; and, for each such set of arbitrary values, there is only one set of values for the other Variables; and the remaining Equations are dependent on these $\overline{n-k}$ Equations.

It is evident that the Equations must contain actually $\overline{n-k}$ at least of the Variables.

First, let them contain actually only $\overline{n-k}$ the Variables.

Then they are consistent; and there is only one set of values for the Variables; and the remaining k Equations are dependent on these $\overline{n-k}$ Equations; (PROP. VIII. Cor.

also arbitrary values may be given to the k Variables which are not actually contained in the given Equations.

Secondly, let them contain actually more than $\overline{n-k}$ of the Variables.

Let a set of $\overline{n-k}$ Equations, such as satisfy the hypothesis, be selected; and let a non-evanescent principal Minor of their V -Block be selected; and let one of the remaining Equations be taken along with them; and let the $\overline{n-k}$ Variables, whose coefficients are contained in this Minor, be placed first in these $\overline{n-k+1}$ Equations; and let these $\overline{n-k+1}$ Equations, so arranged, be represented by

$$1 \left(1.x_1 + \dots + 1 \right) \left(n-k.x_{n-k} + 1 \right) \left(n-k+1.x_{n-k+1} + \dots + 1 \right) \left(n.x_n + \dots + n-k \right) \left(1.x_1 + \dots + n-k \right) \left(n-k.x_{n-k} + n-k \right) \left(n-k+1.x_{n-k+1} + \dots + n-k \right) \left(n.x_n + n-k+1 \right) \left(1.x_1 + \dots + n-k+1 \right) \left(n-k.x_{n-k} + n-k+1 \right) \left(n-k+1.x_{n-k+1} + \dots + n-k+1 \right) \left(n.x_n + n-k \right)$$

Now let arbitrary values be assigned to the Variables x_{n-k+1} , &c.;

\therefore there are $\overline{n-k+1}$ Equations, containing $\overline{n-k}$ Variables, and there are among them $\overline{n-k}$ Equations, which have their V -Block not evanescent, and it may be proved, as in the last Proposition, that the Determinant of their B -Block is evanescent;

they are consistent, and there is only one set of values for the Variables; and the $\overline{n - k + 1}$ th Equation is dependent on these $\overline{n - k}$ Equations; (PROP. VIII. also, if any other of the remaining Equations be substituted for this $\overline{n - k + 1}$ th Equation, the same thing may be proved. Therefore, if there be, &c. Q. E. D.

Corollary to Prop. X.

If there be n Equations, containing $\overline{n + r}$ Variables; and if there be among them $\overline{n - k}$ Equations, which have their V -Block not evanescent; and if, when these $\overline{n - k}$ Equations are taken along with each of the remaining Equations successively, each set of $\overline{n - k + 1}$ Equations, so formed, has its B -Block evanescent (whence also $\|B\| = 0$): the Equations are consistent; and, if any non-evanescent principal Minor of the V -Block of these $\overline{n - k}$ Equations be selected, the $\overline{k + r}$ Variables, whose coefficients are not contained in it, may have arbitrary values assigned to them; and, for each such set of arbitrary values, there is only one set of values for the other Variables; and the remaining Equations are dependent on these $\overline{n - k}$ Equations.

Proposition XI. Th.

If there be n homogeneous Equations, containing n Variables; and if $\lrcorner V = 0$ ²⁹: there is, for the Variables, a set of values of which 2 at least are actual. And, of the n Equations, one at least is dependent on the rest.

For, if there be among them $\overline{n - 1}$ Equations which have their V -Block not evanescent, there is one Variable to which an arbitrary value may be assigned; (PROP. IX.

let an actual value be assigned to this Variable;

then at least one other Variable has an actual value; (AX. II.

and the remaining Equation is dependent on these $\overline{n - 1}$ Equations. (PROP. IX.

But, if every $\overline{n - 1}$ of them have their V -Block evanescent, and if the greatest number of them, which have their V -Block not evanescent, be $\overline{n - k}$ (so that $k > 1$), then there are k Variables to which arbitrary values may be assigned; (PROP. X.

that is, there are 2 at least to which actual values may be assigned;

and the remaining k Equations are dependent on these $\overline{n - k}$ Equations.

(PROP. X.

Therefore, if there be, &c. Q. E. D.

Corollary to Prop. XI.

If there be n homogeneous Equations, containing $\overline{n - r}$ Variables; and if $\lrcorner \|V\| = 0$ ³⁰: there is, for the Variables, a set of values of which 2 at least are actual. And, of the n Equations, $\overline{r + 1}$ at least are dependent on the rest.

Proposition XII. Th.

If there be n homogeneous Equations containing more than n Variables: there is, for the Variables, a set of values, of which 2 at least are actual.

²⁹Corrected from $B = 0$ according to *Corrigenda*

³⁰Corrected from $\|B\| = 0$ according to *Corrigenda*

First, let there be one of the Equations such that, when it is taken along with each of the others successively, each pair of Equations, so formed, has its V -Block evanescent;

then the n Equations are identical; (PROP. VI. COR.

\therefore there are at least n Variables, to which arbitrary values may be assigned; (AX. IV.

and one of these values may be actual;

\therefore at least one other may have an actual value. (AX. II.

Secondly, let there be k of the Equations, where k is one of the numbers $2 \dots \overline{n-1}$, which have their V -Block not evanescent, and are such that, when they are taken along with each of the others successively, the set of $\overline{k+1}$ Equations, so formed, has its V -Block evanescent;

then there are at least $\overline{n-k+1}$ Variables, to which arbitrary values may be assigned; (PROP. II.

that is, there are at least 2 such Variables;

and these values may be actual.

Thirdly, let the n Equations have their V -Block not evanescent;

then there is at least one Variable, to which an arbitrary value may be assigned; (PROP. II.

and this value may be actual;

\therefore at least one other may have an actual value. (AX. II.

Therefore, if there be, &c. Q. E. D.

Section II. Properties of Equations under given conditions of consistency.

Proposition XIII. Th.

If there be n Equations containing $\overline{n-1}$ Variables; and if they be consistent: $B = 0$.

For if not, let $B \neq 0$;

then they are inconsistent; (PROP. III.

which is contrary to the hypothesis.

Therefore, if there be, &c. Q. E. D.

Corollary to Prop. XIII.

If there be n Equations containing $\overline{n-r}$ Variables; and if they be consistent: $\|B\| = 0$.

Proposition XIV. Th.

If there be n Equations containing n Variables; and if they be consistent; and if $V = 0$: then $\|B\| = 0$.

For if not, let $|B| \neq 0$;

then the Equations are inconsistent; (PROP. IV.

which is contrary to the hypothesis.

Therefore, if there be, &c. Q. E. D.

Corollary to Prop. XIV.

If there be n homogeneous Equations containing $\overline{n+1}$ Variables; and if there be, for the Variables, a set of values of which one is actual; and if, when that column of the V -Block, which contains such a Variable, is omitted, the remaining Block be evanescent: then the whole V -Block is evanescent.

For the Variable, whose coefficients are contained in that column, may be considered as constant, and the rest as Variables.

Proposition XV. Th.

If there be n Equations containing $\overline{n+r}$ Variables; and if they be consistent; and if $\|V\| = 0$: then $\|B\| = 0$.

For if not, let $|B| \neq 0$;
then the Equations are inconsistent; (PROP. V.
which is contrary to the hypothesis.
Therefore, if there be, &c. Q. E. D.

Corollary to Prop. XV.

If there be n homogeneous Equations containing $\overline{n+r}$ Variables; and if there be, for the Variables, a set of values of which one is actual; and if, when that column of the V -Block, which contains such a Variable, is omitted, the remaining Block be evanescent: then the whole V -Block is evanescent.

For the Variable, whose coefficients are contained in that column, may be considered as constant, and the rest as Variables.

Proposition XVI. Th.

If there be 2 Equations containing Variables; and if they be identical: $\|B\| = 0$.

For if not, let $\|B\| \neq 0$;
then the Equations are not identical; (PROP. VII.
which is contrary to the hypothesis.
Therefore, if there be, &c. Q. E. D.

Proposition XVII. Th.

If there be n Equations containing n Variables; and if they be consistent, and there be one Variable to which an arbitrary value may be assigned: $\|B\| = 0$.

Let the Variable, to which an arbitrary value may be assigned, be placed last, and let the Equations, so arranged, be represented by

$$1 \left(1. x_1 + \dots + 1 \right) \left(n-1. x_{n-1} + 1 \right) \left(n. x_n + 1 \right) \left(n+1 = 0, \right. \\ \left. \text{\&c.} \right)$$

$$n \left(1. x_1 + \dots + n \right) \left(n-1. x_{n-1} + n \right) \left(n. x_n + n \right) \left(n+1 = 0; \right)$$

and call the Determinants of the principal Minors of their B -Block, D_1, \dots, D_n, V .

Now, if possible, let $|B| \neq 0$.

First, if possible, let $D_n \neq 0$;

let x_n have the arbitrary value zero assigned to it;
then there are n Equations containing $\overline{n-1}$ Variables, and such that in them
 $B \neq 0$;
 \therefore they are inconsistent; (PROP. III.
which is contrary to the hypothesis.
 $\therefore D_n = 0$.

Secondly, if possible, let $V \neq 0$;

let x_n have the arbitrary value, 1, assigned to it;
then there are n Equations containing $\overline{n-1}$ Variables, and such that the
Determinant of their B -Block

$$\begin{aligned}
&= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-1}, & (1) \binom{1}{n+1} \binom{1}{n+1} \\ \vdots & & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-1}, & (n) \binom{1}{n+n} \binom{1}{n+1} \end{vmatrix} \\
&= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n} \\ \vdots & & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n} \end{vmatrix} + \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-1}, & 1 \binom{1}{n+1} \\ \vdots & & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-1}, & n \binom{1}{n+1} \end{vmatrix}; \\
&=V + 0 = V;
\end{aligned}$$

\therefore it $\neq 0$;
 \therefore the Equations are inconsistent; (PROP. III.
which is contrary to the hypothesis;
 $\therefore V = 0$;
 $\therefore \|B\| = 0$. (PROP. XIV.
Therefore, if there be, &c. Q. E. D.

Proposition XVIII. Th.

If there be n Equations, containing $\overline{n+r}$ Variables; and if they be consistent,
and there be $\overline{r+1}$ Variables to which arbitrary values may be assigned: $\|B\| = 0$.

Let the $\overline{r+1}$ Variables, to which arbitrary values may be assigned, be placed
last, and let the Equations, so arranged, be represented by

$$\begin{aligned}
&1 \binom{1}{1} x_1 + \dots + 1 \binom{1}{n-1} x_{n-1} + 1 \binom{1}{n} x_n + \dots + 1 \binom{1}{n+r} x_{n+r} + 1 \binom{1}{n+r+1} = 0, \\
&\qquad\qquad\qquad \&c. \\
&n \binom{1}{1} x_1 + \dots + n \binom{1}{n-1} x_{n-1} + n \binom{1}{n} x_n + \dots + n \binom{1}{n+r} x_{n+r} + n \binom{1}{n+r+1} = 0.
\end{aligned}$$

Now, if possible, let $|B| \neq 0$.

First, if possible, let

$$\begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-1}, & 1 \binom{1}{n+r+1} \\ \vdots & & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-1}, & n \binom{1}{n+r+1} \end{vmatrix} \neq 0;$$

let x_n, \dots, x_{n+r} have the arbitrary value zero assigned to each of them;
then there are n Equations containing $\overline{n-1}$ Variables, and such that, in
them, $B \neq 0$;

\therefore the Equations are inconsistent; (PROP. III.
which is contrary to the hypothesis;
 \therefore this Determinant = 0.

$$\text{Secondly, if possible, let } \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-1}, & 1 \binom{1}{n+k} \\ \vdots & & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-1}, & n \binom{1}{n+k} \end{vmatrix} \neq 0;$$

wherein k is some one of the numbers $0, 1, \dots, r$;

let x_{n+k} have the arbitrary value, 1, assigned to it; and let each other of the
Variables x_n, \dots, x_{n+r} , have the arbitrary value zero assigned to it;

then there are n Equations containing $\overline{n-1}$ Variables, and such that their

B -Block

$$\begin{aligned} &= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-1}, & (1) \binom{1}{n+k+1} \binom{1}{n+r+1} \\ \vdots & & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-1}, & (n) \binom{1}{n+k+n} \binom{1}{n+r+1} \end{vmatrix}; \\ &= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-1}, & 1 \binom{1}{n+k} \\ \vdots & & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-1}, & n \binom{1}{n+k} \end{vmatrix} + \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-1}, & 1 \binom{1}{n+r+1} \\ \vdots & & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-1}, & n \binom{1}{n+r+1} \end{vmatrix}; \\ &= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-1}, & 1 \binom{1}{n+k} \\ \vdots & & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-1}, & n \binom{1}{n+k} \end{vmatrix} + 0; \end{aligned}$$

\therefore it $\neq 0$;

\therefore the Equations are inconsistent; (PROP. III.
which is contrary to the hypothesis;

\therefore the square Blocks, formed by taking the first $\overline{n-1}$ columns along with
each of the next $\overline{r+1}$ columns successively, are all evanescent;

that is, all the principal Minors of the V -Block, containing its first $\overline{n-1}$
columns, are evanescent.

$$\text{Thirdly, let } \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-2}, & 1 \binom{1}{n+k}, & 1 \binom{1}{n+r+1} \\ \vdots & & \vdots & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-2}, & n \binom{1}{n+k}, & n \binom{1}{n+r+1} \end{vmatrix} \neq 0;$$

wherein k is some one of the numbers $0, 1, \dots, r$;

let each of the Variables x_n, \dots, x_{n+r} , except x_{n+k} , have the arbitrary value
zero assigned to it; and let x_{n+k} have a possible value assigned to it, and call
this value "a";

then there are n Equations containing $\overline{n-1}$ Variables, and such that their

B -Block

$$= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-2} & 1 \binom{1}{n+k} & (1 \binom{1}{n-1} . a + 1 \binom{1}{n+r+1}) \\ \vdots & & \vdots & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-2} & n \binom{1}{n+k} & (n \binom{1}{n-1} . a + n \binom{1}{n+r+1}) \end{vmatrix};$$

$$= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-2} & 1 \binom{1}{n+k} & 1 \binom{1}{n-1} \\ \vdots & & \vdots & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-2} & n \binom{1}{n+k} & n \binom{1}{n-1} \end{vmatrix} . a + \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-2} & 1 \binom{1}{n+k} & 1 \binom{1}{n+r+1} \\ \vdots & & \vdots & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-2} & n \binom{1}{n+k} & n \binom{1}{n+r+1} \end{vmatrix};$$

$$= 0 + \text{do.};$$

\therefore it $\neq 0$;

\therefore the Equations are inconsistent;

(PROP. III.

which is contrary to the hypothesis;

\therefore the square Blocks, formed by taking the first $\overline{n-2}$ columns, along with one of the columns from the n^{th} to the $\overline{n+r}^{\text{th}}$, and with the last column, are all evanescent;

and the same thing may be proved for any $\overline{n-2}$ of the first $\overline{n-1}$ columns;

\therefore the square Blocks, formed by taking any $\overline{n-2}$ of the first $\overline{n-1}$ columns, along with any one of the next $\overline{r+1}$ columns, and with the last column, are all evanescent.

$$\text{Fourthly, let } \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-2} & 1 \binom{1}{n+k} & 1 \binom{1}{n+l} \\ \vdots & & \vdots & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-2} & n \binom{1}{n+k} & n \binom{1}{n+l} \end{vmatrix} \neq 0;$$

wherein k and l are any 2 of the numbers $0, 1, \dots, r$;

let x_{n+l} have the arbitrary value, 1, assigned to it; and let each of the other Variables x_n, \dots, x_{n+r} , except x_{n+l} , have the arbitrary value zero assigned to it; and let the Variable x_{n-1} have a possible value assigned to it, and call this value " a ";

then there are n Equations containing $\overline{n-1}$ Variables, and such that their

B -Block

$$= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-2} & 1 \binom{1}{n+k} & (1 \binom{1}{n-1} . a + 1 \binom{1}{n+r+1} + 1 \binom{1}{n+l}) \\ \vdots & & \vdots & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-2} & n \binom{1}{n+k} & (n \binom{1}{n-1} . a + n \binom{1}{n+r+1} + n \binom{1}{n+l}) \end{vmatrix};$$

$$= \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-2} & 1 \binom{1}{n+k} & 1 \binom{1}{n-1} \\ \vdots & & \vdots & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-2} & n \binom{1}{n+k} & n \binom{1}{n-1} \end{vmatrix} . a + \begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-2} & 1 \binom{1}{n+k} & 1 \binom{1}{n+r+1} \\ \vdots & & \vdots & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-2} & n \binom{1}{n+k} & n \binom{1}{n+r+1} \end{vmatrix} +$$

$$\begin{vmatrix} 1 \binom{1}{1} & \dots & 1 \binom{1}{n-2} & 1 \binom{1}{n+k} & 1 \binom{1}{n+l} \\ \vdots & & \vdots & \vdots & \vdots \\ n \binom{1}{1} & \dots & n \binom{1}{n-2} & n \binom{1}{n+k} & n \binom{1}{n+l} \end{vmatrix};$$

$$= 0 + 0 + \text{do.}$$

\therefore it $\neq 0$;
 \therefore the Equations are inconsistent; (PROP. III.
 which is contrary to the hypothesis;
 \therefore the square Blocks, formed by taking the first $\overline{n-2}$ columns along with
 any 2 of the columns from the n^{th} to the $\overline{n+r^{\text{th}}}$, are all evanescent;
 and the same thing may be proved for any $\overline{n-2}$ of the first $\overline{n-1}$ columns;
 \therefore the square Blocks, formed by taking any $\overline{n-2}$ of the first $\overline{n-1}$ columns
 along with any 2 of the next $\overline{r+1}$ columns, are all evanescent;
 that is, all the principal Minors of the V -Block, containing $\overline{n-2}$ of its first
 $\overline{n-1}$ columns, are evanescent.
 The same thing may be proved for $\overline{n-3}$ of these columns, for $\overline{n-4}$ of them,
 and so on; and finally for all principal Minors, of the V -Block, not containing
 any of its first $\overline{n-1}$ columns.
 Therefore $\|V\| = 0$.
 Therefore $\|B\| = 0$. (PROP. XV.
 Therefore, if there be, &c. Q. E. D.

Proposition XIX. Th.

If there be n homogeneous Equations, containing n Variables; and if there be a
 set of values, for the Variables, which are not all zero (so that at least 2 of them
 are actual): then $V = 0$.
 For if not, let $V \neq 0$;
 then the values for the Variables are all zero; (PROP. I. COR.
 which is contrary to the hypothesis.
 Therefore, if there be, &c. Q. E. D.

Corollary to Prop. XIX.

If there be n homogeneous Equations, containing $\overline{n-r}$ Variables; and if there
 be a set of values, for the Variables, which are not all zero (so that at least 2 of
 them are actual): then $\|V\| = 0$.

Chapter IV. Tests for Consistency of Equations.

Definitions.

- I.** If there be a condition, or set of conditions, such that, when it is all fulfilled,
 a certain other condition is also fulfilled: it is said to be a **sufficient test** of
 that other condition.
- II.** And if it be such that, when any part of it is not fulfilled, a certain other
 condition is not fulfilled: it is said to be a **necessary test** of that other condi-
 tion.

Convention.

When a condition, or set of conditions, is said to be a test of a certain other
 condition, let it be understood that it is sufficient and necessary, unless it be
 otherwise stated.

Proposition I. Th.

If there be 2 conditions, whereof the first is a test of the second: the second is likewise a test of the first.

Since the first is a *sufficient* test of the second;
∴ if the first be fulfilled, so is the second;
∴ if the second be not fulfilled, neither is the first;
the second is a *necessary* test of the first.
Again, since the first is a *necessary* test of the second;
∴ if the first be not fulfilled, neither is the second;
∴ if the second be fulfilled, so is the first;
∴ the second is a *sufficient* test of the first.
Therefore, if there be, &c. Q. E. D.

Proposition II. Th.

If there be given n Equations, not all homogeneous, containing Variables: a test for their being consistent is that either, first, there is one of them such that, when it is taken along with each of the remaining Equations successively, each pair of Equations, so formed, has its B -Block evanescent; or, secondly, there are m of them, where m is one of the numbers $2 \dots n$, which contain at least m Variables, and have their V -Block not evanescent, and are such that, when they are taken along with each of the remaining Equations successively, each set of Equations, so formed, has its B -Block evanescent.

Let the test be fulfilled;
in the first case, the Equations are identical; (CH. III. PROP. VI.
in the second, they are consistent; (CH. III. PROPS. I, II, IX, X.
∴ the test is *sufficient*.
Next, let it be not fulfilled;
then there are 2 or more of the Equations, which have their V -Block evanescent, but not their B -Block;
∴ these Equations are inconsistent; (CH. III. PROPS. III, IV, V.
∴ the test is *necessary*.
Therefore, if there be, &c. Q. E. D³¹.

Proposition III. Th.

If there be given 2 Equations containing Variables: a test for their being identical is that $\|B\| = 0$.

Let the test be fulfilled;
then the Equations are identical; (CH. III. PROP. VI.
∴ it is *sufficient*.
Next, let it be not fulfilled;
in the case where $\|V\| = 0$, the Equations are inconsistent; (CH. III.
PROPS. III, IV, V.
in the case where $\|V\| \neq 0$, they are not identical; (CH. III. PROP. VII.

³¹*Prop. II.* From this Proposition we may deduce a general process for analysing a set of Equations containing Variables. As, however, in the practical application of such a process, it is necessary to test the evanescence of certain Blocks, and as we have at present no convenient method of doing this, the subject is deferred till we come to the Chapter on ‘Tests of Evanescence of Blocks.’

the test is *necessary*.
Therefore, if there be, &c. Q. E. D.

Proposition IV. Th.

If there be given n homogeneous Equations, containing not more than n Variables; a test for there being, for the Variables, a set of values which are not all zero (so that at least 2 of them are actual) is that $\|V\| = 0$.

Let the test be fulfilled;
then there is such a set of values; (CH. III. PROP. XI.
∴ it is *sufficient*.
Next, let it be not fulfilled;
then there is only one set of values for the Variables; (CH. III. PROP. I.
and these must each be zero; (CH. III. AX. II.
the test is *necessary*.
Therefore, if there be, &c. Q. E. D.

Chapter V. Analysis of Blocks.

Section I. Evanescence of Blocks under given conditions.

Proposition I. Th.

If, in a square Block, the oblong Block, consisting of 2 or more of its rows or columns, be evanescent: the first Block is also evanescent.

First, let the evanescent oblong Block consist of rows.

Let the rows which constitute it be placed last;

now the Determinant of the first Block may be resolved into terms, each consisting of one of the Elements of the first row, multiplied by the Determinant of one of the principal Minors of the oblong Block formed by erasing the first row; (CH. II. PROP. I. COR. 1.

and each of these Determinants may be in like manner resolved into terms, each containing as a factor the Determinant of one of the principal Minors of the oblong Block formed by erasing the first two rows;

and this process may be repeated, until finally the Determinant of the first Block is resolved into terms, each containing as a factor the Determinant of one of the principal Minors of the evanescent oblong Block;

but each of these vanishes by hypothesis;

∴ the Determinant of the whole Block vanishes.

Similarly, if the evanescent oblong Block consists of columns.

Therefore, if in a square Block, &c. Q. E. D³².

³²Prop. I. Thus, if, in the square Block $\begin{pmatrix} a & b & c & d \\ e & f & g & h \\ j & k & l & m \\ n & p & q & r \end{pmatrix}$, it be given that

$$\begin{vmatrix} j & k & l & m \\ n & p & q & r \end{vmatrix} = 0: \text{ the whole Block is evanescent.}$$

Corollary to Prop. I.

If, in an oblong Block, the oblong Block, consisting of 2 or more of its longitudinals, be evanescent: the first Block is also evanescent.

Proposition II. Th.

If there be an oblong Block, having one of its secondary Minors not evanescent; and if, of its principal Minors, each one, which contains that secondary Minor, be evanescent: the whole Block is evanescent.

Call the length of the Block $\overline{n+r}$, and its width n .

Let the Block be placed that its laterals are rows, and let the longitudinals, which contain the non-evanescent Minor, be placed first; and let each of these longitudinals be multiplied throughout by the symbol of a Variable; and let each lateral be equated to zero; and let the $\overline{n+r}$ Equations, so formed, be represented by

$$1 \left(1.x_1 + \dots + 1 \right) \left(n-1.x_{n-1} + 1 \right) n = 0,$$

&c.

$$n+r \left(1.x_1 + \dots + n+r \right) \left(n-1.x_{n-1} + n+r \right) n = 0;$$

then there are $\overline{n+r}$ Equations, containing $\overline{n-1}$ Variables; and there are among them $\overline{n-1}$ Equations, which have their V -Block not evanescent; and, when such a set of $\overline{n-1}$ Equations is selected and taken along with each of the remaining Equations successively, each set of n Equations, so formed, has its B -Block evanescent;

∴ the $\overline{n+r}$ Equations are consistent; (CH. III. PROP. VIII. COR.)

∴ their B -Block is evanescent. (CHAP. III. PROP. XIII. COR.)

Therefore, if there be, &c. Q. E. D³³.

Proposition III. Th.

If there be a Block, having one of its Minors of the k^{th} degree, where k is less than the degree of a secondary Minor, not evanescent; and if, of the oblong Blocks formed from it by selecting $\overline{k+1}$ of its longitudinals, each one, which, contains that non-evanescent Minor, be evanescent: every other oblong Block, so formed, is evanescent. And the same is true of its laterals.

Call the two dimensions of the Block 'm' and 'n'.

$$\text{For } \begin{pmatrix} a & b & c & d \\ e & f & g & h \\ j & k & l & m \\ n & p & q & r \end{pmatrix} = a. \begin{vmatrix} f & g & h \\ k & l & m \\ p & q & r \end{vmatrix} - b. \begin{vmatrix} e & g & h \\ j & l & m \\ n & q & r \end{vmatrix} + \&c.$$

$$= af. \begin{vmatrix} l & m \\ q & r \end{vmatrix} - ag. \begin{vmatrix} k & m \\ p & r \end{vmatrix} + \&c.$$

³³Prop. II. Thus, if, in the oblong Block $\begin{pmatrix} a & b & c & d \\ e & f & g & h \\ j & k & l & m \end{pmatrix}$, it be given that $\begin{vmatrix} b & d \\ k & m \end{vmatrix} \neq 0$,

and that $\begin{vmatrix} a & b & d \\ e & f & h \\ j & k & m \end{vmatrix} = 0$, and $\begin{vmatrix} b & c & d \\ f & g & h \\ k & l & m \end{vmatrix} = 0$: the whole Block is evanescent.

Let the Block be placed in either position, and let the k rows, and also the k columns, which contain the non-evanescent Minor, be placed first; and let each of the columns, except the last, be multiplied throughout by the symbol of a Variable; and let each row be equated to zero; and let the Equations, so formed, be represented by

$$\begin{aligned}
 &1 \left(1. x_1 + \dots + 1 \right) \left(k. x_k + \dots + 1 \right) \left(m - 1. x_{m-1} + 1 \right) m = 0, \\
 &\quad \quad \quad \&c. \\
 &k \left(1. x_1 + \dots + k \right) \left(k. x_k + \dots + k \right) \left(m - 1. x_{m-1} + k \right) m = 0, \\
 &k + 1 \left(1. x_1 + \dots + k + 1 \right) \left(k. x_k + \dots + k + 1 \right) \left(m - 1. x_{m-1} + k + 1 \right) m = 0, \\
 &\quad \quad \quad \&c. \\
 &n \left(1. x_1 + \dots + n \right) \left(k. x_k + \dots + n \right) \left(m - 1. x_{m-1} + n \right) m = 0;
 \end{aligned}$$

where m is $>$, $=$, or $<$ n ; and where

$$\begin{vmatrix}
 1 \left(1 \dots 1 \right) k \\
 \vdots & & \vdots \\
 k \left(1 \dots k \right) k
 \end{vmatrix} \neq 0;$$

then the first $\overline{k+1}$ Equations contain $\overline{m-1}$ Variables, and there are among them k Equations whose V -Block is not evanescent; and the B -Block of these $\overline{k+1}$ Equations is evanescent;

also, since $\overline{m-1} > k$, $\therefore \overline{m-1} \not\leq \overline{k+1}$.

First, let $\overline{m-1} = \overline{k+1}$;

then the Equations are consistent; and the Variable x_{m-1} may have an arbitrary value assigned to it; and the $\overline{k+1}^{\text{th}}$ Equation is dependent on the first k Equations; (CH. III. PROP. IX.)

also, if any of the remaining Equations be substituted for the $\overline{k+1}^{\text{th}}$ Equation, the same thing may be proved;

\therefore the n Equations are consistent, and the Variable x_{m-1} may have an arbitrary value assigned to it;

\therefore if any set of $\overline{k+1}$ Equations be selected, the same thing is true of them;

\therefore any such set has its B -Block evanescent. (CH. III. PROP. XVII.)

Secondly, let $\overline{m-1} = \overline{k+1} + r$;

then the Equations are consistent; and the $\overline{r+1}$ Variables, x_{k+1}, \dots, x_{n-1} , may have arbitrary values assigned to them; and the $\overline{k+1}^{\text{th}}$ Equation is dependent on the first k Equations; (CH. III. PROP. IX.)

COR.

also, if any of the remaining Equations be substituted for the $\overline{k+1}^{\text{th}}$ Equation, the same thing may be proved;

\therefore the n Equations are consistent, and these $\overline{r+1}$ Variables may have arbitrary values assigned to them;

\therefore if any set of $\overline{k+1}$ Equations be selected, the same thing is true of them;

\therefore any such set has its B -Block evanescent. (CH. III. PROP. XVIII.)

Therefore, if there be, &c. Q. E. D³⁴.

Corollary to Prop. III.

If there be a Block, having one of its Minors of the k^{th} degree not evanescent, where k is less than the degree of a secondary Minor; and if, of its Minors of the $k + 1^{\text{th}}$ degree, each one, which contains that non-evanescent Minor, be evanescent: every other Minor of that degree is evanescent.

Proposition IV. Th.

If there be a Block containing 2 rows and 2 or more columns; and if, in every column, the 1st term bear to the 2nd a constant ratio: the Block is evanescent.

Let the Block be represented by

$$\begin{Bmatrix} a_1, & b_1, & \dots & a_n \\ b_1, & b_2, & \dots & b_n \end{Bmatrix}$$

and let it be given that

$$\begin{aligned} a_1 : b_1 :: a_2 : b_2 :: \&c. :: a_n : b_n; \\ &:: k : 1 \text{ (say);} \end{aligned}$$

$$\therefore a_1 = kb_1, a_2 = kb_2, \&c., a_n = kb_n;$$

now $\left\| \begin{matrix} kb_1, & kb_2, & \dots & kb_n \\ b_1, & b_2, & \dots & b_n \end{matrix} \right\| = 0$, since every principal Minor of this Block, if its first row be divided by k has 2 rows identical;

that is, $\left\| \begin{matrix} a_1, & b_1, & \dots & a_n \\ b_1, & b_2, & \dots & b_n \end{matrix} \right\| = 0$.

Therefore, if there be, &c. Q. E. D.

Proposition V. Th.

If there be a Block containing 3 rows and 3 or more columns;

and if, in every column, the difference between the 1st and 2nd terms bears to the 3rd term a constant ratio: the Block is evanescent.

Let the Block be represented by $\begin{Bmatrix} a_1, & a_2, & \dots & a_n \\ b_1, & b_2, & \dots & b_n \\ c_1, & c_2, & \dots & c_n \end{Bmatrix}$; and let it be given that

$$\begin{aligned} (a_1 - b_1) : c_1 :: (a_2 - b_2) : c_2 :: \&c. :: (a_n - b_n) : c_n; \\ &:: k : 1 \text{ (say);} \end{aligned}$$

³⁴ Prop. III. Thus, if, in the Block $\begin{Bmatrix} a & b & c & d & e \\ f & g & h & j & k \\ l & m & n & p & q \\ r & s & t & u & v \end{Bmatrix}$, it be given that $\begin{vmatrix} h & k \\ n & q \end{vmatrix} \neq 0$, and

that $\begin{vmatrix} a & b & c & d & e \\ f & g & h & j & k \\ l & m & n & p & q \end{vmatrix} = 0$, and $\begin{vmatrix} f & g & h & j & k \\ l & m & n & p & q \\ r & s & t & u & v \end{vmatrix} = 0$: then $\begin{vmatrix} a & b & c & d & e \\ f & g & h & j & k \\ r & s & t & u & v \end{vmatrix} = 0$, and $\begin{vmatrix} a & b & c & d & e \\ l & m & n & p & q \\ r & s & t & u & v \end{vmatrix} = 0$.

$$\therefore (a_1 - b_1) = kc_1, (a_2 - b_2) = kc_2, \text{ \&c.}, (a_n - b_n) = kc_n;$$

$$\text{now } \begin{vmatrix} kc_1, & kc_2, & \dots & kc_n \\ b_1, & b_2, & \dots & b_n \\ c_1, & c_2, & \dots & c_n \end{vmatrix} = 0, \text{ since every principal Minor of this Block,}$$

if its 1st row be divided by k , has 2 rows identical;

$$\text{that is, } \begin{vmatrix} (a_1 - b_1), & (a_2 - b_2), & \dots & (a_n - b_n) \\ b_1, & b_2, & \dots & b_n \\ c_1, & c_2, & \dots & c_n \end{vmatrix} = 0;$$

\therefore , adding to the terms of the 1st row those of the 2nd,

$$\begin{vmatrix} a_1, & a_2, & \dots & a_n \\ b_1, & b_2, & \dots & b_n \\ c_1, & c_2, & \dots & c_n \end{vmatrix} = 0. \quad (\text{CH. II. PROP. III. COR. 3.})$$

Therefore, if there be, &c. Q. E. D.

Proposition VI. Th.

If there be a Block containing 3 rows and 3 or more columns;

and if, in every column, the difference between the 1st and 2nd terms bears to the difference between the 2nd and 3rd a constant ratio: the Block is evanescent.

Let the Block be represented by $\begin{Bmatrix} a_1, & a_2, & \dots & a_n \\ b_1, & b_2, & \dots & b_n \\ c_1, & c_2, & \dots & c_n \end{Bmatrix}$; and let it be given

that

$$(a_1 - b_1) : (b_1 - c_1) :: (a_2 - b_2) : (b_2 - c_2) :: \text{ \&c.} :: (a_n - b_n) : (b_n - c_n); \\ :: k : 1 \text{ (say);}$$

$$\therefore (a_1 - b_1) = k(b_1 - c_1), (a_2 - b_2) = k(b_2 - c_2), \text{ \&c.}, (a_n - b_n) = k(b_n - c_n);$$

$$\text{now } \begin{vmatrix} k(b_1 - c_1), & k(b_2 - c_2), & \dots & k(b_n - c_n) \\ (b_1 - c_1), & (b_2 - c_2), & \dots & (b_n - c_n) \\ c_1, & c_2, & \dots & c_n \end{vmatrix} = 0, \text{ since every principal}$$

Minor of this Block, if its 1st row be divided by k , has 2 rows identical;

$$\text{that is, } \begin{vmatrix} (a_1 - b_1), & (a_2 - b_2), & \dots & (a_n - b_n) \\ (b_1 - c_1), & (b_2 - c_2), & \dots & (b_n - c_n) \\ c_1, & c_2, & \dots & c_n \end{vmatrix} = 0;$$

\therefore , adding to the terms of the 1st row those of the 2nd and 3rd, and to the terms of the 2nd row those of the 3rd,

$$\begin{vmatrix} a_1, & a_2, & \dots & a_n \\ b_1, & b_2, & \dots & b_n \\ c_1, & c_2, & \dots & c_n \end{vmatrix} = 0. \quad (\text{CH. II. PROP. III. COR. 3.})$$

Therefore, if there be, &c. Q. E. D.

Section II. Properties of Blocks under given conditions of evanescence.

Proposition VII. Th.

If there be a Block containing 2 rows and 2 or more columns; and if it be evanescent: then, in every column, the first term bears to the second a constant ratio.

Let the Block be represented by $\left\{ \begin{matrix} a_1, & b_1, & \dots & a_n \\ b_1, & b_2, & \dots & b_n \end{matrix} \right\};$

$$\therefore \begin{vmatrix} a_1, & b_1 \\ b_1, & b_2 \end{vmatrix} = 0;$$

$$\therefore a_1 b_2 = a_2 b_1;$$

$$\therefore \frac{a_1}{b_1} = \frac{a_2}{b_2};$$

$$\therefore a_1 : b_1 :: a_2 : b_2 :: (\text{by symmetry}) \ \&c. \ :: a_n : b_n.$$

Therefore, if there be, &c. Q. E. D.

Proposition VIII. Th.

If there be a Block containing 3 rows and 3 or more columns; and if, in one of its columns, the 1st and 2nd terms be equal and the 3rd zero; and if it be evanescent: then, in every column, the difference between the 1st and 2nd terms bears to the 3rd term a constant ratio.

Let the Block be represented by $\left\{ \begin{matrix} a_1, & a_2, & \dots & h \\ b_1, & b_2, & \dots & h \\ c_1, & c_2, & \dots & 0 \end{matrix} \right\};$

$$\therefore \begin{vmatrix} a_1, & a_2, & h \\ b_1, & b_2, & h \\ c_1, & c_2, & 0 \end{vmatrix} = 0;$$

\therefore , subtracting from the terms of the 1st row those of the 2nd,

$$\begin{vmatrix} (a_1 - b_1), & (a_2 - b_2), & 0 \\ b_1, & b_2, & h \\ c_1, & c_2, & 0 \end{vmatrix} = 0; \quad (\text{CH. II. PROP. III. COR. 3.})$$

$$\therefore \begin{vmatrix} (a_1 - b_1), & (a_2 - b_2) \\ c_1, & c_2 \end{vmatrix} = 0; \quad (\text{CH. II. PROP. I. COR. 2.})$$

$$\therefore (a_1 - b_1) : c_1 :: (a_2 - b_2) : c_2; \quad (\text{PROP. VII.})$$

$$:: (a_3 - b_3) : c_3; (\text{by symmetry})$$

$$:: \&c.$$

Therefore, if there be, &c. Q. E. D.

Proposition IX. Th.

If there be a Block containing 3 rows and 3 or more columns; and if, in one of its columns, the 3 terms be equal; and if the Block be evanescent: then, in every column, the difference between the 1st and 2nd terms bears to the difference between the 2nd and 3rd a constant ratio.

Let the Block be represented by $\left\{ \begin{matrix} a_1, & a_2, & \dots & h \\ b_1, & b_2, & \dots & h \\ c_1, & c_2, & \dots & h \end{matrix} \right\};$

$$\therefore \begin{vmatrix} a_1, & a_2, & h \\ b_1, & b_2, & h \\ c_1, & c_2, & h \end{vmatrix} = 0;$$

\therefore , subtracting from the terms of the 1st row those of the 2nd, and from the terms of the 2nd those of the third,

$$\begin{vmatrix} (a_1 - b_1), & (a_2 - b_2), & 0 \\ (b_1 - c_1), & (b_2 - c_2), & 0 \\ c_1, & c_2, & h \end{vmatrix} = 0; \quad (\text{CH. II. PROP. III. COR. 3.})$$

$$\therefore \begin{vmatrix} (a_1 - b_1), & (a_2 - b_2) \\ (b_1 - c_1), & (b_2 - c_2) \end{vmatrix} = 0; \quad (\text{CH. II. PROP. I. COR. 2.})$$

$$\begin{aligned} \therefore (a_1 - b_1) : (b_1 - c_1) &:: (a_2 - b_2) : (b_2 - c_2); \\ &:: (a_3 - b_3) : (b_3 - c_3); (\text{by symmetry}) \\ &:: \&c. \end{aligned}$$

Therefore, if there be, &c. Q. E. D.

Proposition X. Th.

If there be an oblong Block, whose length exceeds its breadth by unity; and if one of its principal Minors be non-evanescent: at least one other is also non-evanescent.

In the lateral, which is not included in the non-evanescent principal Minor, let an actual term be selected; and let the Elements of the longitudinal, which contains the selected term, be each multiplied by the Determinant of the Minor formed by erasing the lateral containing that Element;

then the sum of these products, affected with + and - alternately, is zero; (CH. II. PROP. III. COR. 2.)

\therefore if one of them be actual, at least one other is actual;

\therefore at least one other principal Minor of the oblong Block is non-evanescent.

Therefore, if there be, &c. Q. E. D.

Chapter VI. Tests for Evanescence of Blocks.

Proposition I. Th.

If there be given an oblong Block, having one of its secondary Minors not evanescent; a test of its being evanescent is that, of its principal Minors, each one, which contains that secondary Minor, is evanescent.

Let the test be fulfilled;

then the given Block is evanescent;

(CH. V. PROP. I.)

\therefore it is *sufficient*.

Next, let it be not fulfilled;

then the given Block is not evanescent;

\therefore it is *necessary*.

Therefore, if there be, &c. Q. E. D³⁵.

³⁵ Prop. I. Thus, in the oblong Block $\begin{Bmatrix} 2 & 1 & 3 & -1 & 0 \\ -1 & 3 & -5 & 4 & -7 \\ 1 & 0 & 2 & -1 & 1 \end{Bmatrix}$, we have $\begin{vmatrix} 2 & 1 \\ -1 & 3 \end{vmatrix} \neq 0$,

$$\begin{vmatrix} 2 & 1 & 3 \\ 1 & 3 & -5 \\ 1 & 0 & 2 \end{vmatrix} = 0, \quad \begin{vmatrix} 2 & 1 & -1 \\ -1 & 3 & 4 \\ 1 & 0 & -1 \end{vmatrix} = 0, \quad \begin{vmatrix} 2 & 1 & 0 \\ -1 & 3 & -7 \\ 1 & 0 & 1 \end{vmatrix} = 0. \text{ Hence the whole Block is evanescent.}$$

Proposition II. Th.

If there be given a Block: a test of its being evanescent is that either every Element of it is zero; or there are 2 or more of its longitudinals, which form a Block, having one of its secondary Minors not evanescent, and such that, of its principal Minors, each one, which contains that secondary Minor, is evanescent.

Let the test be fulfilled;

in the case where each Element of the Block is zero, it is plain that the Block is evanescent;

in the case where 2 or more of its longitudinals, but not all of them, form such a Block, the Block, so formed, is evanescent; (CH. V. PROP. II.)

∴ the given Block is evanescent; (CH. V. PROP. I.)

in the case where all the longitudinals of the given Block form such a Block, it is evanescent;

∴ the test is *sufficient*. (CH. V. PROP. II.)

Next, let it be not fulfilled;

then one of the Elements of the Block is actual;

∴ any Block, formed of 2 of the longitudinals of the given Block, has one of its principal Minors not evanescent;

for otherwise, it must have all of its principal Minors evanescent, and, since it necessarily has one of its secondary Minors not evanescent, the test would be fulfilled;

∴ every Block, formed of 2 of the longitudinals of the given Block, is not evanescent;

then it may be proved, in the same manner, that every Block formed of 3 of the longitudinals of the given Block, is not evanescent, and so on, up to the given Block itself;

∴ the given Block is not evanescent;

∴ the test is *necessary*.

Therefore, if there be, &c. Q. E. D³⁶.

Proposition III. Th.

If there be given a Block: a test for the evanescence of every oblong Block, formed from it by selecting h of its laterals, is that either every Element of it is zero, or that it has a non-evanescent Minor of the k^{th} degree, where k is less than h , such that, of the oblong Blocks formed from it by selecting $k + 1$ of its laterals, each one, which contains that non-evanescent Minor, is evanescent. And the test for the longitudinals of the given Block is similar to this.

Let the test be fulfilled;

³⁶ Prop. II. Hence the oblong Block $\left\{ \begin{array}{ccccc} 2 & 1 & 3 & -1 & 0 \\ -1 & 3 & -5 & 4 & -7 \\ 1 & 0 & 2 & -1 & 1 \\ 3 & 4 & -2 & 5 & -1 \end{array} \right\}$ is evanescent, since its first

3 longitudinals form the Block discussed in the last Note.

We are now in a position to describe, and apply, a general process for analysing a set of Equations containing Variables. This will be found in Appendix I.

in the case where every Element of the given Block is zero, it is evident that every oblong Block, formed from it by selecting h of its laterals, is evanescent; in the other ease, the same results follow; (CH. V. PROP. III.
 \therefore the test is *sufficient*.

Next, let it be not all fulfilled;

then the given Block contains one or more actual Elements, and each one of its non-evanescent Minors of the k^{th} degree, where k is less than h , is such that, among- the oblong Blocks, formed from the given Block by selecting $\overline{k+1}$ of its laterals, there is one, containing that non-evanescent Minor, which is itself non-evanescent;

\therefore this is true when $k = 1$;

\therefore among the oblong Blocks, formed from the given Block by selecting 2 of its laterals, there is one non-evanescent;

\therefore the given Block has a non-evanescent Minor of the 2nd degree;

\therefore among the oblong Block, formed from the given Blocks by selecting 3 of its laterals, there is one non-evanescent;

and the same thing may be proved for all values of k up to $\overline{h-1}$;

\therefore among the oblong Blocks, formed from the given Block by selecting h of its laterals, there is one non-evanescent.

\therefore the test is *necessary*.

Therefore this is proved to be a test for the laterals of the given Block;

and a similar set of conditions may be proved, in like manner, to be a test for its longitudinals.

Therefore, if there be, &c. Q. E. D.

Chapter VII. Geometrical Analysis.

Convention I.

When mention is made of a Point, a Line, or a Plane, let it be understood that the words "at a finite distance" are to be added, unless it be otherwise expressed.

Section I. Plane Geometry.

Definition I.

In the Trilinear System, the Equation

$$a\alpha + b\beta + c\gamma - 2M = 0$$

is called the **systematic** Equation.

Convention II.

In the Trilinear System, when the coordinates of a Point are given, let it be understood that they satisfy the Systematic Equation.

Propositton I. Th.

If there be given an Equation of the first degree;

first, in the Cartesian System, viz.—

$$Ax + By + C = 0;$$

and

- (1) If either A , or B , $\neq 0$;
then the Equation represents one real Line, and one only.
- (2) If $A = B = 0$, but $C \neq 0$;
then it does not represent a real Line.
- (3) If $A = B = C = 0$;

then it represents the Plane of reference:

secondly, in the Trilinear System, viz.—

$$A\alpha + B\beta + C\gamma + D = 0,$$

the systematic Equation being $a\alpha + b\beta + c\gamma - 2.M = 0$; and

- (1) If $|V| \neq 0$;
then the 2 Equations are consistent; (CH. III. PROP. II.)
 \therefore the given Equation represents a real Line.
also there is one Variable to which an arbitrary value may be given, and; for each such arbitrary value, there is only one value for each of the other Variables; (CH. III. PROP. II.)
 \therefore the given Equation represents one real Line, and one only.
- (2) If $\|V\| = 0$, but $|B| \neq 0$;
then the 2 Equations are inconsistent; (CH. III. PROP. V.)
 \therefore the given Equation does not represent a real Line.
- (3) If $\|B\| = 0$; (whence also $\|V\| = 0$);
then the 2 Equations are identical; (CH. III. PROP. VI.)
 \therefore the given Equation represents the Plane of reference.

Conventions (continued).

III. When an Equation to a Line is given in the form

$$Ax + By + C = 0,$$

let it be understood that either A , or B , $\neq 0$; when in the form

$$A\alpha + B\beta + C\gamma + D = 0,$$

the systematic Equation being $a\alpha + b\beta + c\gamma - 2M = 0$;

let it be understood that $|V| \neq 0$.

IV. In the Trilinear System, when mention is made of the V -Block, or B -Block, of any number of Equations to Lines: let it be understood that, in forming such Block, the systematic Equation is always taken along with them.

V. When 2 Lines are said to **intersect in a Point at an infinite distance**, let it be understood that they are parallel.

Proposition II. Th.

If the Equation to a line, passing through the origin or a vertex of reference, be given in the form

$$\frac{x}{l} = \frac{y}{m} = 0; \text{ or } \frac{\alpha}{l} = \frac{\beta}{m}:$$

this may be written in the form

$$\begin{vmatrix} x, & y \\ l, & m \end{vmatrix} = 0, \text{ or } \begin{vmatrix} \alpha, & \beta \\ l, & m \end{vmatrix} = 0. \quad (\text{CH. V. PROP. IV.})$$

Again, if the Equation to a Line, passing through a given Point, be given in the form

$$\frac{x-x'}{l} = \frac{y-y'}{m}, \text{ or } \frac{\alpha-\alpha'}{l} = \frac{\beta-\beta'}{m}:$$

this may be written in the form

$$\begin{vmatrix} x, & y, & 1 \\ x', & y', & 1 \\ l, & m, & 0 \end{vmatrix} = 0, \text{ or } \begin{vmatrix} \alpha, & \beta, & 1 \\ \alpha', & \beta', & 1 \\ l, & m, & 0 \end{vmatrix} = 0. \quad (\text{CH. V. PROP. V.})$$

Again, if the Equation to a Line, passing through 2 given Points, be given in the form

$$\frac{x-x_1}{x_1-x_2} = \frac{y-y_1}{y_1-y_2}, \text{ or } \frac{\alpha-\alpha_1}{\alpha_1-\alpha_2} = \frac{\beta-\beta_1}{\beta_1-\beta_2}:$$

this may be written in the form

$$\begin{vmatrix} x, & y, & 1 \\ x_1, & y_1, & 1 \\ x_2, & y_2, & 1 \end{vmatrix} = 0, \text{ or } \begin{vmatrix} \alpha, & \beta, & 1 \\ \alpha_1, & \beta_1, & 1 \\ \alpha_2, & \beta_2, & 1 \end{vmatrix} = 0. \quad (\text{CH. V. PROP. VI.})$$

Proposition III. Th.

If there be given 2 Lines, represented, in the Cartesian System, by

$$\begin{aligned} A_1x + B_1y + C_1 &= 0, \\ A_2x + B_2y + C_2 &= 0; \end{aligned}$$

or, in the Trilinear system, by

$$\begin{aligned} A_1\alpha + B_1\beta + C_1\gamma + D_1 &= 0, \\ A_2\alpha + B_2\beta + C_2\gamma + D_2 &= 0, \end{aligned}$$

the systematic Equation being $a\alpha + b\beta + c\gamma - 2M = 0$;

and

(1) If $V \neq 0$;

then the Equations are consistent, and there is only one set of values for the Variables; (CH. III. PROP. I.)

\therefore the 2 Lines intersect in one Point, and in one only.

(2) If $V = 0$, but $|B| \neq 0$;

then the Equations are inconsistent; (CH. III. PROP. IV.)

\therefore the 2 Lines are parallel.

(3) If $\|B\| = 0$; (whence also $V = 0$);

then, in the Cartesian System, the Equations are identical; (CH. III. PROP. VI.)

also, in the Trilinear System, since either of the Equations to the Lines, taken with the systematic Equation, have their V -Block not evanescent; (CONV. II.

\therefore the 3 Equations are consistent, and either of the Equations to the Lines is dependent on the other Equations; (CH. III. PROP. VIII.

\therefore whatsoever Point lies on one of the 2 Lines, lies also on the other; (CH. III. DEF. VI.

\therefore in either System, the 2 Lines coincide³⁷.

From (2) and (3) may be deduced

(4) If $V = 0$; the 2 Lines have the same direction.

Proposition IV. Th.

If there be given 3 Lines, represented, in the Cartesian System, by

$$\begin{aligned} A_1x + B_1y + C_1 &= 0, \\ A_2x + B_2y + C_2 &= 0, \\ A_3x + B_3y + C_3 &= 0; \end{aligned}$$

or, in the Trilinear System, by

$$\begin{aligned} A_1\alpha + B_1\beta + C_1\gamma + D_1 &= 0, \\ A_2\alpha + B_2\beta + C_2\gamma + D_2 &= 0, \\ A_3\alpha + B_3\beta + C_3\gamma + D_3 &= 0, \end{aligned}$$

the systematic Equation being $a\alpha + b\beta + c\gamma - 2M = 0$;

and

(1) If $B \neq 0$; (whence also $|V| \neq 0$, and every 2 of the Equations to the 3 Lines have their B -Block not evanescent);

then the Equations are inconsistent; (CH. III. PROP. III.

\therefore the 3 Lines do not intersect in one Point, but there are 2 of them which intersect in one Point, and in one only. (PROP. III. (1)

(2) If $B = 0$; and if there be, among the Equations to the 3 Lines, 2 which have their V -Block not evanescent;

then the Equations are consistent, and there is only one set of values for the Variables; (CH. III. PROP. VIII.

\therefore the 3 Lines intersect in one Point, and in one only³⁸.

³⁷ Prop. III. (3.) Thus, if the given Lines be

$$\begin{aligned} \alpha + \beta + 1 &= 0, \\ \alpha + 2\beta + 5\gamma - 14 &= 0; \end{aligned}$$

the systematic Equation being $3\alpha + 4\beta + 5\gamma - 12 = 0$; $\|B\| = 0$, and therefore the 2 Lines coincide.

³⁸ Prop. IV. (2.) Thus, if the given Lines be

$$\begin{aligned} \alpha - \beta + \gamma + 1 &= 0, \\ 3\alpha + \beta - 2\gamma - 4 &= 0, \\ 2\alpha + 9\beta - \gamma - 20 &= 0 \end{aligned}$$

the systematic Equation being $3\alpha + 4\beta + 5\gamma - 12 = 0$; since $B = 0$, and $\begin{vmatrix} 1 & -1, & 1 \\ 3 & 1, & -2 \\ 3 & 4, & 1 \end{vmatrix} \neq 0$,

the 3 Lines intersect in one Point, and in one only.

(3) If $B = 0$; and if every 2 of the Equations to the 3 Lines have their V -Block evanescent; and if there be among them 2 which have their B -Block not evanescent;

then 2 of the Lines are parallel; (PROP. III. (2))

and the 3 have the same direction. (PROP. III. (4))

(4) If every 2 of the Equations to the 3 Lines have their B -Block evanescent; (whence also $B = 0$);

then the 3 Lines coincide. (PROP. III. (3))

From (2), (3), and (4) may be deduced

(5) If $B = 0$;

then the 3 Lines intersect in one Point at a finite or infinite distance.

From (2) and (4) may be deduced

(6) If $B = 0$; and if either there be, among the Equations to the 3 Lines, 2 which have their V -Block not evanescent, or if every 2 have their B -Block evanescent;

then the 3 Lines intersect in one Point.

Proposition V. Th.

If there be given 2 Points, represented, in the Trilinear System, by $(\alpha_1, \beta_1, \gamma_1)$, $(\alpha_2, \beta_2, \gamma_2)$; and if

$$\begin{vmatrix} \alpha_1, & \beta_1, & \gamma_1 \\ \alpha_2, & \beta_2, & \gamma_2 \end{vmatrix} = 0;$$

then $\begin{vmatrix} \alpha_1, & \beta_1, & \gamma_1, & 1 \\ \alpha_2, & \beta_2, & \gamma_2, & 1 \end{vmatrix} = 0$.

For $a\alpha_1 + b\beta_1 + c\gamma_1 - 2M = 0$,

$a\alpha_2 + b\beta_2 + c\gamma_2 - 2M = 0$;

in these Equations, let $a, b, c, -2M$, be considered as Variables;

then there are 2 homogeneous Equations containing 4 Variables; and their

V -Block is $\begin{Bmatrix} \alpha_1, & \beta_1, & \gamma_1, & 1 \\ \alpha_2, & \beta_2, & \gamma_2, & 1 \end{Bmatrix}$; and there is a set of values, for the Variables, of which the last is actual; and, if the last column of their V -Block be omitted, the remaining Block is evanescent;

\therefore the whole Block is evanescent.

(CH. III. PROP. XV. COR.)

Therefore, if there be given, &c. Q. E. D.

Corollaries to Prop. V.

1. Hence the 2 Points are coincident.

For, since $\begin{vmatrix} \alpha_1, & 1 \\ \alpha_2, & 1 \end{vmatrix} = 0$, $\alpha_1 = \alpha_2$; and so of the others.

2. By a similar process (using CH. III. PROP. XIV. COR.), it may be proved that, if there be 3 Points, thus represented, and if

$$\begin{vmatrix} \alpha_1, & \beta_1, & \gamma_1 \\ \alpha_2, & \beta_2, & \gamma_2 \\ \alpha_3, & \beta_3, & \gamma_3 \end{vmatrix} = 0;$$

$$\text{then } \begin{vmatrix} \alpha_1, & \beta_1, & \gamma_1, & 1 \\ \alpha_2, & \beta_2, & \gamma_2, & 1 \\ \alpha_3, & \beta_3, & \gamma_3, & 1 \end{vmatrix} = 0.$$

Proposition VI. Th.

If there be given 3 Points, represented, in the Cartesian System, by (x_1, y_1) &c.; or, in the Trilinear System, by $(\alpha_1, \beta_1, \gamma_1)$, &c.; and if, in each System, the general Equation to a Line be taken, involving 3 undetermined quantities A, B, C ; and if the coordinates of the given Points be successively substituted in it; and if $A, B,$ and C be considered as Variables in the Equations so formed, viz.—

in the Cartesian System,

$$\left. \begin{array}{l} Ax_1 + By_1 + C = 0, \\ Ax_2 + By_2 + C = 0, \\ Ax_3 + By_3 + C = 0, \end{array} \right\} \text{ whose } V\text{-Block is } \begin{Bmatrix} x_1, & y_1, & 1 \\ x_2, & y_2, & 1 \\ x_3, & y_3, & 1 \end{Bmatrix};$$

or, in the Trilinear System,

$$\left. \begin{array}{l} A\alpha_1 + B\beta_1 + C\gamma_1 = 0, \\ A\alpha_2 + B\beta_2 + C\gamma_2 = 0, \\ A\alpha_3 + B\beta_3 + C\gamma_3 = 0, \end{array} \right\} \text{ whose } V\text{-Block is } \begin{Bmatrix} \alpha_1, & \beta_1, & \gamma_1 \\ \alpha_2, & \beta_2, & \gamma_2 \\ \alpha_3, & \beta_3, & \gamma_3 \end{Bmatrix};$$

and

(1) If $V \neq 0$;

then the only values for A, B, C are zero; (CH. III. PROP. I. COR.

\therefore the 3 Points do not lie on one Line.

(2) If $V = 0$; and if there be, among the 3 Equations, 2 which have their V -Block not evanescent;

then there are 2 of the Points which do not coincide, that is, which lie on one Line, and on one only;

also the 3rd Equation is dependent on the others; (CH. III. PROP. VIII.

that is, those values of $A, B,$ and $C,$ which belong to a Line passing through these 2 Points, the same belong also to a Line passing through the 3rd Point;

\therefore the 3 Points lie on one Line, and on one only³⁹.

(3) If every 2 of the 3 Equations have their V -Block evanescent; (whence also $V = 0$);

then the 3 Points coincide. (PROP. V. COR. 1.

³⁹ Prop. VI. (2.) Thus, in the Cartesian system, if the given Points be $(2, 5), (3, -1), (1, 11)$;

since $\begin{vmatrix} 2 & 5 & 1 \\ 3 & -1 & 1 \\ 1 & 11 & 1 \end{vmatrix} = 0,$ and $\begin{vmatrix} 2 & 5 & 1 \\ 3 & -1 & 1 \end{vmatrix} \neq 0,$ the three Points lie on one Line, and on one only.

Again, in the Trilinear system, if the given Points be $(1, 3, -2), (2, -1, 5), (4, 5, 1)$; since

$$\begin{vmatrix} 1 & 3 & -2 \\ 2 & -1 & 5 \\ 4 & 5 & 1 \end{vmatrix} = 0, \text{ and } \begin{vmatrix} 1 & 3 & -2 \\ 2 & -1 & 5 \end{vmatrix} \neq 0, \text{ the same result follows.}$$

From (2) and (3) may be deduced

- (4) If $V = 0$;
then the 3 Points lie on one Line.

Section II. Solid Geometry.

Definition II.

In the Quadriplanar System, the Equation

$$a\alpha + b\beta + c\gamma + d\delta - 3.M = 0$$

is called the **systematic** Equation.

Convention VI.

In the Quadriplanar System, when the coordinates of a Point are given, let it be understood that they satisfy the Systematic Equation.

Proposition VII. Th.

If there be given an Equation of the first degree;

first, in the Cartesian System, viz.—

$$Ax + By + Cz + D = 0;$$

and

- (1) If either A , or B , or C , and $\neq 0$;
then the Equation represents one real Plane, and one only.
- (2) If $A = B = C = 0$, but $D \neq 0$;
then it does not represent a real Plane,
- (3) If $A = B = C = D = 0$;
then it represents all Space:

secondly, in the Quadriplanar System, viz.—

$$A\alpha + B\beta + C\gamma + D\delta + E = 0,$$

the systematic Equation being $a\alpha + b\beta + c\gamma + d\delta - 3M = 0$;

and

- (1) If $|V| \neq 0$;
then the 2 Equations are consistent; (CH. III. PROP. II.)
 \therefore the given Equation represents a real Plane;
also there are 2 Variables to which arbitrary values may be given, and, for each such set of arbitrary values, there is only one value for each of the other Variables;
(CH. III. PROP. II.)
 \therefore the given Equation represents one real Plane, and one only.
- (2) If $\|V\| = 0$, but $|B| \neq 0$;
then the 2 Equations are inconsistent; (CH. III. PROP. V.)
 \therefore the given Equation does not represent a real Plane.
- (3) If $\|B\| = 0$; (whence also $\|V\| = 0$);
then the 2 Equations are identical; (CH. III. PROP. VI.)
 \therefore the given Equation represents all Space.

Conventions (continued).

VII. When an Equation to a Plane is given in the form

$$Ax + By + Cz + D = 0,$$

let it be understood that either A , or B , or C , $\neq 0$; when in the form

$$A\alpha + B\beta + C\gamma + D\delta + E = 0,$$

the systematic Equation being $a\alpha + b\beta + c\gamma + d\delta - 3M = 0$,

let it be understood that $|V| \neq 0$.

VIII. In the Quadriplanar System, when mention is made of the V -Block, or B -Block, of any number of Equations to Planes: let it be understood that, in forming such Block, the systematic Equation is always taken along with them.

IX. When 2 Planes are said to **intersect in a Line at an infinite distance**, let it be understood that they are parallel.

X. When 3 Planes are said to **intersect in a Point at an infinite distance**, let it be understood that either every 2 of them are parallel, or, if any 2 of them intersect, any Line, in which they intersect, is parallel to the 3rd Plane.

Proposition VIII. Th.

If the Equation to a Line, passing through the origin or a vertex of reference, be given in the form

$$\frac{x}{l} = \frac{y}{m} = \frac{z}{n}, \text{ or } \frac{\alpha}{l} = \frac{\beta}{m} = \frac{\gamma}{n};$$

this may be written in the form

$$\begin{vmatrix} x & y & z \\ l & m & n \end{vmatrix} = 0, \text{ or } \begin{vmatrix} \alpha & \beta & \gamma \\ l & m & n \end{vmatrix} = 0. \quad (\text{CH. V. PROP. IV.})$$

Again, if the Equation to a Line, passing through a given Point, be given in the form

$$\frac{x-x'}{l} = \frac{y-y'}{m} = \frac{z-z'}{n}, \text{ or } \frac{\alpha-\alpha'}{l} = \frac{\beta-\beta'}{m} = \frac{\gamma-\gamma'}{n};$$

this may be written in the form

$$\begin{vmatrix} x & y & z & 1 \\ x' & y' & z' & 1 \\ l & m & n & 0 \end{vmatrix} = 0, \text{ or } \begin{vmatrix} \alpha & \beta & \gamma & 1 \\ \alpha' & \beta' & \gamma' & 1 \\ l & m & n & 0 \end{vmatrix} = 0. \quad (\text{CH. V. PROP. V.})$$

Again, if the Equation to a Line, passing through 2 given Points, be given in the form

$$\frac{x-x_1}{x_1-x_2} = \frac{y-y_1}{y_1-y_2} = \frac{z-z_1}{z_1-z_2}, \text{ or } \frac{\alpha-\alpha_1}{\alpha_1-\alpha_2} = \frac{\beta-\beta_1}{\beta_1-\beta_2} = \frac{\gamma-\gamma_1}{\gamma_1-\gamma_2};$$

this may be written in the form

$$\begin{vmatrix} x & y & z & 1 \\ x_1 & y_1 & z_1 & 1 \\ x_2 & y_2 & z_2 & 1 \end{vmatrix} = 0, \text{ or } \begin{vmatrix} \alpha & \beta & \gamma & 1 \\ \alpha_1 & \beta_1 & \gamma_1 & 1 \\ \alpha_2 & \beta_2 & \gamma_2 & 1 \end{vmatrix} = 0. \quad (\text{CH. V. PROP. VI.})$$

Proposition IX. Th.

If there be given 2 Planes, represented, in the Cartesian System, by

$$A_1x + B_1y + C_1z + D_1 = 0,$$

$$A_2x + B_2y + C_2z + D_2 = 0;$$

or, in the Quadriplanar System, by

$$\begin{aligned} A_1\alpha + B_1\beta + C_1\gamma + D_1\delta + E_1 &= 0, \\ A_2\alpha + B_2\beta + C_2\gamma + D_2\delta + E_2 &= 0, \end{aligned}$$

the systematic Equation being $a\alpha + b\beta + c\gamma + d\delta - 3M = 0$;

and

- (1) If $|V| \neq 0$;
then the Equations are consistent, and there is one Variable to which an arbitrary value may be given; (CH. III. PROP. II.)
 \therefore the 2 Planes intersect in more than one Point;
i. e. they intersect in a Line.
also, for each such arbitrary value, there is only one value for each of the other Variables; (CH. III. PROP. II.)
 \therefore they do not coincide;
the 2 Planes intersect in one Line, and in one only.
- (2) If $\|V\| = 0$, but $|B| \neq 0$;
then the Equations are inconsistent; (CH. III. PROP. V.)
 \therefore the 2 Planes are parallel⁴⁰;
- (3) If $\|B\| = 0$; (whence also $\|V\| = 0$);
then, in the Cartesian System, the Equations are identical; (CH. III. PROP. VI.)
also, in the Quadriplanar System, since either of the Equations to the Planes, taken with the systematic Equation, are such that their V -Block is not evanescent; (CONV. VII.)
 \therefore the 3 Equations are consistent, and either of the Equations to the Planes is dependent on the other Equations; (CH. III. PROP. IX. COR.)
i. e. whatsoever Point lies on one of the 3 Planes, lies also on the other; (CH. III. DEF. VI.)
 \therefore in either System, the 2 Planes coincide.

From (2) and (3) may be deduced

- (4) If $\|V\| = 0$;
then the 2 Planes have the same direction.

⁴⁰ Prop. IX. (2.) Thus, in the Quadriplanar System, if the systematic Equation be

$$9\alpha + 9\beta + 12\gamma + 20\delta - 20 = 0;$$

and if there be 2 Planes

$$\begin{array}{rcl} 5\alpha + 4\beta & +2\gamma + 9\delta & +5 = 0, \\ \alpha - \beta & -8\gamma - 2\delta & +3 = 0 : \end{array}$$

since $\|V\| = 0$, (as may be proved by taking the 2 principal Minors of it, which contain the non-evanescent secondary Minor $\begin{Bmatrix} 9, & 9 \\ 5, & 4 \end{Bmatrix}$), but $|B| \neq 0$, the 2 Planes are parallel.

N.B. The above systematic Equation was obtained by taking, as the base of the Tetrahedron of reference, a triangle whose sides are 3, 3, 4, and erecting, at the centre of the inscribed, circle a perpendicular whose length = 1.

Proposition X. Th.

If there be given 3 Planes, represented, in the Cartesian System, by

$$\begin{aligned} A_1x + B_1y + C_1z + D_1 &= 0, \\ A_2x + B_2y + C_2z + D_2 &= 0, \\ A_3x + B_3y + C_3z + D_3 &= 0; \end{aligned}$$

or, in the Quadriplanar System, by

$$\begin{aligned} A_1\alpha + B_1\beta + C_1\gamma + D_1\delta + E_1 &= 0, \\ A_2\alpha + B_2\beta + C_2\gamma + D_2\delta + E_2 &= 0, \\ A_3\alpha + B_3\beta + C_3\gamma + D_3\delta + E_3 &= 0, \end{aligned}$$

the systematic Equation being $a\alpha + b\beta + c\gamma + d\delta - 3M = 0$;

and

- (1) If $V \neq 0$;
then the Equations are consistent, and there is only one set of values for the Variables; (CH. III. PROP. I.)
 \therefore the 3 Planes intersect in one Point, and in one only.
- (2) If $V = 0$, but $|B| \neq 0$;
then the Equations are inconsistent; (CH. III. PROP. IV.)
 \therefore the 3 Planes do not intersect in one Point.
i. e. either every 2 of them are parallel, or, if any 2 of them intersect, any Line, in which they intersect, is parallel to the 3rd Plane;
i. e. they intersect in a Point at an infinite distance.
- (3) If $\|B\| = 0$; (whence also $V = 0$); and if there be, among the Equations to the 3 Planes, 2 which have their V -Block not evanescent;
then there are 2 of the Planes which intersect in one Line, and in one only; (PROP. IX. (1))
and the Equation to the 3rd Plane is dependent on the other 3 Equations; (CH. III. PROP. VIII.)
 \therefore the 3rd Plane passes through the line of intersection;
 \therefore the 3 Planes intersect in one Line, and in one only⁴¹.
- (4) If $\|B\| = 0$; (whence also $V = 0$); and if every 2 of the Equations to the 3 Planes have their V -Block evanescent; and if there be among them 2 which have their B -Block not evanescent;
then 2 of the Planes are parallel; (PROP. IX. (2))
and the 3 have the same direction. (PROP. IX. (4))
- (5) If every 2 of the Equations to the 3 Planes have their B -Block evanescent; (whence also $\|B\| = 0$, and $V = 0$);
then the 3 Planes coincide. (PROP. IX. (3))

⁴¹ Prop. X. (3.) Thus the 3 Planes

$$\begin{aligned} 2x + y & & -2 &= 0, \\ x + 2y & & +3z &= 0, \\ x - 4y & & -11z &= 0, \end{aligned}$$

intersect in one Line, and in one only.

From (2), (3), (4), and (5) may be deduced

(6) If $V = 0$;
then the Lines of intersection, if any, have the same direction.

From (3), (4), and (5) may be deduced

(7) If $\|B\| = 0$;
then the 3 Planes intersect in one Line at a finite or infinite distance.

From (3) and (5) may be deduced

(8) If $\|B\| = 0$; and if either there be, among the Equations to the 3 Planes, 2 which have their V -Block not evanescent, or if every 2 have their B -Block evanescent;
then the 3 Planes intersect in one Line.

Proposition XI. Th.

If there be given 4 Planes, represented, in the Cartesian System, by

$$\begin{aligned} A_1x + B_1y + C_1z + D_1 &= 0, \\ &\&c. \\ A_4x + B_4y + C_4z + D_4 &= 0; \end{aligned}$$

or, in the Quadriplanar System, by

$$\begin{aligned} A_1\alpha + B_1\beta + C_1\gamma + D_1\delta + E_1 &= 0, \\ &\&c. \\ A_4\alpha + B_4\beta + C_4\gamma + D_4\delta + E_4 &= 0; \end{aligned}$$

the systematic Equation being $a\alpha + b\beta + c\gamma + d\delta - 3M = 0$;

and

(1) If $B \neq 0$; (whence also $|V| \neq 0$, and every 3 of the Equations to the 4 Planes have their B -Block not evanescent);
then the Equations are inconsistent; (CH. III. PROP. III.
 \therefore the 4 Planes do not intersect in one Point, but there are 3 of them which intersect in one Point, and in one only.

(2) If $B = 0$, and if there be, among the Equations to the 4 Planes, 3 which have their V -Block not evanescent;
then the Equations are consistent, and there is only one set of values for the Variables; (CH. III. PROP. VIII.
 \therefore the 4 Planes intersect in one Point, and in one only⁴².

⁴²Prop. XI. (2.) Thus, in the Quadriplanar System, if the systematic Equation be

$$9\alpha + 9\beta + 12\gamma + 20\delta - 20 = 0,$$

the 4 planes

$\alpha + \beta$	$-\gamma + 5\delta$	$-3 = 0,$
$5\alpha + 3\beta$	$+8\gamma + 12\delta$	$-11 = 0,$
$3\alpha + 5\beta$	$+5\gamma + \delta$	$-4 = 0,$
$\alpha + \beta$	$+3\gamma + 3\delta$	$-1 = 0,$

intersect in one Point, and in one only.

(3) If $B = 0$; and if every 3 of the Equations to the 4 Planes have their V -Block evanescent; and if there be among them 3 which have their B -Block not evanescent;

then 3 of the Planes intersect in a Point at an infinite distance; (PROP. X. (2))
and all the Lines of intersection, if any, have the same direction. (PROP. X. (6))

(4) If every 3 of the Equations to the 4 Planes have their B -Block evanescent; (whence also $B = 0$); and if there be among them 2 which have their V -Block not evanescent;

then there are 3 of the Planes which intersect in one line, and one only; (PROP. X. (3))
and the Equation of the 4th Plane is dependent on the other Equations; (CH. III.

PROP. IX.

\therefore the 4th Plane passes through the Line of intersection;

\therefore the 4 Planes intersect in one Line, and one only.

(5) If every 3 of the Equations to the 4 Planes have their B -Block evanescent; (whence also $B = 0$); and if every 2 have their V -Block evanescent; and if there be among them 2 which have their B -Block not evanescent;

then there are 2 of the Planes which are parallel; (PROP. IX. (2))

and the 4 have the same direction. (PROP. IX. (4))

(6) If every 2 of the Equations to the 4 Planes have their B -Block evanescent; (whence also every 3 have the same, and $B = 0$);

then the 4 Planes coincide. (PROP. IX. (3))

From (2), (3), (4), (5), and (6) may be deduced

(7) If $B = 0$;

then the 4 Planes intersect in one Point at a finite or infinite distance.

From (2), (4), and (6) may be deduced

(8) If $B = 0$; and if either there be, among the Equations to the 4 Planes, 3 which have their V -Block not evanescent, or if every 3 have their B -Block evanescent and there be 2 which have their V -Block not evanescent, or if every 2 have their B -Block evanescent;

then the 4 Planes intersect in one Point.

Proposition XII. Th.

If there be given 2 Points in Space, represented, in the Quadriplanar System, by $(\alpha_1, \beta_1, \gamma_1, \delta_1)$, $(\alpha_2, \beta_2, \gamma_2, \delta_2)$; and if

$$\begin{vmatrix} \alpha_1 & \beta_1 & \gamma_1 & \delta_1 \\ \alpha_2 & \beta_2 & \gamma_2 & \delta_2 \end{vmatrix} = 0;$$

then $\begin{vmatrix} \alpha_1 & \beta_1 & \gamma_1 & \delta_1 & 1 \\ \alpha_2 & \beta_2 & \gamma_2 & \delta_2 & 1 \end{vmatrix} = 0.$

For

$$a\alpha_1 + b\beta_1 + c\gamma_1 + d\delta_1 - 3M = 0,$$

$$a\alpha_2 + b\beta_2 + c\gamma_2 + d\delta_2 - 3M = 0;$$

in these Equations, let $a, b, c, d, -3M$, be considered as Variables;

then there are 2 homogeneous Equations containing 5 Variables; and their V -Block is $\left\{ \begin{array}{ccccc} \alpha_1, & \beta_1, & \gamma_1, & \delta_1, & 1 \\ \alpha_2, & \beta_2, & \gamma_2, & \delta_2, & 1 \end{array} \right\}$; and there is a set of values, for the Variables, of which the last is actual; and, if the last column of their V -Block be omitted, the remaining Block is evanescent;

\therefore the whole Block is evanescent. (CH. III. PROP. XV. COR.

Therefore, if there be given, &c. Q. E. D.

Corollaries to Prop. XII.

1. Hence the 2 Points are coincident.

For, since $\left\| \begin{array}{cc} \alpha_1, & 1 \\ \alpha_2, & 1 \end{array} \right\| = 0$, $\alpha_1 = \alpha_2$; and so of the others.

2. By a similar process it may be proved that, if there be 3 Points in Space, thus represented, and if

$$\left\| \begin{array}{cccc} \alpha_1, & \beta_1, & \gamma_1, & \delta_1 \\ \alpha_2, & \beta_2, & \gamma_2, & \delta_2 \\ \alpha_3, & \beta_3, & \gamma_3, & \delta_3 \end{array} \right\| = 0;$$

$$\text{then } \left\| \begin{array}{ccccc} \alpha_1, & \beta_1, & \gamma_1, & \delta_1, & 1 \\ \alpha_2, & \beta_2, & \gamma_2, & \delta_2, & 1 \\ \alpha_3, & \beta_3, & \gamma_3, & \delta_3, & 1 \end{array} \right\| = 0.$$

3. And similarly, (using CH. III. PROP. XIV. COR.), that if there be 4 Points in Space, thus represented, and if

$$\left\| \begin{array}{cccc} \alpha_1, & \beta_1, & \gamma_1, & \delta_1 \\ \vdots, & \vdots, & \vdots, & \vdots \\ \alpha_4, & \beta_4, & \gamma_4, & \delta_4 \end{array} \right\| = 0;$$

$$\text{then } \left\| \begin{array}{ccccc} \alpha_1, & \beta_1, & \gamma_1, & \delta_1, & 1 \\ \vdots, & \vdots, & \vdots, & \vdots, & \vdots \\ \alpha_4, & \beta_4, & \gamma_4, & \delta_4, & 1 \end{array} \right\| = 0.$$

Proposition XIII. Th.

If there be given 3 Points in Space, represented, in the Cartesian System, by (x_1, y_1, z_1) , &c.; or, in the Quadriplanar System, by $(\alpha_1, \beta_1, \gamma_1, \delta_1)$, &c.; and if, in each System, the general Equation to a Plane be taken, involving 4 undetermined quantities A, B, C, D ; and if the coordinates of the given Points be successively substituted in it; and if A, B, C , and D be considered as Variables in the Equations so formed, viz.—

in the Cartesian System,
 $\left. \begin{array}{l} Ax_1 + By_1 + Cz_1 + D = 0, \\ Ax_2 + By_2 + Cz_2 + D = 0, \\ Ax_3 + By_3 + Cz_3 + D = 0, \end{array} \right\}$, whose V -Block is $\left\{ \begin{array}{cccc} x_1, & y_1, & z_1, & 1 \\ x_2, & y_2, & z_2, & 1 \\ x_3, & y_3, & z_3, & 1 \end{array} \right\}$;
 or, in the Quadriplanar System,

$$\left. \begin{aligned} A\alpha_1 + B\beta_1 + C\gamma_1 + D\delta_1 &= 0, \\ A\alpha_2 + B\beta_2 + C\gamma_2 + D\delta_2 &= 0, \\ A\alpha_3 + B\beta_3 + C\gamma_3 + D\delta_3 &= 0, \end{aligned} \right\}, \text{ whose } V\text{-Block is } \left\{ \begin{array}{cccc} \alpha_1, & \beta_1, & \gamma_1, & \delta_1 \\ \alpha_2, & \beta_2, & \gamma_2, & \delta_2 \\ \alpha_3, & \beta_3, & \gamma_3, & \delta_3 \end{array} \right\};$$

then, in the first place, it is evident that there is a real Plane on which the 3 Points lie;

also further

(1) If $|V| \neq 0$;
then the values for the Variables bear to each other one and the same set of ratios;
(CH. III. PROP. II. COR.

\therefore there is only one such Plane;

\therefore the 3 Points lie on one Plane, and on one only.

(2) If $\|V\| = 0$; and if there be, among the 3 Equations, 2 which have their V -Block not evanescent;

then the Equations are consistent, and there are 2 Variables to which arbitrary values may be given, and for each such set of arbitrary values, there is only one value for each of the other Variables; (CH. III. PROP. IX. COR.

\therefore for each such set, there is only one Plane;

hence, by giving to these 2 Variables certain arbitrary values, and again certain others not equimultiples of these, 2 Planes may be found on each of which the 3 Points lie;

and these Planes do not coincide; (PROP. IX. (1), (2)

\therefore the 3 Points lie on one Line, and on one only.

(3) If every 2 of the 3 Equations have their V -Block evanescent; (whence also $\|V\| = 0$);

then the 3 Points coincide. (PROP. XII. COR. 1.

From (2) and (3) may be deduced

(4) If $\|V\| = 0$; the 3 Points lie on one Line⁴³.

Proposition XIV. Th.

If there be given 4 Points in Space, represented, in the Cartesian System, by (x_1, y_1, z_1) , &c.; or, in the Quadriplanar System, by $(\alpha_1, \beta_1, \gamma_1, \delta_1)$, &c.; and if, in each System, the general Equation to a Plane be taken, involving 4 undetermined quantities A, B, C, D ; and if the coordinates of the given Points be successively substituted in it; and if the quantities A, B, C , and D be considered as Variables in the Equations so formed; viz.—

in the Cartesian System,

$$\left. \begin{aligned} Ax_1 + By_1 + Cz_1 + D &= 0, \\ \&c. \\ Ax_4 + By_4 + Cz_4 + D &= 0, \end{aligned} \right\}, \text{ whose } V\text{-Block is } \left\{ \begin{array}{cccc} x_1, & y_1, & z_1, & 1 \\ \vdots & \vdots & \vdots & \vdots \\ x_4, & y_4, & z_4, & 1 \end{array} \right\};$$

⁴³Prop. XIII. (4.) Thus, in the Quadriplanar System, the 3 Points, whose coordinates are

$$\begin{aligned} (3, & 1, & 2, & -1), \\ (2, & -1, & 5, & 4), \\ (1, & -3, & 8, & 9), \end{aligned}$$

lie on one Line.

in the Quadriplanar System,

$$\left. \begin{array}{l} A\alpha_1 + B\beta_1 + C\gamma_1 + D\delta_1 = 0, \\ \&c. \\ A\alpha_4 + B\beta_4 + C\gamma_4 + D\delta_4 = 0, \end{array} \right\}, \text{ whose } V\text{-Block is } \left\{ \begin{array}{cccc} \alpha_1, & \beta_1, & \gamma_1, & \delta_1 \\ \vdots & \vdots & \vdots & \vdots \\ \alpha_4, & \beta_4, & \gamma_4, & \delta_4 \end{array} \right\};$$

and

- (1) If $V \neq 0$;
then the only values for A, B, C, D are zero; (CH. III. PROP. I. COR.
 \therefore the 4 Points do not lie on one Plane.
(2) If $V = 0$; and if there be, among the 4 Equations, 3 which have their
 V -Block not evanescent;
then there are 3 of the Points which lie on one Plane, and on one only; (PROP. XIII.
(1)
also the 4th Equation is dependent on the others; (CH. III. PROP. IX.
that is, these values of A, B, C , and D , which belong to a plane passing through
these 3 Points, the same belong also to a Plane passing through the 4th Point;
 \therefore the 4 Points lie on one Plane, and on one only⁴⁴.
(3) If every 3 of the 4 Equations have their V -Block evanescent; (whence also
 $V = 0$); and if there be among them 2 which have their V -Block not evanescent;
then there are 2 of the Points which do not coincide, that is, which lie on one Line,
and on one only;
and each of the other Points lies on the same Line; (PROP. XIII. (2)
 \therefore the 4 Points lie on one Line, and on one only.
(4) If every 2 of the 4 Equations have their V -Block evanescent; (whence
also every 3 have their V -Block evanescent; and whence also $V = 0$);
then the 4 Points coincide. (PROP. XII. COR. 1.

From (2), (3), and (4) may be deduced

- (5) If $V = 0$; the 4 Points lie on one Plane.

From (3) and (4) may be deduced

- (6) If every 3 of the 4 Equations have their V -Block evanescent; the 4 Points
lie on one Line.

Chapter VIII. Geometrical Tests.

Section I. Plane Geometry.

⁴⁴Prop. XIV. (2.) Thus, in the Cartesian System, the 4 points, whose coordinates are

$$\begin{array}{l} (2, \quad 1, \quad -1), \\ (3, \quad 2, \quad 1), \\ (1, \quad -2, \quad -3), \\ (4, \quad 5, \quad 3), \end{array}$$

lie on one Plane, and on one only.

Proposition I. Th.

Test for 2 Lines having the same direction.

If there be given 2 Lines represented, in the Cartesian System, by

$$\begin{aligned}A_1x + B_1y + C_1 &= 0, \\A_2x + B_2y + C_2 &= 0;\end{aligned}$$

or, in the Trilinear system, by

$$\begin{aligned}A_1\alpha + B_1\beta + C_1\gamma + D_1 &= 0, \\A_2\alpha + B_2\beta + C_2\gamma + D_2 &= 0;\end{aligned}$$

the systematic Equation being $a\alpha + b\beta + c\gamma - 2M = 0$:
a test for their having the same direction is that $V = 0$.

Let the test be fulfilled;

then the 2 Lines have the same direction; (CH. VII. PROP. III. (4))

\therefore the test is *sufficient*.

Next, let it be not fulfilled;

then the 2 Lines intersect in one Point, and in one only; (CH. VII.

PROP. III. (1))

that is, they have not the same direction;

\therefore the test is *necessary*.

Therefore, if there be, &c. Q. E. D.

Proposition II. Th.

Test for 3 Lines intersecting, (1) in a Point at a finite or infinite distance, (2) in one Point.

If there be given 3 Lines, represented, in the Cartesian System, by

$$\begin{aligned}A_1x + B_1y + C_1 &= 0, \\A_2x + B_2y + C_2 &= 0, \\A_3x + B_3y + C_3 &= 0;\end{aligned}$$

or, in the Trilinear System, by

$$\begin{aligned}A_1\alpha + B_1\beta + C_1\gamma + D_1 &= 0, \\A_2\alpha + B_2\beta + C_2\gamma + D_2 &= 0, \\A_3\alpha + B_3\beta + C_3\gamma + D_3 &= 0,\end{aligned}$$

the systematic Equation being $a\alpha + b\beta + c\gamma - 2M = 0$:

then, firstly,

a test for their intersecting in one Point, at a finite or infinite distance, is that $B = 0$.

Let the test be fulfilled;

then the 3 Lines do so intersect; (CH. VII. PROP. IV. (5))

\therefore the test is *sufficient*.

Next, let it be not fulfilled;
then the 3 Lines do not intersect in one Point at a finite distance; (CH. VII. PROP. IV. (1))
also there must be, among their Equations, 2 which have their *V*-Block not evanescent; for otherwise *B* would = 0;
∴ there are, among the 3 Lines, 2 which intersect in one Point and in one only;
(CH. VII. PROP. III. (1))
∴ the 3 Lines do not intersect in a Point at an infinite distance;
∴ the test is *necessary*.
Therefore, if there be, &c. Q. E. D.

Secondly,

a test for their intersecting in one Point is that $B = 0$, and that either there are, among the Equations to the 3 Lines, 2 which have their *V*-Block not evanescent, or else every 2 of them have their *B*-Block evanescent.

Let the test be fulfilled;
then the 3 Lines intersect in one Point; (CH. VII. PROP. IV. (6))
∴ the test is *sufficient*.
Next, let it be not all fulfilled;
then either $|B| \neq 0$, or else every 2 of the Equations to the 3 Lines have their *V*-Block evanescent, and 2 of them have their *B*-Block not evanescent;
in the first case, the 3 Lines do not intersect in one point; (CH. VII. PROP. IV. (1))
in the second, 2 of them are parallel; (CH. VII. PROP. III. (2))
∴ in either case, they do not intersect in one Point;
∴ the test is *necessary*.
Therefore, if there be, &c. Q. E. D.

Proposition III. Th.

Test for 3 Points lying on one Line.

If there be given, 3 Points, represented, in the Cartesian System, by (x_1, y_1) , &c.; or, in the Trilinear System, by $(\alpha_1, \beta_1, \gamma_1)$, &c.; and if, in each System, the given coordinates be formed into a Block, thus:—

$$\left\{ \begin{array}{l} x_1, \quad y_1, \quad 1 \\ x_2, \quad y_2, \quad 1 \\ x_3, \quad y_3, \quad 1 \end{array} \right\}, \left\{ \begin{array}{l} \alpha_1, \quad \beta_1, \quad \gamma_1 \\ \alpha_2, \quad \beta_2, \quad \gamma_2 \\ \alpha_3, \quad \beta_3, \quad \gamma_3 \end{array} \right\};$$

a test for the 3 Points lying on one Line is that the Block so formed is evanescent.

In each System let the general Equation to a line be taken, involving 3 undetermined quantities *A*, *B*, *C*; and let the coordinates of the given Points be successively substituted in it; and let *A*, *B*, and *C* be considered as Variables in the Equations so formed, whose *V*-Blocks are those given above.

Now let the test be fulfilled;
then the 3 Points lie on one Line; (CH. VII. PROP. VI. (4))
∴ the test is *sufficient*.
Next, let it be not fulfilled;
then they do not lie on one Line; (CH. VII. PROP. VI. (1))
∴ the test is *necessary*.
Therefore, if there be, &c. Q. E. D.

Corollaries to Prop. III.

1. If there be given 2 Points, represented, in the Cartesian System, by (x_1, y_1) , (x_2, y_2) ; or in the Trilinear System, by $(\alpha_1, \beta_1, \gamma_1)$, $(\alpha_2, \beta_2, \gamma_2)$: the Equation to the Line through them is

$$\begin{vmatrix} x, & y, & 1 \\ x_1, & y_1, & 1 \\ x_2, & y_2, & 1 \end{vmatrix} = 0, \text{ or } \begin{vmatrix} \alpha, & \beta, & \gamma \\ \alpha_1, & \beta_1, & \gamma_1 \\ \alpha_2, & \beta_2, & \gamma_2 \end{vmatrix} = 0$$

2. The Equation in the Cartesian System may also be written $\frac{x-x_1}{x_1-x_2} = \frac{y-y_1}{y_1-y_2}$. (CH. V. PROP. IX.)

3. The equation in the Trilinear System may also be written

$$\alpha \cdot \begin{vmatrix} \beta_1, & \gamma_1 \\ \beta_2, & \gamma_2 \end{vmatrix} - \beta \cdot \begin{vmatrix} \alpha_1, & \gamma_1 \\ \alpha_2, & \gamma_2 \end{vmatrix} + \gamma \cdot \begin{vmatrix} \alpha_1, & \beta_1 \\ \alpha_2, & \beta_2 \end{vmatrix} = 0.$$

Also, since it is equivalent to

$$\begin{vmatrix} \alpha, & \beta, & \gamma, & 1 \\ \alpha_1, & \beta_1, & \gamma_1, & 1 \\ \alpha_2, & \beta_2, & \gamma_2, & 1 \end{vmatrix}, \quad (\text{CH. VII. PROP. V. COR. 2.})$$

it may be written

$$\frac{\alpha-\alpha_1}{\alpha_1-\alpha_2} = \frac{\beta-\beta_1}{\beta_1-\beta_2} = \frac{\gamma-\gamma_1}{\gamma_1-\gamma_2}. \quad (\text{CH. V. PROP. IX.})$$

4. If there be 2 Points, not coincident, represented, in the Trilinear System, by $(\alpha_1, \beta_1, \gamma_1)$, $(\alpha_2, \beta_2, \gamma_2)$: the 3 ratios

$$\begin{vmatrix} \beta_1, & \gamma_1 \\ \beta_2, & \gamma_2 \end{vmatrix} : a, - \begin{vmatrix} \alpha_1, & \gamma_1 \\ \alpha_2, & \gamma_2 \end{vmatrix} : b, \begin{vmatrix} \alpha_1, & \beta_1 \\ \alpha_2, & \beta_2 \end{vmatrix} : c,$$

cannot be all equal.

For, if they were, the Equation to the Line through them might be written

$$a\alpha + b\beta + c\gamma = 0;$$

but this does not represent a real Line. (CH. VII. PROP. I. (2))

Section II. Solid Geometry.

Proposition IV. Th.

Test for 2 Planes having the same direction.

If there be given 2 Planes, represented, in the Cartesian System, by

$$\begin{aligned} A_1x + B_1y + C_1z + D_1 &= 0, \\ A_2x + B_2y + C_2z + D_2 &= 0; \end{aligned}$$

or, in the Quadriplanar System, by

$$\begin{aligned} A_1\alpha + B_1\beta + C_1\gamma + D_1\delta + E_1 &= 0, \\ A_2\alpha + B_2\beta + C_2\gamma + D_2\delta + E_2 &= 0; \end{aligned}$$

the systematic Equation being $a\alpha + b\beta + c\gamma + d\delta - 3M = 0$;
 a test for their having the same direction is that $\|V\| = 0$.

Let the test be fulfilled;

then the 2 Planes have the same direction; (CH. VII. PROP. IX. (4))

\therefore it is *sufficient*.

Next, let it be not fulfilled;

then they intersect in one Line and one only; (CH. VII. PROP. IX. (1))

that is, they have not the same direction;

\therefore it is *necessary*.

Therefore, if there be, &c. Q. E. D.

Proposition V. Th.

*Test for 3 Planes intersecting, (1) in one Line at a finite or infinite distance,
 (2) in one Line.*

If there be given 3 Planes, represented, in the Cartesian System, by

$$\begin{aligned} A_1x + B_1y + C_1z + D_1 &= 0, \\ A_2x + B_2y + C_2z + D_2 &= 0, \\ A_3x + B_3y + C_3z + D_3 &= 0; \end{aligned}$$

or, in the Quadriplanar System, by

$$\begin{aligned} A_1\alpha + B_1\beta + C_1\gamma + D_1\delta + E_1 &= 0, \\ A_2\alpha + B_2\beta + C_2\gamma + D_2\delta + E_2 &= 0, \\ A_3\alpha + B_3\beta + C_3\gamma + D_3\delta + E_3 &= 0, \end{aligned}$$

the systematic Equation being $a\alpha + b\beta + c\gamma + d\delta - 3M = 0$:

then, firstly,

a test for their intersecting in one Line, at a finite or infinite distance, is that $\|B\| = 0$.

Let the test be fulfilled;

then the 3 Planes do so intersect; (CH. VII. PROP. X. (7))

\therefore the test is *sufficient*.

Next, let it be not fulfilled;

then the 3 Planes do not intersect in one Line at a finite distance; (CH. VII. PROP. X. (1), (2))

also there must be, among their Equations, 2 which have their *V*-Block not evanescent; for otherwise, every secondary Minor of the *V*-Block would be evanescent, that is, *B* would = 0;

\therefore there are, among the 3 Planes, 2 which intersect in one Line, and in one only; (CH. VII. PROP. IX. (1))

\therefore the 3 Planes do not intersect in a Line at an infinite distance;

\therefore the test is *necessary*.

Therefore a test, &c. Q. E. D.

Secondly,

a test for their intersecting in one Line is that $\|B\| = 0$, and either there are, among the Equations to the 3 Planes, 2 which have their V -Block not evanescent, or else every 2 of them have their B -Block evanescent.

Let the test be fulfilled;

then the 3 Planes intersect in one Line; (CH. VII. PROP. X. (8))

\therefore it is *sufficient*.

Next, let it be not all fulfilled;

then either $|B| \neq 0$; or else every 2 of the Equations to the 3 Planes have their V -Block evanescent, and 2 of them have their B -Block not evanescent;

in the case where $|B| \neq 0$, the 3 Planes do not intersect in one Line; (CH. VII. PROP. X. (1))

in the second case, 2 of them are parallel; (CH. VII. PROP. IX. (2))

\therefore in either case they do not intersect in one Line;

\therefore the test is *necessary*.

Therefore, if there be, &c. Q. E. D.

Proposition VI. Th.

Test for 4 Planes intersecting, (1) in one Point at a finite or infinite distance, (2) in one Point.

If there be given 4 Planes, represented, in the Cartesian System, by

$$A_1x + B_1y + C_1z + D_1 = 0,$$

&c.;

or, in the Quadriplanar System, by

$$A_1\alpha + B_1\beta + C_1\gamma + D_1\delta + E_1 = 0,$$

&c.;

the systematic Equation being $a\alpha + b\beta + c\gamma + d\delta - 3M = 0$:

then, firstly,

a test for their intersecting in one Point, at a finite or infinite distance, is that $B = 0$.

Let the test be fulfilled;

then the 4 Planes do so intersect; (CH. VII. PROP. XI. (7))

\therefore the test is *sufficient*.

Next, let it be not fulfilled;

then the 4 Planes do not intersect in one Point at a finite distance; (CH. VII. PROP. XI. (1))

also there must be, among, their Equations, 3 which have their V -Block not evanescent; for otherwise B would = 0;

\therefore there are, among the 4 Planes, 3 which intersect in one Point and in one only; (CH. VII. PROP. X. (1))

\therefore the 4 Planes do not intersect in a Point at an infinite distance;

\therefore the test is *necessary*.

Therefore a test, &c. Q. E. D.

Secondly,

a test for their intersecting in one Point is that $B = 0$, and either there are, among the Equations to the 4 Planes, 3 which have their V -Block not evanescent, or else every 3 have their B -Block evanescent and there are 2 which have their V -Block not evanescent, or else every 2 have their B -Block evanescent.

Let the test be fulfilled;

then the 4 Planes intersect in one Point.

(CH. VII. PROP. XI. (8))

\therefore it is *sufficient*.

Next, let it be not all fulfilled;

then either $B \neq 0$; or every 3 of the Equations to the 4 Planes have their V -Block evanescent, and there are 3 among them which have their B -Block not evanescent; or every 2 have their V -Block evanescent, and there are 2 which have their B -Block not evanescent;

in the first case, the 4 Planes do not intersect in one Point;

(CH. VII.

PROP. XI. (1))

in the second, 3 of them do not so intersect;

(CH. VII. PROP. X. (2))

in the third, 2 of them are parallel;

(CH. VII. PROP. IX. (2))

\therefore in any case, they do not intersect in one Point;

\therefore the test is *necessary*.

Therefore, if there be, &c. Q. E. D.

Proposition VII. Th.

Test for 3 Points in Space lying on one Line.

If there be given 3 Points in Space, represented, in the Cartesian System, by (x_1, y_1, z_1) , &c.; or, in the Quadriplanar System, by $(\alpha_1, \beta_1, \gamma_1, \delta_1)$, &c.; and if, in each System, the given coordinates be formed into a Block, thus:—

$$\left\{ \begin{array}{cccc} x_1, & y_1, & z_1, & 1 \\ x_2, & y_2, & z_2, & 1 \\ x_3, & y_3, & z_3, & 1 \end{array} \right\}, \left\{ \begin{array}{cccc} \alpha_1, & \beta_1, & \gamma_1, & \delta_1 \\ \alpha_2, & \beta_2, & \gamma_2, & \delta_2 \\ \alpha_3, & \beta_3, & \gamma_3, & \delta_3 \end{array} \right\};$$

a test for the 3 Points lying on one Line is that the Block so formed is evanescent.

In each System let the general equation to a Plane be taken, involving 4 undetermined quantities A, B, C, D ; and let the coordinates of the given Points be successively substituted in this general Equation; and let A, B, C , and D be considered as Variables in the Equations so formed, so that their V -Blocks are those given above.

Now let the test be fulfilled;

then the 3 Points lie on one Line;

(CH. VII. PROP. XIII. (4))

\therefore it is *sufficient*.

Next, let it be not fulfilled;

then the 3 Points lie on one Plane, and one only; (CH. VII. PROP. XIII. (1))

\therefore it is *necessary*.

Therefore, if there be, &c. Q. E. D.

Corollaries to Prop. VII.

1. If there be given 2 Points in Space, represented, in the Cartesian System, by (x_1, y_1, z_1) , &c.; or, in the Quadriplanar System, by $(\alpha_1, \beta_1, \gamma_1, \delta_1)$, &c.: the

Equations to the Line through them are given by

$$\begin{vmatrix} x, & y, & z, & 1 \\ x_1, & y_1, & z_1, & 1 \\ x_2, & y_2, & z_2, & 1 \end{vmatrix} = 0, \quad \begin{vmatrix} \alpha, & \beta, & \gamma, & \delta \\ \alpha_1, & \beta_1, & \gamma_1, & \delta_1 \\ \alpha_2, & \beta_2, & \gamma_2, & \delta_2 \end{vmatrix} = 0,$$

2. The Equation in the Cartesian System may also be written

$$\frac{x-x_1}{x_1-x_2} = \frac{y-y_1}{y_1-y_2} = \frac{z-z_1}{z_1-z_2}. \quad (\text{CH. V. PROP. IX.})$$

3. The Equation in the Quadriplanar System is equivalent to

$$\begin{vmatrix} \alpha, & \beta, & \gamma, & \delta, & 1 \\ \alpha_1, & \beta_1, & \gamma_1, & \delta_1, & 1 \\ \alpha_2, & \beta_2, & \gamma_2, & \delta_2, & 1 \end{vmatrix}, \quad (\text{CH. VII. PROP. V. COR. 2.})$$

and therefore may be written

$$\frac{\alpha-\alpha_1}{\alpha_1-\alpha_2} = \frac{\beta-\beta_1}{\beta_1-\beta_2} = \frac{\gamma-\gamma_1}{\gamma_1-\gamma_2} = \frac{\delta-\delta_1}{\delta_1-\delta_2}. \quad (\text{CH. V. PROP. IX.})$$

Proposition VIII. Th.

Test for 4 Points in Space lying on one Plane.

If there be given 4 Points in Space, represented, in the Cartesian System, by (x_1, y_1, z_1) , &c.; or, in the Quadriplanar System, by $(\alpha_1, \beta_1, \gamma_1, \delta_1)$, &c.; and if, in each System, the given coordinates be formed into a Block, thus:—

$$\begin{Bmatrix} x_1, & y_1, & z_1, & 1 \\ x_2, & y_2, & z_2, & 1 \\ x_3, & y_3, & z_3, & 1 \\ x_4, & y_4, & z_4, & 1 \end{Bmatrix}, \quad \begin{Bmatrix} \alpha_1, & \beta_1, & \gamma_1, & \delta_1 \\ \alpha_2, & \beta_2, & \gamma_2, & \delta_2 \\ \alpha_3, & \beta_3, & \gamma_3, & \delta_3 \\ \alpha_4, & \beta_4, & \gamma_4, & \delta_4 \end{Bmatrix};$$

the test for the 4 Points lying on one Plane is that the Block so formed is evanescent.

In each System let the general Equation to a Plane be taken, involving 4 undetermined quantities A, B, C, D ; and let the coordinates of the given Points be successively substituted in this general Equation; and let A, B, C , and D be considered as Variables in the Equations so formed, so that their V -Blocks are those given above.

Now let the test be fulfilled;

then the 4 Points lie on one Plane; (CH. VII. PROP. XIV. (5))

\therefore it is *sufficient*.

Next, let it be not fulfilled;

then the 4 Points do not lie on one Plane; (CH. VII. PROP. XIV. (1))

\therefore it is *necessary*.

Therefore, if there be, &c. Q. E. D.

Corollaries to Prop. VIII.

1. If there be given 3 Points in space, represented, in the Cartesian System, by (x_1, y_1, z_1) , &c.; or, in the Quadriplanar System, by $(\alpha_1, \beta_1, \gamma_1, \delta_1)$, &c.: the Equation to the Plane through them is

$$\begin{vmatrix} x, & y, & z, & 1 \\ x_1, & y_1, & z_1, & 1 \\ x_2, & y_2, & z_2, & 1 \\ x_3, & y_3, & z_3, & 1 \end{vmatrix} = 0, \quad \text{or} \quad \begin{vmatrix} \alpha, & \beta, & \gamma, & \delta \\ \alpha_1, & \beta_1, & \gamma_1, & \delta_1 \\ \alpha_2, & \beta_2, & \gamma_2, & \delta_2 \\ \alpha_3, & \beta_3, & \gamma_3, & \delta_3 \end{vmatrix} = 0.$$

2. The Equation in the Quadriplanar System may be written

$$\alpha. \begin{vmatrix} \beta_1, & \gamma_1, & \delta_1 \\ \beta_2, & \gamma_2, & \delta_2 \\ \beta_3, & \gamma_3, & \delta_3 \end{vmatrix} - \beta. \begin{vmatrix} \alpha_1, & \gamma_1, & \delta_1 \\ \alpha_2, & \gamma_2, & \delta_2 \\ \alpha_3, & \gamma_3, & \delta_3 \end{vmatrix} + \gamma. \begin{vmatrix} \alpha_1, & \beta_1, & \delta_1 \\ \alpha_2, & \beta_2, & \delta_2 \\ \alpha_3, & \beta_3, & \delta_3 \end{vmatrix} - \delta. \begin{vmatrix} \alpha_1, & \beta_1, & \gamma_1 \\ \alpha_2, & \beta_2, & \gamma_2 \\ \alpha_3, & \beta_3, & \gamma_3 \end{vmatrix} = 0.$$

3. If there be 3 Points in Space, not lying in one Line, represented in the Quadriplanar System by $(\alpha_1, \beta_1, \gamma_1, \delta_1)$, &c.; then the ratios

$$\begin{vmatrix} \beta_1, & \gamma_1, & \delta_1 \\ \beta_2, & \gamma_2, & \delta_2 \\ \beta_3, & \gamma_3, & \delta_3 \end{vmatrix} : a, - \begin{vmatrix} \alpha_1, & \gamma_1, & \delta_1 \\ \alpha_2, & \gamma_2, & \delta_2 \\ \alpha_3, & \gamma_3, & \delta_3 \end{vmatrix} : b, \begin{vmatrix} \alpha_1, & \beta_1, & \delta_1 \\ \alpha_2, & \beta_2, & \delta_2 \\ \alpha_3, & \beta_3, & \delta_3 \end{vmatrix} : c, - \begin{vmatrix} \alpha_1, & \beta_1, & \gamma_1 \\ \alpha_2, & \beta_2, & \gamma_2 \\ \alpha_3, & \beta_3, & \gamma_3 \end{vmatrix} : d,$$

cannot be all equal.

For, if they were, the Equation to the Plane through these 3 Points might be written

$$a\alpha + b\beta + c\gamma + d\delta = 0;$$

but this does not represent a real Plane. (CH. VII. PROP. VII. (2))

Appendix I.

Method of analysing a given set of Simultaneous Linear Equations. (See Page 1341, note.)

1. Equations not all homogeneous.

The points, on which information is required, concern

- (1) The consistency of the Equations.
- (2) Their dependence one on another.
- (3) The Variables to which arbitrary values may be simultaneously assigned.

We begin by examining the *V*-Block and *B*-Block of the first 2 Equations; then those of the first 3; of the first 4, and so on.

If in the course of this process we find a set of Equations whose *V*-Block is evanescent, but not their *B*-Block, these are inconsistent, and the inquiry comes to an end.

If in its course we find a set whose *B*-Block is evanescent, the last may be set aside as dependent on one or more of the preceding.

This process is continued until the whole set have been thus examined, or until we have found a set, whose number is equal to the number of the Variables, and whose *V*-Block is not evanescent. In the latter case, if there be Equations still remaining, we must take each of them separately along with the set already examined, and examine the *B*-Block of each set so formed. If any such *B*-Block be not evanescent, the Equations are inconsistent; but if every such *B*-Block be evanescent, all these remaining Equations are dependent on the set already examined.

Thus in any case we either prove the inconsistency of the given Equations, or else (setting aside all that are proved to be dependent on others) we obtain a set of *independent* Equations, whose *V*-Block is not evanescent.

Now in this set of independent Equations, the number of Variables is either equal to, or else greater than, the number of Equations. In the former case, there is only one set of values for the Variables; in the latter, the excess gives the number of Variables to which arbitrary values may be simultaneously assigned, and, for every non-evanescent principal Minor of the V -Block, there is such a set of Variables, namely those whose coefficients do not enter into that principal Minor. (Hence, in this case, there are always two such sets at least. See CHAP. V. PROP. X.)

Let us take as an example the 4 Equations

$$\begin{array}{rclcl} u + v & -2x + y & -z - 6 & = 0, \\ 2u + 2v & -4x - y & +z - 9 & = 0, \\ u + v & -2x & -5 & = 0, \\ u - v & +x + y & -2z & = 0. \end{array}$$

We begin by examining the V -Block and B -Block of the first 2 Equations; and for this purpose we take the first column along with each of the others successively. Thus we have $\begin{vmatrix} 1, & 1 \\ 2, & 2 \end{vmatrix} = 0$, $\begin{vmatrix} 1, & -2 \\ 2, & -4 \end{vmatrix} = 0$, $\begin{vmatrix} 1, & 1 \\ 2, & -1 \end{vmatrix} \neq 0$.

This shows that their V -Block is not evanescent.

We now take the first 3 Equations, and combine the 2 columns, which contain the non-evanescent Minor so found, with each of the other columns successively. Thus we have

$$\begin{array}{l} \begin{vmatrix} 1, & 1, & 1 \\ 2, & -1, & 2 \\ 1, & 0, & 1 \end{vmatrix} = 0, \quad \begin{vmatrix} 1, & 1, & -2 \\ 2, & -1, & -4 \\ 1, & 0, & -2 \end{vmatrix} = 0, \\ \begin{vmatrix} 1, & 1, & -1 \\ 2, & -1, & 1 \\ 1, & 0, & 0 \end{vmatrix} = 0, \quad \begin{vmatrix} 1, & 1, & -6 \\ 2, & -1, & -9 \\ 1, & 0, & -5 \end{vmatrix} = 0, \end{array}$$

This shows that the B -Block of these 3 Equations is evanescent, so that the 3rd is dependent on one or both of the first 2.

Omitting the 3rd we take the 1st, 2nd, and 4th, and proceed as before. Thus

we have $\begin{vmatrix} 1, & 1, & 1 \\ 2, & -1, & 2 \\ 1, & 1, & -1 \end{vmatrix} \neq 0$. This shows that the V -Block of these 3 Equations

is not evanescent. Hence these Equations are consistent, and, since they contain 5 Variables, there are 2 Variables to which arbitrary values may be assigned.

To ascertain how many such sets of 2 may be selected from the 5 Variables, it is necessary to compute *all* the principal Minors of the V -Block of these 3

Equations. These are $\begin{vmatrix} 1, & 1, & -2 \\ 2, & 2, & -4 \\ 1, & -1, & 1 \end{vmatrix} = 0$, (because the oblong Block, formed of

the first 2 rows, is evanescent); next, taking columns (124) $\begin{vmatrix} 1, & 1, & 1 \\ 2, & 2, & -1 \\ 1, & -1, & 1 \end{vmatrix} \neq 0$;

for columns (125), $\begin{vmatrix} 1, & 1, & -6 \\ 2, & 2, & -9 \\ 1, & -1, & 0 \end{vmatrix} \neq 0$; for (134), $\begin{vmatrix} 1, & -2, & 1 \\ 2, & -4, & 1 \\ 1, & 1, & 1 \end{vmatrix} \neq 0$; for (135),

$$\begin{aligned} & \begin{vmatrix} 1, & -2, & -6 \\ 2, & -4, & -9 \\ 1, & -1, & 0 \end{vmatrix} \neq 0; \text{ for (145), } \begin{vmatrix} 1, & 1, & -6 \\ 2, & 1, & -9 \\ 1, & -2, & 1 \end{vmatrix} \neq 0; \text{ for (234), } \begin{vmatrix} 1, & -2, & -1 \\ 2, & -4, & 1 \\ -1, & 1, & -2 \end{vmatrix} \neq \\ & 0; \text{ for (235), } \begin{vmatrix} 1, & -2, & -6 \\ 2, & -4, & -9 \\ -1, & 1, & 0 \end{vmatrix} \neq 0; \text{ for (245), } \begin{vmatrix} 1, & 1, & -6 \\ 2, & -1, & -9 \\ -1, & 1, & 0 \end{vmatrix} \neq 0; \text{ for (345), } \\ & \begin{vmatrix} 1, & -1, & -6 \\ -1, & 1, & -9 \\ 1, & -2, & 0 \end{vmatrix} \neq 0 \end{aligned}$$

We have thus ascertained, with regard to these 4 Equations, that

- (1) They are consistent.
- (2) The 1st, 2nd, and 4th are independent, and the 3rd is dependent on one or both of the first two.
- (3) It is possible to assign arbitrary values to 2 of the Variables simultaneously; and for this purpose *any* set of 2, with the exception of (y, z) , may be taken. If, for example, we assign to y and z the values '1', '2', we obtain for u, x , and z the values '2', '-1', '1'.

Again, let us take the 5 Equations

$$\begin{aligned} 3x - y & \qquad \qquad \qquad +7 = 0, \\ 6x - 2y & \qquad \qquad \qquad +14 = 0, \\ x + y & \qquad \qquad \qquad +1 = 0, \\ x + 5y & \qquad \qquad \qquad -3 = 0, \\ 5x + y & \qquad \qquad \qquad +9 = 0. \end{aligned}$$

We begin by examining the V -Block and B -Block of the first 2 Equations; and for this purpose we take the first column along with each of the others successively. Thus we have $\begin{vmatrix} 3, & -1 \\ 6, & -2 \end{vmatrix} = 0$, $\begin{vmatrix} 3, & 7 \\ 6, & 14 \end{vmatrix} = 0$. Hence the B -Block is evanescent, and either Equation is dependent on the other.

Omitting the 2nd, we take the 1st and 3rd, and examine them in the same manner. Thus we have $\begin{vmatrix} 3, & -1 \\ 1, & 1 \end{vmatrix} \neq 0$. Hence these Equations are consistent, and there is only one set of values for the Variables.

We have now applied the general process as far as it will go, since the number of Equations, last tested, is equal to the number of Variables, All we have now to do, is to take these 2 Equations along with each of the remaining Equations successively, and examine whether the B -Block of each set, so formed, is evanescent or not.

Taking them along with the 4th, we have $\begin{vmatrix} 3, & -1, & 7 \\ 1, & 1, & 1 \\ 1, & 5, & -3 \end{vmatrix} = 0$. Hence the 4th Equation is dependent on one or both of the 1st and 3rd.

Then taking them along with the 5th, we have $\begin{vmatrix} 3, & -1, & 7 \\ 1, & 5, & -3 \\ 5, & 1, & 9 \end{vmatrix} = 0$. Hence the 5th Equation is similarly dependent.

We have thus ascertained, with regard to these 5 Equations, that

- (1) They are consistent.
- (2) The 1st and 3rd are independent, and each of the rest is dependent on one or both of these.
- (3) There are no Variables to which arbitrary values can be assigned.

2. Given Equations all homogeneous.

It must be remembered that homogeneous Equations are *always* consistent, i. e. they may be satisfied by assigning to each Variable the value zero: in some cases, the Variables admit of no other values, in others, they admit of a set of values of which one at least is (and therefore two at least are) actual. In this latter case, whatever set of values for the Variables satisfy the Equations, any equimultiples of them will do so also, so that in this case it is always possible to assign an arbitrary value to any one of those Variables which admit of actual values. Again, there are cases in which it is possible to assign arbitrary values to 2 or more of these Variables simultaneously. These properties will be the subject of our inquiry.

The points, on which information is required, concern

- (1) The possibility of assigning to the Variables a set of values which are not all zero. (In which case 2 at least of the Variables admit of actual values, and to either of them an arbitrary value may be assigned.)
- (2) The dependence of the Equations one on another.
- (3) The Variables to which arbitrary values may be simultaneously assigned.

We begin by examining the *V*-Block of the first 2 Equations; then those of the first 3; of the first 4, and so on.

If in the course of this process we find a set of Equations whose *V*-Block is evanescent, the last may be set aside as dependent on one or more of the preceding.

This process is continued until the whole set have been thus examined, or until we have found a set, whose number is less by unity than the number of the Variables, and whose *V*-Block is not evanescent. In the latter case, if there be Equations still remaining, we must take each of them separately along with the set already examined, and examine the *V*-Block of each set so formed. If any such *V*-Block be not evanescent, the Equations admit of zero values only; but if every such *V*-Block be not evanescent, all these remaining Equations are dependent on the set already examined.

Thus in any case we either prove that the given equations admit of zero values only, or else (setting aside all that are proved to be dependent on others) we obtain a set of *independent* Equations, whose *V*-Block is not evanescent.

Now in this set of independent Equations, the number of Variables exceeds the number of Equations, either by unity, or by some greater number. In the former case, there is only one set of ratios among the Variables, (see CHAP. III. PROP. II. COR.), i. e. it is not possible to assign arbitrary values to 2 of the Variables simultaneously; in the latter case, the excess gives the number of Variables

to which arbitrary values may be simultaneously assigned, and, for every non-evanescent principal Minor of the V -Block, there is such a set of Variables, namely those whose coefficients do not enter into that principal Minor. (Hence, in this case, there are always 2 such sets at least. See CHAP. V. PROP. X.)

Let us take as an instance the 3 Equations

$$\begin{array}{rcl} 2u + v & +2x + y & +3z = 0, \\ 5u + 3v & -4x + 3y & -6z = 0, \\ u + v & -8x + y & -12z = 0. \end{array}$$

Here the V -Block of the first 2 Equations is not evanescent.

But the V -Block of the whole set is evanescent; hence the 3rd Equation may be omitted as dependent on the other 2.

And, in these 2, the Variables exceed the Equations in number by 3; hence every non-evanescent principal Minor indicates a set of 3 Variables to which arbitrary values may be simultaneously assigned. The non-evanescent Minors are those belonging to (u, v) , (u, x) , (u, y) , (u, z) , (v, x) , (v, z) , (x, y) , (y, z) . Hence, with the exception of (v, x, z) , (u, v, y) , any 3 of the Variables may have arbitrary values assigned to them. If, for example, we assign to x, y, z , the values 1, 2, -1, we obtain for u and v the values 5, -11.

Appendix II.

Arithmetical Computation of Determinants.

A general method for computing the value of a Determinant has been already given (see CH. II. PROP. I. COR. 1. Note); and, when the Elements are *Algebraical*, this method is perhaps the best we can employ.

But when the Elements are *Arithmetical*, it is often possible so to rearrange, or otherwise modify, the given Block, as to make the process of computation both easier and more expeditious. Were not this the case, it would seldom be worth while to employ Determinants for any purpose where actual calculation is necessary; for instance, in the solution of a set of 3 or more simultaneous Equations, the old method of elimination would be far preferable.

In this process of simplification, much must be left to the ingenuity of the student, guided by the circumstances of the case. A few general rules are all that the teacher can supply.

1. We have seen (CH. II. AX. II.) that “if, in a square Block, the Elements of any one row or column be multiplied by v ; the Determinant of the new Block is equal to that of the first multiplied by v .” Hence conversely, if, in a square Block, the Elements of any one row, or column, contain v as a factor; it may be divided out and placed outside the Determinant. As an instance of the application of

this principle, let us take the Block $\begin{Bmatrix} 36, & 15, & -24 \\ 18, & -9, & 3 \\ 36, & 8, & 16 \end{Bmatrix}$. Here we may observe

that the 1st row contains ‘3’ as a factor, the 2nd ‘3’ also, and that the 3rd contains

‘4’: hence the Determinant may be reduced to the form $3^2 \cdot 4 \cdot \begin{vmatrix} 12, & 5, & -8 \\ 6, & -3, & 1 \\ 9, & 2, & 4 \end{vmatrix}$:

and this again, since the 1st column contains '3' as a factor, may be reduced to

$$\text{the form } 3^3 \cdot 4 \cdot \begin{vmatrix} 4, & 5, & -8 \\ 2, & -3, & 1 \\ 3, & 2, & 4 \end{vmatrix}.$$

2. We have seen (CH. II. PROP. I. COR. 2.) that "if, in a square Block, the Elements in any one row, or column, all vanish but one: the Determinant of the Block is the product produced by multiplying the Determinant of the complementary Minor of that Element by that Element itself, affected with + or -, according as the numerals in its symbol are similar or dissimilar." As an instance

of the application of this principle, let us take the Block $\begin{pmatrix} 3, & 1, & 0, & 2 \\ 2, & -1, & 0, & 1 \\ 1, & 1, & -5, & 2 \\ 4, & -2, & 0, & -1 \end{pmatrix}$,

where the Elements of the 3rd column all vanish but one, and where the symbol of that Element is 3, so that its numerals are *similar*. Hence the Determinant

of this Block may be at once reduced to the form $-5 \cdot \begin{vmatrix} 3, & 1, & 2 \\ 2, & -1, & 1 \\ 4, & -2, & -1 \end{vmatrix}$. When the

given Block does not contain any such row or column, it may be made to do so by the application of another principle, which we proceed to consider.

3. We have seen (CH. II. PROP. III. COR. 3.) that "if, in a square Block, there be added to the several Elements of any row, or column, the corresponding Elements of any other row, or column, multiplied by any number: the Determinant of the new Block is the same as that of the first." As an instance of

the application of this principle, let us take the Block $\begin{pmatrix} 7, & 2, & 1, & -3 \\ 2, & -1, & 3, & 6 \\ 1, & 4, & -3, & 2 \\ -6, & 4, & 1, & 5 \end{pmatrix}$,

and let us select the 3rd column as the one to be reduced to the required form, and its first Element, "1," as the one which is not to vanish. Now to the Elements of the 2nd row add those of the 3rd. To the Elements of the 3rd row add those of the 4th, multiplied by 3. To the Elements of the 4th row add those of the 1st, multiplied by -1. The Determinant of the Block is thus reduced to

the form $\begin{vmatrix} 7, & 2, & 1, & -3 \\ 3, & 3, & 0, & 8 \\ -17, & 10, & 0, & 17 \\ -13, & 2, & 0, & 8 \end{vmatrix}$, which again is reduced, by the former rule, to

$$\begin{vmatrix} 3, & 3, & 8 \\ -17, & 10, & 17 \\ -13, & 2, & 8 \end{vmatrix}.$$

In employing this Rule, we must observe that each modification is a *separate* application of the principle, so that if we employ, in any stage of the process, the Elements of a row, or column, which has been already modified, we must employ them as so modified, and not in their original state. Failing to observe this, we

might imagine that, in the Block $\begin{pmatrix} 3, & 5, & 2 \\ 2, & 1, & 3 \\ 4, & -1, & -2 \end{pmatrix}$, it would be legitimate to

add to the Elements of the 2nd row those of the 3rd, and at the same time to add to the Elements of the 3rd row those of the 2nd, and thus to reduce the

Determinant to the form $\begin{vmatrix} 3, & 5, & 2 \\ 6, & 0, & 1 \\ 6, & 0, & 1 \end{vmatrix}$: whereas the first modification reduces the
 Determinant to the form $\begin{vmatrix} 3, & 5, & 2 \\ 6, & 0, & 1 \\ 4, & -1, & -2 \end{vmatrix}$, and thus the second proposed modification is impossible. To guard against this error it is always best to employ, in each stage of the process, the Elements of some row, or column, which has not yet been modified.

Other version:
 → 7.1, p. 1220

4. The process of computation, which I now proceed to explain, and for which “Condensation” appears to be an appropriate name, was communicated by me to the Royal Society in the year 1866, and an account of it is to be found in their “Proceedings,” No. 84.

In the following remarks I shall use the phrase “interior of a Block” to denote the Block which remains when the first and last rows and columns are erased.

The process of “Condensation” is exhibited in the following rules, in which the given block is supposed to consist of n rows and n columns:—

(1) Arrange the given Block, if necessary, so that no ciphers occur in its interior. This may be done either by transposing rows or columns, or by adding to certain rows the several terms of other rows multiplied by certain multipliers.

(2) Compute the Determinant of every Minor consisting of four adjacent terms. These values will constitute a second Block, consisting of $\overline{n-1}$ rows and $\overline{n-1}$ columns.

(3) Condense this second Block in the same manner, dividing each term, when found, by the corresponding term in the interior of the first Block.

(4) Repeat this process as often as may be necessary (observing that in condensing any Block of the series, the r^{th} for example, the terms so found must be divided by the corresponding terms in the interior of the $\overline{r-1}^{\text{th}}$ Block), until the Block is condensed to a single term, which will be the required value.

As an instance of the foregoing rules, let us take the Block

$$\begin{vmatrix} -2 & -1 & -1 & -2 \\ -1 & -2 & -1 & -3 \\ -1 & -1 & 2 & 2 \\ 2 & 1 & -3 & -4 \end{vmatrix}.$$

By rule (2) this is condensed into $\begin{vmatrix} 3 & -1 & 1 \\ -1 & -5 & 4 \\ 1 & 1 & -2 \end{vmatrix}$; this, again, by rule (3), is condensed into $\begin{vmatrix} 8 & -1 \\ -4 & 3 \end{vmatrix}$; and this, by rule (4), into -4 , which is the required value.

The simplest method of working this rule appears to be to arrange the series of Blocks one under another, as here exhibited; it will then be found very easy to pick out the divisors required in rules (3) and (4).

$$\begin{vmatrix} -2 & -1 & -1 & -2 \\ -1 & -2 & -1 & -3 \\ -1 & -1 & 2 & 2 \\ 2 & 1 & -3 & -4 \end{vmatrix}$$

$$\begin{vmatrix} 3 & -1 & 1 \\ -1 & -5 & 4 \\ 1 & 1 & -2 \end{vmatrix}$$

$$\begin{vmatrix} 8 & -1 \\ -4 & 3 \end{vmatrix}$$

–4.

This process cannot be continued when ciphers occur in the interior of any one of the Blocks, since infinite values would be introduced by employing them as divisors. When they occur in the given Block itself, it may be re-arranged as has been already mentioned; but this cannot be done when they occur in any one of the derived Blocks; in such a case the given Block must be rearranged as circumstances require, and the operation commenced anew.

The best way of doing this is as follows:—

Suppose a cipher to occur in the h^{th} row and k^{th} column of one of the derived Blocks (reckoning both row and column from the *nearest* corner of the Block); find the term in the h^{th} row and k^{th} column of the given Block (reckoning from the corresponding corner), and transpose rows or columns cyclically until it is left in an outside row or column. When the necessary alterations have been made in the derived Blocks, it will be found that the cipher now occurs in an outside row or column, and therefore need no longer be used as a divisor.

The advantage of *cyclical* transposition is, that most of the terms in the new Blocks will have been computed already, and need only be copied; in no case will it be necessary to compute more than *one* new row or column for each Block of the series. We must of course observe, in any such transposition, whether or no the *sign* of the Determinant is changed.

In the following instance it will be seen that in the first series of Blocks a cipher occurs in the interior of the third. We therefore abandon the process at that point and begin again, re-arranging the given Block by transferring the top row to the bottom; and the cipher, when it occurs, is now found in an exterior row. It will be observed that in each Block of the new series, there is only one new row to be computed; the other rows are simply copied from the work already done.

$$\begin{vmatrix} 2 & -1 & 2 & 1 & -3 \\ 1 & 2 & 1 & -1 & 2 \\ 1 & -1 & -2 & -1 & -1 \\ 2 & 1 & -1 & -2 & -1 \\ 1 & -2 & -1 & -1 & 2 \end{vmatrix} \begin{vmatrix} 1 & 2 & 1 & -1 & 2 \\ 1 & -1 & -2 & -1 & -1 \\ 2 & 1 & -1 & -2 & -1 \\ 1 & -2 & -1 & -1 & 2 \\ 2 & -1 & 2 & 1 & -3 \end{vmatrix}$$

$$\begin{vmatrix} 5 & -5 & -3 & -1 \\ -3 & -3 & -3 & 3 \\ 3 & 3 & 3 & -1 \\ -5 & -3 & -1 & -5 \end{vmatrix} \begin{vmatrix} -3 & -3 & -3 & 3 \\ 3 & 3 & 3 & -1 \\ -5 & -3 & -1 & -5 \\ 3 & -5 & 1 & 1 \end{vmatrix}$$

$$\begin{vmatrix} -30 & 6 & -12 \\ 0 & 0 & 6 \\ 6 & -6 & 8 \end{vmatrix} \begin{vmatrix} 0 & 0 & 6 \\ 6 & -6 & 8 \\ -17 & 8 & -4 \end{vmatrix}$$

$$\begin{vmatrix} 0 & 12 \\ 18 & 40 \end{vmatrix}$$

36.

The fact that, whenever ciphers occur in the interior of a derived Block, it is necessary to recommence the operation, may be thought a great obstacle to the use of this method; but I believe it will be found in practice that, even though this should occur several times in the course of one operation, the whole amount of labour will still be much less than that involved in the old process of computation.

Appendix III.

Algebraical Proof of the method of 'Condensation.'

We have seen (CH. II. PROP. VII.) that "if there be a square Block of the n^{th} degree, and if in it any Minor of the m^{th} degree be selected: the Determinant of the corresponding Minor in the adjugate Block is equal, in absolute magnitude, to the product of the $m-1^{\text{th}}$ power of the Determinant of the first Block, multiplied by the Determinant of the Minor complementary to the one selected. Also, if the numerals, indicating the selected rows, be represented by α, β, \dots , and those indicating the selected columns by κ, λ, \dots , and their respective sums by $\sum(\alpha), \sum(\kappa)$: the relationship of sign between the equal magnitudes will be secured by multiplying either of them by $(-1)^{m \cdot (\sum(\alpha) + \sum(\kappa))}$."

Let us first take a Block of 9 terms, and represent it by $\begin{Bmatrix} 1(1 & \dots & 1)3 \\ \vdots & & \vdots \\ 3(1 & \dots & 3)3 \end{Bmatrix}_a$,

and the adjugate Block by $\begin{Bmatrix} 1(1 & \dots & 1)3 \\ \vdots & & \vdots \\ 3(1 & \dots & 3)3 \end{Bmatrix}_A$.

If we 'condense' this, by the method already given, we get the Block $\begin{Bmatrix} 3(3_A, & -3(1_A) \\ -1(3_A, & 1(1_A) \end{Bmatrix}$,

and the Determinant of this will remain unchanged if we transpose the columns, and also the rows, and then multiply the first row and first column by -1 ;

hence it = $\begin{vmatrix} 1(1_A, & 1(3_A) \\ 3(1_A, & 3(3_A) \end{vmatrix}$;

and this, by the theorem above cited,

$$= D_a^{2-1} \cdot 2(2_a \cdot (-1)^{2 \cdot (4+4)} = D_a \cdot 2(2;$$

$$\therefore D_a = \frac{\begin{vmatrix} 3(3_A, & -3(1_A) \\ -1(3_A, & 1(1_A) \end{vmatrix}}{2(2_a};$$

which proves the method for a Block of 9 terms.

Next, let us take a Block of 16 terms; and represent it by $\left\{ \begin{array}{ccc} 1(1) & \dots & 1(4) \\ \vdots & & \vdots \\ 4(1) & \dots & 4(4) \end{array} \right\}_a$,

and the adjugate Block by $\left\{ \begin{array}{ccc} 1(1) & \dots & 1(4) \\ \vdots & & \vdots \\ 4(1) & \dots & 4(4) \end{array} \right\}_A$.

If we 'condense' this, we get a Block of 9 terms; let us represent it by

$$\left\{ \begin{array}{ccc} 1(1) & \dots & 1(3) \\ \vdots & & \vdots \\ 3(1) & \dots & 3(3) \end{array} \right\}_b,$$

so that $1(1)_b = \begin{vmatrix} 1(1) & 1(2) \\ 2(1) & 2(2) \end{vmatrix}_a$, $1(2)_b = \begin{vmatrix} 1(2) & 1(3) \\ 2(2) & 2(3) \end{vmatrix}_a$, &c.

If we 'condense' this Block again, we get a Block of 4 terms, each of which is, by the preceding paragraph, the Determinant of 9 terms of the Block of 16 terms;

that is, we get the Block $\left\{ \begin{array}{cc} 4(4_A) & -4(1_A) \\ -4(1_A) & 1(1_A) \end{array} \right\}$;

and the Determinant of this will remain unchanged if we transpose the columns, and also the rows, and then multiply the first row and column by -1 ;

hence it = $\begin{vmatrix} 1(1_A) & 1(4_A) \\ 4(1_A) & 4(4_A) \end{vmatrix}$;

and this, by the theorem above cited,

$$= D_a^{2-1} \cdot \begin{vmatrix} 2(2_a) & 2(3_a) \\ 3(2_a) & 3(3_a) \end{vmatrix} \cdot (-1)^{2 \cdot (5+5)};$$

$$= D_a \cdot 2(2_b);$$

$$\therefore D_a = \frac{\begin{vmatrix} 1(1_A) & 1(4_A) \\ 4(1_A) & 4(4_A) \end{vmatrix}}{2(2_b)}$$

which proves the method for a Block of 16 terms, and similar proofs might be given for larger Blocks.

Appendix IV.

Application of the Method of 'Condensation' to the Solution of Simultaneous Linear Equations.

If we take a Block containing n rows and $\overline{n+1}$ columns, and ‘condense’ it, we reduce it at last to 2 terms, the first of which is the Determinant of the first n columns, the other of the last n columns.

Hence, if we take the n simultaneous Equations

$$1 \left(1. x_1 + 1 \right) 2. x_2 + \dots + 1 \left(n. x_n + 1 \right) n + 1 = 0,$$

&c.

$$n \left(1. x_1 + n \right) 2. x_2 + \dots + n \left(n. x_n + n \right) n + 1 = 0;$$

and if we ‘condense’ their B -Block, we reduce it to 2 terms, the first of which is V , the other D_1 .

Now we know that $x_1 = (-)^n \cdot \frac{D_1}{V}$; that is, $(-)^n V \cdot x_1 = D_1$.

Hence the 2 terms obtained by the process of condensation may be converted into an Equation for x_1 , by multiplying the first of them by x_1 , affected with $+$ or $-$, according as n is even or odd. The latter part of the rule may be simply expressed thus:—“place the signs $+$ and $-$ alternately over the several columns, beginning with the last, and the sign which occurs over the column containing x_1 is the sign with which x_1 is to be afflicted.”

When the value of x_1 has been thus found, it may be substituted in the first $\overline{n-1}$ Equations, and the same operation repeated on the new Block, which will now consist of $\overline{n-1}$ rows and n columns. But in calculating the second series of Blocks, it will be found that most of the work has been already done; in fact, of the 2 Determinants required in the new Block, one has been already computed isorrectly, and the other so nearly so that it is only necessary to correct the *last* column in each of the derived Blocks.

In the example given opposite, after writing $+$ and $-$ alternately over the columns, beginning with the last, we first condense the whole Block, and thus obtain the 2 terms 36 and -72 . Observing that the x -column has the sign $-$ placed over it, we multiply the 36 by $-x$, and so form the Equation $-36x = -72$, which gives $x = 2$.

Hence the x -terms in the first four Equations become respectively 2, 2, 4, and 2; adding these values to the constant terms in the same Equations, we obtain a Block of which we need only write down the last two columns, viz.

$$\begin{vmatrix} 2 & 4 \\ -1 & -2 \\ -1 & -2 \\ 2 & 6 \end{vmatrix}.$$

We then condense these into the column $\begin{vmatrix} 0 \\ 0 \\ 2 \end{vmatrix}$, and, supplying from the second

Block of the first series the column $\begin{vmatrix} 3 \\ -1 \\ -5 \end{vmatrix}$, we obtain $\begin{vmatrix} 3 & 0 \\ -1 & 0 \\ -5 & 2 \end{vmatrix}$ as the last two

columns of the *second* Block of the new series; and proceeding thus we ultimately obtain the two terms 12, 12. Observing that the y -column has the sign $+$ placed over it, we multiply the first 12 by $+y$, and so form the Equation $12y = 12$, which gives $y = 1$. The values of z , u , and v are similarly found.

It will be seen that when once the given Block has been successfully condensed, and the value of the first unknown obtained, there is no further danger

of the operation being interrupted by the occurrence of ciphers.

$$\begin{array}{rcccccc}
 - & & + & & - & & + \\
 x & + & 2y & + & z & - & u & + & 2v & +2 & = & 0 \\
 x & - & y & - & 2z & - & u & - & v & -4 & = & 0 \\
 2x & + & y & - & z & - & 2u & - & v & -6 & = & 0 \\
 x & - & 2y & - & z & - & u & + & 2v & +4 & = & 0 \\
 2x & - & y & + & 2z & + & u & - & 3v & -8 & = & 0
 \end{array}$$

$$\left| \begin{array}{cccccc} 1 & 2 & 1 & -1 & 2 & 2 \\ 1 & -1 & -2 & -1 & -1 & -4 \\ 2 & 1 & -1 & -2 & -1 & -6 \\ 1 & -2 & -1 & -1 & 2 & 4 \\ 2 & -1 & 2 & 1 & -3 & -8 \end{array} \right| \left| \begin{array}{cc} 2 & 4 \\ -1 & -2 \\ -1 & -2 \\ 2 & 6 \end{array} \right| \left| \begin{array}{cc} 2 & 6 \\ -1 & -3 \\ -1 & -1 \end{array} \right| \left| \begin{array}{cc} 2 & 5 \\ -1 & -1 \end{array} \right| \left| \begin{array}{cc} 2 & 4 \end{array} \right| \therefore -2v = 4 \dots v = -2$$

$$\left| \begin{array}{ccccc} -3 & -3 & -3 & 3 & -6 \\ 3 & 3 & 3 & -1 & 2 \\ -5 & -3 & -1 & -5 & 8 \\ 3 & -5 & 1 & 1 & -4 \end{array} \right| \left| \begin{array}{cc} 3 & 0 \\ -1 & 0 \\ -5 & -2 \end{array} \right| \left| \begin{array}{cc} 3 & 0 \\ -1 & -2 \end{array} \right| \left| \begin{array}{cc} 3 & 3 \end{array} \right| \therefore 3u = 3 \dots u = 1$$

$$\left| \begin{array}{cccc} 0 & 0 & 6 & 0 \\ 6 & -6 & 8 & -2 \\ -17 & 8 & -4 & 6 \end{array} \right| \left| \begin{array}{cc} 6 & 0 \\ 8 & -2 \end{array} \right| \left| \begin{array}{cc} 6 & 6 \end{array} \right| \therefore -6z = 6 \dots z = -1$$

$$\left| \begin{array}{ccc} 0 & 12 & 12 \\ 18 & 40 & -8 \end{array} \right| \left| \begin{array}{cc} 12 & 12 \end{array} \right| \therefore 12y = 12 \dots y = 1$$

$$\left| \begin{array}{cc} 36 & -72 \end{array} \right| \therefore -36x = -72 \dots x = 2$$

$$\begin{array}{rcccc}
 - & & + & & - & & + \\
 5x & + & 2y & - & 3z & +3 & = & 0 \\
 3x & - & y & - & 2z & +7 & = & 0 \\
 2x & + & 3y & + & z & -12 & = & 0
 \end{array}$$

$$\left| \begin{array}{cccc} 5 & 2 & -3 & 3 \\ 3 & -1 & -2 & 7 \\ 2 & 3 & 1 & -12 \end{array} \right| \left| \begin{array}{cc} -3 & 8 \\ -2 & 10 \end{array} \right| \left| \begin{array}{cc} -3 & 12 \end{array} \right| \therefore 3z = 12 \dots z = 4$$

$$\left| \begin{array}{ccc} -11 & -7 & -15 \\ 11 & 5 & 17 \end{array} \right| \left| \begin{array}{cc} -7 & -14 \end{array} \right| \therefore -7y = -14 \dots y = 2$$

$$\left| \begin{array}{cc} -22 & 22 \end{array} \right| \therefore 22x = 22 \dots x = 1$$

Appendix V.

Solution of the Problem "Given an algebraic function of 2 or more terms; to construct a square Block, whose Elements are all monomial, and whose Determinant vanishes simultaneously with the given function."

In what follows we shall use the word 'complemental' in a somewhat extended sense: its definition may be given as follows: "If, in a Block, any rows and any columns be selected: the Block formed of their common Elements, and the Block formed of the Elements common to the other rows and columns, are said to be complemental to each other." The definition previously given (CH. II. DEF. VII.) is evidently a particular case of this.

We have now to prove the following Theorem: "If, in a square Block, any rows and any columns be selected; and if the Block formed of their common Elements be multiplied throughout by any quantity, and the complemental Block divided throughout by the same quantity: the Determinant of the new Block vanishes simultaneously with that of the first."

Call the degree of the first Block 'n', its Determinant 'D', the number of selected rows 'p', of columns 'q', and the quantity used for the processes of multiplication and division 'v'.

First, let the selected p rows be multiplied throughout by v; then the Determinant of the new Block, so formed, = $D \cdot v^p$. (CH. II. AX. II.)

Next, let the $\overline{n - q}$ columns, which were not selected, be divided throughout by v; then the Determinant of the new Block, so formed, = $D \cdot v^{p+q-n}$; and therefore it vanishes simultaneously with D.

But, by the first process, the selected Block was multiplied throughout by v, as were also all the Elements common to the p selected rows and the $\overline{n - q}$ columns which were not selected; and, by the second process, these latter Elements were again divided by v, as was also the Block complemental to the one selected.

Thus, by the two processes, the selected Block was multiplied throughout, and the complemental Block divided throughout, by v.

Hence this Theorem has been proved true.

Now in the square Block $\begin{Bmatrix} 1 \{ 1 & 1 \{ 2 & 1 \{ 3 \\ 2 \{ 1 & 2 \{ 2 & 2 \{ 3 \\ 3 \{ 1 & 3 \{ 2 & 3 \{ 3 \end{Bmatrix}$, let each of the Elements $2 \{ 2$, $3 \{ 3$, be divided, and its complemental Minor multiplied, by the Element itself. We thus obtain (neglecting exterior factors, which do not affect its evanescence)

the Block $\begin{Bmatrix} 1 \{ 1. 2 \{ 2. 3 \{ 3, & 1 \{ 2. 3 \{ 3, & 1 \{ 3. 2 \{ 2 \\ 2 \{ 1. 3 \{ 3, & 3 \{ 3, & 2 \{ 3 \\ 2 \{ 3. 3 \{ 1, & 3 \{ 2, & 2 \{ 2 \end{Bmatrix}$. Then multiplying the 2nd row by $1 \{ 2$, the 3rd row by $1 \{ 3$, the 2nd columns by $2 \{ 1$, and the 3rd by $3 \{ 1$, we

obtain $\left\{ \begin{array}{l} 1 \left\{ \begin{array}{l} 1.2 \\ 2.3 \end{array} \right\} 3, \quad 1 \left\{ \begin{array}{l} 2.2 \\ 1.3 \end{array} \right\} 3, \quad 1 \left\{ \begin{array}{l} 3.2 \\ 2.3 \end{array} \right\} 1 \\ 1 \left\{ \begin{array}{l} 2.2 \\ 1.3 \end{array} \right\} 3, \quad 1 \left\{ \begin{array}{l} 2.2 \\ 3.3 \end{array} \right\} 1 \\ 1 \left\{ \begin{array}{l} 3.2 \\ 2.3 \end{array} \right\} 1, \quad 1 \left\{ \begin{array}{l} 3.2 \\ 1.3 \end{array} \right\} 2, \quad 1 \left\{ \begin{array}{l} 3.2 \\ 2.3 \end{array} \right\} 1 \end{array} \right\}$, every Element of which is a Constituent of the first Block.

Now let it be given that A, B, C, D, E, F are the 6 Constituents of a certain square Block of 9 terms: then we have the 6 Equations

$$\begin{aligned} A &= 1 \left\{ \begin{array}{l} 1.2 \\ 2.3 \end{array} \right\} 3, & -D &= 1 \left\{ \begin{array}{l} 1.2 \\ 3.3 \end{array} \right\} 2, \\ B &= 1 \left\{ \begin{array}{l} 2.2 \\ 3.3 \end{array} \right\} 1, & -E &= 1 \left\{ \begin{array}{l} 2.2 \\ 1.3 \end{array} \right\} 3, \\ C &= 1 \left\{ \begin{array}{l} 3.2 \\ 1.3 \end{array} \right\} 2, & -F &= 1 \left\{ \begin{array}{l} 3.2 \\ 2.3 \end{array} \right\} 1 \end{aligned}$$

then, substituting in the Block just found, we obtain $\left\{ \begin{array}{ccc} A, & -E, & -F \\ -E, & -E, & B \\ -F, & C, & -F \end{array} \right\}$, or

multiplying the 1st row and 1st column by -1 , $\left\{ \begin{array}{ccc} A, & E, & F \\ E, & -E, & B \\ F, & C, & -F \end{array} \right\}$.

The Determinant of this Block = $EF \cdot \left\{ A - \frac{ABC}{EF} + E + B + F + C \right\}$, and this, since $-\frac{ABC}{EF} = D$, becomes $EF \cdot \{A + B + C + D + E + F\}$, and so is evanescent simultaneously with the unknown Block. And this condition, $ABC = -DEF$, is the only one which the 6 given quantities must fulfil, that the problem may be possible.

If the given Algebraical function contain 6 terms, we have only to apply this test, by grouping them into sets of 3, and if they satisfy the test, the Determinant can be written out at once: this may be done by multiplying together the 6 terms, taking the square root of their product, and finding, if possible, a set of three terms, whose product is equal to that square root, and whose sign is contrary to that of the product of the other 3 terms. Let us take as an example

$$5ab^2 + 3a^2 - 3abc - 2ab + 10a - 4c;$$

here the continued product is 2. 2. 4. 3. 3. 5. $5a^6b^4c^2$, whose square root is $60a^3b^2c$, and this may be made up of the 3 terms $5ab^2, 3a^2, -4c$; and as the sign of this product is $-$, and the sign of the product of the other 3 terms is $+$, the problem is possible. Hence, calling these 3 terms ' A, B, C ,' and the terms $10a, -2ab, 'E, F'$, we obtain the Block

$$\left\{ \begin{array}{ccc} 5ab^2, & 10a, & -2ab \\ 10a, & 10a, & 3a^2 \\ -2ab, & -4c, & 2ab \end{array} \right\},$$

which, if we divide rows by common factors, reduces to $\left\{ \begin{array}{ccc} 5b^2, & 10, & -2b \\ 10, & -10, & 3a \\ -ab, & -2c, & ab \end{array} \right\}$,

that is, dividing the 2nd column, to $\left\{ \begin{array}{ccc} 5b^2, & 5, & -2b \\ 10, & -5, & 3a \\ -ab, & -c, & ab \end{array} \right\}$, that is, multiplying the central term, and dividing its complementary Minor, by ' b ,' and also multiplying

the last term in the 3rd row, and dividing its complementary Minor, by '5,' and changing the signs of the last term in the 1st row and of its complementary Minor

$$\begin{pmatrix} b, & 1, & 2 \\ -2, & b, & 3a \\ a, & c, & 5a \end{pmatrix}.$$

If the given function contain 5 terms only, it will be necessary to break up one of them into 2 portions. In this case we ought to find 4 terms whose continuous product is such that the Algebraical portion of it is a square, and form them into 2 groups, each of which furnishes the square root of this product. We then break the 5th term into 2 portions, assigning one to each group, and in doing so we have only to attend to the numerical coefficients. As an example of this let us take

$$5a^4b - 4a^3c + 3a^2bc + 2ac^3 + 11b^2;$$

here the continued product of the first 4 terms is $8.3.5.a^4b^2c^4$, and the square root of the Algebraical portion of this is a^2bc^2 , and this is furnished by the product of $5a^4b$ and $2ac^2$: hence, arranging the terms in 2 groups, $5a^4b.2ac^2$ and $-4a^3c.3a^2bc$, we find by inspection that the last term must be broken into the 2 portions $6b^2$ and $5b^2$. Thus the two products, taken 3 and 3, become $5a^4b.2ac^2.6b^2$ and $-4a^3c.3a^2bc.5b^2$. Thus the required test is fulfilled and the

Block may be written $\begin{pmatrix} 5a^4b, & -4a^3c, & 3a^2bc \\ -4a^3c, & 4a^3c, & 2ac^2 \\ 3a^2bc, & 6b^2, & -3a^2bc \end{pmatrix}$, which, dividing rows by

common factors, becomes $\begin{pmatrix} 5a^2b, & -4ac, & 3bc \\ -2a^2, & 2a^2, & c \\ a^2c, & 2b, & -a^2c \end{pmatrix}$; and this again, dividing

columns, becomes $\begin{pmatrix} 5b, & -2ac, & 3b \\ -2, & a^2, & 1 \\ c, & b, & -a^2 \end{pmatrix}$.

If the given function contain 4 terms only, we may proceed as in the case of 6, and append two equal terms with opposite signs: +1 and -1 are most convenient. For example, if the given function be

$$3a^2bc^2 - 4ab^4c - 6ac^3 + 8b^2;$$

the continued product is $4.2.8.3.3.a^4b^8c^4$, whose square root is $24.a^2b^4c^2$, and this may be made up by the 2 terms $3a^2bc^2$ and $8b^3$. Hence the 6 terms may be taken to be $3a^2bc^2, 8b^3, 1$, and $-4ab^4c, -6ac, -1$. Thus the test is fulfilled,

and the Block may be written $\begin{pmatrix} 3a^2bc^2, & -6ac, & -1 \\ -6ac, & 6ac, & 8b^3 \\ -1, & 1, & 1 \end{pmatrix}$, that is. multiplying

the 3rd term of the 3rd row, and dividing its complementary Minor, by $3ac$, and also dividing the 2nd row by 2, and changing the signs of the 1st row and 1st

column, $\begin{pmatrix} abc, & 2, & 1 \\ 1, & 1, & 4b^3 \\ 1, & 1, & 3ac \end{pmatrix}$.

A Block of 16 terms may be constructed by a process similar to that employed for 9 terms.

Thus, in the Block $\left\{ \begin{array}{cccc} 1 \{ 1 \ 1 \ 2 \ 1 \ 3 \ 1 \ 4 \} \\ 2 \{ 1 \ 2 \ 2 \ 2 \ 3 \ 2 \ 4 \} \\ 3 \{ 1 \ 3 \ 2 \ 3 \ 3 \ 3 \ 4 \} \\ 4 \{ 1 \ 4 \ 2 \ 4 \ 3 \ 4 \ 4 \} \end{array} \right\}$, let each of the Elements $2 \{ 2, 3 \ 3, 4 \} 4$,

be divided, and its complementary Minor multiplied, by the Element itself. We thus obtain the Block

$$\left\{ \begin{array}{cccc} 1 \{ 1.2 \ 2.3 \ 3.4 \} 4, & 1 \{ 2.3 \ 3.4 \} 4, & 1 \{ 3.2 \ 2.4 \} 4, & 1 \{ 4.2 \ 2.3 \} 3 \\ 2 \{ 1.3 \ 3.4 \} 4, & 3 \{ 3.4 \} 4, & 2 \{ 3.4 \} 4, & 2 \{ 4.3 \} 3 \\ 2 \{ 2.3 \ 1.4 \} 4, & 3 \{ 2.4 \} 4, & 2 \{ 2.4 \} 4, & 2 \{ 2.3 \} 4 \\ 2 \{ 2.3 \ 3.4 \} 1, & 3 \{ 3.4 \} 2, & 2 \{ 2.4 \} 3, & 2 \{ 2.3 \} 3 \end{array} \right\}.$$

Then, multiplying the 2nd row by $1 \{ 2$, the 3rd by $1 \{ 3$, the 4th by $1 \{ 4$, the 2nd column by $2 \{ 1$, the 3rd by $3 \{ 1$, and the 4th by $4 \{ 1$, we obtain the Block

$$\left\{ \begin{array}{cccc} 1 \{ 1.2 \ 2.3 \ 3.4 \} 4, & 1 \{ 2.2 \ 1.3 \ 3.4 \} 4, & 1 \{ 3.2 \ 2.3 \ 1.4 \} 4, & 1 \{ 4.2 \ 2.3 \ 3.4 \} 1 \\ 1 \{ 2.2 \ 1.3 \ 3.4 \} 4, & 1 \{ 2.2 \ 1.3 \ 3.4 \} 4, & 1 \{ 2.2 \ 3.3 \ 1.4 \} 4, & 1 \{ 2.2 \ 4.3 \ 3.4 \} 1 \\ 1 \{ 3.2 \ 2.3 \ 1.4 \} 4, & 1 \{ 3.2 \ 1.3 \ 2.4 \} 4, & 1 \{ 3.2 \ 2.3 \ 1.4 \} 4, & 1 \{ 3.2 \ 2.3 \ 4.4 \} 1 \\ 1 \{ 4.2 \ 2.3 \ 3.4 \} 1, & 1 \{ 4.2 \ 1.3 \ 3.4 \} 2, & 1 \{ 4.2 \ 2.3 \ 1.4 \} 3, & 1 \{ 4.2 \ 2.3 \ 3.4 \} 1 \end{array} \right\},$$

every Element of which is a Constituent of the 1st Block.

Now let it be given that A, B, C , &c. are the 24 Constituents of a certain square Block of 16 terms: then we have the 24 Equations

$$\left. \begin{array}{l} A = 1 \{ 1.2 \ 2.3 \ 3.4 \} 4 \\ B = 1 \{ 2.2 \ 1.3 \ 4.4 \} 3 \\ C = 1 \{ 3.2 \ 4.3 \ 1.4 \} 2 \\ D = 1 \{ 4.2 \ 3.3 \ 2.4 \} 1 \\ N = 1 \{ 1.2 \ 2.3 \ 4.4 \} 3 \\ P = 1 \{ 2.2 \ 1.3 \ 3.4 \} 4 \\ -Q = 1 \{ 3.2 \ 4.3 \ 2.4 \} 1 \\ -R = 1 \{ 4.2 \ 3.3 \ 1.4 \} 2 \end{array} \right\}, \quad \left. \begin{array}{l} E = 1 \{ 1.2 \ 3.3 \ 4.4 \} 2 \\ F = 1 \{ 2.2 \ 4.3 \ 3.4 \} 1 \\ G = 1 \{ 3.2 \ 1.3 \ 2.4 \} 4 \\ H = 1 \{ 4.2 \ 2.3 \ 1.4 \} 3 \\ -S = 1 \{ 1.2 \ 4.3 \ 3.4 \} 2 \\ -T = 1 \{ 2.2 \ 3.3 \ 4.4 \} 1 \\ -U = 1 \{ 3.2 \ 2.3 \ 1.4 \} 4 \\ -V = 1 \{ 4.2 \ 1.3 \ 2.4 \} 3 \end{array} \right\}, \quad \left. \begin{array}{l} J = 1 \{ 1.2 \ 4.3 \ 2.4 \} 3 \\ K = 1 \{ 2.2 \ 3.3 \ 1.4 \} 4 \\ L = 1 \{ 3.2 \ 2.3 \ 4.4 \} 1 \\ M = 1 \{ 4.2 \ 1.3 \ 3.4 \} 2 \\ -W = 1 \{ 1.2 \ 3.3 \ 2.4 \} 4 \\ -X = 1 \{ 2.2 \ 4.3 \ 1.4 \} 3 \\ -V = 1 \{ 3.2 \ 1.3 \ 4.4 \} 2 \\ -Z = 1 \{ 4.2 \ 2.3 \ 3.4 \} 1 \end{array} \right\},$$

thus, substituting in the Block just found, we obtain $\left\{ \begin{array}{cccc} A, & -P, & -U, & -Z \\ -P, & -P, & K, & F \\ -U, & G, & -U, & L \\ -Z, & M, & H, & Z \end{array} \right\}$,

which, if we change the signs of the 1st row and 1st column, becomes

$$\begin{Bmatrix} A, & P, & U, & Z \\ P, & -P, & K, & F \\ U, & G, & -U, & L \\ Z, & M, & H, & -Z \end{Bmatrix}.$$

This contains 10 only of the given 24 quantities, so that, in order to prove that its Determinant contains $(A + B + \&c. + Z)$ as a factor, we must have 14 independent relations among the given quantities.

The 10 quantities which enter into the above Block are

$$A, F, G, H, K, L, M, P, U, Z;$$

and the following Equations give the remaining 14 quantities in terms of these:—

$$\left. \begin{array}{l} B = -\frac{HLP}{UZ} \\ C = -\frac{FMU}{PZ} \\ D = -\frac{GKZ}{PU} \end{array} \right\}, \left. \begin{array}{l} E = -\frac{AKLM}{PUZ} \\ J = -\frac{AFGH}{PUZ} \end{array} \right\}, \left. \begin{array}{l} N = -\frac{AHL}{UZ} \\ Q = -\frac{FG}{P} \\ R = -\frac{KM}{P} \end{array} \right\}, \left. \begin{array}{l} S = -\frac{AFM}{PZ} \\ T = -\frac{KL}{U} \\ V = -\frac{GH}{U} \end{array} \right\}, \left. \begin{array}{l} W = -\frac{AGK}{PU} \\ X = -\frac{FH}{Z} \\ Y = -\frac{LM}{Z} \end{array} \right\}.$$

9.5 The Fifth Book of Euclid Treated Algebraically

Source: The Fifth Book of Euclid Treated Algebraically

Currently only preface

So Far as it Relates to Commensurable Magnitudes, with Notes

Preface

The theory of Incommensurable Magnitudes, without which the whole subject of Geometrical Proportion is so incomplete as to be, from a logical point of view, utterly valueless, is nevertheless omitted, as far as possible, from the following treatise.

My reasons for this omission are two: first, that I believe it to be much too abstruse a subject for the ordinary Pass Examination; secondly, that it is not required in it. The exemption is a most necessary one, though the effect of it is to reduce the Vth and VIth Books, in the form in which they are now learned and accepted in the Schools, to a logical absurdity.

Whether it would not be preferable to substitute for these Books an equivalent quantity of Algebra, perhaps as far as Permutations and Combinations, is a question I do not here enter on. To supply, in its shortest form, that knowledge of the subject which is at present required and accepted in the Schools, is my object in putting forth this treatise. I hope that it may not be long wanted.

9.6 Euclid, Book V.

Source: Euclid, Book V

Currently only preface and appendix

Proved Algebraically so far as it relates to Commensurable Magnitudes to which is prefixed a Summary of all the necessary algebraical operations.

Preface

The student is recommended to go through this treatise in the following order:—

First, to master the ‘Preliminary Algebra,’ and not to go further until he finds that, when covering up the right-hand column and setting himself any question in the left-hand column, he can at once *work out* (not merely supply from memory) the required answer.

Secondly, taking the Algebraical Enunciation which stands at the top of the right-hand column in each Proposition, to learn to supply the proof which follows it. To do this, he should cover the rest of the right-hand column, and try to work out the proof for himself, with the help of the directions in the left-hand column. As every step of the work has been already done in the ‘Preliminary Algebra,’ this ought to be possible without any reference to the right-hand column: but if any difficulty *should* occur, there will usually be found a marginal reference to the ‘Preliminary Algebra,’ and it will be better to turn back to the section referred to, and so refresh the memory, than to look at the right-hand column, which should only be uncovered, when the proof has been written out, as a test of the correctness of the work.

Thirdly, to practise himself in working out the same proofs, without the help of the directions in the left-hand column, from the Algebraical Enunciations only. These are given by themselves at p. 49.

Fourthly, taking the Enunciation printed in *small* type in each Proposition, and covering up all below it, to learn to express it algebraically, as given in the first sentence of the right-hand column.

Fifthly, taking the Enunciation printed in *large* type in each Proposition, and covering up all below it, to learn to repeat it with the addition of algebraical symbols for the magnitudes, as given in the small-type Enunciation.

Sixthly, to learn Euclid’s Definitions and Axioms, given at p. 53.

Appendix

Euclid’s Definition of Proportion is not used in the Fifth Book, when proved algebraically, since this method of Proof applies to commensurable Magnitudes only, for which a much simpler Definition is sufficient: but it is required for Prop. I of the Sixth Book, on which the rest of that Book depends, so that some explanation of it may fitly be given here.

The Student should pay particular attention to the word “*whatsoever*.” Four magnitudes are said to be Proportionals, not merely when “*any* equimultiples” fulfil certain conditions (in which case *one* successful instance would be enough to justify the use of the name, in spite of many unsuccessful instances being found), but when “*any whatsoever*” fulfil them (in which case *all* instances must

be successful to justify the use of the name, and a *single* unsuccessful instance would be enough to destroy our right to use it). To take an illustration from Chemistry, a drug might fairly be called “dangerous to life,” if *any* instance could be found of a person having died from swallowing it, but it could not be called “*certainly* fatal to life,” unless it could be shown that *any person whatsoever*, who swallowed it, must die in consequence; and a *single* proved case of a person having survived it would destroy our right to use the name.

In other words, before we have a right to call certain Magnitudes “Proportionals” in Euclid’s sense of the word, we must first have proved what is called in Logic “a Universal Proposition” (whose typical form is “All A are B”); that is, we must have proved that *all* equimultiples of these Magnitudes fulfil certain conditions.

Now a Universal Proposition may be proved by two totally distinct methods. One may be defined as “the enumeration of all instances,” the other as “the establishment of a general law.” Before explaining these phrases as applied to Euclid’s Definition, let us illustrate them by examples from another subject.

Suppose we wish to establish the Universal Proposition that “All English Queens who have reigned since the Conquest have had the letter ‘A’ in their names.” This may be proved true by enumerating all the names, and pointing out that *each* fulfils the condition stated. But, inasmuch as the circumstance is merely an *accident* as to each name, no “general law” can be shown to exist. In this case, then, we are restricted to the *first* method of proof.

Next, suppose the Proposition to be “All English Queens who have reigned since the Conquest have been of royal descent.” In this case we have a choice of methods: we may either enumerate all the names, giving the genealogy of each: or we may show that, by the principles of our Constitution, such royal descent is essential to a Queen. In many cases of this kind, it would be quite a matter for consideration, *which* method to employ: sometimes the one would be found the more convenient, sometimes the other.

Thirdly, suppose the Proposition to be “All English Queens, who have reigned since the Conquest, or who ever will reign, have had, or will have, weight.” In this case, since some of the instances referred to do not yet exist, so that no evidence, concerning them individually, can be given, we are restricted to the use of the *second* method: that is, we can only prove the Proposition by showing that all English Queens, past, present, and future, are necessarily human beings; and that human beings, by a law of Nature, have weight.

Now which of these two methods does Euclid mean us to employ, when he tells us, before we can use the name “Proportionals” of certain Magnitudes, to prove the Universal Proposition that “*all* equimultiples” fulfil certain conditions?

The number of equimultiples we may take of the magnitudes is infinite: hence “the enumeration of all instances” is *impossible* in this case, and the only method left us is “the establishment of a general law.”

To take the actual instance in which the Definition is used by Euclid—Prop. I of the Sixth Book. Euclid wishes to show that if two Triangles be of the same altitude, the two bases and the two Triangles constitute four “Proportionals.” To do this, out of the infinite number of *possible* equimultiples of the first and third, he chooses a single instance; and out of the infinite number of *possible* equimultiples of the second and fourth, he also chooses a single instance. He does not assume it to be enough for his purpose to show that, in this particular pair of instances, the test of “if greater, greater; if equal, equal; if less, less” is

fulfilled. The essence of his argument consists in showing that what is true in the particular instances chosen would *also*, from the nature of the case, be true in *every other* conceivable instance which could be taken.

This part of the proof depends on two theorems—first, Prop. XXXYII of the First Book, namely “Triangles on equal bases, and between the same parallels, are equal”; secondly, on an easy deduction from this (which is not explicitly stated by Euclid, and so is often overlooked), namely, “Triangles between the same parallels, but on unequal bases, are unequal, that which is on the greater base being the greater.” Both Prop. XXXVII and this deduction from it are clearly of *universal* applicability. Hence Euclid’s proof of the Universal Proposition, that “*all* equimultiples” fulfil the requisite conditions, is complete, and his conclusion, that the original four Magnitudes are “Proportionals,” is legitimate.

9.7 An Inconceivable Conversation

Source: manuscript written 1874 (heavily edited, here only “final” variant)

Between S. and D. on Indivisibility of Time and Space

S. And thus your favourite paradox, my dear D., is finally disposed of, and Achilles & the Tortoise may walk off hand in hand. No argument of any sort can be maintained, which would prove him *not* to overtake it.

D. No *mathematical* argument, you mean; for, if you permit me a *classical* one, I will contend that the Tortoise was nothing but the “*testudo*” of the ancients, a machine of common use in sieges—that it was at that moment moving against the walls of Troy—and that the true reason why Achilles did not overtake it was simply that he was sulking in his tent & never went near it.

S. I beg to limit this discussion to *mathematical* argument.

D. Be it so. And the mathematical argument you dispose of, as I understand you, by the assertion that we find ourselves at last among Indivisible distances & Indivisible periods of time, & thus you propose to plunge us, however reluctant we may be to take the leap, into the dark abyss of the Inconceivable?

S. That is my solution of the paradox.

D. Granting, for argument’s sake, that the paradox is thus finally disposed of, let me ask you a question or two. These indivisible distances—are they equal, or unequal?

S. Am I bound to choose one or other of these categories?

D. I fear I can offer you no third alternative.

S. Well then, as I do not clearly see what you are aiming at, I will, for the present, say “unequal,” reserving to myself however the right of substituting “equal,” should I see reason to do so.

D. The privilege is an unusual one, but I will not object to your exercising it. Let them then be unequal. Now take two of these unequal distances: lay them side by side, so as to coincide at one end: will they coincide at the other end also?

S. Surely not.

D. There will therefore be a difference between them: and this difference, being homogenous with the things differing, will itself be a distance?

S. I cannot deny it.

D. Divisible, shall we say? Or indivisible?

S. (laughing) Indivisible, of course. You would not wish me to imagine a divisible distance less than an indivisible one?

D. You shall please yourself in that matter. Let me now add together these two lesser indivisible distances. Will their sum total be divisible or indivisible, think you?

S. (after a pause) It occurs to me that I would rather take the other horn of your dilemma, & say that these indivisible distances are all equal.

D. With all my heart. They shall now be all equal. And we will suppose that Achilles has just passed over one of these indivisible distances. What time would you say that he occupied in doing so?

S. An indivisible time, clearly.

D. But the Tortoise had previously passed over the same indivisible distance: how long do you suppose *he* took to do it?

S. As he travelled at only half the pace of Achilles, it is evident that he required *two* of our indivisible periods of time.

D. No doubt. But now tell me—at the end of the *first* of these indivisible periods of time, *where had the Tortoise got to?*

S. I will trouble you to pass the wine. I think I should like another half-glass of sherry.

Nov. 22, 1874.

9.8 Algebra (13)

Source: cyclostyled 1877

1. Define *Factor* and *Index*.
2. Multiply $\frac{2x}{3} - \frac{1}{2}$ by $\frac{x^2}{2} - \frac{x}{3} + \frac{1}{4}$.
3. Solve $ax - b = a + \frac{b^2x}{a}$.
4. What sum of money exceeds four-ninths of it by $4s.$, $9d$?
5. Resolve into factors $2a^5 - 2ab^2$.
6. Find G. C. M. of $a^3bc^2d^4$, $a^5c^3d^2$, $a^4b^3d^3$. Also of $x^2 - y^2 + ax + ay$, and $x^2 + y^2 + ax - ay - 2xy$.
7. Find L. C. M. of x^5y , x^3y^4 , a^2y^2 . Also of $(x-1)^2$, $x^2 - 1$, $(x+1)^3$, $x^3 + 1$.
8. Simplify $\frac{1}{x + \frac{1}{x - \frac{x}{x+1}}}$; and $\left\{\frac{1}{3} + \frac{2a}{3(1-a)}\right\} \times \left\{\frac{1}{4} - \frac{a}{2(1+a)}\right\}$.
9. Solve $3x + \frac{y}{2} = 7x - y = 13$.
10. A is twice as old as B, and 3 times as old as C. One year ago, B was twice as old as C. Find A's age.
11. Find $\left(\frac{1}{x^2} - \frac{3}{y^2}\right)^3$; and the square root of $\frac{a^2}{b^4} + \frac{b^4}{a^2} - 2$.
12. Simplify $\frac{x^{1-m}}{x^{1-n}}$; $\sqrt[3]{x^{9a^3} \cdot a^3}$; and $\frac{x^{-1}}{y^0}$.

Solutions:

1. In $a \times b$, a and b are the factors, in a^b , b is the index.
2. $\frac{x^3}{3} - \frac{17x^2}{36} + \frac{x}{3} - \frac{1}{8}$
3. $x = \frac{a}{a-b}$
4. approximately $8s\ 6\frac{1}{2}d$
5. $2 \times a \times (a^2 + b) \times (a^2 - b)$
6. a^3d^2 ; $x - y + a$
7. $a^2x^5y^4$; $x^7 - 2x^5 + x^4 + x^3 - 2x^2 + 1$
8. $\frac{x^2}{x^3+x+1}$; $\frac{1}{12}$
9. $x = 3$, $y = 8$
10. 6
11. $\frac{1}{x^6} - \frac{9}{x^4y^2} + \frac{27}{x^2y^4} - \frac{27}{y^6}$; $\left|\frac{a}{b^2} - \frac{b^2}{a}\right|$
12. x^{n-m} ; $x^{3a^3} \cdot a$; $\frac{1}{x}$

9.9 The Cats and Rats Again

Source: The Monthly Packet, February 1880

This is an answer to an earlier “Spider Question”, which Carroll obviously saw and wanted to comment on. This probably led to the “Knots” published in the following years. By the way, a similar comment is made by Sam Loyd in his *Cyclopedia of 5000 Puzzles, Tricks and Conundrums with Answers*

(<https://archive.org/details/CyclopediaOfPuzzlesLoyd/page/n120/mode/1up>).

Since he obviously knew well the work of Lewis Carroll (including lesser known texts), his comment might be based on this text.

‘If 6 cats kill 6 rats in 6 minutes, how many will be needed to kill 100 rats in 50 minutes?’

This is a good example of a phenomenon that often occurs in working problems in double proportion; the answer looks all right at first, but, when we come to test it, we find that, owing to peculiar circumstances in the case, the solution is either impossible or else indefinite, and needing further data. The ‘peculiar circumstance’ here is that fractional cats or rats are excluded from consideration, and in consequence of this the solution is, as we shall see, indefinite.

The solution, by the ordinary rules of Double Proportion, is as follows:—

$$\left. \begin{array}{l} 6 \text{ rats} : 100 \text{ rats} \\ 50 \text{ min.} : 6 \text{ min.} \end{array} \right\} :: 6 \text{ cats} : \text{ans.}$$

$$\therefore \text{ans.} = \frac{100 \cdot 6 \cdot 6}{6 \cdot 50} = 12$$

But when we come to trace the history of this sanguinary scene through all its horrid details, we find that at the end of 48 minutes 96 rats are dead, and that there remain 4 live rats and 2 minutes to kill them in: the question is, can this be done?

Now there are at least *four* different ways in which the original feat, of 6 cats killing 6 rats in 6 minutes, may be achieved. For the sake of clearness let us tabulate them:—

- A. All 6 cats are needed to kill a rat; and this they do in one minute, the other rats standing meekly by, waiting for their turn.
- B. 3 cats are needed to kill a rat, and they do it in 2 minutes.
- C. 2 cats are needed, and do it in 3 minutes.
- D. Each cat kills a rat all by itself, and takes 6 minutes to do it.

In cases A and B it is clear that the 12 cats (who are assumed to come quite fresh from their 48 minutes of slaughter) can finish the affair in the required time; but, in case C, it can only be done by supposing that 2 cats could kill two-thirds of a rat in 2 minutes; and in case D, by supposing that a cat could kill one-third of a rat in 2 minutes. Neither supposition is warranted by the data; nor could the fractional rats (even if endowed with equal vitality) be fairly assigned to the different cats. For my part, if I were a cat in case D, and did not find my claws in good working order, I should certainly prefer to have my one-third-rat cut off from the tail end.

In cases C and D, then, it is clear that we must provide extra cat-power. In case C *less* than 2 extra cats would be of no use. If 2 were supplied, and if they began killing their 4 rats at the beginning of the time, they would finish them

in 12 minutes, and have 36 minutes to spare, during which they might weep, like Alexander, because there were not 12 more rats to kill. In case D, one extra cat would suffice; it would kill its 4 rats in 24 minutes, and have 24 minutes to spare, during which it could have killed another 4. But in neither case could any use be made of the last 2 minutes, except to half-kill rats—a barbarity we need not take into consideration.

To sum up our results. If the 6 cats kill the 6 rats by method A or B, the answer is '12;' if by method C, '14;' if by method D, '13.'

This, then, is an instance of a solution made 'indefinite' by the circumstances of the case. If an instance of the 'impossible' be desired, take the following:—'If a cat can kill a rat in a minute, how many would be needed to kill it in the thousandth part of a second?' The *mathematical* answer, of course, is '60,000,' and no doubt less than this would *not* suffice; but would 60,000 suffice? I doubt it very much. I fancy that at least 50,000 of the cats would never even see the rat, or have any idea of what was going on.

Or take this:—'If a cat can kill a rat in a minute, how long would it be killing 60,000 rats?' Ah, how long, indeed! My privat opinion is, that the rats would kill the cat.

Lewis Carroll.

9.10 A Tangled Tale

Source: The Monthly Packet (April 1880–May 1885, originally as “Romantic Problems, A Tangled Tale”, with minor differences as noted, without images, all Knots and solutions are signed “Lewis Carroll”, this is omitted here unless some more text appears); A Tangled Tale

Knot I. Excelsior

Source: The Monthly Packet, April 1880 (with minor differences as noted, without image); A Tangled Tale

“Goblin, lead them up and down.”

Quoted from *A Midsummer Night's Dream* by William Shakespeare

The ruddy glow of sunset was already fading into the sombre shadows of night, when two travellers might have been observed swiftly—at a pace of six miles in the hour—descending the rugged side of a mountain; the younger bounding from crag to crag with the agility of a fawn, while his companion, whose aged limbs seemed ill at ease in the heavy chain armour habitually worn by tourists in that `district`¹, toiled on painfully at his side.

As is always the case `under`² such circumstances, the younger knight was the first to break the silence.

“A goodly pace, I trow!” he exclaimed. “We sped not thus in the ascent!”

“Goodly, indeed!” the other echoed with a groan. “We clomb it but at three miles in the hour.”

“And on the dead level our pace is——?” the younger suggested; for he was weak in statistics, and left all such details to his aged `companion`³.

“Four miles in the hour,” the other wearily replied. “Not an ounce more,” he added, with that love of metaphor so common in old age, “and not a farthing less!”

“’Twas three hours past high noon when we left our hostelry,” the young man said, musingly. “We shall scarce be back by supper-time. Perchance mine host will roundly deny us all food!”

“He will chide our tardy return,” was the grave reply, “and such a rebuke will be meet.”

“A brave conceit!” cried the other, with a merry laugh. “And should we bid him bring us yet another course, I trow his answer will be tart!”

“We shall but get our deserts,” sighed the elder knight, who had never seen a joke in his life, and was somewhat displeased at his companion’s untimely levity. “’Twill be nine of the clock,” he added in an undertone, “by the time we regain our hostelry. Full many a mile shall we have plodded this day!”

“How many? How many?” cried the eager youth, ever athirst for knowledge.

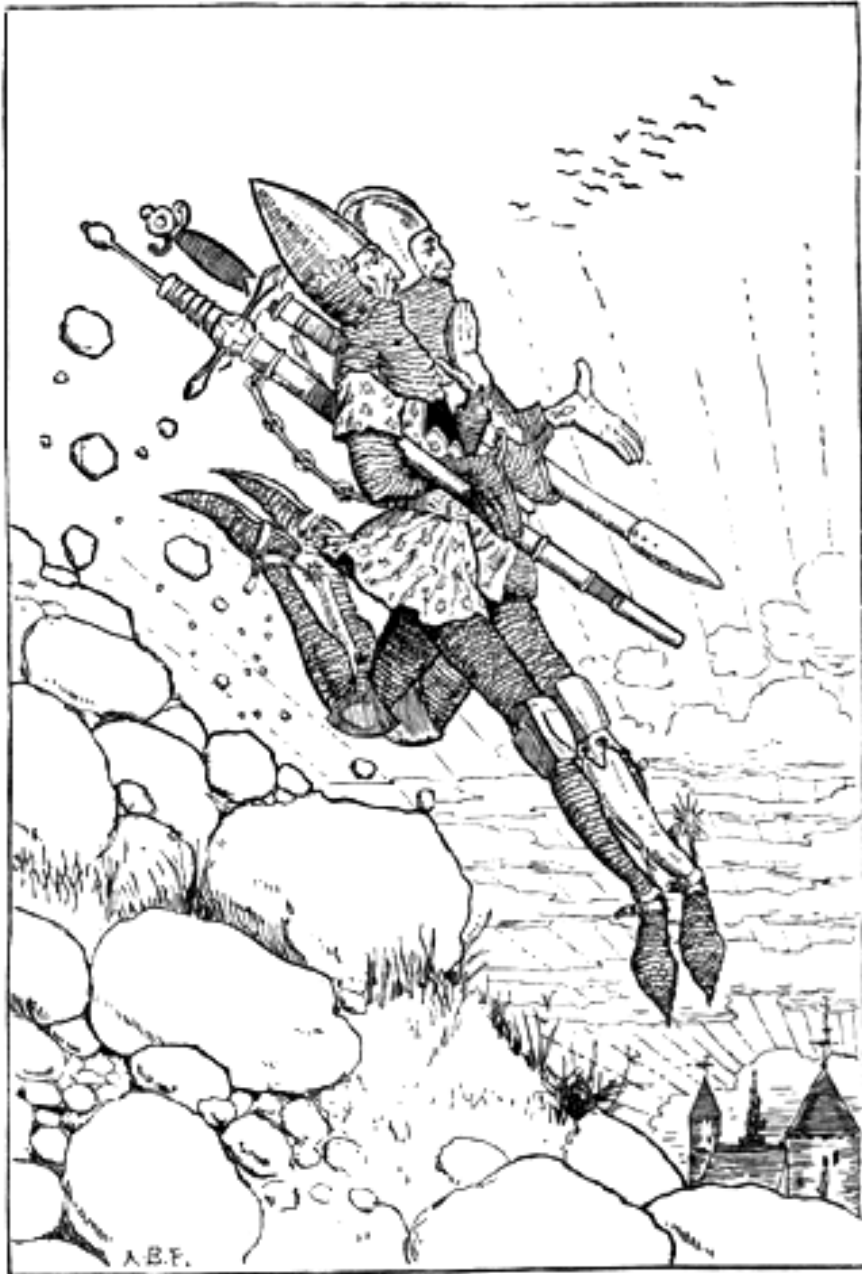
The old man was silent.

“Tell me,” he answered, after a moment’s thought, “what time it was when we stood together on yonder peak. Not exact to the minute!” he added hastily,

¹period

²in

³friend



“At a pace of six miles in the hour.”
(Frontispiece)

reading a protest in the young man's face. "An' thy guess be within one poor half-hour of the mark, 'tis all I ask of thy mother's son! Then will I tell thee, true to the last inch, how far we shall have trudged betwixt three and nine of the clock."

A groan was the young man's only reply; while his convulsed features and the deep wrinkles that chased each other across his manly brow, revealed the abyss of arithmetical agony into which one chance question had plunged him.⁷⁴

Knot II. Eligible Apartments

Source: The Monthly Packet, April 1881 (as "Knot V. Eligible Apartments", with minor differences as noted, without image); A Tangled Tale

*"Straight down the crooked lane,
And all round the square."*

Quoted from *A Plain
Direction* by Thomas
Hood

"Let's ask Balbus about it," said Hugh.

"All right," said Lambert.

"*He* can guess it," said Hugh.

"Rather," said Lambert.

No more words were needed: the two brothers understood each other perfectly.

Balbus was waiting for them at the hotel: the journey down had tired him, he said: so his two pupils had been the round of the place, in search of lodgings, without the old tutor who had been their inseparable companion from their childhood. They had named him after the hero of their Latin exercise-book, which overflowed with anecdotes of that versatile genius—anecdotes whose vagueness in detail was more than compensated by their sensational brilliance. "Balbus has overcome all his enemies" had been marked by their tutor, in the margin of the book, "Successful Bravery." In this way he had tried to extract a moral from every anecdote about Balbus—sometimes one of warning, as in "Balbus had borrowed a healthy dragon," against which he had written "Rashness in Speculation"—sometimes of encouragement, as in the words "Influence of Sympathy in United Action," which stood opposite to the anecdote "Balbus was assisting his mother-in-law to convince the dragon"—and sometimes it dwindled down to a single word, such as "Prudence," which was all he could extract from the touching record that "Balbus, having scorched the tail of the dragon, went away." His pupils liked the short morals best, as it left them more room for marginal illustrations, and in this instance they required all the space they could get to exhibit the rapidity of the hero's departure.

Their report of the state of things was discouraging. That most fashionable of watering-places, Little Mendip, was "chockfull" (as the boys expressed it) from end to end. But in one Square they had seen no less than four cards, in different houses, all announcing in flaming capitals "ELIGIBLE APARTMENTS." "So there's plenty of choice, after all, you see"⁷⁵, said spokesman Hugh in conclusion.

⁴In the *Monthly Packet* this is followed by "Lewis Carroll. Answers are invited. The right one will be inserted after the Spider answers."

⁵(missing in the *Monthly Packet*)



“Balbus was assisting his mother-in-law to convince the dragon.”

“That doesn’t follow from the data,” said Balbus, as he rose from the easy chair, where he had been dozing over *The Little Mendip Gazette*. “They may be all single rooms. However, we may as well see them. I shall be glad to stretch my legs a bit.”

An unprejudiced bystander might have objected that the operation was needless, and that this long, lank creature would have been all the better with even shorter legs: but no such thought occurred to his loving pupils. One on each side, they did their best to keep up with his gigantic strides, while Hugh repeated the sentence in their father’s letter, just received from abroad, over which he and Lambert had been puzzling. “He says a friend of his, the Governor of—*what* was that name again, Lambert?” (“Kgovjni,” said Lambert.) “Well, yes. The Governor of—*what-you-may-call-it*—wants to give a very small dinner-party, and he means to ask his father’s brother-in-law, his brother’s father-in-law, his father-in-law’s brother, and his brother-in-law’s father: and we’re to guess how many guests there will be.”

There was an anxious pause. “*How* large did he say the pudding was to be?” Balbus said at last. “Take its cubical contents, $_divide$ ⁶ by the cubical contents of what each man can eat, and the quotient—”

“He didn’t say anything about pudding,” said Hugh, “—and here’s the Square,” as they turned a corner and came into sight of the “eligible apartments.”

“It *is* a Square!” was Balbus’ first cry of delight, as he gazed around him. “Beautiful! Beau-ti-ful! Equilateral! *And* rectangular!”

The boys looked round with less enthusiasm. “Number nine is the first with a card,” said prosaic Lambert; but Balbus would not so soon awake from his dream of beauty.

“See, boys!” he cried. “Twenty doors on a side! What symmetry! Each side divided into twenty-one equal parts! It’s delicious!”

“Shall I knock, or ring?” said Hugh, looking in some perplexity at a $_square$ ⁷ brass plate which bore the simple inscription “RING ALSO.”

“Both,” said Balbus. “That’s an Ellipsis, my boy. Did you never see an Ellipsis before?”

“I couldn’t hardly read it,” said Hugh, evasively. “It’s no good having an Ellipsis, if they don’t keep it clean.”

“Which there is *one* room, gentlemen,” said the smiling landlady. “And a sweet room too! As snug a little back-room—”

“We will see it,” said Balbus gloomily, as they followed her in. “I knew how it would be! One room in each house! No view, I suppose?”

“Which indeed there *is*, gentlemen!” the landlady indignantly protested, as she drew up the blind, and indicated the back garden.

“Cabbages, I perceive,” said Balbus. “Well, they’re green, at any rate.”

“Which the greens at the shops,” their hostess explained, “are by no means dependable upon. Here you has them on the premises, *and* of the best.”

“Does the window open?” was always Balbus’ first question in testing a lodging: and “Does the chimney smoke?” his second. Satisfied on all points, he secured the refusal of the room, and they moved on to Number Twenty-five.

This landlady was grave and stern. “I’ve nobbut one room left,” she told them: “and it gives on the back-gyardin.”

⁶and divide

⁷dingy

“But there are cabbages?” Balbus suggested⁸.

The landlady visibly relented. “There is, sir,” she said: “and good ones, though I say it as shouldn’t. We can’t rely on the shops for greens. So we grows them ourselves.”

“A singular advantage,” said Balbus: and, after the usual questions, they went⁹ on to Fifty-two.

“And I’d gladly accommodate you all, if I could,” was the greeting that met them. “We are but mortal,” (“Irrelevant!” muttered Balbus) “and I’ve let all my rooms but one.”

“Which one is a back-room, I perceive¹⁰,” said Balbus: “and looking out on—on cabbages, I presume¹¹?”

“Yes, indeed, sir!” said their hostess. “Whatever *other* folks may do, *we* grows our own. For the shops——”

“An excellent arrangement!” Balbus interrupted. “Then one can really depend on their being good. Does the window open?”

The usual questions were answered satisfactorily: but this time Hugh added one of his own invention—“Does the cat scratch?”

The landlady looked round suspiciously, as if to make sure the cat was not listening, “I will not deceive you, gentlemen,” she said. “It *do* scratch, but not without¹² you pulls its whiskers!”¹³ It’ll never do it,” she repeated slowly, with a visible effort to recall the exact words of some written agreement between herself and the cat, “without you pulls its whiskers!”

“Much may be excused in a cat so treated,” said Balbus, as they left the house and crossed to Number Seventy-three, leaving the landlady curtsying on the doorstep, and still murmuring to herself her parting words, as if they were a form of blessing, “——not without you pulls its whiskers!”

At Number Seventy-three they found only a small shy girl to show the house, who said “yes’m” in answer to all questions.

“The usual room,” said Balbus, as they marched in: “the usual back-garden, the usual cabbages. I suppose you can’t get them good at the shops?”

“Yes’m,” said the girl.

“Well, you may tell your mistress we will take the room, and that her plan of growing her own cabbages is simply *admirable!*”

“Yes’m,” said the girl, as she showed them out.

“One day-room and three bed-rooms,” said Balbus, as they returned to the hotel. “We will take as our day-room the one that gives us the least walking to do to get to it.”

“Must we walk from door to door, and count the steps?” said Lambert.

“No, no! Figure it out, my boys, figure it out!” Balbus gaily exclaimed, as he put pens, ink, and paper before his hapless pupils, and left the room.

“I say! It’ll be a job!” said Hugh.

“Rather!” said Lambert.¹⁴

⁸meekly suggested

⁹passed

¹⁰A back-room, I see

¹¹believe

¹²withouth’—she looked round once more, before adding, in a half-whisper, ‘not without

¹³paragraph ends here in the *Monthly Packet*

¹⁴In the *Monthly Packet* followed by the signature “Lewis Carroll” and:

P.S.—An answer to Knot IV. has been received, too late to be noticed with the others, from ALGERNON BRAY. He assumes that ‘each picture is to have three marks,’ which, if true, would

Knot III. Mad Mathesis

Source: The Monthly Packet, July 1880 (as “Knot II. Mad Mathesis”, with minor differences as noted); A Tangled Tale

“I waited for the train.”

Quoted from *Godiva*
by Alfred Lord
Tennyson

“Well, they call me so because I *am* a little mad, I suppose,” she said, good-humouredly, in answer to Clara’s cautiously-worded question as to how she came by so strange a nick-name. “You see, I never do what sane people¹⁵ are expected to do now-a-days¹⁶. I never wear long trains, (talking of trains, that’s the Charing Cross Metropolitan Station—I’ve something to tell you about *that*), and I never play lawn-tennis. I can’t cook an omelette. I can’t even set a broken limb! *There’s* an ignoramus for you!”

Clara was her niece, and full twenty years her junior; in fact, she was still attending a High School—an institution of which Mad Mathesis spoke with undisguised aversion. “Let a woman be meek and lowly!” she would say. “None of your High Schools for me!” But it was vacation-time just now, and Clara was her guest, and Mad Mathesis was showing her the sights of that Eighth Wonder of the world—London.

“The Charing Cross Metropolitan Station!” she resumed, waving her hand towards the entrance as if she were introducing her niece to a friend. “The Bayswater and Birmingham Extension is just completed, and the trains now run round and round continuously—skirting the border of Wales, just touching at York, and so round by the east coast back to London. The way the trains run is *most* peculiar. The westerly ones go round in two hours; the easterly ones take three; but they always manage to start two trains from here, opposite ways, punctually every quarter-of-an-hour.”

“They part to meet again,” said Clara, her eyes filling with tears at the romantic thought.

“No need to cry about it!” her aunt grimly remarked. “They don’t meet on the same line of rails, you know. Talking of meeting, an idea strikes me!” she added, changing the subject with her usual abruptness. “Let’s go opposite ways round, and see which can meet most trains. No need for a chaperon—ladies’ saloon, you know. You shall go whichever way you like, and we’ll have a bet about it!”

“I never make bets,” Clara said very gravely. “Our excellent preceptress has often warned us——”

“You’d be none the worse if you did!” Mad Mathesis interrupted. “In fact, you’d be the better, I’m certain!”

“Neither does our excellent preceptress approve of puns,” said Clara. “But we’ll have a match, if you like. Let me choose my train,” she added after a brief mental calculation, “and I’ll engage to meet exactly half as many again as you do.”

have justified his conclusion that the problem is ‘self-contradictory.’ But no such condition is laid down, True, Mad Mathesis says ‘I want you to fill them’ (the three columns) ‘with oughts and crosses.’ But she could not mean ‘fill them *full*,’ for *that* would require that *every* picture in the room should be marked, which was clearly not intended. L. C.

¹⁵ladies

¹⁶to do

“Not if you count fair,” Mad Mathesis bluntly interrupted. “Remember, we only count the trains we meet *on the way*. You mustn’t count the one that starts as you start, nor the one that arrives as you arrive.”

“That will only make the difference of *one* train¹⁷,” said Clara, as they turned and entered the station. “But I never travelled alone before. There’ll be no one to help me to alight. However, I don’t mind. Let’s have a match.”¹⁸

A ragged little boy overheard her remark, and came running after her.¹⁹ “Buy a box of cigar-lights, Miss!” he pleaded²⁰, pulling her²¹ shawl to attract her attention²². Clara²³ stopped to explain.

“I never smoke cigars,” she said in a meekly apologetic tone. “Our excellent preceptress—,” but Mad Mathesis impatiently hurried²⁴ her on, and the little boy was left gazing after her with round eyes of amazement.

The two ladies bought their tickets and moved slowly down the central platform, Mad Mathesis prattling on as usual—Clara silent, anxiously reconsidering the calculation on which she rested her hopes of winning the match.

“Mind where you go, dear!” cried her aunt, checking her just in time. “One step more, and you’d have been in that pail of cold water!”

“I know, I know,” Clara said, dreamily. “The pale, the cold, and the moony—”

“Take your places on the spring-boards!” shouted a porter.

“What are *they* for!” Clara asked in a terrified whisper.

“Merely to help us into the trains.” The elder lady spoke with the nonchalance of one quite used to the process. “Very few people can get into a carriage without help in less than three seconds, and the trains only stop for one second.” At this moment the whistle was heard, and two trains rushed into the station. A moment’s pause, and they were gone again; but in that brief interval several hundred passengers had been shot into them, each flying straight to his place with the accuracy of a Minie bullet—while an equal number were showered out upon the side-platforms.

Three hours had passed away, and the two friends met again on the Charing Cross platform, and eagerly compared notes. Then Clara turned away with a sigh. To young impulsive hearts, like hers, disappointment is always a bitter pill. Mad Mathesis followed her, full of kindly sympathy.

“Try again, my love!” she said, cheerily. “Let us vary the experiment. We will start as we did before, but not to begin counting till our trains meet. When we see each other, we will say ‘One!’ and so count on till we come here again.”

Clara brightened up. “I shall win *that*,” she exclaimed eagerly, “if I may choose my train²⁵!”

Another shriek of engine whistles, another upheaving of spring-boards, another living avalanche plunging into two trains as they flashed by: and the travellers were off again.

¹⁷make very little difference

¹⁸joined the stream hurrying into the station.

¹⁹(missing in the *Monthly Packet*)

²⁰pleaded a ragged little boy

²¹Clara’s

²²attention as she passed

²³Clara at once

²⁴dragged

²⁵go the same way round as I did last time

Each gazed eagerly from her carriage window, holding up²⁶ her handkerchief as a signal to her friend. A rush and a roar. Two trains shot past each other in a tunnel, and two travellers leaned back in their corners with a sigh—or rather with *two* sighs—of relief. “One!” Clara murmured to herself. “Won! It’s a word of good omen. *This* time, at any rate, the victory will be mine!”

But was it?²⁷

Knot IV. The Dead Reckoning

Source: The Monthly Packet, October 1880 (as “Knot III. The Dead Reckoning”, with minor differences as noted, without image); A Tangled Tale

“I did dream of money-bags to-night.”

Quoted from *The Merchant of Venice*
by William Shakespeare

Noonday on the open sea within a few degrees of the Equator is apt to be oppressively warm; and our two travellers were now airily clad in suits of dazzling white linen, having laid aside the chain-armor which they had found not only endurable in the cold mountain air they had lately been breathing, but a necessary precaution against the daggers of the banditti who infested the heights. Their holiday-trip was over, and they were now on their way home, in the monthly packet which plied between the two great ports of the island they had been exploring.

Along with their armor, the tourists had laid aside the antiquated speech it had pleased them to affect while in knightly disguise, and had returned to the ordinary style of two country gentlemen of the Twentieth Century.

Stretched on a pile of cushions, under the shade of a huge umbrella, they were lazily watching some native fishermen, who had come on board at the last landing-place, each carrying over his shoulder a small but heavy sack. A large weighing-machine, that had been used for cargo at the last port, stood on the deck; and round this the fishermen had gathered, and, with much unintelligible jabber, seemed to be weighing their sacks.

“More like sparrows in a tree than human talk, isn’t it?” the elder tourist remarked to his son, who smiled feebly, but would not exert himself so far as to speak. The old man tried another listener.

“What have they got in those sacks, Captain?” he inquired, as that great being passed them in his never ending parade to and fro on the deck.

The Captain paused in his march, and towered over the travellers—tall, grave, and serenely self-satisfied.

“Fishermen,” he explained, “are often passengers in My ship. These five are from Mhruxi—the place we last touched at—and that’s the way they carry their money. The money of this island is heavy, gentlemen, but it costs little, as you may guess. We buy it from them by weight—about five shillings a pound. I fancy a ten pound-note would buy all those sacks.”

By this time the old man had closed his eyes—in order, no doubt, to concentrate his thoughts on these interesting facts; but the Captain failed to realise his motive, and with a grunt resumed his monotonous march.

²⁶and waved

²⁷Followed by “Lewis Carroll. Note.—Answers to be sent in before July 30th.” in the *Monthly Packet*

Meanwhile the fishermen were getting so noisy over the weighing-machine that one of the sailors took the precaution of carrying off all the weights, leaving them to amuse themselves with such substitutes in the form of winch-handles, belaying-pins, &c., as they could find. This brought their excitement to a speedy end: they carefully hid their sacks in the folds of the jib that lay on the deck near the tourists, and strolled away.

When next the Captain's heavy footfall passed, the younger man roused²⁸ himself to speak.

"What did you call the place those fellows came from, Captain?" he asked.

"Mhruxi, sir."

"And the one we are bound for?"

The Captain took a long breath, plunged into the word, and came out of it nobly. "They call it Kgovjni, sir."

"K—I give it up!" the young man faintly said.

He stretched out his hand for a glass of iced water which the compassionate steward had brought him a minute ago, and had set down, unluckily, just outside the shadow of the umbrella. It was scalding hot, and he decided not to drink it. The effort of making this resolution, coming close on the fatiguing conversation he had just gone through, was too much for him: he sank back among the cushions in silence.

His father courteously tried to make amends for his *nonchalance*.

"Whereabouts are we now, Captain?" said he, "Have you any idea?"

The Captain cast a pitying look on the ignorant landsman. "I could tell you that, sir," he said, in a tone of lofty condescension, "to an inch!"

"You don't say so!" the old man remarked, in a tone of languid surprise.

"And mean so," persisted the Captain. "Why, what do you suppose would become of My ship, if I were to lose My Longitude and My Latitude? Could you make anything of My Dead Reckoning?"

"Nobody could, I'm sure!" the other heartily rejoined.

But he had overdone it.

"It's *perfectly* intelligible," the Captain said, in an offended tone, "to any one that understands such things." With these words²⁹ he moved away, and began giving orders to the men, who were preparing to hoist the jib.

Our tourists watched the operation with such interest that neither of them remembered the five money-bags, which in another moment, as the wind filled out the jib, were whirled overboard and fell heavily into the sea.

But the poor fishermen had not so easily forgotten their property. In a moment they had rushed to the spot, and stood uttering cries of fury, and pointing, now to the sea, and now to the sailors who had caused the disaster.

The old man explained it to the Captain.

"Let us make it up among us," he added in conclusion. "Ten pounds will do it, I think you said?"

But the Captain put aside the suggestion with a wave of the hand.

"No, sir!" he said, in his grandest manner. "You will excuse Me, I am sure; but these are My passengers. The accident has happened on board My ship, and under My orders. It is for Me to make compensation." He turned to the

²⁸it was the younger man who roused

²⁹And so saying



angry fishermen. “Come here, my men!” he said, in the Mhruxian dialect. “Tell me the weight of each sack. I saw you weighing them just now.”

Then ensued a perfect Babel of noise, as the five natives explained, all screaming together, how the sailors had carried off the weights, and they had done what they could with whatever came handy.

Two iron belaying-pins, three blocks, six holystones, four winch-handles, and a large hammer, were now carefully weighed, the Captain superintending and noting the results. But the matter did not seem to be settled, even then: an angry discussion followed, in which the sailors³⁰ and the five natives all joined: and at last the Captain approached our tourists with a disconcerted look, which he tried to conceal under a laugh.

“It’s an absurd difficulty,” he said. “Perhaps one of you gentlemen can suggest something. It seems they weighed the sacks two at a time!”

“If they didn’t have five separate weighings, of course you can’t value them separately,” the youth hastily decided.

“Let’s hear all about it,” was the old man’s more cautious remark.

“They *did* have five separate weighings,” the Captain said, “but—Well, it beats *me* entirely!” he added, in a sudden burst of candour. “Here’s the result. First and second sack weighed twelve pounds; second and third, thirteen and a half; third and fourth, eleven and a half; fourth and fifth, eight: and then they say they had only the large hammer left, and it took *three* sacks to weigh it down—that’s the first, third and fifth—and *they* weighed sixteen pounds. There, gentlemen! Did you ever hear anything like *that*?”

The old man³¹ muttered under his breath “If only my sister were here!” and looked helplessly at his son. His son looked at the five natives. The five natives looked at the Captain. The Captain looked at nobody: his eyes were cast down, and he seemed to be saying softly to himself “Contemplate one another, gentlemen, if such be your good pleasure. *I* contemplate *Myself*!”

Knot V. Oughts and Crosses

Source: The Monthly Packet, January 1881 (as “Knot IV. Oughts and Crosses”, with minor differences as noted); A Tangled Tale

“Look here, upon this picture, and on this.”

Quoted from *Hamlet*
by William
Shakespeare

“And what made you choose the first train, Goosey?” said Mad Mathesis, as they got into the cab. “Couldn’t you count better than *that*?”

“I took an extreme case,” was the tearful reply. “Our excellent preceptress always says ‘When in doubt, my dears, take an extreme case.’ And I *was* in doubt.”

“Does it always succeed?” her aunt enquired.

Clara sighed. “Not *always*,” she reluctantly admitted. “And I can’t make out why. One day she was telling the little girls—they make such a noise at tea, you know—‘The more noise you make, the less jam you will have, and *vice versa*.’ And I thought they wouldn’t know what ‘*vice versa*’ meant: so I explained it to them. I said ‘If you make an infinite noise, you’ll get no jam: and if you make

³⁰the Captain, the sailors

³¹older tourist

no noise, you'll get an infinite lot of jam.' But our excellent preceptress said that wasn't a good instance. *Why* wasn't it?" she added plaintively.

Her aunt evaded the question. "One sees certain objections to it," she said. "But how did you work it with the Metropolitan trains? None of them go infinitely fast, I believe."

"I called them hares and tortoises," Clara said—a little timidly, for she dreaded being laughed at. "And I thought there couldn't be so many hares as tortoises on the Line: so I took an extreme case—one hare and an infinite number of tortoises."

"An extreme case, indeed," her aunt remarked with admirable gravity: "and a most dangerous state of things!"

"And I thought, if I went with a tortoise, there would be only *one* hare to meet: but if I went with the hare—you know there were *crowds* of tortoises!"

"It wasn't a bad idea," said the elder lady, as they left the cab, at the entrance of Burlington House. "You shall have another chance to-day. We'll have a match in marking pictures."

Clara brightened up. "I should like to try again, very much," she said. "I'll take more care this time. How are we to play?"

To this question Mad Mathesis made no reply: she was busy drawing lines down the margins of the catalogue. "See," she said after a minute, "I've drawn three columns against the names of the pictures in the long room, and I want you to fill them with oughts and crosses—crosses for good marks and oughts for bad. The first column is for choice of subject, the second for arrangement, the third for colouring. And these are the conditions of the match. You must give three crosses to two or three pictures. You must give two crosses to four or five——"

"Do you mean *only* two crosses?" said Clara. "Or may I count the three-cross pictures among the two-cross pictures?"

"Of course you may," said her aunt. "Any one, ³²that has *three* eyes, may be said _{to have}³³ *two* eyes, I suppose?"

Clara followed her aunt's dreamy gaze across the crowded gallery, half-dreading to find that there was a three-eyed person in sight.

"And you must give one cross to nine or ten."

"And which wins the match?" Clara asked, as she carefully entered these conditions on a blank leaf in her catalogue.

"Whichever marks fewest pictures."

"But suppose we marked the same number?"

"Then whichever uses most marks."

Clara considered. "I don't think it's much of a match," she said. "I shall mark nine pictures, and give three crosses to three of them, two crosses to two more, and one cross each to all the rest."

"Will you, indeed?" said her aunt. "Wait till you've heard all the conditions, my impetuous child. You must give three oughts to one or two pictures, two oughts to three or four, and one ought to eight or nine. I don't want you to be *too* hard on the R.A.'s."

Clara quite gasped as she wrote down all these fresh conditions. "It's a great deal worse than Circulating Decimals!" she said. "But I'm determined to win,

³²that's got

³³has got

all the same!”

Her aunt smiled grimly. “We can begin *here*,” she said, as they paused before a gigantic picture, which the catalogue informed them was the “Portrait of Lieutenant Brown, mounted on his favorite elephant.”

“He looks awfully conceited!” said Clara. “I don’t think he was the elephant’s favorite Lieutenant. What a hideous picture it is! And it takes up room enough for twenty!”

“Mind what you say, my dear!” her aunt interposed. “It’s by an R.A.!”

But Clara was quite reckless. “I don’t care who it’s by!” she cried. “And I shall give it three bad marks!”

Aunt and niece soon drifted away from each other in the crowd, and for the next half-hour Clara was hard at work, putting in marks and rubbing them out again, and hunting up and down for suitable pictures. This she found the hardest part of all. “I *can’t* find the one I want!” she exclaimed at last, almost crying with vexation.

“What is it you want to find, my dear?” The voice was strange to Clara, but so sweet and gentle that she felt attracted to the owner of it, even before she had seen her; and when she turned, and met the smiling looks of two little old ladies, whose round dimpled faces, exactly alike, seemed never to have known a care, it was as much as she could do—as she confessed to Aunt Mattie afterwards—to keep herself from hugging them both.

“I was looking for a picture,” she said, “that has a good subject—and that’s well arranged—but badly coloured.”

The little old ladies glanced at each other in some alarm. “Calm yourself, my dear,” said the one who had spoken first, “and try to remember which it was. What *was* the subject?”

“Was it an elephant, for instance?” the other sister suggested. They were still in sight of Lieutenant Brown.

“I don’t know, indeed!” Clara impetuously replied. “You know it doesn’t matter a bit what the subject *is*, so long as it’s a good one!”

Once more the sisters exchanged looks of alarm, and one of them whispered something to the other, of which Clara caught only the one word “mad.”

“They mean Aunt Mattie, of course,” she said to herself—fancying, in her innocence, that London was like her native town, where everybody knew everybody else. “If you mean my aunt,” she added aloud, “she’s *there*—just three pictures beyond Lieutenant Brown.”

“Ah, well! Then you’d better go to her, my dear!” her new friend said, soothingly. “*She’ll* find you the picture you want. Good-bye, dear!”

“Good-bye, dear!” echoed the other sister, “Mind you don’t lose sight of your aunt!” And the pair trotted off into another room, leaving Clara rather perplexed at their manner.

“They’re real darlings!” she soliloquised. “I wonder why they pity me so!” And she wandered on, murmuring to herself “It must have two good marks, and——”³⁴

Knot VI. Her Radiancy

Source: The Monthly Packet, July 1881 (with minor differences as noted, without

³⁴Followed by “Lewis Carroll. Note.—Answers to be sent to the care of the Editor before February 1st. They will be noticed on March 1st.” in the *Monthly Packet*

image); A Tangled Tale

*“One piecee thing that my have got,
Maskee³⁵ that thing my no can do.
You talkee you no sabey what?
Bamboo.”*

Quoted from *John
Chinaman’s Lignum
Vitæ* by Arthur T.
Bingham Wright

They landed, and were at once conducted to the Palace. About half way they were met by the Governor, who welcomed them in English—a great relief to our travellers, whose guide could speak nothing but Kgovjnian.

“I don’t half like the way they grin³⁶ at us as we go by!” the old man whispered to his son. “And why do they say ‘Bamboo!’ so often?”

“It alludes to a local custom,” replied the Governor, who had overheard the question. “Such persons as happen in any way to displease Her Radiancy are usually beaten with rods.”

The old man shuddered. “A most objectional local custom!” he remarked with strong emphasis. “I wish we had never landed! Did you notice that black fellow, Norman, opening his great mouth at us? I verily believe he would like to eat us!”

Norman appealed to the Governor, who was walking at his other side. “Do they often eat distinguished strangers here?” he said, in as indifferent a tone as he could assume.

“Not often—not ever!” was the welcome reply. “They are not good for it. Pigs we eat, for they are fat. This old man is thin.”

“And thankful to be so!” muttered the elder traveller. “Beaten we shall be without a doubt. It’s a comfort to know it won’t be Beaten without the B! My dear boy, just look at the peacocks!”

They were now walking between two unbroken lines of those gorgeous birds, each held in check, by means of a golden collar and chain, by a black slave, who stood well behind, so as not to interrupt the view of the glittering tail, with its network of rustling feathers and its hundred eyes.

The Governor smiled proudly. “In your honour,” he said, “Her Radiancy has ordered up ten thousand additional peacocks. She will, no doubt, decorate you, before you go, with the usual Star and Feathers.”

“It’ll be Star without the S!” faltered one of his hearers.

“Come, come! Don’t lose heart!” said the other. “All this is full of charm for me.”

“You are young, Norman,” sighed his father; “young and light-hearted. For me, it is Charm without the C.”

“The old one is sad,” the Governor remarked with some anxiety. “He has, without doubt, effected some fearful crime?”

“But I haven’t!” the poor old gentleman hastily exclaimed. “Tell him I haven’t, Norman!”

“He has not, as yet,” Norman gently explained. And the Governor repeated, in a satisfied tone, “Not as yet.”

“Yours is a wondrous country!” the Governor resumed, after a pause. “Now here is a letter from a friend of mine, a merchant, in London. He and his brother

³⁵“*Maskee*,” in Pigeon-English, means “*without*.”

³⁶everybody grins



“Why do they say ‘Bamboo!’ so often?”

went there a year ago, with a thousand pounds apiece; and on New-Year's-day they had sixty thousand pounds between them!"

"How did they do it?" Norman eagerly exclaimed. Even the elder traveller looked excited.

The Governor handed him the open letter. "Anybody can do it, when once they know how," so ran this oracular document. "We borrowed nought: we stole nought. We began the year with only a thousand pounds apiece: and last New-Year's-day we had sixty thousand pounds between us—sixty thousand golden sovereigns!"

Norman looked grave and thoughtful as he handed back the letter. His father hazarded one guess. "Was it by gambling?"

"A Kgovjnian never gambles," said the Governor gravely, as he ushered them through the palace gates. They followed him in silence down a long passage, and soon found themselves in a lofty hall, lined entirely with peacocks' feathers. In the centre was a pile of crimson cushions, which almost concealed the figure of Her Radiancy—a plump little damsel, in a robe of green satin dotted with silver stars, whose pale round face lit up for a moment with a half-smile as the travellers bowed before her, and then relapsed into the exact expression of a wax doll, while she languidly murmured a word or two in the Kgovjnian dialect.

The Governor interpreted. "Her Radiancy welcomes you. She notes the Impenetrable Placidity of the old one, and the Imperceptible Acuteness of the youth."

Here the little potentate clapped her hands, and a troop of slaves instantly appeared, carrying trays of coffee and sweetmeats, which they offered to the guests, who had, at a signal from the Governor, seated themselves on the carpet.

"Sugar-plums!" muttered the old man. "One might as well be at a confectioner's! Ask for a penny bun, Norman!"

"Not so loud!" his son whispered. "Say something complimentary!" For the Governor was evidently expecting a speech.

"We thank Her Exalted Potency," the old man timidly began. "We bask in the light of her smile, which——"

"The words of old men are weak!" the Governor interrupted angrily. "Let the youth speak!"

"Tell her," cried Norman, in a wild burst of eloquence, "that, like two grasshoppers in a volcano, we are shrivelled up in the presence of Her Spangled Vehemence!"

"It is well," said the Governor, and translated this into Kgovjnian. "I am now to tell you," he proceeded, "what Her Radiancy requires of you before you go. The yearly competition for the post of Imperial Scarf-maker is just ended; you are the judges. You will take account of the rate of work, the lightness of the scarves, and their warmth. Usually the competitors differ in one point only. Thus, last year, Fifi and Gogo made the same number of scarves in the trial-week, and they were equally light; but Fifi's were twice as warm as Gogo's and she was pronounced twice as good. But this year, woe is me, who can judge it? Three competitors are here, and they differ in all points! While you settle their claims, you shall be lodged, Her Radiancy bids me say, free of expense—in the best dungeon, and abundantly fed on the best bread and water."

The old man groaned. "All is lost!" he wildly exclaimed. But Norman heeded him not: he had taken out his note-book, and was calmly jotting down the particulars.

“Three they be,” the Governor proceeded, “Lolo, Mimi, and Zuzu. Lolo makes 5 scarves while Mimi makes 2; but Zuzu makes 4 while Lolo makes 3! Again, so fairylike is Zuzu’s handiwork, 5 of her scarves weigh no more than one of Lolo’s; yet Mimi’s is lighter still—5 of hers will but balance 3 of Zuzu’s! And for warmth one of Mimi’s is equal to 4 of Zuzu’s; yet one of Lolo’s is as warm as 3 of Mimi’s!”

Here the little lady once more clapped her hands.

“It is our signal of dismissal!” the Governor hastily said. “Pay Her Radiancy your farewell compliments—and walk out backwards.”

The walking part was all the elder tourist could manage. Norman simply said “Tell Her Radiancy we are transfixed by the spectacle of Her Serene Brilliance, and bid an agonized³⁷ farewell to her Condensed Milkiness!”

“Her Radiancy is pleased,” the Governor reported, after duly translating this. “She casts on you a glance from Her Imperial Eyes, and is confident that you will catch it!”

“That I warrant we shall!” the elder traveller moaned to himself distractedly.

Once more they bowed low, and then followed the Governor down a winding staircase to the Imperial Dungeon, which they found to be lined with coloured marble, lighted from the roof, and splendidly though not luxuriously furnished with a bench of polished malachite. “I trust you will not delay the calculation,” the Governor said, ushering them in with much ceremony. “I have known great inconvenience—great and serious inconvenience—result to those unhappy ones who have delayed to execute the commands of Her Radiancy! And on this occasion she is resolute: she says the thing must and shall be done: and she has ordered up ten thousand additional bamboos!” With these words he left them, and they heard him lock and bar the door on the outside.

“I told you how it would end!” moaned the elder traveller, wringing his hands, and quite forgetting in his anguish that he had himself proposed the expedition, and had never predicted anything of the sort. “Oh that we were well out of this miserable business!”

“Courage!” cried the younger cheerily. “*Hæc olim meminisse juvabit!* The end of all this will be glory!”

“Glory without the L!” was all the poor old man could say, as he rocked himself to and fro on the malachite bench. “Glory without the L!”

Knot VII. Petty Cash

Source: The Monthly Packet, April 1882 (with different punctuation and spelling, without image); A Tangled Tale

“Base is the slave that pays.”

“Aunt Mattie!”

“My child?”

“*Would* you mind writing it down at once? I shall be quite *certain* to forget it if you don’t!”

“My dear, we really must wait till the cab stops. How can I possibly write anything in the midst of all this jolting?”

³⁷agonised

Quoted from *Henry V* by William Shakespeare

“But *really* I shall be forgetting it!”

Clara’s voice took the plaintive tone that her aunt never knew how to resist, and with a sigh the old lady drew forth her ivory tablets and prepared to record the amount that Clara had just spent at the confectioner’s shop. Her expenditure was always made out of her aunt’s purse, but the poor girl knew, by bitter experience, that sooner or later “Mad Mathesis” would expect an exact account of every penny that had gone, and she waited, with ill-concealed impatience, while the old lady turned the tablets over and over, till she had found the one headed “PETTY CASH.”

“Here’s the place,” she said at last, “and here we have yesterday’s luncheon duly entered. *One glass lemonade* (Why can’t you drink water, like me?) *three sandwiches* (They never put in half mustard enough. I told the young woman so, to her face; and she tossed her head—like her impudence!) *and seven biscuits. Total one-and-two-pence.* Well, now for to-day’s?”

“One glass of lemonade——” Clara was beginning to say, when suddenly the cab drew up, and a courteous railway-porter was handing out the bewildered girl before she had had time to finish her sentence.

Her aunt pocketed the tablets instantly. “Business first,” she said: “petty cash—which is a form of pleasure, whatever *you* may think—afterwards.” And she proceeded to pay the driver, and to give voluminous orders about the luggage, quite deaf to the entreaties of her unhappy niece that she would enter the rest of the luncheon account. “My dear, you really must cultivate a more capacious mind!” was all the consolation she vouchsafed to the poor girl. “Are not the tablets of your memory wide enough to contain the record of one single luncheon?”

“Not wide enough! Not half wide enough!” was the passionate reply.

The words came in aptly enough, but the voice was not that of Clara, and both ladies turned in some surprise to see who *it*³⁸ was that had so suddenly struck into their conversation. A fat little old lady was standing at the door of a cab, helping the driver to extricate what seemed an exact duplicate of herself: it would have been no easy task to decide which was the fatter, or which looked the more good-humoured of the two sisters.

“I tell you the cab-door isn’t half wide enough!” she repeated, as her sister finally emerged, somewhat after the fashion of a pellet from a pop-gun, and she turned to appeal to Clara. “Is it, dear?” she said, trying hard to bring a frown into a face that dimpled all over with smiles.

“Some folks is too wide for ’em,” growled the cab-driver.

“Don’t provoke me, man!” cried the little old lady, in what she meant for a tempest of fury. “Say another word and I’ll put you into the County Court, and sue you for a *Habeas Corpus!*” The cabman touched his hat, and marched off, grinning.

“Nothing like a little Law to cow the ruffians, my dear!” she remarked confidentially to Clara. “You saw how he quailed when I mentioned the *Habeas Corpus*? Not that I’ve any idea what it means, but it sounds very grand, doesn’t it?”

“It’s very provoking,” Clara replied, a little vaguely.

“Very!” the little old lady eagerly repeated. “And we’re very much provoked indeed. Aren’t we, sister?”

³⁸mistakenly “is” in the *Monthly Packet*



"I tell you the cab-door isn't half wide enough!"

"I never was so provoked in all my life!" the fatter sister assented, radiantly.

By this time Clara had recognised her picture-gallery acquaintances, and, drawing her aunt aside, she hastily whispered her reminiscences. "I met them first in the Royal Academy—and they were very kind to me—and they were lunching at the next table to us, just now, you know—and they tried to help me to find the picture I wanted—and I'm sure they're dear old things!"

"Friends of yours, are they?" said Mad Mathesis. "Well, I like their looks. You can be civil to them, while I get the tickets. But do try and arrange your ideas a little more chronologically!"

And so it came to pass that the four ladies found themselves seated side by side on the same bench waiting for the train, and chatting as if they had known one another for years.

"Now this I call quite a remarkable coincidence!" exclaimed the smaller and more talkative of the two sisters—the one whose legal knowledge had annihilated the cab-driver. "Not only that we should be waiting for the same train, and at the same station—*that* would be curious enough—but actually on the same day, and the same hour of the day! That's what strikes *me* so forcibly!" She glanced at the fatter and more silent sister, whose chief function in life seemed to be to support the family opinion, and who meekly responded—

"And me too, sister!"

"Those are not *independent* coincidences——" Mad Mathesis was just beginning, when Clara ventured to interpose.

"There's no jolting here," she pleaded meekly. "*Would* you mind writing it down now?"

Out came the ivory tablets once more. "What was it, then?" said her aunt.

"One glass of lemonade, one sandwich, one biscuit—Oh dear me!" cried poor Clara, the historical tone suddenly changing to a wail of agony.

"Toothache?" said her aunt calmly, as she wrote down the items. The two sisters instantly opened their reticules and produced two different remedies for neuralgia, each marked "unequalled."

"It isn't that!" said poor Clara. "Thank you very much. It's only that I *can't* remember how much I paid!"

"Well, try and make it out, then," said her aunt. "You've got yesterday's luncheon to help you, you know. And here's the luncheon we had the day before—the first day we went to that shop—*one glass lemonade, four sandwiches, ten biscuits. Total, one-and-fivepence.*" She handed the tablets to Clara, who gazed at them with eyes so dim with tears that she did not at first notice that she was holding them upside down.

The two sisters had been listening to all this with the deepest interest, and at this juncture the smaller one softly laid her hand on Clara's arm.

"Do you know, my dear," she said coaxingly, "my sister and I are in the very same predicament! Quite identically the very same predicament! Aren't we, sister?"

"Quite identically and absolutely the very——" began the fatter sister, but she was constructing her sentence on too large a scale, and the little one would not wait for her to finish it.

"Yes, my dear," she resumed; "we were lunching at the very same shop as you were—and we had two glasses of lemonade and three sandwiches and five biscuits—and neither of us has the least idea what we paid. Have we, sister?"

“Quite identically and absolutely——” murmured the other, who evidently considered that she was now a whole sentence in arrears, and that she ought to discharge one obligation before contracting any fresh liabilities; but the little lady broke in again, and she retired from the conversation a bankrupt.

“*Would* you make it out for us, my dear?” pleaded the little old lady.

“You can do Arithmetic, I trust?” her aunt said, a little anxiously, as Clara turned from one tablet to another, vainly trying to collect her thoughts. Her mind was a blank, and all human expression was rapidly fading out of her face.

A gloomy silence ensued.

Knot VIII. De Omnibus Rebus

Source: The Monthly Packet, August 1883 (as “Knot IX. De Omnibus Rebus”, with minor differences as noted); A Tangled Tale

*“This little pig went to market:
This little pig staid at home.”*

Quoted from nursery rhyme

“By Her Radiancy’s express command,” said the Governor, as he conducted the travellers, for the last time, from the Imperial presence, “I shall now have the ecstasy of escorting you as far as the outer gate of the Military Quarter, where the agony of parting—if indeed Nature can survive the shock—must be endured! From that gate grurmstipths start every quarter of an hour, both ways——”

“Would you mind repeating that word?³⁹” said Norman. “Grurm——?”

“Grurmstipths,” the Governor repeated. “You call them omnibuses in England. They run both ways, and you can travel by one of them all the way down to the harbour.”

The old man breathed a sigh of relief; four hours of courtly ceremony had wearied him, and he had been in constant terror lest something should call into use the ten thousand additional bamboos.

In another minute they were crossing a large quadrangle, paved with marble, and tastefully decorated with a pigsty in each corner. Soldiers, carrying pigs, were marching in all directions: and in the middle stood a gigantic officer giving orders in a voice of thunder, which made itself heard above all the uproar of the pigs.

“It is the Commander-in-Chief!” the Governor hurriedly whispered to his companions, who at once followed his example in prostrating themselves before the great man. The Commander gravely bowed in return. He was covered with gold lace from head to foot: his face wore an expression of deep misery: and he had a little black pig under each arm. Still the gallant fellow did his best, in the midst of the orders he was every moment issuing to his men, to bid a courteous farewell to the departing guests.

“Farewell, oh old one—carry these three to the South corner—and farewell to thee, thou young one—put this fat one on the top of the others in the Western sty—may your shadows never be less—woe is me, it is wrongly done! Empty out all the sties, and begin again!” And the soldier leant upon his sword, and wiped away a tear.

³⁹I beg your pardon

"He is in distress," the Governor explained as they left the court. "Her Radiancy has commanded him to place twenty-four pigs in those four sties, so that, as she goes round the court, she may always find the number in each sty nearer to ten than the number in the last."

"Does she call ten nearer to ten than nine is?" said Norman.

"Surely," said the Governor. "Her Radiancy would admit that ten is nearer to ten than nine is—and also nearer than eleven is."

"Then I think it can be done," said Norman.

The Governor shook his head. "The Commander has been transferring them in vain for four months," he said. "What hope remains? And Her Radiancy has ordered up ten thousand additional——"

"The pigs don't seem to enjoy being transferred," the old man hastily interrupted. He did not like the subject of bamboos.

"They are only *provisionally* transferred, you know," said the Governor. "In most cases they are immediately carried back again: so they need not mind it. And all is done with the greatest care, under the personal superintendence of the Commander-in-Chief."

"Of course she would only go *once* round?" said Norman.

"Alas, no!" sighed their conductor. "Round and round. Round and round. These are Her Radiancy's own words. But oh, agony! Here is the outer gate, and we must part!" He sobbed as he shook hands with them, and the next moment was briskly walking away.

"He *might* have waited to see us off!" said the old man, piteously.

"And he needn't have begun whistling the very *moment* he left us!" said the young one, severely. "But look sharp—here are two what's-his-names in the act of starting!"

Unluckily, the sea-bound omnibus was full. "Never mind!" said Norman, cheerily. "We'll walk on till the next one overtakes us."

They trudged on in silence, both thinking over the military problem, till they met an omnibus coming from the sea. The elder traveller took out his watch. "Just twelve minutes and a half since we started," he remarked in an absent manner. Suddenly the vacant face brightened; the old man had an idea. "My boy!" he shouted, bringing his hand down upon Norman's shoulder so suddenly as for a moment to transfer his centre of gravity beyond the base of support.

Thus taken off his guard, the young man wildly staggered forwards, and seemed about to plunge into space: but in another moment he had gracefully recovered himself. "Problem in Precession and Nutation," he remarked—in tones where filial respect only just managed to conceal a shade of annoyance. "What is it?" he hastily added, fearing his father might have been taken ill. "Will you have some brandy?"

"When will the next omnibus overtake us? When? When?" the old man cried, growing more excited every moment.

Norman looked gloomy. "Give me time," he said. "I must think it over." And once more the travellers passed on in silence—a silence only broken by the distant squeals of the unfortunate little pigs, who were still being provisionally transferred from sty to sty, under the personal superintendence of the Commander-in-Chief.

Knot IX. A Serpent with Corners

Source: The Monthly Packet, January 1883 (as “Knot VIII. A Serpent with Corners”, with minor differences as noted, without image); A Tangled Tale

*“Water, water, every where,
Nor any drop to drink.”*

Quoted from *The Rime of the Ancient Mariner* by Samuel Taylor Coleridge

“It’ll just take one more pebble.”

“What ever *are* you doing with those buckets?”

The speakers were Hugh and Lambert. Place, the beach of Little Mendip. Time, 1.30, P.M. Hugh was floating a bucket in another a size larger, and trying how many pebbles it would carry without sinking. Lambert was lying on his back, doing nothing.

For the next minute or two Hugh was silent, evidently deep in thought. Suddenly he started. “I say, look here, Lambert!” he cried.

“If it’s alive, and slimy, and with legs, I don’t care to,” said Lambert.

“Didn’t Balbus say this morning that, if a body is immersed in liquid, it displaces as much liquid as is equal to its own bulk?” said Hugh.

“He said things of that sort,” Lambert vaguely replied.

“Well, just look here a minute. Here’s the little bucket almost quite immersed: so the water displaced ought to be just about the same bulk. And now just look at it!” He took out the little bucket as he spoke, and handed the big one to Lambert. “Why, there’s hardly a teacupful! Do you mean to say *that* water is the same bulk as the little bucket?”

“Course it is,” said Lambert.

“Well, look here again!” cried Hugh, triumphantly, as he poured the water from the big bucket into the little one. “Why, it doesn’t half fill it!”

“That’s its business,” said Lambert. “If Balbus says it’s the same bulk, why, it is the same bulk, you know.”

“Well, I don’t believe it,” said Hugh.

“You needn’t,” said Lambert. “Besides, it’s dinner-time. Come along.”

They found Balbus waiting dinner for them, and to him Hugh at once propounded his difficulty.

“Let’s get you helped first,” said Balbus, briskly cutting away at the joint. “You know the old proverb ‘Mutton first, mechanics afterwards’?”

The boys did *not* know the proverb, but they accepted it in perfect good faith, as they did every piece of information, however startling, that came from so infallible an authority as their tutor. They ate on steadily in silence, and, when dinner was over, Hugh set out the usual array of pens, ink, and paper, while Balbus repeated to them the problem he had prepared for their afternoon’s task.

“A friend of mine has a flower-garden—a very pretty one, though no great size—”

“How big is it?” said Hugh.

“That’s what *you* have to find out!” Balbus gaily replied. “All I tell you is that it is oblong in shape—just half a yard longer than its width—and that a gravel-walk, one yard wide, begins at one corner and runs all round it.”

“Joining into itself?” said Hugh.

“*Not* joining into itself, young man. Just before doing *that*, it turns a corner, and runs round the garden again, alongside of the first portion, and then inside that again, winding in and in, and each lap touching the last one, till it has used up the whole of the area.”

“Like a serpent with corners?” said Lambert.

“Exactly so. And if you walk the whole length of it, to the last inch, keeping in the centre of the path, it’s exactly two miles and half a furlong. Now, while you find out the length and breadth⁴⁰ of the garden, I’ll see if I can think⁴¹ out that sea-water puzzle.”

“You said it was a flower-garden?” Hugh inquired, as Balbus was leaving the room.

“I did,” said Balbus.

“Where do the flowers grow?” said Hugh. But Balbus thought it best not to hear the question. He left the boys to their problem, and, in the silence of his own room, set himself to unravel Hugh’s mechanical paradox.

“To fix our thoughts,” he murmured to himself, as, with hands deep-buried in his pockets, he paced up and down the room, “we will take a cylindrical glass jar, with a scale of inches marked up the side, and fill it with water up to the 10-inch mark: and we will assume that every inch depth of jar contains a pint of water. We will now take a solid cylinder, such that every inch of it is equal in bulk to *half* a pint of water, and plunge 4 inches of it into the water, so that the end of the cylinder comes down to the 6-inch mark. Well, that displaces 2 pints of water. What becomes of them? Why, if there were no more cylinder, they would lie comfortably on the top, and fill the jar up to the 12-inch mark. But unfortunately there is more cylinder, occupying half the space between the 10-inch and the 12-inch marks, so that only *one* pint of water can be accommodated there. What becomes of the other pint? Why, if there were no more cylinder, it would lie on the top, and fill the jar up to the 13-inch mark. But unfortunately—Shade of Newton!” he exclaimed, in sudden accents of terror. “When *does* the water stop rising?”

A bright idea struck him. “I’ll write a little essay on it,” he said.

Balbus’s Essay

“When a solid is immersed in a liquid, it is well known that it displaces a portion of the liquid equal to itself in bulk, and that the level of the liquid rises just so much as it would rise if a quantity of liquid had been added to it, equal in bulk to the solid. Lardner says, precisely the same process occurs when a solid is *partially* immersed: the quantity of liquid displaced, in this case, equalling the portion of the solid which is immersed, and the rise of the level being in proportion.

“Suppose a solid held above the surface of a liquid and partially immersed: a portion of the liquid is displaced, and the level of the liquid rises. But, by this rise of level, a little bit more of the solid is of course immersed, and so there is a new displacement of a second portion of the liquid, and a consequent rise of level. Again, this second rise of level causes a yet further immersion, and by consequence another displacement of liquid and another rise. It is self-evident that this process must continue till the entire solid is immersed, and that the liquid will then begin to immerse whatever holds the solid, which, being

⁴⁰dimensions

⁴¹go and think

connected with it, must for the time be considered a part of it. If you hold a stick, six feet long, with its end in a tumbler of water, and wait long enough, you must eventually be immersed. The question as to the source from which the water is supplied—which belongs to a high branch of mathematics, and is therefore beyond our present scope—does not apply to the sea. Let us therefore take the familiar instance of a man standing at the edge of the sea, at ebb-tide, with a solid in his hand, which he partially immerses: he remains steadfast and unmoved, and we all know that he must be drowned. The multitudes who daily perish in this manner to attest a philosophical truth, and whose bodies the unreasoning wave casts sullenly upon our thankless shores, have a truer claim to be called the martyrs of science than a Galileo or a Kepler. To use Kossuth's eloquent phrase, they are the unnamed demigods of the nineteenth century."⁴²

"There's a fallacy *somewhere*," he murmured drowsily, as he stretched his long legs upon the sofa. "I must think it over again." He closed his eyes, in order to concentrate his attention more perfectly, and for the next hour or so his slow and regular breathing bore witness to the careful deliberation with which he was investigating this new and perplexing view of the subject.

Knot X. Chelsea Buns

Source: The Monthly Packet, November 1884 (as "Knot X and Last. Chelsea Buns", with minor differences as noted); A Tangled Tale

*"Yea, buns, and buns, and buns!"
Old Song.*

"How very, very sad!" exclaimed Clara; and the eyes of the gentle girl filled with tears as she spoke.

"Sad—but very curious when you come to look at it arithmetically," was her aunt's less romantic reply. "Some of them have lost an arm in their country's service, some a leg, some an ear, some an eye——"

"And some, perhaps, *all!*" Clara murmured dreamily, as they passed the long rows of weather-beaten heroes basking in the sun. "Did you notice that very old one, with a red face, who was drawing a map in the dust with his wooden leg, and all the others watching? I *think* it was a plan of a battle——"

"The battle of Trafalgar, no doubt," her aunt interrupted, briskly.

"Hardly that, I think," Clara ventured to say. "You see, in that case, he couldn't well be alive——"

"Couldn't well be alive!" the old lady contemptuously repeated. "He's as lively as you and me put together! Why, if drawing a map in the dust—with one's wooden leg—doesn't prove one to be alive, perhaps you'll kindly mention what *does* prove it!"

Clara did not see her way out of it. Logic had never been her *forte*.

"To return to the arithmetic," Mad Mathesis resumed—the eccentric old lady never let slip an opportunity of driving her niece into a calculation—"what percentage do you suppose must have lost all four—a leg, an arm, an eye, and an ear?"

⁴²Note by the writer.—For the above Essay I am indebted to a dear friend, now deceased.



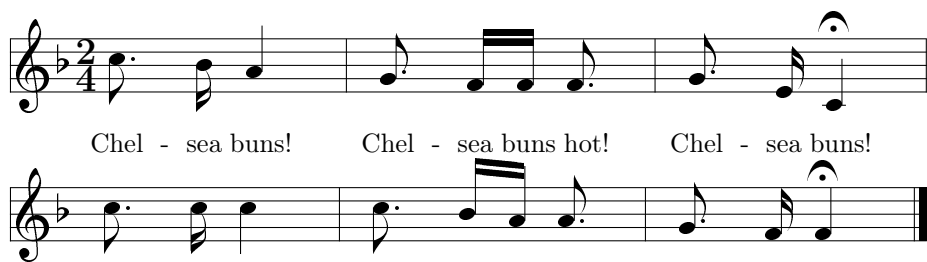
“He remains steadfast and unmoved.”

“How *can* I tell?” gasped the terrified girl. She knew well what was coming.

“You can’t, of course, without *data*,” her aunt replied: “but I’m just going to give you——”

“Give her a Chelsea bun, Miss! That’s what most young ladies likes best!” The voice was rich and musical, and the speaker dexterously whipped back the snowy cloth that covered his basket, and disclosed a tempting array of the familiar square buns, joined together in rows, richly egged and browned, and glistening in the sun.

“No, sir! I shall give her nothing so indigestible! Be off!” The old lady waved her parasol threateningly: but nothing seemed to disturb the good-humour of the jolly old man, who marched on, chanting his melodious refrain:—



“Far too indigestible, my love!” said the old lady. “Percentages will agree with you ever so much better!”

Clara sighed, and there was a hungry look in her eyes as she watched the basket lessening in the distance: but she meekly listened to the relentless old lady, who at once proceeded to count off the *data* on her fingers.

“Say that 70 per cent. have lost an eye—75 per cent. an ear—80 per cent. an arm—85 per cent. a leg—that’ll do it beautifully. ⁴³Now, my dear, what percentage, *at least*, must have lost all four?”

No more conversation occurred—unless a smothered exclamation of “Piping hot!” which escaped from Clara’s lips as the basket vanished round a corner could be counted as such—until they reached the old Chelsea mansion, where Clara’s ⁴⁴father was then staying, with his three sons and their old tutor.

Balbus, Lambert, and Hugh had entered the house only a few minutes before them. They had been out walking, and Hugh had been propounding a difficulty which had reduced Lambert to the depths of gloom, and had even puzzled Balbus.

“It changes from Wednesday to Thursday at midnight, doesn’t it?” Hugh had begun.

“Sometimes,” said Balbus, cautiously.

“Always,” said Lambert, decisively.

“*Sometimes*,” Balbus gently insisted. “Six midnights out of seven, it changes to some other name.”

“I meant, of course,” Hugh corrected himself, “when it *does* change from Wednesday to Thursday, it does it at midnight—and *only* at midnight.”

“Surely,” said Balbus. Lambert was silent.

“Well, now, suppose it’s midnight here in Chelsea. Then it’s Wednesday *west* of Chelsea (say in Ireland or America) where midnight hasn’t arrived yet: and

⁴³Now then

⁴⁴uncle

it's Thursday *east* of Chelsea (say in Germany or Russia) where midnight has just passed by?"

"Surely," Balbus said again. Even Lambert nodded this time.

"But it isn't midnight, anywhere else; so it can't be changing from one day to another anywhere else. And yet, if Ireland and America and so on call it Wednesday, and Germany and Russia and so on call it Thursday, there *must* be some place—not Chelsea—that has different days on the two sides of it. And the worst of it is, the people *there* get their days in the wrong order: they've got Wednesday *east* of them, and Thursday *west*—just as if their day had changed from Thursday to Wednesday!"

"I've heard that puzzle before!" cried Lambert. "And I'll tell you the explanation. When a ship goes round the world from east to west, we know that it loses a day in its reckoning: so that when it gets home, and calls its day Wednesday, it finds people here calling it Thursday, because we've had one more midnight than the ship has had. And when you go the other way round you gain a day."

"I know all that," said Hugh, in reply to this not very lucid explanation: "but it doesn't help me, because the ship hasn't proper days. One way round, you get more than twenty-four hours to the day, and the other way you get less: so of course the names get wrong: but people that live on in one place always get twenty-four hours to the day."

"I suppose there is such a place," Balbus said, meditatively, "though I never heard of it. And the people must find it very queer, as Hugh says, to have the old day *east* of them, and the new one *west*: because, when midnight comes round to them, with the new day in front of it and the old one behind it, one doesn't see exactly what happens. I must think it over."

So they had entered the house in the state I have described—Balbus puzzled, and Lambert buried in gloomy thought.

"Yes, m'm, Master is at home, m'm," said the stately old butler. (N.B.—It is only a butler of experience who can manage a series of three M's *ṭ*'gether⁴⁵, without any interjacent vowels.) "And the *ole* party is a-waiting for you in the libery."

"I don't like his calling your father an *old* party," Mad Mathesis whispered to her niece, as they crossed the hall. And Clara had only just time to whisper in reply "he meant the *whole* party," before they were ushered into the library, and the sight of the five solemn faces there assembled chilled her into silence.

Her father sat at the head of the table, and mutely signed to the ladies to take the two vacant chairs, one on each side of him. His three sons and Balbus completed the party. Writing materials had been arranged round the table, after the fashion of a ghostly banquet: the butler had evidently bestowed much thought on the grim device. Sheets of quarto paper, each flanked by a pen on one side and a pencil on the other, represented the plates—penwipers did duty for rolls of bread—while ink-bottles stood in the places usually occupied by wine-glasses. The *pièce de resistance* was a large green baize bag, which gave forth, as the old man restlessly lifted it from side to side, a charming jingle, as of innumerable golden guineas.

"Sister, daughter, sons—and Balbus—," the old man began, so nervously, that Balbus put in a gentle "Hear, hear!" while Hugh drummed on the table with his fists. This disconcerted the unpractised orator. "Sister—" he began

⁴⁵together

again, then paused a moment, moved the bag to the other side, and went on with a rush, "I mean—this being—a critical occasion—more or less—being the year when one of my sons comes of age—" he paused again in some confusion, having evidently got into the middle of his speech sooner than he intended: but it was too late to go back. "Hear, hear!" cried Balbus. "Quite so," said the old gentleman, recovering his self-possession a little: "when first I began this annual custom—my friend Balbus will correct me if I am wrong—" (Hugh whispered "with a strap!" but nobody heard him except Lambert, who only frowned and shook his head at him) "—this annual custom of giving each of my sons as many guineas as would represent his age—it was a critical time—so Balbus informed me—as the ages of two of you were together equal to that of the third—so on that occasion I made a speech—" He paused so long that Balbus thought it well to come to the rescue with the words "It was a most—" but the old man checked him with a warning look: "yes, made a speech," he repeated. "A few years after that, Balbus pointed out—I say pointed out—" ("Hear, hear!" cried Balbus. "Quite so," said the grateful old man.) "—that it was *another* critical occasion. The ages of two of you were together *double* that of the third. So I made another speech—another speech. And now again it's a critical occasion—so Balbus says—and I am making—" (Here Mad Mathesis pointedly referred to her watch) "all the haste I can!" the old man cried, with wonderful presence of mind. "Indeed, sister, I'm coming to the point now! The number of years that have passed since that first occasion is just two-thirds of the number of guineas I then gave you. Now, my boys, calculate your ages from the *data*, and you shall have the money!"

"But we *know* our ages!" cried Hugh.

"Silence, sir!" thundered the old man, rising to his full height (he was exactly five-foot five) in his indignation. "I say you must use the *data* only! You mustn't even assume *which* it is that comes of age!" He clutched the bag as he spoke, and with tottering steps (it was about as much as he could do to carry it) he left the room.

"And *you* shall have a similar *cadeau*," the old lady whispered to her niece, "when you've calculated that percentage!" And she followed her brother.

Nothing could exceed the solemnity with which the old couple had risen from the table, and yet was it—was it a *grin* with which the father turned away from his unhappy sons? Could it be—could it be a *wink* with which the aunt abandoned her despairing niece? And were those—were those sounds of suppressed *chuckling* which floated into the room, just before Balbus (who had followed them out) closed the door? Surely not: and yet the butler told the cook—but no, that was merely idle gossip, and I will not repeat it.

The shades of evening granted their unuttered petition, and "closed not o'er" them (for the butler brought in the lamp): the same obliging shades left them a "lonely bark" (the wail of a dog, in the back-yard, baying the moon) for "awhile": but neither "morn, alas," (nor any other epoch) seemed likely to "restore" them—to that peace of mind which had once been theirs ere ever these problems had swooped upon them, and crushed them with a load of unfathomable mystery!

"It's hardly fair," muttered Hugh, "to give us such a jumble as ⁷⁴⁶this to work out!"

"Fair?" Clara echoed, bitterly. "Well!"

⁴⁶that

Quoted from *Isle of Beauty* by Thomas Haynes Bayly

And to all my readers I can but repeat the last words of gentle Clara—
Farewell!⁴⁷

Appendix

“A knot!” said Alice. “Oh, do let me help to undo it!”

Quoted from *Alice’s Adventures in Wonderland* by Lewis Carroll

Answers to Knot I

Source: The Monthly Packet, June 1880 (as “Answers to ‘Romantic Problems. Knot I.’”, with minor differences as noted); A Tangled Tale

Problem.—“Two travellers spend from 3 o’clock till 9 in walking along a level road, up a hill, and home again: their pace on the level being 4 miles an hour, up hill 3, and down hill 6. Find distance walked: also (within half an hour) time of reaching top of hill.”

Answer.—“24 miles: half-past 6.”

Solution.—A level mile takes $\frac{1}{4}$ of an hour, up hill $\frac{1}{3}$, down hill $\frac{1}{6}$. Hence to go and return over the same mile, whether on the level or on the hill-side, takes $\frac{1}{2}$ an hour. Hence in 6 hours they went 12 miles out and 12 back. If the 12 miles out had been nearly all level, they would have taken a little over 3 hours; if nearly all up hill, a little under 4. Hence $3\frac{1}{2}$ hours must be within $\frac{1}{2}$ an hour of the time taken in reaching the peak; thus, as they started at 3, they got there within $\frac{1}{2}$ an hour of $\frac{1}{2}$ past 6.⁴⁸

Twenty-seven answers have come in. Of these, 9 are right, 16 partially right, and ²⁴⁹ wrong. The 16 give the *distance* correctly, but they have failed to grasp the fact that the top of the hill might have been reached at *any* moment between 6 o’clock and 7.

The two wrong answers are from GERTY VERNON and A NIHILIST. The former makes the distance “23 miles,” while her revolutionary companion puts it at “27.” GERTY VERNON says “they had to go 4 miles along the plain, and got to the foot of the hill at 4 o’clock.” They *might* have done so, I grant; but you have no ground for saying they *did* so. “It was $7\frac{1}{2}$ miles to the top of the hill, and they reached that at $\frac{1}{4}$ before 7 o’clock.” Here you go wrong in your arithmetic, and I must, however reluctantly, bid you farewell. $7\frac{1}{2}$ miles, at 3 miles an hour, would *not* require $2\frac{3}{4}$ hours. A NIHILIST says “Let x denote the whole number of miles; y the number of hours to hill-top; $\therefore 3y =$ number of miles to hill-top, and $x - 3y =$ number of miles on the other side.” You bewilder me. The other side of *what*? “Of the hill,” you say. But then, how did they get home again? However, to accommodate your views we will build a new hostelry at the foot of the hill on the opposite side, and also assume (what I grant you is *possible*, though it is not *necessarily* true) that there was no level road at all. Even then you go wrong.

⁴⁷In the *Monthly Packet* followed by “Lewis Carroll. Answers will be received up to the end of November.”

⁴⁸Solution missing in the *Monthly Packet*

⁴⁹3

You say

$$\begin{aligned} & \text{“}y = 6 - \frac{x-3y}{6}, \dots\dots\dots\text{(i);} \\ & \frac{x}{4\frac{1}{2}} = 6 \dots\dots\dots\text{(ii).”} \end{aligned}$$

I grant you (i), but I deny (ii): it rests on the assumption that to go *part* of the time at 3 miles an hour, and the rest at 6 miles an hour, comes to the same result as going the *whole* time at $4\frac{1}{2}$ miles an hour. But this would only be true if the “*part*” were an exact *half*, i. e., if they went up hill for 3 hours, and down hill for the other 3: which they certainly did *not* do.

The sixteen, who are partially right, are AGNES BAILEY, F. K., FIFEE, G. E. B., H. P., KIT, M. E. T., MYSIE, A MOTHER’S SON, NAIRAM, A REDRUTHIAN, A SOCIALIST, SPEAR MAIDEN, T. B. C, VIS INERTIÆ, and YAK. Of these, F. K., FIFEE, T. B. C, and VIS INERTIÆ do not attempt the second part at all. F. K. and H. P. give no working. The _rest ⁵⁰ make particular assumptions, such as that there was no level road—that there were 6 miles of level road—and so on, all leading to *particular* times being fixed for reaching the hill-top. The most curious assumption is that of AGNES BAILEY, who says “Let x = number of hours occupied in ascent; then $\frac{x}{2}$ = hours occupied in descent; and $\frac{4x}{3}$ = hours occupied on the level.” I suppose you were thinking of the relative *rates*, up hill and on the level; which we might express by saying that, if they went x miles up hill in a certain time, they would go $\frac{4x}{3}$ miles on the level *in the same time*. You have, in fact, assumed that they took *the same time* on the level that they took in ascending the hill. FIFEE assumes that, when the aged knight said they had gone “four miles in the hour” on the level, he meant that four miles was the *distance* gone, not merely the rate. This would have been—if FIFEE will excuse the slang expression—a “sell,” ill-suited to the dignity of the hero.

And now “descend, ye classic Nine!” who have solved the whole problem, and let me sing your praises. Your names are BLITHE, E. W., L. B., A MARLBOROUGH BOY, O. V. L., PUTNEY WALKER, ROSE, SEA BREEZE, SIMPLE SUSAN, and MONEY SPINNER. (These last two I count as one, as they send a joint answer.) ROSE and SIMPLE SUSAN and Co. do not actually state that the hill-top was reached some time between 6 and 7, but, as they have clearly grasped the fact that a mile, ascended and descended, took the same time as two level miles, I mark them as “right.” A MARLBOROUGH BOY and PUTNEY WALKER deserve honourable mention for their algebraical solutions being the only two who have perceived that the question leads to *an indeterminate equation*. E. W. brings a charge of untruthfulness against the aged knight—a serious charge, for he was the very pink of chivalry! She says “According to the data given, the time at the summit affords no clue to the total distance. It does not enable us to state precisely to an inch how much level and how much hill there was on the road.” “Fair damsel,” the aged knight replies, “—if, as I surmise, thy initials denote Early Womanhood—bethink thee that the word ‘enable’ is thine, not mine. I did but ask the time of reaching the hill-top as my *condition* for further parley. If *now* thou wilt not grant that I am a truth-loving man, then will I affirm that those same initials denote Envenomed Wickedness!”

⁵⁰rest all

Class List⁵¹ I

A MARLBOROUGH BOY.
PUTNEY WALKER.

II

BLITHE.
E. W.
L. B.
O. V. L.
ROSE.
SEA BREEZE.
{ SIMPLE SUSAN.
{ MONEY-SPINNER.

BLITHE has made so ingenious an addition to the problem, and SIMPLE SUSAN and Co. have solved it in such tuneful verse, that I record both their answers in full⁵². I have altered a word or two in BLITHE'S—which I trust she will excuse; it did not seem quite clear as it stood.

“Yet stay,” said the youth, as a gleam of inspiration lighted up the relaxing muscles of his quiescent features. “Stay. Methinks it matters little *when* we reached that summit, the crown of our toil. For in the space of time wherein we clambered up one mile and bounded down the same on our return, we could have trudged the *twain* on the level. We have plodded, then, four-and-twenty miles in these six mortal hours; for never a moment did we stop for catching of fleeting breath or for gazing on the scene around!”

“Very good,” said the old man. “Twelve miles out and twelve miles in. And we reached the top some time between six and seven of the clock. Now mark me! For every five minutes that had fled since six of the clock when we stood on yonder peak, so many miles had we toiled upwards on the dreary mountainside!”

The youth moaned and rushed into the hostel.

BLITHE.

The elder and the younger knight,
They sallied forth at three;
How far they went on level ground
It matters not to me;
What time they reached the foot of hill,
When they began to mount,
Are problems which I hold to be
Of very small account.

The moment that each waved his hat
Upon the topmost peak—
To trivial query such as this
No answer will I seek.

⁵¹In the *Monthly Packet* this list appears with the answers to Knot IV (which is Knot III there)

⁵²trust the Editor will find space for both their answers

Yet can I tell the distance well
 They must have travelled o'er:
 On hill and plain, 'twixt three and nine,
 The miles were twenty-four.
 Four miles an hour their steady pace
 Along the level track,
 Three when they climbed—but six when they
 Came swiftly striding back
 Adown the hill; and little skill
 It needs, methinks, to show,
 Up hill and down together told,
 Four miles an hour they go.
 For whether long or short the time
 Upon the hill they spent,
 Two thirds were passed in going up,
 One third in the descent.
 Two thirds at three, one third at six,
 If rightly reckoned o'er,
 Will make one whole at four—the tale
 Is tangled now no more.

SIMPLE SUSAN.
 MONEY SPINNER.⁷⁵³

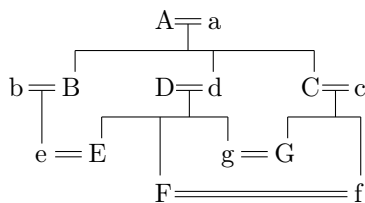
Answers to Knot II

Source: The Monthly Packet, June 1881 (as “Answers to Knot V”, with minor differences as noted); A Tangled Tale

§ 1. The Dinner Party *Problem.*—“The Governor of Kgovjni wants to give a very small dinner party, and invites his father’s brother-in-law, his brother’s father-in-law, his father-in-law’s brother, and his brother-in-law’s father. Find the number of guests.”

Answer.—“One.”

In this genealogy, males are denoted by capitals, and females by small letters. The Governor is E and his guest is C.



⁵³Followed by “The Muffin Man and L. G. also answered.” in the *Monthly Packet*

Ten answers have been received. Of these, one is wrong, GALANTHUS NIVALIS MAJOR, who insists on inviting *two* guests, one being the Governor's *wife's brother's father*. If she had taken his *sister's husband's father* instead, she would have found it possible to reduce the guests to *one*.

Of the nine who send right answers, SEA-BREEZE is the very faintest breath that ever bore the name! She simply states that the Governor's uncle might fulfill all the conditions "by intermarriages"! "Wind of the western sea," you have had a very narrow escape! Be thankful to appear in the Class-list at all! BOG-OAK and BRADSHAW OF THE FUTURE use genealogies which require 16 people instead of 14, by inviting the Governor's *father's sister's husband* instead of his *father's wife's brother*. I cannot think this so good a solution as one that requires only 14. CAIUS and VALENTINE deserve special mention as the only two who have supplied genealogies.

Quoted from *Sweet and Low* by Alfred Lord Tennyson

Class List

I

BEE.
 CAIUS.
 M. M.
 MATTHEW MATTICKS.
 OLD CAT.
 VALENTINE.

II

BOG-OAK.
 BRADSHAW OF THE FUTURE.

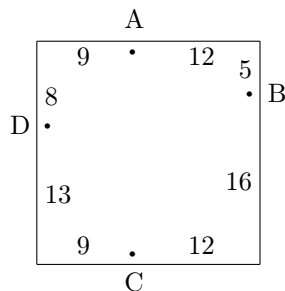
III

SEA-BREEZE.

§ 2. The Lodgings *Problem.*—"A Square has 20 doors on each side, which contains 21 equal parts. They are numbered all round, beginning at one corner. From which of the four, Nos. 9, 25, 52, 73, is the sum of the distances, to the other three, least?"

Answer.—"From No. 9."

Let A be No. 9, B No. 25, C No. 52, and D No. 73.



$$\text{Then } AB = \sqrt{(12^2 + 5^2)} = \sqrt{169} = 13;$$

$$AC = 21;$$

$$AD = \sqrt{(9^2 + 8^2)} = \sqrt{145} = 12+$$

(N.B. *i. e.* "between 12 and 13.")

$$BC = \sqrt{(16^2 + 12^2)} = \sqrt{400} = 20;$$

$$BD = \sqrt{(3^2 + 21^2)} = \sqrt{450} = 21+;$$

$$CD = \sqrt{(9^2 + 13^2)} = \sqrt{250} = 15+;$$

Hence sum of distances from A is between 46 and 47; from B, between 54 and 55; from C, between 56 and 57; from D, between 48 and 51. (Why not "between 48 and 49"? Make this out for yourselves.) Hence the sum is least for A.

Twenty-five solutions have been received. Of these, 15 must be marked "0," 5 are partly right, and 5 right. Of the 15, I may dismiss ALPHABETICAL PHANTOM, BOG-OAK, DINAH MITE, FIFEE, GALANTHUS NIVALIS MAJOR (I fear the cold spring has blighted our SNOWDROP), GUY, H.M.S. PINAFORE, JANET, and VALENTINE with the simple remark that they insist on the unfortunate lodgers *keeping to the pavement*. (I used the words "crossed to Number Seventy-three" for the special purpose of showing that *short cuts* were possible.) SEA-BREEZE does the same, and adds that "the result would be the same" even if they crossed the Square, but gives no proof of this. M. M. draws a diagram, and says that No. 9 is the house, "as the diagram shows." I cannot see *how* it does so. OLD CAT assumes that the house *must* be No. 9 or No. 73. She does not explain how she estimates the distances. BEE'S Arithmetic is faulty: she makes $\sqrt{169} + \sqrt{442} + \sqrt{130} = 741$. (I suppose you mean $\sqrt{741}$, which would be a little nearer the truth. But roots cannot be added in this manner. Do you think $\sqrt{9} + \sqrt{16}$ is 25, or even $\sqrt{25}$?) But AYR'S state is more perilous still: she draws illogical conclusions with a frightful calmness. After pointing out (rightly) that AC is less than BD she says, "therefore the nearest house to the other three must be A or C." And again, after pointing out (rightly) that B and D are both within the half-square containing A, she says "therefore" $AB + AD$ must be less than $BC + CD$. (There is no logical force in either "therefore." For the first, try Nos. 1, 21, 60, 70: this will make your premiss true, and your conclusion false. Similarly, for the second, try Nos. 1, 30, 51, 71.)

Of the five partly-right solutions, RAGS AND TATTERS and MAD HATTER (who send one answer between them) make No. 25 6 units from the corner instead of 5. CHEAM, E. R. D. L., and MEGGY POTTS leave openings at the corners of the Square, which are not in the *data*: moreover CHEAM gives values for the distances without any hint that they are only *approximations*. CROPHI AND MOPHI make the bold and unfounded assumption that there were really 21 houses on each side, instead of 20 as stated by Balbus. "We may assume," they add, "that the doors of Nos. 21, 42, 63, 84, are invisible from the centre of the Square"! What is there, I wonder, that CROPHI AND MOPHI would *not* assume?

Of the five who are wholly right, I think BRADSHAW OF THE FUTURE, CAIUS, CLIFTON C., and MARTREB deserve special praise for their full *analytical* solutions. MATTHEW MATTICKS picks out No. 9, and proves it to be the right house in two ways, very neatly and ingeniously, but *why* he picks it out does not appear. It is an excellent *synthetical* proof, but lacks the analysis which the other four supply.

Class List

I

BRADSHAW OF THE FUTURE.
CAIUS.
CLIFTON C.
MARTREB.

II

MATTHEW MATTICKS.

III

CHEAM.
CROPHI AND MOPHI.
E. R. D. L.
MEGGY POTTS.
{ RAGS AND TATTERS.
{ MAD HATTER.⁷⁵⁴

⌊A remonstrance has reached me from SCRUTATOR on the subject of KNOT I., which he declares was “no problem at all.” “Two questions,” he says, “are put. To solve one there is no data: the other answers itself.” As to the first point, SCRUTATOR is mistaken; there *are* (not “is”) data sufficient to answer the question. As to the other, it is interesting to know that the question “answers itself,” and I am sure it does the question great credit: still I fear I cannot enter it on the list of winners, as this competition is only open to human beings.⁷⁵⁵

Answers to Knot III

Source: The Monthly Packet, September 1880 (as “Answers to ‘Romantic Problems. Knot II’”, with minor differences as noted); A Tangled Tale

Problem.—(1) “Two travellers, starting at the same time, went opposite ways round a circular railway. Trains start each way every 15 minutes, the easterly ones going round in 3 hours, the westerly in 2. How many trains did each meet on the way, not counting trains met at the terminus itself?” (2) “They went round, as before, each traveller counting as ‘one’ the train containing the other traveller. How many did each meet?”

Answers.—(1) 19. (2) The easterly traveller met 12; the other 8.

The trains one way took 180 minutes, the other way 120. Let us take the L. C. M., 360, and divide the railway into 360 units. Then one set of trains went at the rate of 2 units a minute and at intervals of 30 units; the other at the rate of 3 units a minute and at intervals of 45 units. An easterly train starting

⁵⁴In the *Monthly Packet*, this is followed by the signature “Lewis Carroll”, the remark which here comes after the answers to Knot VI., and some remarks on Lanrick (→ 10.14, p. 1592).

⁵⁵In the *Monthly Packet*, this comes after the answers to Knot III (which is Knot II there), and is followed by the signature “Lewis Carroll.”

has 45 units between it and the first train it will meet: it does 2-5ths of this while the other does 3-5ths, and thus meets it at the end of 18 units, and so all the way round. A westerly train starting has 30 units between it and the first train it will meet: it does 3-5ths of this while the other does 2-5ths, and thus meets it at the end of 18 units, and so all the way round. Hence if the railway be divided, by 19 posts, into 20 parts, each containing 18 units, trains meet at every post, and, in (1), each traveller passes 19 posts in going round, and so meets 19 trains. But, in (2), the easterly traveller only begins to count after traversing 2-5ths of the journey, *i. e.*, on reaching the 8th post, and so counts 12 posts: similarly the other counts 8. They meet at the end of 2-5ths of 3 hours, or 3-5ths of 2 hours, *i. e.*, 72 minutes.

Forty-five answers have been received. Of these $\lrcorner 12$ ⁵⁶ are beyond the reach of discussion, as they give no working. I can but enumerate their names. ARDMORE, E. A., F. A. D., L. D., MATTHEW MATTICKS, M. E. T., POO-POO, and THE RED QUEEN are all wrong. \lrcorner BETA⁵⁷ and ROWENA have got (1) right and (2) wrong. CHEEKY BOB and NAIRAM give the right answers, but it may perhaps make the one less cheeky, and induce the other to take a less inverted view of things, to be informed that, if this had been a competition for a prize, they would have got no marks. [N.B.—I have not ventured to put E. A.'s name in full, as she only gave it provisionally, in case her answer should prove right.]

Of the 33 answers for which the working is given, 10 are wrong; 11 half-wrong and half-right; 3 right, except that they cherish the delusion that it was *Clara* who travelled in the easterly train—a point which the data do not enable us to settle; and 9 wholly right.

The 10 wrong answers are from BO-PEEP, FINANCIER, I. W. T., KATE B., M. A. H., Q. Y. Z., SEA-GULL, THISTLEDOWN, TOM-QUAD, and an unsigned one. BO-PEEP rightly says that the easterly traveller met all trains which started during the 3 hours of her trip, as well as all which started during the previous 2 hours, *i. e.*, all which started at the commencements of 20 periods of 15 minutes each; and she is right in striking out the one she met at the moment of starting; but wrong in striking out the *last* train, for she did not meet this at the terminus, but 15 minutes before she got there. She makes the same mistake in (2). FINANCIER thinks that any train, met for the second time, is not to be counted. I. W. T. finds, by a process which is not stated, that the travellers met at the end of 71 minutes and $26\frac{1}{2}$ seconds. KATE B. thinks the trains which are met on starting and on arriving are *never* to be counted, even when met \lrcorner elsewhere.⁵⁸ Q. Y. Z. tries a rather complex algebraical solution, and succeeds in finding the time of meeting correctly: all else is wrong. SEA-GULL seems to think that, in (1), the easterly train *stood still* for 3 hours; and says that, in (2), the travellers met at the end of 71 minutes 40 seconds. THISTLEDOWN nobly confesses to having tried no calculation, but merely having drawn a picture of the railway and counted the trains; in (1), she counts wrong; in (2) she makes

⁵⁶13

⁵⁷AYR, BETA

⁵⁸Followed by "M. A. H. gets the right answer for (1), by making two mistakes which cancel each other: so of course I mark her 'wrong.' She rightly takes, as BO-PEEP does, 20 periods of 15 minutes each; but omits (what she should have counted) the train which starts at the commencement of the *first* period; and she afterwards counts (what she should have omitted) the train which starts as the traveller starts. And in (2) she makes the travellers count 'one' *after* they met, not *when* they met." in the *Monthly Packet*

them meet in 75 minutes. TOM-QUAD omits (1): in (2) he makes Clara count the train she met on her arrival. The unsigned one is also unintelligible; it states that the travellers go “1-24th more than the total distance to be traversed”! The “Clara” theory, already referred to, is adopted by 5 of these, viz., BO-PEEP, FINANCIER, KATE B., TOM-QUAD, and the nameless writer.

The 11 half-right answers are from BOG-OAK, BRIDGET, CASTOR, \perp CHESHIRE CAT,⁷⁵⁹ G. E. B., GUY, MARY, \perp M. A. H.,⁷⁶⁰ OLD MAID, R. W., and VENDREDI. All \perp these⁷⁶¹ adopt the “Clara” theory. CASTOR omits (1). VENDREDI gets (1) right, but in (2) makes the same mistake as BO-PEEP. I notice in your solution a marvellous proportion-sum:—“300 miles: 2 hours :: one mile: 24 seconds.” May I venture to advise your acquiring, as soon as possible, an utter disbelief in the possibility of a ratio existing between *miles* and *hours*? Do not be disheartened by your two friends’ sarcastic remarks on your “roundabout ways.” Their short method, of adding 12 and 8, has the slight disadvantage of bringing the answer wrong: even a “roundabout” method is better than *that!* \perp M. A. H., in (2), makes the travellers count “one” *after* they met, not *when* they met.⁷⁶² CHESHIRE CAT and OLD MAID get “20” as answer for (1), by forgetting to strike out the train met on arrival. The others all get “18” in various ways. BOG-OAK, GUY, and R. W. divide the trains which the westerly traveller has to meet into 2 sets, viz., those already on the line, which they (rightly) make “11,” and those which started during her 2 hours’ journey (exclusive of train met on arrival), which they (wrongly) make “7”; and they make a similar mistake with the easterly train. BRIDGET (rightly) says that the westerly traveller met a train every 6 minutes for 2 hours, but (wrongly) makes the number “20”; it should be “21.” G. E. B. adopts BO-PEEP’s method, but (wrongly) strikes out (for the easterly traveller) the train which started at the *commencement* of the previous 2 hours. MARY thinks a train, met on arrival, must not be counted, even when met on a *previous* occasion.

The 3, who are wholly right but for the unfortunate “Clara” theory, are F. LEE, G. S. C., and X. A. B.

And now “descend, ye \perp classic Ten!”⁷⁶³ who have solved the whole problem. Your names are AIX-LES-BAINS, ALGERNON BRAY (thanks for a friendly remark, which comes with a heart-warmth that not even the Atlantic could chill), ARVON, BRADSHAW OF THE FUTURE, \perp FIFEE,⁷⁶⁴ H. L. R., J. L. O., OMEGA, S. S. G., and WAITING FOR THE TRAIN. Several of these have put Clara, provisionally, into the easterly train: but they seem to have understood that the data do not decide that point.

\perp Class List⁷⁶⁵ I

AIX-LE-BAINS.

⁵⁹additionally “FIFEE” in the *Monthly Packet*

⁶⁰missing in the *Monthly Packet*

⁶¹except FIFEE

⁶²missing in the *Monthly Packet*, instead “FIFEE makes, in (1), the same mistake as M. A. H.: she gets (2) right.”

⁶³classic Nine (there is something uncanny about this coincidence: let us hope it will prove to be the beginning of a genuine ghost story)

⁶⁴missing in the *Monthly Packet*

⁶⁵In the *Monthly Packet* this list appears with Knot IV (which is Knot III there), instead it is followed by the remark here after Knot II

ALGERNON BRAY.
BRADSHAW OF THE FUTURE.
FIFEE.
H. L. R.
OMEGA.
S. S. G.
WAITING FOR THE TRAIN.

II

ARVON.
J. L. O.

III

F. LEE.
G. S. C.
X. A. B.

Answers to Knot IV

Source: The Monthly Packet, December 1880 (as “Answers to Knot III”, with minor differences as noted); A Tangled Tale

*Problem.*⁶⁶—“There are 5 sacks, of which Nos. 1, 2, weigh 12 lbs.; Nos. 2, 3, $13\frac{1}{2}$ lbs.; Nos. 3, 4, $11\frac{1}{2}$ lbs.; Nos. 4, 5, 8 lbs.; Nos. 1, 3, 5, 16 lbs. Required the weight of each sack.”

Answer.—“ $5\frac{1}{2}$, $6\frac{1}{2}$, 7, $4\frac{1}{2}$, $3\frac{1}{2}$.”

The sum of all the weighings, 61 lbs., includes sack No. 3 *thrice* and each other *twice*. Deducting twice the sum of the 1st and 4th weighings, we get 21 lbs. for *thrice* No. 3, *i. e.*, 7 lbs. for No. 3. Hence, the 2nd and 3rd weighings give $6\frac{1}{2}$ lbs., $4\frac{1}{2}$ lbs. for Nos. 2, 4; and hence again, the 1st and 4th weighings give $5\frac{1}{2}$ lbs., $3\frac{1}{2}$ lbs., for Nos. 1, 5.

Ninety-seven answers have been received. Of these, 15 are beyond the reach of discussion, as they give no working. I can but enumerate their names, and I take this opportunity of saying that this is the last time I shall put on record the names of competitors who give no sort of clue to the process by which their answers were obtained. In guessing a conundrum, or in catching a flea, we do not expect the breathless victor to give us afterwards, in cold blood, a history of the mental or muscular efforts by which he achieved success; but a mathematical calculation is another thing. The names of this “mute inglorious”

⁶⁶In the *Monthly Packet* preceded by:

In the House of Commons a *personal explanation* always takes precedence of all other matters of debate. Following that lofty precedent, I beg to express to FIFEE and to M. A. H. my sincere regret that I misunderstood their replies to Knot II, and so marked them wrongly. They enumerated the 19 starting-times of the trains met by the fast train (supposed to start at 4), and as they included in the list, 4.0, I supposed they were counting a meeting *at the terminus*. I see now that they were counting its *second* meeting with the fast train, which I was putting to the credit of the train starting at 1.0. Their method is quite right, and better than mine. M. A. H. ought to have been included among the ‘half-right’ answers, while FIFEE’S proper place was along with the ‘classic Nine,’ thus making them the *unclassical* (but, let us hope, the all-the-more mathematical) Ten. Let us now turn to Knot III.

Quoted from *Elegy
written in a Country
Churchyard* by
Thomas Gray

band are COMMON SENSE, D. E. R., DOUGLAS, E. L., ELLEN, I. M. T., J. M. C., JOSEPH, KNOT I, LUCY, MEEK, M. F. C., PYRAMUS, SHAH, VERITAS.

Of the eighty-two answers with which the working, or some approach to it, is supplied, one is wrong: seventeen have given solutions which are (from one cause or another) practically valueless: the remaining sixty-four I shall try to arrange in a Class-list, according to the varying degrees of shortness and neatness to which they seem to have attained.

The solitary wrong answer is from NELL. To be thus “alone in the crowd” is a distinction—a painful one, no doubt, but still a distinction. I am sorry for you, my dear young lady, and I seem to hear your tearful exclamation, when you read these lines, “Ah! This is the knell of all my hopes!” Why, oh why, did you assume that the 4th and 5th bags weighed 4 lbs. each? And why did you not test your answers? However, please try again: and please don’t change your *nom-de-plume*: let us have NELL in the First Class next time!

The seventeen whose solutions are practically valueless are ARDMORE, A READY RECKONER, ARTHUR, BOG-LARK, BOG-OAK, BRIDGET, FIRST ATTEMPT, J. L. C., M. E. T., ROSE, ROWENA, SEA-BREEZE, SYLVIA, THISTLE-DOWN, THREE-FIFTHS ASLEEP, VENDREDI, and WINIFRED. BOG-LARK tries it by a sort of “rule of false,” assuming experimentally that Nos. 1, 2, weigh 6 lbs. each, and having thus produced $17\frac{1}{2}$, instead of 16, as the weight of 1, 3, and 5, she removes “the superfluous pound and a half,” but does not explain how she knows from which to take it. THREE-FIFTHS ASLEEP says that (when in that peculiar state) “it seemed perfectly clear” to her that, “3 out of the 5 sacks being weighed twice over, $\frac{3}{5}$ of $45 = 27$, must be the total weight of the 5 sacks.” As to which I can only say, with the Captain, “it beats me entirely!” WINIFRED, on the plea that “one must have a starting-point,” assumes (what I fear is a mere guess) that No. 1 weighed $5\frac{1}{2}$ lbs. The rest all do it, wholly or partly, by guess-work.⁷⁶⁷

The problem⁷⁶⁸ is of course (as any Algebraist sees at once) a case of “simultaneous simple equations.” It is, however, easily soluble by Arithmetic only; and, when this is the case, I hold that it is bad workmanship to use the more complex method. I have not, this time, given more credit to arithmetical solutions; but in future problems I shall (other things being equal) give the highest marks to those who use the simplest machinery. I have put into Class I. those whose answers seemed specially short and neat, and into Class III. those that seemed specially long or clumsy. Of this last set, A. C. M., FURZE-BUSH, JAMES, PARTRIDGE, R. W., and WAITING FOR THE TRAIN, have sent long wandering solutions, the substitutions having no definite method, but seeming to have been made to see what would come of it. CHILPOME and DUBLIN BOY omit some of the working. ARVON MARLBOROUGH BOY only finds the weight of *one sack*.⁷⁶⁹

⁷⁶⁷In the *Monthly Packet* followed by:

We now come to the sixty-four who deserve (more or less) ‘honourable mention,’ and, as Class-lists are now the order of the day, we may as well go back to Knots I. and II., and make the thing complete. In assigning classes for Knot III., I can only *hope* that I have done justice all round; but the enormous number of solutions sent in has been such as to exhaust all possible methods of solving the question and the brains of the unfortunate reviewer.

⁷⁶⁸problem in Knot III.

⁷⁶⁹In the *Monthly Packet* followed by: [*N.B.—The names in each Class are arranged in alphabetical order.*]

Class List⁷⁰ I

B. E. D.
C. H.
CONSTANCE JOHNSON.
GREYSTEAD.
GUY.
HOOPOE.
J. F. A.
M. A. H.
NUMBER FIVE.
PEDRO.
R. E. X.
SEVEN OLD MEN.
VIS INERTIÆ.
WILLY B.
YAHOO.

II

AMERICAN SUBSCRIBER.
AN APPRECIATIVE SCHOOLMA'AM.
AYR.
BRADSHAW OF THE FUTURE.
CHEAM.
C. M. G.
DINAH MITE.
DUCKWING.
E. C. M.
E. N. LOWRY.
ERA.
EUROCLYDON.
F. H. W.
FIFEE.
G. E. B.
HARLEQUIN.
HAWTHORN.
HOUGH GREEN.
J. A. B.
JACK TAR.
J. B. B.
KGOVJNI.
LAND LUBBER.
L. D.
MAGPIE.
MARY.
MHRUXI.
MINNIE.

⁷⁰In the *Monthly Packet* preceded by the Class Lists for Knot I and Knot III (as Knot II.)

MONEY-SPINNER.
 NAIRAM.
 OLD CAT.
 POLICHINELLE.
 SIMPLE SUSAN.
 S. S. G.
 THISBE.
 VERENA.
 WAMBA.
 WOLFE.
 WYKEHAMICUS.
 Y. M. A. H.

III

A. C. M.
 ARVON MARLBOROUGH BOY.
 CHILPOME.
 DUBLIN BOY.
 FURZE-BUSH.
 JAMES.
 PARTRIDGE.
 R. W.
 WAITING FOR THE TRAIN.⁷¹

Answers to Knot V

Source: The Monthly Packet, March 1881 (as “Answers to Knot IV”, with different punctuation); A Tangled Tale

Problem.—To mark pictures, giving 3 x’s to 2 or 3, 2 to 4 or 5, and 1 to 9 or 10; also giving 3 o’s to 1 or 2, 2 to 3 or 4 and 1 to 8 or 9; so as to mark the smallest possible number of pictures, and to give them the largest possible number of marks.

Answer.—10 pictures; 29 marks; arranged thus:—

x	x	x	x	x	x	x	x	x	x	o
x	x	x	x	x			o	o	o	o
x	x	o	o	o	o	o	o	o	o	o

Solution.—By giving all the x’s possible, putting into brackets the optional ones, we get 10 pictures marked thus:—

⁷¹In the *Monthly Packet* followed by the following paragraph and an entry about *Lanrick* (→ 10.14, p. 1590):

A remonstrance has reached me from ALGERNON BRAY on the subject of Knot III., which he complains of as too easy and commonplace, and he kindly offers me a problem on numbers, where the difficulty consists in finding the digits. As to the first point, the great increase in the number and variety of solutions shows, I think, that Knot III. is better adapted than either of its predecessors to the class of readers for whom ‘A Tangled Tale’ is intended. As to the problem suggested, the writer is no doubt aware that in *Algebra* such a question is very common and easy; without *Algebra* I doubt if it could be done at all. But what I am seeking to supply for the fair readers of the *Monthly Packet* is practice in *hard Arithmetic* rather than in *easy Algebra*.

x x x x x x x x x (x)
x x x x (x)
x x (x)

By then assigning o's in the same way, beginning at the other end, we get 9 pictures marked thus:—

(o) o
(o) o o o
(o) o o o o o o o o

All we have now to do is to run these two wedges as close together as they will go, so as to get the minimum number of pictures—erasing optional marks where by so doing we can run them closer, but otherwise letting them stand. There are 10 necessary marks in the 1st row, and in the 3rd; but only 7 in the 2nd. Hence we erase all optional marks in the 1st and 3rd rows, but let them stand in the 2nd.

Twenty-two answers have been received. Of these 11 give no working; so, in accordance with what I announced in my last review of answers, I leave them unnamed, merely mentioning that 5 are right and 6 wrong.

Of the eleven answers with which some working is supplied, 3 are wrong. C. H. begins with the rash assertion that under the given conditions “the sum is impossible. For,” he or she adds (these initialed correspondents are dismally vague beings to deal with: perhaps “it” would be a better pronoun), “10 is the least possible number of pictures” (granted): “therefore we must either give 2 x’s to 6, or 2 o’s to 5.” Why “must,” oh alphabetical phantom? It is nowhere ordained that every picture “must” have 3 marks! FIFEE sends a folio page of solution, which deserved a better fate: she offers 3 answers, in each of which 10 pictures are marked, with 30 marks; in one she gives 2 x’s to 6 pictures; in another to 7; in the 3rd she gives 2 o’s to 5; thus in every case ignoring the conditions. (I pause to remark that the condition “2 x’s to 4 or 5 pictures” can only mean “*either* to 4 *or else* to 5”: if, as one competitor holds, it might mean *any* number not less than 4, the words “*or* 5” would be superfluous.) I. E. A. (I am happy to say that none of these bloodless phantoms appear this time in the class-list. Is it IDEA with the “D” left out?) gives 2 x’s to 6 pictures. She then takes me to task for using the word “ought” instead of “nought.” No doubt, to one who thus rebels against the rules laid down for her guidance, the word must be distasteful. But does not I. E. A. remember the parallel case of “adder”? That creature was originally “a nadder”: then the two words took to bandying the poor “n” backwards and forwards like a shuttlecock, the final state of the game being “an adder.” May not “a nought” have similarly become “an ought”? Anyhow, “oughts and crosses” is a very old game. I don’t think I ever heard it called “noughts and crosses.”

In the following Class-list, I hope the solitary occupant of III. will sheathe her claws when she hears how narrow an escape she has had of not being named at all. Her account of the process by which she got the answer is so meagre that, like the nursery tale of “Jack-a-Minory” (I trust I. E. A. will be merciful to the spelling), it is scarcely to be distinguished from “zero.”

Class List I

GUY.
OLD CAT.
SEA-BREEZE.

II

AYR.
BRADSHAW OF THE FUTURE.
F. LEE.
H. VERNON.

III

⌊CAT.⁷²

Answers to Knot VI

Source: The Monthly Packet, September 1881 (with minor differences as noted); A Tangled Tale

Problem 1.—*A* and *B* began the year with only 1,000*l.* a-piece. They borrowed nought; they stole nought. On the next New-Year's Day they had 60,000*l.* between them. How did they do it?

Solution.—They went that day to the Bank of England. *A* stood in front of it, while *B* went round and stood behind it.

Two answers have been received, both worthy of much honour. ADDLEPATE makes them borrow “0” and steal “0,” and uses both cyphers by putting them at the right-hand end of the 1,000*l.*, thus producing 100,000*l.*, which is well over the mark. But (or to express it in Latin) AT SPES INFRACTA has solved it even more ingeniously: with the first cypher she turns the “1” of the 1,000*l.* into a “9,” and adds the result to the original sum, thus getting 10,000*l.*: and in this, by means of the other “0,” she turns the “1” into a “6,” thus hitting the exact 60,000*l.*

Class List I

AT SPES INFRACTA.

II

ADDLEPATE.

Problem 2.—*L* makes 5 scarves, while *M* makes 2: *Z* makes 4 while *L* makes 3. Five scarves of *Z*'s weigh one of *L*'s; 5 of *M*'s weigh 3 of *Z*'s. One of *M*'s is as warm as 4 of *Z*'s: and one of *L*'s as warm as 3 of *M*'s. Which is best, giving equal weight in the result to rapidity of work, lightness, and warmth?

⁷²Followed by the signature “Lewis Carroll” and some remarks about Lanrick in the *Monthly Packet* (→ 10.14, p. 1591)

Answer.—The order is M, L, Z .⁷³

Solution.—As to rapidity (other things being constant) L 's merit is to M 's in the ratio of 5 to 2: Z 's to L 's in the ratio of 4 to 3. In order to get one set of 3 numbers fulfilling these conditions, it is perhaps simplest to take the one that occurs twice as unity, and reduce the others to fractions: this gives, for L, M , and Z ,⁷⁴ the marks $1, \frac{2}{5}, \frac{4}{3}$. In estimating for *lightness*, we observe that the greater the weight, the less the merit, so that Z 's merit is to L 's as 5 to 1. Thus the marks for *lightness* are $\frac{1}{5}, \frac{5}{3}, 1$. And similarly, the marks for warmth are $3, 1, \frac{1}{4}$. To get the total result, we must multiply L 's 3 marks together, and do the same for M and for Z . The final numbers are $1 \times \frac{1}{5} \times 3, \frac{2}{5} \times \frac{5}{3} \times 1, \frac{4}{3} \times 1 \times \frac{1}{4}$; *i. e.* $\frac{3}{5}, \frac{2}{3}, \frac{1}{3}$; *i. e.* multiplying throughout by 15 (which will not alter the proportion), 9, 10, 5; showing the order of merit to be M, L, Z .

Twenty-nine answers have been received, of which five are right, and twenty-four wrong. These hapless ones have all (with three exceptions) fallen into the error of *adding* the proportional numbers together, for each candidate, instead of *multiplying*. Why the latter is right, rather than the former, is fully proved in text-books, so I will not occupy space by stating it here: but it can be *illustrated* very easily by the case of length, breadth, and depth. Suppose A and B are rival diggers of rectangular tanks: the amount of work done is evidently measured by the number of *cubical feet* dug out. Let A dig a tank 10 feet long, 10 wide, 2 deep: let B dig one 6 feet long, 5 wide, 10 deep. The cubical contents are 200, 300; *i. e.* B is best digger in the ratio of 3 to 2. Now try marking for length, width, and depth, separately; giving a maximum mark of 10 to the best in each contest, and then *adding* the results!

Of the twenty-four malefactors, one gives no working, and so has no real claim to be named; but I break the rule for once, in deference to its success in Problem 1: he, she, or it, is ADDLEPATE. The other twenty-three may be divided into five groups.

First and worst are, I take it, those who put the rightful winner *last*; arranging them as "Lolo, Zuzu, Mimi." The names of these desperate wrong-doers are AYR, BRADSHAW OF THE FUTURE, FURZE-BUSH and POLLUX (who send a joint answer), GREYSTEAD, GUY, OLD HEN, and SIMPLE SUSAN. The latter was *once* best of all; the Old Hen has taken advantage of her simplicity, and beguiled her with the chaff which was the bane of her own chickenhood.

Secondly, I point the finger of scorn at those who have put the worst candidate at the top; arranging them as "Zuzu, Mimi, Lolo." They are GRAECIA, M. M., OLD CAT, and R. E. X. "Tis Greece, but——"

The third set have avoided both these enormities, and have even succeeded in putting the worst last, their answer being "Lolo, Mimi, Zuzu." Their names are AYR (who also appears among the "quite too too"), CLIFTON C., F. B., FIFEE, GRIG, JANET, and MRS. SAIREY GAMP. F. B. has not fallen into the common error; she *multiplies* together the proportionate numbers she gets, but in getting them she goes wrong, by reckoning warmth as a *de*-merit. Possibly she is "Freshly Burnt," or comes "From Bombay." JANET and MRS. SAIREY GAMP have also avoided this error: the method they have adopted is shrouded in mystery—I scarcely feel competent to criticize it. MRS. GAMP says "if Zuzu

Quoted from *The Giaour* by George Gordon Byron

⁷³missing in the *Monthly Packet*

⁷⁴mistakenly "N" in the *Monthly Packet*

makes 4 while Lolo makes 3, Zuzu makes 6 while Lolo makes 5 (bad reasoning), while Mimi makes 2." From this she concludes "therefore Zuzu excels in speed by 1" (*i. e.* when compared with Lolo; but what about Mimi?). She then compares the 3 kinds of excellence, measured on this mystic scale. JANET takes the statement, that "Lolo makes 5 while Mimi makes 2," to prove that "Lolo makes 3 while Mimi makes 1 and Zuzu 4" (worse reasoning than MRS. GAMP'S), and thence concludes that "Zuzu excels in speed by $\frac{1}{8}$!" JANET should have been ADELINE, "mystery of mysteries!"

The fourth set actually put Mimi at the top, arranging them as "Mimi, Zuzu, Lolo." They are MARQUIS AND CO., MARTREB, S. B. B. (first initial scarcely legible: may be meant for "J"), and STANZA.

The fifth set consist of AN ANCIENT FISH and CAMEL. These ill-assorted comrades, by dint of foot and fin, have scrambled into the right answer, but, as their method is wrong, of course it counts for nothing. Also AN ANCIENT FISH has very ancient and fishlike ideas as to *how* numbers represent merit: she says "Lolo gains $2\frac{1}{2}$ on Mimi." Two and a half *what?* Fish, fish, art thou in thy duty?

Of the five winners I put BALBUS and THE ELDER TRAVELLER slightly below the other three—BALBUS for defective reasoning, the other for scanty working. BALBUS gives two reasons for saying that *addition* of marks is *not* the right method, and then adds "it follows that the decision must be made by *multiplying* the marks together." This is hardly more logical than to say "This is not Spring: *therefore* it must be Autumn."

Class List I

DINAH MITE.
E. B. D. L.
JORAM.

II

BALBUS.
THE ELDER TRAVELLER.

⌋With regard to Knot V., I beg to express to VIS INERTIÆ and to any others who, like her, understood the condition to be that *every* marked picture must have *three* marks, my sincere regret that the unfortunate phrase "*fill* the columns with oughts and crosses" should have caused them to waste so much time and trouble. I can only repeat that a *literal* interpretation of "fill" would seem to *me* to require that *every* picture in the gallery should be marked. VIS INERTIÆ would have been in the First Class if she had sent in the solution she now offers.⁷⁵

⁷⁵In the *Monthly Packet*, this comes—starting with "P.S." and "Knot IV." instead of "Knot V."—after the answers to Knot II (which is Knot V there), instead, here follows:

P.S.—I beg to thank BALBUS for his suggestion about 'Mischmasch' (which will be a help for the next edition), and to say, in that a 'false extract' (*i. e.* one for which no word is known) *may* be proposed—and that, if an extract be set a second time, one ought to be allowed to give the old answer.

Lewis Carroll.

Answers to Knot VII

Source: The Monthly Packet, June 1882 (with minor differences as noted); A Tangled Tale

Problem.—Given that one glass of lemonade, 3 sandwiches, and 7 biscuits, cost 1s. 2d.; and that one glass of lemonade, 4 sandwiches, and 10 biscuits, cost 1s. 5d.: find the cost of (1) a glass of lemonade, a sandwich, and a biscuit; and (2) 2 glasses of lemonade, 3 sandwiches, and 5 biscuits.

⌊*Answer.*—(1) 8d.; (2) 1s. 7d.⁷⁶

Solution.—This is best treated algebraically. Let x = the cost (in pence) of a glass of lemonade, y of a sandwich, and z of a biscuit. Then we have $x + 3y + 7z = 14$, and $x + 4y + 10z = 17$. And we require the values of $x + y + z$, and of $2x + 3y + 5z$. Now, from *two* equations only, we cannot find, *separately*, the values of *three* unknowns: certain *combinations* of them may, however, be found. Also we know that we can, by the help of the given equations, eliminate 2 of the 3 unknowns from the quantity whose value is required, which will then contain one only. If, then, the required value is ascertainable at all, it can only be by the 3rd unknown vanishing of itself: otherwise the problem is impossible.

Let us then eliminate lemonade and sandwiches, and reduce everything to biscuits—a state of things even more depressing than “if all the world were apple-
pie”—by subtracting the 1st equation from the 2nd, which eliminates lemonade, and gives $y + 3z = 3$, or $y = 3 - 3z$; and then substituting this value of y in the 1st, which gives $x - 2z = 5$, *i. e.* $x = 5 + 2z$. Now if we substitute these values of x , y , in the quantities whose values are required, the ⌊*first*⁷⁷ becomes $(5 + 2z) + (3 - 3z) + z$, *i. e.* 8: and the ⌊*second*⁷⁸ becomes $2(5 + 2z) + 3(3 - 3z) + 5z$, *i. e.* 19. Hence the answers are (1) 8d., (2) 1s. 7d.

Quoted from nursery rhyme

The above is a *universal* method: that is, it is absolutely certain either to produce the answer, or to prove that no answer is possible. The question may also be solved by combining the quantities whose values are given, so as to form those whose values are required. This is merely a matter of ingenuity and good luck: and as it *may* fail, even when the thing is possible, and is of no use in proving it *impossible*, I cannot rank this method as equal in value with the other. Even when it succeeds, it may prove a very tedious process. Suppose the 26 competitors, who have sent in what I may call *accidental* solutions, had had a question to deal with where every number contained 8 or 10 digits! I suspect it would have been a case of “silvered is the raven hair” (see “Patience”) before any solution would have been hit on by the most ingenious of them.

Quoted from *Patience* by Gilbert and Sullivan

Forty-five answers have come in, of which 44 give, I am happy to say, some sort of *working*, and therefore deserve to be mentioned by name, and to have their virtues, or vices as the case may be, discussed. Thirteen have made assumptions to which they have no right, and so cannot figure in the Class-list, even though, in 10 of the ⌊*13*⁷⁹ cases, the answer is right. Of the remaining 28, no less than 26 have sent in *accidental* solutions, and therefore fall short of the highest honours.

⁷⁶missing in the *Monthly Packet*

⁷⁷1st

⁷⁸2nd

⁷⁹mistakenly “12”

I will now discuss individual cases, taking the worst first, as my custom is.

FROGGY gives no working—at least this is all he gives: after stating the given equations, he says “therefore the difference, 1 sandwich + 3 biscuits, = $3d.$ ”: then follow the amounts of the unknown bills, with no further hint as to how he got them. FROGGY has had a *very* narrow escape of not being named at all!

Of those who are wrong, VIS INERTIÆ has sent in a piece of incorrect working. Peruse the horrid details, and shudder! „She⁷⁸⁰ takes x (call it “ y ”) as the cost of a sandwich, and concludes (rightly enough) that a biscuit will cost $\frac{3-y}{3}$. „She⁷⁸¹ then subtracts the second equation from the first, and deduces $3y + 7 \times \frac{3-y}{3} - 4y + 10 \times \frac{3-y}{3} = 3$. By making two mistakes in this line, „she⁷⁸² brings out $y = \frac{3}{2}$. Try it again, oh VIS INERTIÆ! Away with INERTIÆ: infuse a little more VIS: and you will bring out the correct (though uninteresting) result, $0 = 0$! This will show you that it is hopeless to try to coax any one of these 3 unknowns to reveal „its⁷⁸³ *separate* value. The other competitor, who is wrong throughout, is either J. M. C. or T. M. C.: but, whether he be a Juvenile Mis-Calculator or a True Mathematician Confused, he makes the answers $7d.$ and $1s. 5d.$ He assumes, with Too Much Confidence, that biscuits were $\frac{1}{2}d.$ each, and that Clara paid for 8, though she only ate 7!

We will now consider the 13 whose working is wrong, though the answer is right: and, not to measure their demerits too exactly, I will take them in alphabetical order. ANITA finds (rightly) that “1 sandwich and 3 biscuits cost $3d.$,” and proceeds “therefore 1 sandwich = $1\frac{1}{2}d.$, 3 biscuits = $1\frac{1}{2}d.$, 1 lemonade = $6d.$ ” DINAH MITE begins like ANITA: and thence proves (rightly) that a biscuit costs less than a $1d.$: whence she concludes (wrongly) that it *must* cost $\frac{1}{2}d.$ F. C. W. is so beautifully resigned to the certainty of a verdict of “guilty,” that I have hardly the heart to utter the word, without adding a “recommended to mercy owing to extenuating circumstances.” But really, you know, where *are* the extenuating circumstances? She begins by assuming that lemonade is $4d.$ a glass, and sandwiches $3d.$ each, (making with the 2 given equations, *four* conditions to be fulfilled by *three* miserable unknowns!). And, having (naturally) developed this into a contradiction, she then tries $5d.$ and $2d.$ with a similar result. (N.B. *This* process might have been carried on through the whole of the Tertiary Period, without gratifying one single Megatherium.) She then, by a “happy thought,” tries half-penny biscuits, and so obtains a consistent result. This may be a good solution, viewing the problem as a conundrum: but it is *not* scientific. JANET identifies sandwiches with biscuits! “One sandwich + 3 biscuits” she makes equal to “4.” Four *what?* MAYFAIR makes the astounding assertion that the equation, $s + 3b = 3$, “is evidently only satisfied by $s = \frac{3}{2}$, $b = \frac{1}{2}$!” OLD CAT believes that the assumption that a sandwich costs $1\frac{1}{2}d.$ is “the only way to avoid unmanageable fractions.” But *why* avoid them? Is there not a certain glow of triumph in taming such a fraction? “Ladies and gentlemen, the fraction now before you is one that for years defied all efforts of a refining nature: it was, in a word, hopelessly vulgar. Treating it as a circulating decimal (the treadmill of fractions) only made matters worse. As a last resource, I reduced it to its lowest terms, and extracted its square root!” Joking apart, let me thank

⁸⁰He

⁸¹He

⁸²he

⁸³his

OLD CAT for some very kind words of sympathy, in reference to a correspondent (whose name I am happy to say I have now forgotten) who had found fault with me as a discourteous critic. O. V. L. is beyond my comprehension. He takes the given equations as (1) and (2): thence, by the process [(2) – (1)] deduces (rightly) equation (3) viz. $s + 3b = 3$: and thence again, by the process [$\times 3$] (a hopeless mystery), deduces $3s + 4b = 4$. I have nothing to say about it: I give it up. SEA-BREEZE says “it is immaterial to the answer” (why?) “in what proportion $3d$. is divided between the sandwich and the 3 biscuits”: so she assumes $s = 1\frac{1}{2}d$, $b = \frac{1}{2}d$. STANZA is one of a very irregular metre. At first she (like JANET) identifies sandwiches with biscuits. She then tries two assumptions ($s = 1$, $b = \frac{2}{3}$, and $s = \frac{1}{2}$, $b = \frac{5}{6}$), and (naturally) ends in contradictions. Then she returns to the first assumption, and finds the 3 unknowns separately: *quod est absurdum*. STILETTO identifies sandwiches and biscuits, as “articles.” Is the word ever used by confectioners? I fancied “What is the next article, Ma’am?” was limited to linendrapers. TWO SISTERS first assume that biscuits are 4 a penny, and then that they are 2 a penny, adding that “the answer will of course be the same in both cases.” It is a dreamy remark, making one feel something like Macbeth grasping at the spectral dagger. “Is this a statement that I see before me?” If you were to say “we both walked the same way this morning,” and I were to say “one of you walked the same way, but the other didn’t,” which of the three would be the most hopelessly confused? TURTLE PYATE (what is a Turtle Pyate, please?) and OLD CROW, who send a joint answer, and Y. Y., adopt the same method. Y. Y. gets the equation $s + 3b = 3$: and then says “this sum must be apportioned in one of the three following ways.” It *may* be, I grant you: but Y. Y. do you say “must”? I fear it is *possible* for Y. Y. to be *two* Y’s. The other two conspirators are less positive: they say it “can” be so divided: but they add “either of the three prices being right”! This is bad grammar and bad arithmetic at once, oh mysterious birds!

Quoted from *Macbeth*
by William
Shakespeare
(modified)

Of those who win honours, THE SHETLAND SNARK must have the 3rd class all to himself. He has only answered half the question, viz. the amount of Clara’s luncheon: the two little old ladies he pitilessly leaves in the midst of their “difficulty.” I beg to assure him (with thanks for his friendly remarks) that entrance-fees and subscriptions are things unknown in that most economical of clubs, “The Knot-Untiers.”

The authors of the 26 “accidental” solutions differ only in the number of steps they have taken between the *data* and the answers. In order to do them full justice I have arranged the 2nd class in sections, according to the number of steps. The two Kings are fearfully deliberate! I suppose walking quick, or taking short cuts, is inconsistent with kingly dignity: but really, in reading THESEUS’ solution, one almost fancied he was “marking time,” and making no advance at all! The other King will, I hope, pardon me for having altered “Coal” into “Cole.” King Coilus, or Coil, seems to have reigned soon after Arthur’s time. Henry of Huntingdon identifies him with the King Coël who first built walls round Colchester, which was named after him. In the Chronicle of Robert of Gloucester we read:—

“Aftur Kyng Aruirag, of wam we habbeth y told,
Marius ys sone was kyng, quoynte mon & bold.
And ys sone was aftur hym, Coil was ys name,
Bothe it were quoynte men, & of noble fame.”

Quoted from *Robert of Gloucester’s Chronicle*, edited by Thomas Hearne

BALBUS lays it down as a general principle that “in order to ascertain the cost of any one luncheon, it must come to the same amount upon two different assumptions.” (*Query*. Should not “it” be “we”? Otherwise the *luncheon* is represented as wishing to ascertain its own cost!) He then makes two assumptions—one, that sandwiches cost nothing; the other, that biscuits cost nothing, (either arrangement would lead to the shop being inconveniently crowded!)—and brings out the unknown luncheons as 8*d.* and 19*d.*, on each assumption. He then concludes that this agreement of results “shows that the answers are correct.” Now I propose to disprove his general law by simply giving *one* instance of its failing. One instance is quite enough. In logical language, in order to disprove a “universal affirmative,” it is enough to prove its contradictory, which is a “particular negative.” (I must pause for a digression on Logic, and especially on Ladies’ Logic. The universal affirmative “everybody says he’s a duck” is crushed instantly by proving the particular negative “Peter says he’s a goose,” which is equivalent to “Peter does *not* say he’s a duck.” And the universal negative “nobody calls on her” is well met by the particular affirmative “*I* called yesterday.” In short, either of two contradictories disproves the other: and the moral is that, since a particular proposition is much more easily proved than a universal one, it is the wisest course, in arguing with a Lady, to limit one’s *own* assertions to “particulars,” and leave *her* to prove the “universal” contradictory, if she can. You will thus generally secure a *logical* victory: a *practical* victory is not to be hoped for, since she can always fall back upon the crushing remark “*that* has nothing to do with it!”—a move for which Man has not yet discovered any satisfactory answer.⁸⁴ Now let us return to BALBUS.) Here is my “particular negative,” on which to test his rule. Suppose the two recorded luncheons to have been “2 buns, one queen-cake, 2 sausage-rolls, and a bottle of Zoëdone: total, one-and-ninepence,” and “one bun, 2 queen-cakes, a sausage-roll, and a bottle of Zoëdone: total, one-and-fourpence.” And suppose Clara’s unknown luncheon to have been “3 buns, one queen-cake, one sausage-roll, and 2 bottles of Zoëdone:” while the two little sisters had been indulging in “8 buns, 4 queen-cakes, 2 sausage-rolls, and 6 bottles of Zoëdone.” (Poor souls, how thirsty they must have been!) If BALBUS will kindly try this by his principle of “two assumptions,” first assuming that a bun is 1*d.* and a queen-cake 2*d.*, and then that a bun is 3*d.* and a queen-cake 3*d.*, he will bring out the other two luncheons, on each assumption, as “one-and-nine-pence” and “four-and-ten-pence” respectively, which harmony of results, he will say, “shows that the answers are correct.” And yet, as a matter of fact, the buns were 2*d.* each, the queen-cakes 3*d.*, the sausage-rolls 6*d.*, and the Zoëdone 2*d.* a bottle: so that Clara’s third luncheon had cost one-and-sevenpence, and her thirsty friends had spent four-and-fourpence!

Another remark of BALBUS I will quote and discuss: for I think that it also may yield a moral for some of my readers. He says “it is the same thing in substance whether in solving this problem we use words and call it Arithmetic, or use letters and signs and call it Algebra.” Now this does not appear to me a correct description of the two methods: the Arithmetical method is that of “synthesis” only; it goes from one known fact to another, till it reaches its goal: whereas the Algebraical method is that of “analysis”: it begins with the goal, symbolically represented, and so goes backwards, dragging its veiled victim with

⁸⁴In the *Monthly Packet* followed by: By the way, I think it might be a good thing to try a *logical* knot in the next chapter, instead of an *arithmetical* one. All who would like it, please hold up their hand.

it, till it has reached the full daylight of known facts, in which it can tear off the veil and say "I know you!"

Take an illustration. Your house has been broken into and robbed, and you appeal to the policeman who was on duty that night. "Well, Mum, I did see a chap getting out over your garden-wall: but I was a good bit off, so I didn't chase him, like. I just cut down the short way to the Chequers, and who should I meet but Bill Sykes, coming full split round the corner. So I just ups and says 'My lad, you're wanted.' That's all I says. And he says 'I'll go along quiet, Bobby,' he says, 'without the darbies,' he says." There's your *Arithmetical* policeman. Now try the other method. "I seed somebody a running, but he was well gone or ever I got nigh the place. So I just took a look round in the garden. And I noticed the foot-marks, where the chap had come right across your flower-beds. They was good big foot-marks sure-ly. And I noticed as the left foot went down at the heel, ever so much deeper than the other. And I says to myself 'The chap's been a big hulking chap: and he goes lame on his left foot.' And I rubs my hand on the wall where he got over, and there was soot on it, and no mistake. So I says to myself 'Now where can I light on a big man, in the chimbley-sweep line, what's lame of one foot?' And I flashes up permiscuous: and I says 'It's Bill Sykes!' says I." There is your *Algebraical* policeman—a higher intellectual type, to my thinking, than the other.

LITTLE JACK's solution calls for a word of praise, as he has written out what really is an algebraical proof *in words*, without representing any of his facts as equations. If it is all his own, he will make a good algebraist in the time to come. I beg to thank SIMPLE SUSAN for some kind words of sympathy, to the same effect as those received from OLD CAT.

HECLA and MARTREB are the only two who have used a method *certain* either to produce the answer, or else to prove it impossible: so they must share between them the highest honours.

Class List I

HECLA.
MARTREB.

II

§ 1 (2 *steps*).
ADELAIDE.
CLIFTON C. . . .
E. K. C.
GUY.
L'INCONNU.
LITTLE JACK.
NIL DESPERANDUM.
SIMPLE SUSAN.
YELLOW-HAMMER.
WOOLLY ONE.
§ 2 (3 *steps*).
A. A.
A CHRISTMAS CAROL.

AFTERNOON TEA.
 AN APPRECIATIVE SCHOOLMA'AM.
 BABY.
 BALBUS.
 BOG-OAK.
 THE RED QUEEN.
 WALL-FLOWER.
 § 3 (4 *steps*).
 HAWTHORN.
 JORAM.
 S. S. G.⁷⁸⁵
 § 4 (5 *steps*).
 A STEPNEY COACH.
 § 5 (6 *steps*).
 BAY LAUREL.
 BRADSHAW OF THE FUTURE.
 § 6 (9 *steps*).
 OLD KING COLE.
 § 7 (14 *steps*).
 THESEUS.

III

THE SHETLAND SHARK.⁷⁸⁶

Answers to Correspondents

Source: The Monthly Packet, November 1881 (with minor differences as noted); A Tangled Tale

I have received several letters on the subjects of Knots II.⁷⁸⁷ and VI., which lead me to think some further explanation desirable.

In Knot II.⁷⁸⁸, I had intended the numbering of the houses to begin at one corner of the Square, and this was assumed by most, if not all, of the competitors. TROJANUS however says "assuming, in default of any information, that the street enters the square in the middle of each side, it may be supposed that the numbering begins at a street." But surely the other is the more natural assumption?⁷⁸⁹

⁷⁸⁵missing in the *Monthly Packet*, instead at the end:

P.S.—I am sorry that S. S. G.'s answer was accidentally mislaid, and did not reach me in time to be included with the others. His proper place is in § 3 of the second class. I beg to thank him for an algebraical problem, leading to a quadratic equation, but I fear it is hardly suitable for my purpose, as it does not admit of any choice of method, that I can see.

L. C.

⁷⁸⁶Missing in *A Tangled Tale*; in the *Monthly Packet* followed (still before the above P.S.) by a note about "Shakespeare for Girls", → 16.30, p. 1978

⁷⁸⁷V.

⁷⁸⁸V.

⁷⁸⁹In the *Monthly Packet* followed by: One more word to TROJANUS: the brass door-plate at No. 9 was *not* 'elliptical': it was oblong.

In Knot VI., the first Problem was of course a mere *jeu de mots*, whose presence I thought excusable in a series of Problems whose aim is to entertain rather than to instruct: but it has not escaped the contemptuous criticisms of two of my correspondents, who seem to think that Apollo is in duty bound to keep his bow always on the stretch. Neither of them has guessed it: and this is true human nature. Only the other day—the 31st of September, to be quite exact—I met my old friend Brown, and gave him a riddle I had just heard. With one great effort of his colossal mind, Brown guessed it. “Right!” said I. “Ah,” said he, “it’s very neat—very neat. And it isn’t an answer that would occur to everybody. Very neat indeed.” A few yards further on, I fell in with Smith and to him I propounded the same riddle. He frowned over it for a minute, and then gave it up. Meekly I faltered out the answer. “A poor thing, sir!” Smith growled, as he turned away. “A very poor thing! I wonder you care to repeat such rubbish!” Yet Smith’s mind is, if possible, even more colossal than Brown’s.

The second Problem of Knot VI. is an example in ordinary Double Rule of Three, whose essential feature is that the result depends on the variation of several elements, which are so related to it that, if all but one be constant, it varies as that one: hence, if none be constant, it varies as their product. Thus, for example, the cubical contents of a rectangular tank vary as its length, if breadth and depth be constant, and so on; hence, if none be constant, it varies as the product of the length, breadth, and depth.

When the result is not thus connected with the varying elements, the Problem ceases to be Double Rule of Three and often becomes one of great complexity.

To illustrate this, let us take two candidates for a prize, *A* and *B*, who are to compete in French, German, and Italian:

(*a*) Let it be laid down that the result is to depend on their *relative* knowledge of each subject, so that, whether their marks, for French, be “1, 2” or “100, 200,” the result will be the same: and let it also be laid down that, if they get equal marks on 2 papers, the final marks are to have the same ratio as those of the 3rd paper. This is a case of ordinary Double Rule of Three. We multiply *A*’s 3 marks together, and do the same for *B*. Note that, if *A* gets a single “0,” his final mark is “0,” even if he gets full marks for 2 papers while *B* gets only one mark for each paper. This of course would be very unfair on *A*, though a correct solution under the given conditions.

(*b*) The result is to depend, as before, on *relative* knowledge; but French is to have twice as much weight as German or Italian. This is an unusual form of question. I should be inclined to say “the resulting ratio is to be nearer to the French ratio than if we multiplied as in (*a*), and so much nearer that it would be necessary to use the other multipliers *twice* to produce the same result as in (*a*):” *e. g.* if the French Ratio were $\frac{9}{10}$, and the others $\frac{4}{9}, \frac{1}{9}$ so that the ultimate ratio, by method (*a*), would be $\frac{2}{45}$, I should multiply instead by $\frac{2}{3}, \frac{1}{3}$,⁹⁰ giving the result, $\frac{1}{5}$ which is nearer to $\frac{9}{10}$ than if he had used method (*a*).

(*c*) The result is to depend on *actual*⁹¹ amount of knowledge of the \lrcorner 3⁹² subjects collectively. Here we have to ask two questions. (1) What is to be the “unit” (*i. e.* “standard to measure by”) in each subject? (2) Are these units

⁹⁰by the *square roots* of the other ratios, *i. e.* by $\frac{2}{3}, \frac{1}{3}$

⁹¹mistakenly “relative” in the *Monthly Packet*

⁹²three

to be of equal, or unequal value? The usual “unit” is the knowledge shown by answering the whole paper correctly; calling this “100,” all lower amounts are represented by numbers between “0” and “100.” Then, if these units are to be of equal value, we simply add *A*’s 3 marks together, and do the same for *B*.

(*d*) The conditions are the same as (*c*), but French is to have double weight. Here we simply double the French marks, and add as before.

(*e*) French is to have such weight, that, if other marks be equal, the ultimate ratio is to be that of the French paper, so that a “0” in this would swamp the candidate⁹³: but⁹⁴ the other two subjects are only to affect the result collectively, by the amount of knowledge shown, the two being reckoned of equal value. Here I should add *A*’s German and Italian marks together, and multiply by his French mark.

But I need not go on: the problem may evidently be set with many varying conditions, each requiring its own method of solution. The Problem in Knot VI. was meant to belong to variety (*a*), and to make this clear, I inserted the following passage:

“Usually the competitors differ in one point only. Thus, last year, Fifi and Gogo made the same number of scarves in the trial week, and they were equally light; but Fifi’s were twice as warm as Gogo’s, and she was pronounced twice as good.”

What I have said will suffice, I hope, as an answer to BALBUS, who holds that (*a*) and (*c*) are the only possible varieties of the problem, and that to say “We cannot use addition, therefore we must be intended to use multiplication,” is “no more illogical than, from knowledge that one was not born in the night, to infer that he was born in the daytime”; and also to FIFEE, who says “I think a little more consideration will show you that our ‘error of *adding* the proportional numbers together for each candidate instead of *multiplying*’ is no error at all.” Why, even if addition *had* been the right method to use, not one of the writers (I speak from memory) showed any consciousness of the necessity of fixing a “unit” for each subject. “No error at all!” They were positively steeped in error!

One correspondent (I do not name him, as the communication is not quite friendly in tone) writes thus:—“I wish to add, very respectfully, that I think it would be in better taste if you were to abstain from the very trenchant expressions which you are accustomed to indulge in when criticising the answer. That such a tone must not be” (“be not”?) “agreeable to the persons concerned who have made mistakes may possibly have no great weight with you, but I hope you will feel that it would be as well not to employ it, *unless you are quite certain of being correct yourself*.” The only instances the writer gives of the “trenchant expressions” are “hapless” and “malefactors.” I beg to assure him (and any others who may need the assurance: I trust there are none) that all such words have been used in jest, and with no idea that they could possibly annoy any one, and that I sincerely regret any annoyance I may have thus inadvertently given. May I hope that in future they will recognise the distinction between severe language used in sober earnest, and the “words of unmeant bitterness,” which Coleridge has alluded to in that lovely passage beginning “A little child, a limber elf”? If the writer will refer to that passage, or to the preface to “Fire, Famine, and Slaughter,” he will find the distinction, for which I plead, far better drawn out

Quoted from
Christabel by Samuel
Taylor Coleridge

Quoted from *Fire,
Famine, and
Slaughter* by Samuel
Taylor Coleridge

⁹³(missing in the *Monthly Packet*)

⁹⁴but, if the French marks be equal

than I could hope to do in any words of mine.

The writer's insinuation that I care not how much annoyance I give to my readers I think it best to pass over in silence; but to his concluding remark I must entirely demur. I hold that to use language likely to annoy any of my correspondents would not be in the least justified by the plea that I was "quite certain of being correct." I trust that the knot-untiers and I are not on such terms as those!

I beg to thank *G. B.* for the offer of a puzzle—which, however, is too like the old one "Make four 9's into 100."

Answers to Knot VIII

Source: The Monthly Packet, November 1883 (as "Answers to Knot IX", with minor differences as noted); A Tangled Tale

§ 1. **The Pigs**⁷⁹⁵ ¶*Problem.*⁷⁹⁶—Place twenty-four pigs in four sties so that, as you go round and round, you may always find the number in each sty nearer to ten than the number in the last.

¶*Answer.*⁷⁹⁷—Place 8 pigs in the first sty, 10 in the second, nothing in the third, and 6 in the fourth: 10 is nearer ten than 8; nothing is nearer ten than 10; 6 is nearer ten than nothing; and 8 is nearer ten than 6.

This problem is noticed by only two correspondents. BALBUS says "it certainly cannot be solved mathematically, nor do I see how to solve it by any verbal quibble." NOLENS VOLENS makes Her Radiancy change the direction of going round; and even then is obliged to add "the pigs must be carried in front of her"!

§ 2. **The Grumstipths**⁷⁹⁸ ¶*Problem.*⁷⁹⁹—Omnibuses start from a certain point, both ways, every $12\frac{1}{2}$ minutes. A traveller, starting on foot along with one of them, meets one in $12\frac{1}{2}$ minutes: when will he be overtaken by one?

¶*Answer.*⁷⁹⁹—In $6\frac{1}{4}$ minutes.

Solution.—Let "*a*" be the distance an omnibus goes in 15 minutes, and "*x*" the distance from the starting-point to where the traveller is overtaken. Since the omnibus met is due at the starting-point in $2\frac{1}{2}$ minutes, it goes in that time as far as the traveller walks in $12\frac{1}{2}$; *i. e.* it goes 5 times as fast. Now the overtaking omnibus is "*a*" behind the traveller when he starts, and therefore goes "*a + x*" while he goes "*x*." Hence $a + x = 5x$; *i. e.* $4x = a$, and $x = \frac{a}{4}$. This distance would be traversed by an omnibus in $\frac{15}{4}$ minutes, and therefore by the traveller in $5 \times \frac{15}{4}$. Hence he is overtaken in $18\frac{3}{4}$ minutes after starting, *i. e.* in $6\frac{1}{4}$ minutes after meeting the omnibus.

⁹⁵missing in the *Monthly Packet*

⁹⁶*Problem 1*

⁹⁷*Solution*

⁹⁸missing in the *Monthly Packet*

⁹⁹*Problem 2*

¹⁰⁰*Ans.*

Four answers have been received, of which two are wrong. DINAH MITE rightly states that the overtaking omnibus reached the point where they met the other omnibus 5 minutes after they left, but wrongly concludes that, going 5 times as fast, it would overtake them in another minute. The travellers are 5-minutes-walk ahead of the omnibus, and must walk 1-4th of this distance farther before the omnibus overtakes them, which will be 1-5th of the distance traversed by the omnibus in the same time: this will require $1\frac{1}{4}$ minutes more. NOLENS VOLENS tries it by a process like "Achilles and the Tortoise." He rightly states that, when the overtaking omnibus leaves the gate, the travellers are 1-5th of "a" ahead, and that it will take the omnibus 3 minutes to traverse this distance; "during which time" the travellers, he tells us, go 1-15th of "a" (this should be 1-25th). The travellers being now 1-15th of "a" ahead, he concludes that the work remaining to be done is for the travellers to go 1-60th of "a," while the omnibus goes 1-12th. The *principle* is correct, and might have been applied earlier.

Class List I

BALBUS.

DELTA.

Answers to Knot IX

Source: The Monthly Packet, April 1883 (as "Answers to Knot VIII", with minor differences as noted); A Tangled Tale

§ 1. The Buckets Problem.—Lardner states that a solid, immersed in a fluid, displaces an amount equal to itself in bulk. How can this be true of a small bucket floating in a larger one?

Solution.—Lardner means, by "displaces," "occupies a space which might be filled with water without any change in the surroundings." If the portion of the floating bucket, which is above the water, could be annihilated, and the rest of it transformed into water, the surrounding water would not change its position: which agrees with Lardner's statement.

Five answers have been received, none of which explains the difficulty arising from the well-known fact that a floating body is the same weight as the displaced fluid. HECLA says that "only that portion of the smaller bucket which descends below the original level of the water can be properly said to be immersed, and only an equal bulk of water is displaced." Hence, according to HECLA, a solid, whose weight was equal to that of an equal bulk of water, would not float till the whole of it was below "the original level" of the water: but, as a matter of fact, it would float as soon as it was all under water. MAGPIE says the fallacy is "the assumption that one body can displace another from a place where it isn't," and that Lardner's assertion is incorrect, except when the containing vessel "was originally full to the brim." But the question of floating depends on the present state of things, not on past history. OLD KING COLE takes the same view as HECLA. TYMPANUM and VINDEX assume that "displaced" means "raised above its original level," and merely explain how it comes to pass that

the water, so raised, is less in bulk than the immersed portion of bucket, and thus land themselves—or rather set themselves floating—in the same boat as HECLA.

I regret that there is no Class-list to publish for this Problem.

§ 2. Balbus' Essay *Problem.*—Balbus states that if a certain solid be immersed in a certain vessel of water, the water will rise through a series of distances, two inches, one inch, half an inch, &c., which series has no end. He concludes that the water will rise without limit. Is this true?

Solution.—No. This series can never reach 4 inches, since, however many terms we take, we are always short of 4 inches by an amount equal to the last term taken.

Three answers have been received—but only two seem to me worthy of honours.

TYMPANUM says that the statement about the stick “is merely a blind, to which the old answer may well be applied, *solvitur ambulando*, or rather *mergendo*.” I trust TYMPANUM will not test this in his own person, by taking the place of the man in Balbus' Essay! He would infallibly be drowned.

OLD KING COLE rightly points out that the series, 2, 1, &c., is a decreasing Geometrical Progression: while VINDEK rightly identifies the fallacy as that of “Achilles and the Tortoise.”

Class List I

OLD KING COLE.

VINDEK.

§ 3. The Garden *Problem.*—An oblong garden, half a yard longer than wide, consists entirely of a gravel-walk, spirally arranged, a yard wide and 3,630 yards long. Find the dimensions of the garden.

Answer.—60, $60\frac{1}{2}$.¹⁰¹

Solution.—The number of yards and fractions of a yard traversed in walking along a straight piece of walk, is evidently the same as the number of square-yards and fractions of a square-yard, contained in that piece of walk: and the distance, traversed in passing through a square-yard at a corner, is evidently a yard. Hence the area of the garden is 3,630 square-yards: *i. e.*, if x be the width, $x(x + \frac{1}{2}) = 3,630$. Solving this Quadratic, we find $x = 60$. Hence the dimensions are 60, $60\frac{1}{2}$.

Twelve answers have been received—seven right and five wrong.

C. G. L., NABOB, OLD CROW, and TYMPANUM assume that the number of yards in the length of the path is equal to the number of square-yards in the garden. This is true, but should have been proved. But each is guilty of darker deeds. C. G. L.'s “working” consists of dividing 3,630 by 60. Whence came this divisor, oh Segiel? Divination? Or was it a dream? I fear this solution is worth nothing. OLD CROW's is shorter, and so (if possible) worth rather less. He says the answer “is at once seen to be $60 \times 60\frac{1}{2}$ ”! NABOB's calculation is short, but

¹⁰¹Answer missing in the *Monthly Packet*

“as rich as a Nabob” in error. He says that the square root of 3,630, multiplied by 2, equals the length plus the breadth. That is $60.25 \times 2 = 120\frac{1}{2}$. His first assertion is only true of a *square* garden. His second is irrelevant, since 60.25 is *not* the square-root of 3,630! Nay, Bob, this will *not* do! TYMPANUM says that, by extracting the square-root of 3,630, we get 60 yards with a remainder of $\frac{30}{60}$, or half-a-yard, which we add so as to make the oblong $60 \times 60\frac{1}{2}$. This is very terrible: but worse remains behind. TYMPANUM proceeds thus:—“But why should there be the half-yard at all? Because without it there would be no space at all for flowers. By means of it, we find reserved in the very centre a small plot of ground, two yards long by half-a-yard wide, the only space not occupied by walk.” But Balbus expressly said that the walk “used up the whole of the area.” Oh, TYMPANUM! My tympana is exhausted: my brain is num! I can say no more.

HECLA indulges, again and again, in that most fatal of all habits in computation—the making *two* mistakes which cancel each other. She takes x as the width of the garden, in yards, and $x + \frac{1}{2}$ as its length, and makes her first “coil” the sum of $x - \frac{1}{2}$, $x - \frac{1}{2}$, $x - 1$, $x - 1$, *i. e.* $4x - 3$: but the fourth term should be $x - 1\frac{1}{2}$, so that her first coil is $\frac{1}{2}$ a yard too long. Her second coil is the sum of $x - 2\frac{1}{2}$, $x - 2\frac{1}{2}$, $x - 3$, $x - 3$: here the first term should be $x - 2$ and the last $x - 3\frac{1}{2}$: these two mistakes cancel, and this coil is therefore right. And the same thing is true of every other coil but the last, which needs an extra half-yard to reach the *end* of the path: and this exactly balances the mistake in the first coil. Thus the sum total of the coils comes right though the working is all wrong.

Of the seven who are right, DINAH MITE, JANET, MAGPIE, and TAFFY make the same assumption as C. G. L. and Co. They then solve by a Quadratic. MAGPIE also tries it by Arithmetical Progression, but fails to notice that the first and last “coils” have special values.

ALUMNUS ETONÆ attempts to prove what C. G. L. assumes by a particular instance, taking a garden 6 by $5\frac{1}{2}$. He ought to have proved it generally: what is true of one number is not always true of others. OLD KING COLE solves it by an Arithmetical Progression. It is right, but too lengthy to be worth as much as a Quadratic.

VINDEX proves it very neatly, by pointing out that a yard of walk measured along the middle represents a square yard of garden, “whether we consider the straight stretches of walk or the square yards at the angles, in which the middle line goes half a yard in one direction and then turns a right angle and goes half a yard in another direction.”

Class List I

VINDEX.

II

ALUMNUS ETONÆ.
OLD KING COLE.

III

DINAH MITE.
JANET.
MAGPIE.
TAFFY.

Answers to Knot X

Source: The Monthly Packet, March and May 1885 (in two parts with minor differences as noted); A Tangled Tale

§ 1. The Chelsea Pensioners

Problem.—If 70 per cent. have lost an eye, 75 per cent. an ear, 80 per cent. an arm, 85 per cent. a leg: what percentage, *at least*, must have lost all four?

Answer.—Ten.¹⁰²

*Solution.*¹⁰³—(I adopt that of POLAR STAR, as being better than my own). Adding the wounds together, we get $70 + 75 + 80 + 85 = 310$, among 100 men; which gives 3 to each, and 4 to 10 men. Therefore the least percentage is 10.

Nineteen answers have been received. One is “5,” but, as no working is given with it, it must, in accordance with the rule, remain “a deed without a name.” JANET makes it “35 and $\frac{7}{10}$ ths.” I am sorry she has misunderstood the question, and has supposed that those who had lost an ear were 75 per cent. *of those who had lost an eye*; and so on. Of course, on this supposition, the percentages must all be multiplied together. This she has done correctly, but I can give her no honours, as I do not think the question will fairly bear her interpretation, THREE SCORE AND TEN makes it “19 and $\frac{3}{8}$ ths.” Her solution has given me—I will not say “many anxious days and sleepless nights,” for I wish to be strictly truthful, but—some trouble in making any sense at all of it. She makes the number of “pensioners wounded once” to be 310 (“per cent.,” I suppose!): dividing by 4, she gets 77 and a half as “average percentage:” again dividing by 4, she gets 19 and $\frac{3}{8}$ ths as “percentage wounded four times.” Does she suppose wounds of different kinds to “absorb” each other, so to speak? Then, no doubt, the *data* are equivalent to 77 pensioners with one wound each, and a half-pensioner with a half-wound. And does she then suppose these concentrated wounds to be *transferable*, so that $\frac{3}{4}$ ths of these unfortunates can obtain perfect health by handing over their wounds to the remaining $\frac{1}{4}$ th? Granting these suppositions, her answer is right; or rather, *if* the question had been “A road is covered with one inch of gravel, along 77 and a half per cent. of it. How much of it could be covered 4 inches deep with the same material?” her answer *would* have been right. But alas, that *wasn't* the question! DELTA makes some most amazing assumptions: “let every one who has not lost an eye have lost an ear,” “let every one who has not lost both eyes and ears have lost an arm.”¹⁰⁴ Her ideas of a battle-field are grim indeed. Fancy a warrior who would continue fighting after losing both eyes, both ears, and both arms! This is a case which she (or “it?”) evidently considers *possible*.

Next come eight writers who have made the unwarrantable assumption that, because 70 per cent. have lost an eye, *therefore* 30 per cent. have *not* lost one, so that they have *both* eyes. This is illogical¹⁰⁵. If you give me a bag containing 100 sovereigns, and if in an hour I come to you (my face *not* beaming with

Other version:

→ 9.21, p. 1475

Quoted from *Macbeth*
by William
Shakespeare

¹⁰²missing in the *Monthly Packet*

¹⁰³Answer

¹⁰⁴Followed by “etc.” in the *Monthly Packet*

¹⁰⁵not good logic

gratitude nearly so much as when I received the bag) to say “I am sorry to tell you that 70 of these sovereigns are bad,” do I thereby guarantee the other 30 to be good? Perhaps I have not tested them yet. The sides of this illogical octagon are as follows, in alphabetical order:—ALGERNON BRAY, DINAH MITE, G. S. C., JANE E., J. D. W., MAGPIE (who makes the delightful remark “therefore 90 per cent. have two of something,” recalling to one’s memory that fortunate monarch, with whom Xerxes was so much pleased that “he gave him ten of everything”), S. S. G., and TOKIO.

Quoted from *Book IX*
by Herodotus

BRADSHAW OF THE FUTURE and T. R. do the question in a piecemeal fashion—on the principle that the 70 per cent. and the 75 per cent., though commenced at opposite ends of the 100, must overlap by *at least* 45 per cent.; and so on. This is quite correct working, but not, I think, quite the best way of doing it.

The other five competitors will, I hope, feel themselves sufficiently glorified by being placed in the first class, without my composing a Triumphal Ode for each!

Class List I

OLD CAT.
OLD HEN.
POLAR STAR.
SIMPLE SUSAN.
WHITE SUGAR.

II

BRADSHAW OF THE FUTURE.
T. R.

III

ALGERNON BRAY.
DINAH MITE.
G. S. C.
JANE E.
J. D. W.
MAGPIE.
S. S. G.
TOKIO.¹⁰⁶

§ 2. Change of Day¹⁰⁷

¹⁰⁶In the *Monthly Packet* followed by these two paragraphs and the concluding one:

The other two problems—‘where does the day begin?’ and the ages of the old man’s three sons—I must leave to another time. The first has always been a puzzle to me, and, often as it has been brought forward in scientific periodicals, I have never seen its difficulties successfully explained. I am trying to get some definite statistics which will, I hope, shed a new light on it. Meanwhile, if any fresh competitors like to try their hands at it, or at the ages of the three sons, so as to appear in the final Class List, there is yet time to send in their answers.

ALGERNON BRAY enquires for copies of the original edition of *The Hunting of the Snark*. There are still a few on hand, which may be obtained from Messrs. Macmillan & Co., 29, Bedford Street, Covent Garden, London.

¹⁰⁷Part 2 in the *Monthly Packet* starts here, but omits this headline.

Other versions:

→ 16.8, p. 1936

→ 16.11, p. 1945

⌊I must postpone, *sine die*,¹⁰⁸ the geographical problem—partly because I have not yet received the statistics I am hoping for, and partly because I am myself so entirely puzzled by it; and when an examiner is himself dimly hovering between a second class and a third how is he to decide the position of ⌊others?¹⁰⁹

§ 3. The Sons' Ages *Problem.*—“At first, two of the ages are together equal to the third. A few years afterwards, two of them are together double of the third. When the number of years since the first occasion is two-thirds of the sum of the ages on that occasion, one age is 21. What are the other two?”

Answer.—“15 and 18.”

⌊*Solution.*¹¹⁰—Let the ages at first be x , y , $(x + y)$. Now, if $a + b = 2c$, then $(a - n) + (b - n) = 2(c - n)$, whatever be the value of n . Hence the second relationship, if *ever* true, was *always* true. Hence it was true at first. But it cannot be true that x and y are together double of $(x + y)$. Hence it must be true of $(x + y)$, together with x or y ; and it does not matter which we take. We assume, then, $(x + y) + x = 2y$; *i. e.* $y = 2x$. Hence the three ages were, at first, x , $2x$, $3x$; and the number of years, since that time is two-thirds of $6x$, *i. e.* is $4x$. Hence the present ages are $5x$, $6x$, $7x$. The ages are clearly *integers*, since this is only “the year when one of my sons comes of age.” Hence $7x = 21$, $x = 3$, and the other ages are 15, 18.

⌊Eighteen¹¹¹ answers have been received. One of the writers merely asserts that the first occasion was 12 years ago, that the ages were then 9, 6, and 3; and that on the second occasion they were 14, 11, and 8! As a Roman father, I *ought* to withhold the name of the rash writer; but respect for age makes me break the rule: it is THREE SCORE AND TEN. JANE E. also asserts that the ages at first were 9, 6, 3: then she calculates the present ages, leaving the *second* occasion unnoticed. OLD HEN is nearly as bad; she “tried various numbers till I found one that fitted *all* the conditions”; but merely scratching up the earth, and pecking about, is not the way to solve a problem, oh venerable bird! And close after OLD HEN prowls, with hungry eyes, OLD CAT, who calmly assumes, to begin with, that the son who comes of age is the *eldest*. Eat your bird, Puss, for you will get nothing from me!

There are yet two zeroes to dispose of. MINERVA assumes that, on *every* occasion, a son comes of age; and that it is only such a son who is “tipped with gold.” Is it wise thus to interpret “now, my boys, calculate your ages, and you shall have the money”? BRADSHAW OF THE FUTURE says “let” the ages at first be 9, 6, 3, then assumes that the second occasion was 6 years afterwards, and on these baseless assumptions brings out the right answers. Guide *future* travellers, an thou wilt: thou art no Bradshaw for *this* Age!

Of those who win honours, the merely “honourable” are two. DINAH MITE ascertains (rightly) the relationship between the three ages at first, but then *assumes* one of them to be “6,” thus making the rest of her solution tentative. M. F. C. does the algebra all right up to the conclusion that the present ages are $5z$, $6z$, and $7z$; it then assumes, without giving any reason, that $7z = 21$.

¹⁰⁸Once more I must postpone

¹⁰⁹Followed by “So I proceed to” in the *Monthly Packet*

¹¹⁰Missing in the *Monthly Packet*

¹¹¹Twenty

Of the more honourable, DELTA attempts a novelty—to discover *which* son comes of age by elimination: it assumes, successively, that it is the middle one, and that it is the youngest; and in each case it *apparently* brings out an absurdity. Still, as the proof contains the following bit of algebra, “ $63 = 7x + 4y$; $\therefore 21 = x + 4$ sevenths of y ,” I trust it will admit that its proof is not *quite* conclusive. The rest of its work is good. MAGPIE betrays the deplorable tendency of her tribe—to appropriate any stray conclusion she comes across, without having any *strict* logical right to it. Assuming A, B, C , as the ages at first, and D as the number of the years that have elapsed since then, she finds (rightly) the 3 equations, $2A = B, C = B + A, D = 2B$. She then says “supposing that $A = 1$, then $B = 2, C = 3$, and $D = 4$. Therefore for A, B, C, D , four numbers are wanted which shall be to each other as $1 : 2 : 3 : 4$.” It is in the “therefore” that I detect the unconscientiousness of this bird. The conclusion *is* true, but this is only because the equations are “homogeneous” (*i. e.* having one “unknown” in each term), a fact which I strongly suspect had not been grasped—I beg pardon, clawed—by her. Were I to lay this little pitfall, “ $A + 1 = B, B + 1 = C$; supposing $A = 1$, then $B = 2$ and $C = 3$. Therefore for A, B, C , three numbers are wanted which shall be to one another as $1 : 2 : 3$,” would you not flutter down into it, oh Magpie, as amiably as a Dove? SIMPLE SUSAN is anything but simple to *me*. After ascertaining that the 3 ages at first are as $3 : 2 : 1$, she says “then, as two-thirds of their sum, added to one of them, = 21, the sum cannot exceed 30, and consequently the highest cannot exceed 15.” I suppose her (mental) argument is something like this:—“two-thirds of sum, + one age, = 21; \therefore sum, + 3 halves of one age, = 31 and a half. But 3 halves of one age cannot be less than 1 and-a-half (here I perceive that SIMPLE SUSAN would on no account present a guinea to a new-born baby!)¹¹² hence the sum cannot exceed 30.” This is ingenious, but her proof, after that, is (as she candidly admits) “clumsy and roundabout.” She finds that there are 5 possible sets of ages, and eliminates four of them. Suppose that, instead of 5, there had been 5 million possible sets? Would SIMPLE SUSAN have courageously ordered in the necessary gallon of ink and ream of paper?

The solution sent in by C. R. is, like that of SIMPLE SUSAN, partly tentative, and so does not rise higher than being Clumsily Right.

Among those who have earned the highest honours, ALGERNON BRAY solves the problem quite correctly, but adds that there is nothing to exclude the supposition that all the ages were *fractional*. This would make the number of answers infinite. Let me meekly protest that I *never* intended my readers to devote the rest of their lives to writing out answers! E. M. RIX points out that, if fractional ages be admissible, any one of the three sons might be the one “come of age”; but she rightly rejects this supposition on the ground that it would make the problem indeterminate. WHITE SUGAR is the only one who has detected an oversight of mine: I had forgotten the possibility (which of course ought to be allowed for) that the son, who came of age that *year*, need not have done so by that *day*, so that he *might* be only 20. This gives a second solution, viz., 20, 24, 28. Well said, pure Crystal! Verily, thy “fair discourse hath been as sugar”!

Quoted from *Richard II* by William Shakespeare

Class List I

ALGERNON BRAY.

¹¹²missing in the *Monthly Packet*

AN OLD FOGGY.
E. M. RIX.
G. S. C.
S. S. G.
TOKIO.
T. R.
WHITE SUGAR.

II

C. R.
DELTA.
MAGPIE.
SIMPLE SUSAN.

III

DINAH MITE.
M. F. C.

I have received more than one remonstrance on my assertion, in the Chelsea Pensioners' problem, that it was illogical to assume, from the *datum* "70 p.c. have lost an eye," that 30 p.c. have *not*. ALGERNON BRAY states, as a parallel case, "suppose Tommy's father gives him 4 apples, and he eats one of them, how many has he left?" and says "I think we are justified in answering, 3." I think so too. There is no "must" here, and the *data* are evidently meant to fix the answer *exactly*: but, if the question were set me "how many *must* he have left?", I should understand the *data* to be that his father gave him 4 *at least*, but *may* have given him *more*.¹¹³

I take this opportunity of thanking those who have sent, along with their answers to the Tenth Knot, regrets that there are no more Knots to come, or petitions that I should recall my resolution to bring them to an end. I am most grateful for their kind words; but I think it wisest to end what, at best, was but a lame attempt. "The stretched metre of an antique song" is beyond my compass; and my puppets were neither distinctly *in* my life (like those I now address), nor yet (like Alice and the Mock Turtle) distinctly *out* of it. Yet let me at least fancy, as I lay down the pen, that I carry with me into my silent life, dear reader, a farewell smile from your unseen face, and a kindly farewell pressure from your unfelt hand! And so, good night! Parting is such sweet sorrow, that I shall say "good night!" till it be *tomorrow*.¹¹⁴

Quoted from *Sonnet XVII* by William Shakespeare

¹¹³In the *Monthly Packet* followed by:

ALGERNON BRAY asks for 'a separate illustrated edition of the Lang Coortin.' (I misquoted this in my last.) It is to be had, and illustrated, in the volume of 'Rhyme? And Reason?' but a *separate* edition I fear I cannot promise.

Lewis Carroll.

¹¹⁴This paragraph comes at the end of the first part in the *Monthly Packet* and is followed by the signature "Lewis Carroll".

9.11 To Find the Day of the Week for Any Given Date

Source: Nature, March 31, 1887

Having hit upon the following method of mentally computing the day of the week for any given date, I send it you in the hope that it may interest some of your readers. I am not a rapid computer myself, and as I find my average time for doing any such question is about 20 seconds, I have little doubt that a rapid computer would not need 15.

Take the given date in 4 portions, viz. the number of centuries, the number of years over, the month, the day of the month.

Compute the following 4 items, adding each, when found, to the total of the previous items. When an item or total exceeds 7, divide by 7, and keep the remainder only.

The Century-Item.—For Old Style (which ended September 2, 1752) subtract from 18. For New Style (which began September 14) divide by 4, take overplus from 3, multiply remainder by 2.

The Year-Item.—Add together the number of dozens, the overplus, and the number of 4's in the overplus.

The Month-Item.—If it begins or ends with a vowel, subtract the number, denoting its place in the year, from 10. This, plus its number of days, gives the item for the following month. The item for January is "0"; for February or March (the 3rd month), "3"; for December (the 12th month), "12."

The Day-Item is the day of the month.

The total, thus reached, must be corrected, by deducting "1" (first adding 7, if the total be "0"), if the date be January or February in a Leap Year: remembering that every year, divisible by 4, is a Leap Year, excepting only the century-years, in New Style, when the number of centuries is *not* so divisible (*e. g.* 1800).

The final result gives the day of the week, "0" meaning Sunday, "1" Monday, and so on.

Examples

1783, *September 18*

17, divided by 4, leaves "1" over; 1 from 3 gives "2"; twice 2 is "4."

83 is 6 dozen and 11, giving 17; plus 2 gives 19, *i. e.* (dividing by 7) "5." Total 9, *i. e.* "2."

The item for August is "8 from 10," *i. e.* "2"; so, for September, it is "2 plus 3," *i. e.* "5." Total 7, *i. e.* "0," which goes out.

18 gives "4." Answer, "*Thursday.*"

1676, *February 23*

16 from 18 gives "2."

76 is 6 dozen and 4, giving 10; plus 1 gives 11, *i. e.* "4." Total "6."

The item for February is "3." Total 9, *i. e.* "2."

23 gives "2." Total "4."

Correction for Leap Year gives “3.” Answer, “*Wednesday.*”

Lewis Carroll

9.12 Note on Question 7695

Source: Mathematical Questions and Solutions, from the "Educational Times", XLIII, 1885; shorter version also in Educational Times, May 1885

The question this refers to is

(By J. O'Regan.)—Two persons play for a stake, each throwing two dice. They throw in turn, A commencing. A wins if he throws 6, B if he throws 7: the game ceasing as soon as either event happens. Show that A's chance is to B's as 30 to 31. MQS XL, 1885,

<https://archive.org/details/mathematicalque05unkngoog/page/n270>

The solution by D. Biddle, W. J. Greenstreet, and others correctly states that "[t]he probability that B will have a throw after A is [...] $\frac{31}{36}$ "; but that A will throw again after B, only $\frac{30}{36}$ ", but wrongly concludes the result from that by simply dividing the two chances.

by C. L. Dodgson, M.A.

The solution given to this question on p. 75 of Vol. 42, is one of the most curious instances I have met with of the pitfalls to be found in Mathematics: the answer is right, but the method of solution, beautifully simple as it looks, is entirely wrong.

This can be most easily demonstrated by a *reductio ad absurdum*. Let the winning throw, for A and B alike, be 6. Then, by this method of solution, their chances are equal, since "the probability that B will have a throw after A is $\frac{31}{36}$ "; which is also the probability "that A will throw again after B." Yet it is obvious that, as A begins, his "expectation" is better than B's.

The true solution will be best given, first, in the general form; and the formula, so obtained, can then be applied to the particular case.

Let A's chance of making his winning throw, each time he throws, be k ; and similarly let B's chance be l .

Then A's chance of winning, in his first throw, is k ; in his second, $(1-k) \cdot (1-l) \cdot k$; in his third, $(1-k)^2 \cdot (1-l)^2 \cdot k$; and so on for ever. Hence the limit, to which his "expectation" approaches, is the limit of

$$k \cdot [1 + (1-k) \cdot (1-l) + (1-k)^2 \cdot (1-l)^2 + \&c.];$$

$$i. e., \quad k \cdot \frac{1}{1 - (1-k) \cdot (1-l)}; \quad i. e., \quad \frac{k}{k + l - kl}.$$

Similarly, B's chance of winning, in his first throw, is $(1-k) \cdot l$; in his second, $(1-k) \cdot (1-l) \cdot (1-k) \cdot l$; in his third, $(1-k)^2 \cdot (1-l)^2 \cdot (1-k) \cdot l$; and so on for ever. Hence his "expectation" approaches the limit of

$$(1-k) \cdot l \cdot [1 + (1-k) \cdot (1-l) + (1-k)^2 \cdot (1-l)^2 + \&c.]; \quad i. e. \quad \frac{(1-k) \cdot l}{k + l - kl}.$$

Hence the ratio, of A's expectation to B's, is approximately $\frac{k}{(1-k) \cdot l}$.

In the given case, $k = \frac{5}{36}$, $l = \frac{6}{36} = \frac{1}{6}$; hence the required ratio = $\frac{30}{31}$. By a mere accident this happens to be the same as $\frac{1-l}{1-k}$, which accident has misled all the solvers into adopting this as a true formula.

In my “*reductio ad absurdum*” case, $k = l = \frac{5}{36}$; hence the required ratio = $\frac{36}{31}$.

It is worth noting that the ratio, $\frac{30}{31}$, is only *approximative*, the expectations of A and B being just *less* than the fractions $\frac{30}{61}$, $\frac{31}{61}$. If this were not so, the sum total of their expectations would equal 1; *i. e.*, it would be absolutely certain that one or other of them would win—whereas there is clearly a chance, though an indefinite small one, that the game might go on for ever without either winning.

A comment by Mr. Simmons follows, criticizing Carroll’s point of view in this last paragraph.

9.13 Infinitesimal or Zero?

Source: Mathematical Questions and Solutions, from the “Educational Times”, XLIV, 1885; shorter version also in Educational Times, July 1885

The controversy above is treated on the example “A random point being taken on a given line, what is the chance of its coinciding with a previously assigned point?”

Only the two sections by Carroll included here, one section is by Mr. Simmons, three by other writers.

It is surely too late, in A.D. 1885, to seriously discuss the question whether a converging series does or does not reach its limit—in other words, whether an infinitesimal is or is not equal to zero. If the ordinary text-books have not shown Mr. Simmons the difference between them, how can I hope to do it? I will, however, try a *reductio ad absurdum*. I present Mr. Simmons with a line AB in which I have selected a certain point C; and I ask him to take a point at random in AB, and to estimate its chance of coinciding with C. He will reply, ‘If its chance of falling on one side of C be k , its chance of falling on the other side is, *with perfect accuracy*, $1 - k$. Hence its chance of missing C is *absolutely* 1; and its chance of coinciding with it is *absolutely zero*.’ But the very same thing is true of *any other* point I might select in AB. Hence the new point *has no chance of falling anywhere!* If Mr. Simmons is partial to pitfalls, let me recommend this one to his notice; it is nice soft falling, and not very deep.

1. I re-affirm that the question whether a converging series does or does not reach its limit *is*, in other words, whether an infinitesimal is or is not equal to zero. *E. g.*—The converging series 2^{-1} , 2^{-2} , &c., 2^{-n} , has for its limit, unity. Also its sum is $1 - 2^{-n}$. Hence, if when n is infinite, the series reaches its limit, the infinitesimal 2^{-n} must be equal to zero.

2. I never assumed that ‘a line may be considered as wholly made up of points which can all previously be assigned,’ nor of points of any kind. A point, having no magnitude, can form no portion of a line.

3. I admit that, if the length of AC, one portion of a line AB, be k , the length of the other portion CB will *with perfect accuracy* be $1 - k$. And I *am* ‘prepared to deny that the two chances (of a point falling *in* the two portions) are represented quite accurately by k and $1 - k$.’ For this would omit the 3 chances of its falling at A, at B, and at C. Suppose that, when the point falls at C, it is reckoned as falling in AB, and not in BC. Then, to deal fairly with the two portions, we must exclude A, and make unity represent the chance of the point falling somewhere in the line AB, excluding A, but including B. Then k is the chance of its falling between A and C, or else at C; and $1 - k$ the chance of its falling between C and B, or else at B.

4. I re-affirm, as absolutely axiomatic, that, when an event is *possible*, its chance of happening is *not* zero.

In January 1886, a “final” note on this topic appeared by Rev. T. C. Simmons on 7695, see <https://archive.org/details/educationaltimes3941educ/page/n40>, but the discussion continued, see below.

9.14 “Something or Nothing?”

Source: The Educational Times, June 1888

By Charles L. Dodgson, M.A.

In the years 1885, 1886, there appeared in regard to a Solution of Quest. 7695 (see Vol. XLIII., p. 86, and XLIV., p. 24) a discussion about a difficulty in the Theory of Chances, of which the following question was treated as a typical example:—“A random point being taken on a given line, what is the chance of its coinciding with a previously assigned point?” On one side it was maintained that the chance is *absolute zero*: on the other side it was maintained, by myself and others, that it is some sort of *infinitesimal*, and *not* absolute zero. The arguments on both sides were fully stated, and my only excuse, for re-opening the discussion, is that I have a *new* view of the difficulty to offer to the supporters of the “absolute zero” theory.

I assume that both sides accept the following axioms:—(1) that no aggregate, however infinitely numerous, of *absolute zeroes* can constitute a *magnitude*, however infinitely small; (2) (an example of the preceding) that no aggregate, however infinitely numerous, of *points* can constitute any portion, however infinitely short, of a *line*; and hence (3) that, if the chance of a random point on a line coinciding with a *single selected point* be absolute zero, so also is its chance of coinciding with one or other of a *selected aggregate of points*, however infinitely numerous.

I now propose two questions:—

I. “A random point being taken on a given line, what is the chance of its dividing the line into two *commensurable* parts?” It seems clear that we are here dealing with a *selected aggregate of points*, since it is impossible to mark off any portion of the *line*, and to say “Wherever, in this portion, the random point shall fall, it will divide the whole line into two commensurable parts.” I assume, then, that my opponents would answer “It is *absolute zero*.”

II. “And what is its chance of dividing the line into two *incommensurable* parts?” Here again they must answer “It is *absolute zero*.”

And yet *one or other* of these two events *must* happen! Hence, the sum of the two chances must be mathematically represented by unity; that is, one or other (though we cannot say which) must be—not only “*something*,” not only a certain *infinitesimal*, of some inconceivably high order—but must actually reach, if not exceed, the *finite* value of *one-half*!

9.15 Questions for Solution: 9588

Source: The Educational Times, June 1888

Solution by Rev. T. C. Simmons was published in July 1888, see

<https://archive.org/details/educationaltimes3941educ/page/278>

Solutions by Rev. T. C. Simmons and Prof. Tanner, M.A. with Carroll's comments in Mathematical Questions and Solutions, from the "Educational Times" L, 1889

9588. (CHARLES L. DODGSON, M.A.)—A random point being taken on a given line, find the chance of its dividing the line into two parts (1) commensurable, (2) incommensurable.

Comment on Solutions

(1) In reply to the Rev. T. C. SIMMONS, if, instead of dividing his line by 2, 3, &c., he will divide it by $\sqrt{2}$, $\sqrt{3}$, &c., and if, where he has written "commensurable," he will write "incommensurable," he will find his argument quite as sound as before, and, instead of proving the two chances to be "zero" and "unity," he will prove them to be "unity" and "zero." An argument that proves with equal ease either of two contradictories, needs very cautious handling.

(2) In reply to Professor TANNER, I must respectfully decline to explain how a thing can happen which I say cannot happen at all! No "aggregate of points," as I believe, can ever "make up the whole of a line," or any portion of it: so I must refer him, for the explanation he desires, to the "opposition," who are so ready to explain how "an aggregate of absolute zeros may be unity." While their hand is in, they may as well do the other little job. In the latter part of his letter he asserts, unless I misunderstand him, that, if the chance of a random point coinciding with one assigned point be δ , then its chance of coinciding with one or other of $1/\delta$ such points is unity. I suppose he would say, taking 10 bags, each containing 1 white counter and 9 black, that, since the chance of drawing a white from one bag is $\frac{1}{10}$, the chance of drawing a white from one or other of the 10 bags is unity. Does he accept this as a fair instance of the theorem?

9.16 Questions for Solution: 9636

Source: The Educational Times, July 1888; Solution by Professor G. B. M. Zerr with Carroll's comment in Mathematical Questions and Solutions, from the "Educational Times" LIX, 1893

A correct solution by W. S. Foster, Professor Nash, and others was published 1894, see <https://archive.org/details/mathematicalque00unkngoog/page/n226> (MQS LX)

9636. (CHARLES L. DODGSON, M.A.)—If 3 numbers, not in Arithmetical Progression, be such that their sum is a multiple of 3: prove that the sum of their squares is also the sum of another set of 3 squares, the two sets having no common term.

Other version:
→ 9.21, p. 1480

Comment on Solution

Mr. Dodgson states that, in this solution, Prof. ZERR "takes a single special instance of 3 numbers, and seems to think that the theorem, since it is true in this single instance, is thereby proved to be true universally." He submits the following theorem, and asks whether Professor ZERR would consider the appended proof a sound logical one.

Other version:
→ 9.21, p. 1467

"(*Theorem.*) If 3 numbers be such that their sum is a multiple of 7, the sum of their squares is a multiple of 9.

"(*Proof.*) Let m , $2m$, $11m$ be the 3 numbers. Then $m + 2m + 11m = 7 \times 2m$. Also, $m^2 + (2m)^2 + (11m)^2 = 126m^2 = 9 \times 14m^2$."

We shall be glad to have a further solution of the Question.

9.17 Questions for Solution: 9995

Source: The Educational Times, February 1889

Solution by J. C. St. Clair, L. Wiener, and others was published in May 1889, see <https://archive.org/details/educationaltimes4243educ/page/n227>

9995. (C. L. DODGSON, M.A.)—A certain school contains not less than 90 boys nor more than 130. Latin, Greek, and French are taught, but no other languages. For every boy learning Latin, at least two learn Greek, but not French; for every three learning Greek, at least one learns French, but not Latin; and, for every two learning French, at least three learn Latin, but not Greek. Exactly half the school learn no languages. Find how many boys are learning each language.

9.18 Questions for Solution: 11530

Source: The Educational Times, May 1892

Solution by H. J. Woodall, A.R.C.S. was published in March 1893, see

<https://archive.org/details/educationaltimes46educ/page/156>, an expanded version in MQS LIX,

<https://archive.org/details/mathematicalque64unkngoog/page/n72>

11530. (Rev. C. L. DODGSON, M.A.)—Required a general investigation of the following trigonometrical formula, which, so far as I know, is new, and very useful in calculating limits for the value of π . The problem, which I set myself, was to break up $\tan^{-1} 1/a$ into two angles of the same form. Let

$$\tan^{-1} \frac{1}{a} = \tan^{-1} \frac{1}{a+x} + \tan^{-1} \frac{1}{a+y}.$$

Then it is also

$$= \tan^{-1} \frac{\frac{1}{a+x} + \frac{1}{a+y}}{1 - \frac{1}{a+x} \cdot \frac{1}{a+y}} = \tan^{-1} \frac{2a+x+y}{a^2 + a(x+y) + xy - 1}.$$

Then it occurred to me that, if $(xy-1)$ were made equal to a^2 , the denominator would become $a(2a+x+y)$; *i. e.*, the fraction would become $1/a$. Hence we get the rule: Let $(a^2+1) = xy$; *i. e.*, break up (a^2+1) into any two factors, call them x and y , and use them in the formula with which we began. Thus, if $a = 3$, $a^2+1 = 10 = 2 \times 5$. Hence $\tan^{-1} \frac{1}{3} = \tan^{-1} \frac{1}{5} + \tan^{-1} \frac{1}{8}$. By the use of this formula, I have obtained 3.141597 and 3.141583 as limits for π .

9.19 Questions for Solution: 12650

Source: The Educational Times, February 1895

Solutions by D. Biddle, Professor Radhakishuan, and others were published in Mathematical Questions and Solutions, from the "Educational Times", LXIII, 1895, from where the question is taken here, too. But they all miss the much simpler approach (which Carroll probably had in mind) of writing the number as $9n + r$ with $0 \leq r < 9$. Then r can be easily calculated from the two digits tacked on and the two remainders, while the third figure of the last number is just n .

12650. (C. L. Dodgson, M.A.)—To discover the rule by which the following puzzle is worked. It is best exhibited as a dialogue.

A. Think of a number less than 90.—B. I have done so.

A. Tack on to it any digit you like, from 0 to 9. Which shall it be?—B. I have tacked on a 7.

A. Now divide by 3. What is the remainder?—B. It is 2.

A. Tack on to the quotient any digit you like.—B. I have tacked on 4.

A. Divide by 3. What is the remainder?—B. It is 1.

A. And what is the third figure from the end?—B. It is 8.

A. (Instantly rejoins) Then the number you thought of was 76.

Other version:

→ 9.22, p. 1543

9.20 Questions for Solution: 13614

Source: The Educational Times, September 1897

13614. (C. L. DODGSON, M.A.)—ZELLER's formula for the day of the week corresponding to any given date, viz., the p th day of the q th month of the year N , „New Style”¹, is

$$p + 2q + \{3(q + 1)/5\} + N + \{N/4\} - \{N/100\} + \{N/400\} + 2,$$

where $\{N/4\}$ means the integral number of 4's contained in N . Taking a hint from this, I have succeeded in evolving an *algebraical formula for the number of days in the q th month*. I take a certain algebraical function of q , and divide it by 5, and call the remainder r . Then a certain algebraical function of r will give the number of days in the q th month. This works correctly for March and all following months; and even for January, by calling it the 13th month of the preceding year; but I cannot manage *February*.

¹mistakenly “Old Style”

9.21 Pillow-Problems (Curiosa Mathematica. Part II)

Source: Pillow-Problems, fourth edition

Thought Out during Wakeful Hours

Preface to Fourth Edition

Other version:
→ 4.3, p. 696

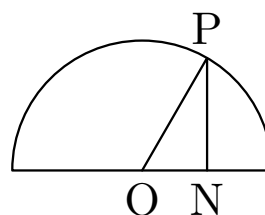
I take this opportunity of explaining *why* it is that (as stated in the Note to p. 1471) I have used the symbols \cap and \sqcup to represent the words ‘sine’ and ‘cosine’.

The use of *some* symbols needs, I suppose, no more justification than the use of + and – to represent ‘plus’ and ‘minus’.

These particular symbols are derived from the old theory of Trigonometry, in which sines, cosines, &c. were actual *lines*.

In this diagram, OP being taken as the unit of length, PN is the *sine* of the angle NOP , on ON its *cosine*.

In each of my two symbols I have retained the semi-circle: in the symbol \cap , I have merely moved PN to the middle; and, in the symbol \sqcup , I have lengthened ON , taking it a little *beyond* the curve, in order to avoid confusion with the existing symbol for ‘semicircle’.



I also take this opportunity of adding a sort of Corollary (lately thought out) to the solution of Problem 59 (see p. 1526).

If a, b, c be given lengths, they must, in order that the Tetrahedron may be *possible*, fulfil certain conditions, as follows:—

(1) they have to form the sides of a Triangle: hence any two of them must be greater than the third;

(2) the three angles of this Triangle have to form a *solid* angle: hence any two of these angles must be together greater than the third: hence any two of them must be together greater than 90° : hence any *one* of them must be *less* than 90° : hence the *cosine* of any one of them must be greater than 0: i. e. $b^2 + c^2 - a^2$ must be greater than 0, &c.; hence a, b, c must be such that the *squares* of any two of them are together greater than the *square* of the third.

For example, the lengths 2, 3, 4 would *not* do as the given lengths, since, although fulfilling the *first* condition, by having $2 + 3 > 4$, they fail to fulfil the *second*, as $2^2 + 3^2$ is *not* $> 4^2$.

C. L. D.
Ch. Ch., Oxford.
March, 1895.

Preface to Second Edition

The principal changes, made in this Second Edition of “Pillow-Problems”, are as follows:—

(1) After the numeral, which precedes each Question, Answer, or Solution, references are given to the pages at which the corresponding matter may be found.

(2) Some of the Solutions have been re-arranged, and duplicate-diagrams have been inserted, in order that every portion of text may have its illustrative diagram visible along with it, and that the reader may thus be saved the trouble, and the strain on his temper, involved in turning a leaf backwards and forwards while referring from the one to the other.

(3) In the title of the book, the words “sleepless nights” have been replaced by “wakeful hours”.

This last change has been made in order to allay the anxiety of kind friends, who have written to me to express their sympathy in my broken-down state of health, believing that I am a sufferer from chronic “insomnia”, and that it is as a remedy for that exhausting malady that I have recommended mathematical calculation.

The title was not, I fear, wisely chosen; and it certainly *was* liable to suggest a meaning I did not intend to convey, viz. that my “nights” are very often *wholly* “sleepless”. This is by no means the case: I have never suffered from “insomnia”: and the over-wakeful hours, that I have had to spend at night, have often been simply the result of the over-sleepy hours I have spent during the preceding evening! Nor is it as a remedy for *wakefulness* that I have suggested mathematical calculation; but as a remedy for the *harassing thoughts* that are apt to invade a wholly-unoccupied mind. I hope the new title will express my meaning more lucidly.

To state the matter logically, the dilemma which my friends *suppose* me to be in has, for its two horns, the endurance of a sleepless night, and the adoption of some recipe for inducing sleep. Now, so far as *my* experience goes, no such recipe has any effect, unless when you are sleepy: and mathematical calculation would be more likely to delay, than to hasten, the advent of sleep.

The *real* dilemma, which I have had to face, is this: given that the brain is in so wakeful a condition that, do what I will, I am *certain* to remain awake for the next hour or so, I must choose between two courses, viz. either to submit to the fruitless self-torture of going through some worrying topic, over and over again, or else to dictate to myself some topic sufficiently absorbing to keep the worry at bay. A mathematical problem *is*, for me, such a topic; and is a benefit, even if it lengthens the wakeful period a little. I believe that an hour of calculation is much better for me than half-an-hour of worry.

Other version:

→ 9.16, p. 1461

The reader will, I think, be interested to see a curiously illogical solution which has been proposed, by a correspondent of the *Educational Times*, for Problem 61, viz. “Prove that, if any 3 Numbers be taken, which cannot be arranged in *A.P.*, and whose sum is a multiple of 3, the sum of their squares is also the sum of another set of 3 squares, the 2 sets having no common term.”

The proposed solution is as follows:—

“Let $3m$, $21m$, $30m$ be the three Numbers: then

$$3m + 21m + 30m = 3 \times 18m.$$

Also $(3m)^2 + (21m)^2 + (30m)^2 = (6m)^2 + (15m)^2 + (33m)^2 = (5m)^2 + (13m)^2 + (34m)^2 = (10m)^2 + (17m)^2 + (31m)^2 = (14m)^2 + (23m)^2 + (25m)^2$.”

Now, if we denote, by ‘ α ’, the property “which cannot be arranged in *A.P.*, and whose sum is a multiple of 3,” and, by ‘ β ’, the property “the sum of whose squares is also the sum of another set of 3 squares, the 2 sets having no common term,” we see that all, that this writer has succeeded in proving, is that *certain selected Numbers*, which have property ‘ α ’, have also property ‘ β ’: but this does not prove my Theorem, viz. that *any Numbers whatever*, which have property ‘ α ’, have also property ‘ β ’. If his argument were arranged in a syllogistic form, it would be found to assume a quite untenable Major Premiss, viz. “that, which is true of *certain selected Numbers* which have property ‘ α ’, is true of *any Numbers whatever*, which have property ‘ α ’.”

C. L. D.

Ch. Ch., Oxford.

September, 1893.

Introduction

Nearly all of the following seventy-two Problems are veritable “Pillow-Problems”, having been solved, in the head, while lying awake at night. (I have put on record the exact dates of some.) No. 37 and one or two others belong to the daylight, having been solved while taking a solitary walk; but every one of them was worked out, to the very end, before drawing any diagram or writing down a single word of the solution. I generally wrote down the *answer*, first of all: and *afterwards* the question and its solution. For example, in No. 70, the very first words I wrote down were as follows:—“(1) down back-edge; up again; down again; and so on; (2) about $\cdot 7$ of the way down the back-edge; (3) about $18^\circ 18'$; (4) about 14° .” These answers are not quite correct; but at least they are *genuine*, as the results of *mental work only*. “A poor thing, Sir, but mine own!”

Quoted from *As You Like It* by William Shakespeare

My motive, for publishing these Problems, with their mentally-worked solutions, is most certainly *not* any desire to display powers of mental calculation. Mine, I feel sure, are nothing out-of-the-way; and I have no doubt there are many mathematicians who could produce, mentally, much shorter and better solutions. It is not for such persons that I intend my little book; but rather for the much larger class of *ordinary* mathematicians, who perhaps have never tried this resource, when mental occupation was needed, and who will, I hope, feel encouraged—by seeing what can be done, after a little practice, by one of *average* mathematical powers—to try the experiment for themselves, and find in it as much advantage and comfort as I have done.

The word “comfort” may perhaps sound out of place, in connection with so entirely *intellectual* an occupation; but it will, I think, come home to many who have known what it is to be haunted by some worrying subject of thought, which no effort of will is able to banish. Again and again I have said to myself, on lying down at night, after a day embittered by some vexatious matter, “I will *not* think of it any more! I have gone through it all, thoroughly. It can do no good whatever to go through it again. I *will* think of something else!” And in another ten minutes I have found myself, once more, in the very thick of the miserable business, and torturing myself, to no purpose, with all the old troubles.

Now it is not possible—this, I think, all psychologists will admit—by any effort of volition, to carry out the resolution “I will *not* think of so-and-so.” (Witness the common trick, played on a child, of saying “I’ll give you a penny,

if you'll stand in that corner for five minutes, and *not once* think of strawberry-jam." No human child ever yet won the tempting wager!) But it *is* possible—as I am most thankful to know—to carry out the resolution "I *will* think of so-and-so." Once fasten the attention upon a subject so chosen, and you will find that the worrying subject, which you desire to banish, is *practically* annulled. It may recur, from time to time—just looking in at the door, so to speak; but it will find itself so coldly received, and will get so little attention paid to it, that it will, after a while, cease to be any worry at all.

Perhaps I may venture, for a moment, to use a more serious tone, and to point out that there are mental troubles, much worse than mere worry, for which an absorbing subject of thought may serve as a remedy. There are sceptical thoughts, which seem for the moment to uproot the firmest faith; there are blasphemous thoughts, which dart unbidden into the most reverent souls; there are unholy thoughts, which torture, with their hateful presence, the fancy that would fain be pure. Against all these some real mental *work* is a most helpful ally. That "unclean spirit" of the parable, who brought back with him seven others more wicked than himself, only did so because he found the chamber "swept and garnished", and its owner sitting with folded hands: had he found it all alive with the "busy hum" of active *work*, there would have been scant welcome for him and his seven!

Quoted from Luke
11:25

My purpose—of giving this encouragement to others—would not be so well fulfilled had I allowed myself, in writing out my solutions, to *improve* on the work done in my head. I felt it to be much more important to set down *what had actually been done in the head*, than to supply shorter or neater solutions, which perhaps would be much harder to do without paper. For example, a Long-Multiplication sum (say the multiplying together of two numbers of 7 digits) is no doubt best done, on *paper*, by beginning at the unit-end, and writing out 7 rows of figures, and adding up the columns in the usual way. But it would be very difficult indeed—to *me* quite impossible—to do such a thing in the *head*. The only chance seems to be to begin with the *millions*, and get *them* properly grouped; then the hundred-thousands, adding the results to the previous one; and so on. Very often it seems to happen, that the easiest *mental* process looks decidedly lengthy and round-about when committed to paper.

When I first tried this plan, easy geometrical problems were all I could manage; and, even in these, I had to pause from time to time, in order to re-draw the diagram, which *would* persist in getting 'rubbed-out'. Algebraical problems I avoided at first, owing to the provoking fact that, if one single coefficient escaped the memory, there was no resource but to begin the calculation all over again. But I soon got over both these difficulties, and found myself able to remember fairly large numerical co-efficients, and also to retain, in the mind's eye, fairly complex diagrams, even to the extent of *finding my way* from one part of the diagram to another. The *lettering* of the diagrams proved such a troublesome thing to keep in the memory, that I almost gave up using it, and learned to recognise Points by their *situation* only. In my MS. of No. 53, I find the following memorandum:—

"I had never set myself this Problem before the week ending Ap. 6, 1889. I tried it, two or three nights, lying awake; and finally worked it out on the night of Ap. 9. All the conclusions were worked out mentally before any use was made of pen and paper. While working it, I did not give *names* to any Points, except *A*, *B*, *C*, and *P*: I merely thought of them by their positions (e. g. 'the foot of

the perpendicular from P on BC ’).”

If any of my readers should feel inclined to reproach me with having worked too uniformly in the region of Common-place, and with never having ventured to wander out of the beaten tracks, I can proudly point to my one Problem in ‘Transcendental Probabilities’—a subject in which, I believe, *very* little has yet been done by even the most enterprising of mathematical explorers. To the casual reader it may seem abnormal, and even paradoxical; but I would have such a reader ask himself, candidly, the question “Is not Life itself a Paradox?”

To give the Reader some idea of the process of construction of these Problems, I will give the biography of No. 63. The history of one is, to a great extent, the history of all.

It was begun during the night of Sept. $\frac{3}{4}$, 1890, and completed during the following night. The idea had occurred to me, a short time previously, that something interesting might be found in the subject of what I may call ‘partially-regular’ Solids. The ‘regular’ Solids are provokingly few in number; and it would be hopeless to find any question, connected with them, that has not already been exhaustively analysed: some also of the ‘partially-regular’ Solids (e.g. rhomboidal crystals) have probably been similarly treated; but there seemed to be room for the invention of other such Solids.

Accordingly, I devised a Solid enclosed, above and below, by 2 equal and parallel Squares, having their centres in the same vertical line, and the upper one twisted round so that its sides should be parallel to the diagonals of the lower Square. Then I imagined the upper one raised until its corners formed the vertices of 4 equilateral Triangles, whose bases were the sides of the lower one. The Solid, thus obtained, was evidently enclosed by 2 Squares and 8 equilateral Triangles: and the Problem I set myself was to obtain its *Volume*.

There was no great difficulty in proving that the distance between the 2 Squares (taking each side as equal to ‘2’) was $2^{\frac{3}{4}}$. But, when I looked about for some Trigonometrical method for calculating the Volume, despair soon seized upon me! A calculable Prism could be cut out of the *middle* of the Solid, I saw: but the outlying projections completely baffled me. After a while, the happy idea occurred to me of trying Algebraical Geometry, and regarding each facet as the base of a Pyramid, having its vertex at the centre of the Solid, which I decided to take as the Origin. I saw at once that I could calculate the co-ordinates of all the vertical Points, thence obtain equations to the Planes containing the facets, and thence calculate their distance from the Origin, which would be the altitudes of the Pyramids. Also it was evident that a sample Pyramid would suffice. I worked out a value for the Volume, that first night; but the thing got into a tangle, and I felt pretty sure I had got it wrong.

The next night I began again, and worked it all through from the beginning. In the morning the *answer* was clear in my memory, and I wrote it down at once; and did not write out the Problem, and its solution, until later in the day, when I was well pleased to find the written proof confirm the result I had arrived at in the hours of darkness.

It is not, perhaps, much to be wondered at that, when these Problems came to be re-written and arranged for publication, a good many mistakes were discovered. Some were so bad as quite to spoil the solutions in which they occurred: these Problems I have omitted altogether. The others I have corrected, in the solutions as given in Chapter III: but, that I may not be credited with an amount of accuracy, as a computator, which I am well aware I do not possess, I here

append a list of them.

In No. 7, in the denominator ' $2 \cap A$ ', I forgot the '2'.¹

In No. 10, I failed to notice that the 3 coins might *also* be a half-crown and 2 shillings.

In No. 13, in the last line but one, I put ' $2bc.ca$ ', instead of ' $4bc.ca$ '.

In No. 32, I brought out the arithmetical value as '358520', instead of '358550'.

In No. 38, I got the decimal wrong, making it .476 instead of .478, and thus brought out the answer as .042 instead of .044.

In No. 44, I said that the denominator would be of the form $(10^n - 1) \cdot 10^m$. This last factor is superfluous: i. e. $m = 0$.

In No. 50, I made a mistake near the end, bringing out $\frac{41}{108}$, instead of $\frac{50}{108}$.

In No. 55, I put 'tan' for 'sin'.

In No. 57, in the last paragraph, I replaced the denominator ' $a \cap B \cap C$ ' by (what I imagined to be its equivalent) ' $2m$ '. Apparently I was under the delusion that ' $a \cap B \cap C$ ' was the same thing as ' $\cap A.bc$ '!

In No. 70, section (3), I forgot to add in the .45, thus making the answer half a degree wrong. And, in section (4), I forgot to add in the 53, thus again making the answer half a degree wrong.

Let me, in conclusion, gratefully acknowledge the valuable assistance I have received from Mr. F. G. Brabant, M.A., of Corpus Christi College, Oxford, who has most patiently and carefully gone through my proofs, first working out each result independently, and has thus detected many mistakes which had escaped my notice. He has also supplied, for No. 59, a much neater answer than mine, viz. $\frac{abc}{3} \cdot \sqrt{\square A \square B \square C}$.

Other mistakes may perchance, having eluded us both, await the penetrating glance of some critical reader, to whom the joy of discovery, and the intellectual superiority which he will thus discern, in himself, to the auther of this little book, will, I hope, repay to some extent the time and trouble its perusal may have cost him!

C. L. D.

Ch. Ch., Oxford.

May, 1893.

Subjects Classified

ARITHMETIC. No. 31.

ALGEBRA:—

Equational Problems. Nos. 8, 25, 39, 52, 68.

Series. Nos. 21, 32.

Indeterminate Equations. No. 47.

Properties of Numbers. Nos. 1, 14, 29, 44, 61.

Chances. Nos. 5, 10, 16, 19, 23, 27, 38, 41, 45, 50, 58, 66.

PURE GEOMETRY, PLANE. Nos. 2, 3, 9, 15, 17, 18, 20, 24, 26, 30, 34, 35, 36, 40, 46, 51, 57, 62, 64, 71.

TRIGONOMETRY:—

Plane. Nos. 4, 6, 7, 11, 12, 13, 18, 22, 28, 37, 42, 43, 48, 54, 55, 56, 57, 60,

¹In the trigonometrical Problems, I have used the symbols \cap and \square , to represent the words 'sine' and 'cosine'.

65, 69.

Solid. Nos. 49, 59, 63, 70.

ALGEBRAICAL GEOMETRY:—

Plane. No. 53.

Solid. No. 67.

DIFFERENTIAL CALCULUS:—

Maxima and Minima. No. 33.

TRANSCENDENTAL PROBABILITIES. No. 72.

Chapter I.

Questions

1. (1488)²

Find a general formula for two squares whose sum = 2. [24/3/84]

2. (1489)

In a given Triangle to place a line parallel to the base, such that the portions of sides, intercepted between it and the base, shall be together equal to the base.

3. (1490)

If the sides of a Tetragon pass through the vertices of a Parallelogram, and if three of them are bisected at those vertices: prove that the fourth is so also.

4. (1490)

In a given acute-angled Triangle inscribe a Triangle, whose sides make, at each of the vertices, equal angles with the sides of the given Triangle. [19/4/76]

5. (1482, 1491)

A bag contains one counter, known to be either white or black. A white counter is put in, the bag shaken, and a counter drawn out, which proves to be white. What is now the chance of drawing a white counter? [8/9/87]

6. (1482, 1491)

Given lengths of lines drawn, from vertices of Triangle, to middle points of opposite sides, to find its sides and angles.

7. (1483, 1492)

Given 2 adjacent sides, and the included angle, of a Tetragon; and that the angles, at the other ends of these 2 sides, are right: find (1) remaining sides, (2) area. [4 or 5/89]

²The numerals, placed in parentheses, indicate the pages where the corresponding matter may be found.

8. (1483, 1492)

Some men sat in a circle, so that each had 2 neighbours; and each had a certain number of shillings. The first had 1/ more than the second, who had 1/ more than the third, and so on. The first gave 1/ to the second, who gave 2/ to the third, and so on, each giving 1/ more than he received, as long as possible. There were then 2 neighbours, one of whom had 4 times as much as the other. How many men were there? And how much had the poorest man at first? [3/89]

9. (1493)

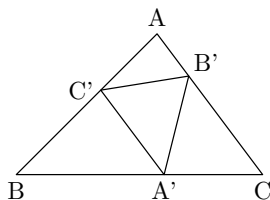
Given two Lines meeting at a Point, and given a Point lying within the angle contained by them: draw, from the given Point, two lines, at right angles to each other, and forming with the given Lines and the line joining their intersection to the given Point, two equal Triangles. [11/76]

10. (1483, 1494)

A triangular billiard-table has 3 pockets, one in each corner, one of which will hold only one ball, while each of the others will hold two. There are 3 balls on the table, each containing a single coin. The table is tilted up, so that the balls run into one corner, it is not known which. The ‘expectation’, as to the contents of the pocket, is 2/6. What are the coins? [8/90]

11. (1483, 1494)

A Triangle ABC has another $A'B'C'$ inscribed in it, so that $\angle BA'C' = \angle CB'A' = \angle AC'B' = \theta$; thus making it similar to the first Triangle. Find ratio between homologous sides. And solve for “ $\theta = 90^\circ$ ”.



The Triangles can be proved similar thus:—

$$\angle C'A'B' + \angle B'A'C = \text{supp. of } \theta,$$

$$\angle B'A'C + \angle A'CB' = \text{supp. of } \theta;$$

\therefore these pairs are equal; $\therefore \angle C'A'B' = C$.

Hence $\angle A'B'C' = A$, and $\angle B'C'A' = B$.

Let $C'A' = ka$; $\therefore A'B' = kb$, and $B'C' = kc$. We have to find k . [31/3/82]

12. (1483, 1495)

Given the semi-perimeter and the area of a Triangle, and also the volume of the cuboid whose edges are equal to the sides of the Triangle: find the sum of the squares of its sides. [23/1/91]

13. (1483, 1495)

Given the lengths of the radii of two intersecting Circles, and the distance between their centres: find the area of the Tetragon formed by the tangents at the points of intersection. [3/89]

14. (1496)

Prove that 3 times the sum of 3 squares is also the sum of 4 squares. [2/12/81]

15. (1496)

If a Figure be such that the opposite angles of every inscribed Tetragon are supplementary: the Figure is a Circle. [3/91]

16. (1483, 1497)

There are two bags, one containing a counter, known to be either white or black; the other containing 1 white and 2 black. A white is put into the first, the bag shaken, and a counter drawn out, which proves to be white. Which course will now give the best chance of drawing a white—to draw from one the two bags without knowing which it is, or to empty one bag into the other and then draw? [10/87]

17. (1497)

In a given Triangle place a line parallel to the base, such that if, from its ends, lines be drawn, parallel to the sides and terminated by the base, they shall be together equal to the first line. [3/89]

18. (1484, 1498)

Find a Point, in the base of a given Triangle, such that, if from it perpendiculars be dropped upon the sides, the line joining their extremities shall be parallel to the base. (1) Trigonometrically. (2) Geometrically [11/89]

19. (1484, 1498)

There are 3 bags; one containing a white counter and a black one, another two white and a black, and the third 3 white and a black. It is not known in what order the bags are placed. A white counter is drawn from one of them, and a black from another. What is the chance of drawing a white counter from the remaining bag?

20. (1499)

In the base of a given Triangle find a Point such that if from it two lines be drawn, terminated by the sides, one being perpendicular to the base and one to the left-hand side, they shall be equal. [5/88]

21. (1484, 1500)

Sum, (1) to n terms, (2) to 100 terms, the series

$$1.3.5 + 2.4.6 + \&c.$$

[7/4/89]

22. (1484, 1500)

Given the 3 'altitudes' of a Triangle: find its (1) sides, (2) angles, (3) area.

[4/6/89]

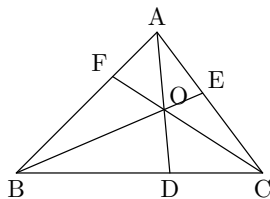
23. (1484, 1501)

A bag contains 2 counters, each of which is known to be black or white. 2 white and a black are put in, and 2 white and a black drawn out. Then a white is put in, and a white drawn out. What is the chance that it now contains 2 white?

[25/9/87]

24. (1484, 1502)

If, from the vertices of a triangle ABC , the lines AD , BE , CF be drawn, intersecting at O : find the ratio $\frac{DO}{OA}$ in terms of the two ratios $\frac{EO}{OB}$, $\frac{FO}{OC}$. [5/86]



25. (1484, 1502)

If ' ϵ ', ' α ', ' λ ' represent proper fractions; and if, in a certain hospital, ' ϵ ' of the patients have lost an eye, ' α ' an arm, and ' λ ' a leg: what is the least possible number who have lost all three? [7/2/76]

Other version:
→ 9.10, p. 1449

26. (1503)

Within a given Triangle place a similar Triangle, whose area shall have to its area a given ratio less than unity, whose sides shall be parallel to its sides, and whose vertices shall be equidistant from its vertices. [4/89]

27. (1484, 1504)

There are 3 bags, each containing 6 counters; one contains 5 white and one black; another, 4 white and 2 black; the third, 3 white and 3 black. From two of the bags (it is not known which) 2 counters are drawn, and prove to be black and white. What is the chance of drawing a white counter from the remaining bag? [4/3/80]

28. (1484, 1504)

If the sides of a given Triangle, taken cyclically, be divided in extreme and mean ratio; and if the Points be joined: find the ratio which the area of the Triangle, so formed, has to the area of the given Triangle. [12/78]

29. (1505)

Prove that the sum of 2 different squares, multiplied by the sum of 2 different squares, gives the sum of 2 squares in 2 different ways. [3/12/81]

30. (1505)

In a given Triangle, to place a line parallel to the base, such that if from its extremities lines be drawn, to the base, parallel to the sides, they shall be together double of the inscribed Line. [15/3/89]

31. (1484, 1506)

On July 1, at 8 a.m. by my watch, it was 8*h.* 4*m.* by my clock. I took the watch to Greenwich, and, when it said 'noon', the true time was 12*h.* 5*m.* That evening, when the watch said '6*h.*', the clock said '5*h.* 59*m.*'

On July 30, at 9 a.m. by my watch, it was 8*h.* 57*m.* by my clock. At Greenwich, when the watch said '12*h.* 10*m.*', the true time was 12*h.* 5*m.* That evening, when the watch said '7*h.*', the clock said '6*h.* 58*m.*'

My watch is only wound up for each journey, and goes uniformly during any one day: the clock is always going, and goes uniformly.

How am I to know when it is *true* noon on July 31? [14/3/89]

32. (1484, 1506)

Sum the series 1.5 + 2.6 + &c. (1) to n terms; (2) to 100 terms. [7/4/89]

33. (1506)

Inscribe in a given Circle the maximum Tetragon having 2 parallel sides, one double the other.

34. (1507)

From a given Point draw 2 Lines, one to the centre of a given Circle, and the other cutting off from it a Segment containing an angle equal to that between the Lines. [21/12/74]

35. (1508)

With a given Triangle, to describe a Circle, cutting each side in two points, such that, if radii be drawn perpendicular to the sides, they are divided by the sides in given ratios. [11/76]

36. (1509)

In a given Triangle, to draw a line, from a Point on one side of it, to a Point on the other side, perpendicular to one of these sides, and equal to the sum of the portions, of these sides, intercepted between it and the base. [3/89]

37. (1485, 1509)

Two given Circles intersect, so that their common chord subtends angles of 30° and 60° at their centres. What fraction of the smaller Circle is within the larger? [12/91]

38. (1485, 1510)

There are 3 bags, 'A', 'B', and 'C'. 'A' contains 3 red counters, 'B' 2 red and one white, 'C' one red and 2 white. Two bags are taken at random, and a counter drawn from each: both prove to be red. The counters are replaced, and the experiment is repeated with the same two bags: one proves to be red. What is the chance of the other being red? [3/76]

39. (1485, 1510)

A and B begin, at 6 a. m. on the same day, to walk along a road in the same direction, B having a start of 14 miles, and each walking from 6 a. m. to 6 p. m. daily. A walks 10 miles, at a uniform pace, the first day, 9 the second, 8 the third and so on: B walks 2 miles, at a uniform pace, the first day, 4 the second, 6 the third, and so on. When and where are they together? [16/3/78]

40. (1511)

In a given Triangle, whose base-angles are acute, draw two lines, at right angles to the base, and together equal to the line drawn, from the vertex, at right angles to the base, and such that

- (1) they are equidistant from the line drawn from the vertex;
- (2) they are equidistant from the ends of the base. [5/76]

41. (1485, 1512)

My friend brings me a bag containing four counters, each of which is either black or white. He bids me draw two, both of which prove to be white. He then says "I meant to tell you, before you began, that there was at least *one* white counter in the bag. However, you know it now, without my telling you. Draw again."

- (1) What is now my chance of drawing white?
- (2) What would it have been, if he had not spoken? [9/87]

42. (1485, 1512)

If the angles of a given Triangle be bisected, and if lines be drawn, through its vertices, at right angles to the bisectors, so as to form a fresh Triangle: find the ratio of the area of this Triangle to the area of the given Triangle.

43. (1513)

From the ends of the base of a given Triangle draw two lines, intersecting, terminated by the sides, and forming an isosceles Triangle at the base, and a Tetragon, equal to it, at the vertex. [2/82]

44. (1513)

If a, b be two numbers prime to each other, a value may be found for n which will make $(a^n - 1)$ a multiple of b . [18/3/81]

45. (1485, 1514)

If an infinite number of rods be broken: find the chance that one at least is broken in the middle. [5/84]

46. (1515)

In a given Triangle, whose base is divided at a given Point, inscribe a Triangle, having its angles equal to given angles, and having an assigned vertex at the given Point. [19/11/87]

47. (1485, 1516)

Solve the 2 Indeterminate Equations

$$\left. \begin{array}{l} \frac{x}{y} = x - z; \\ \frac{x}{z} = x - y; \end{array} \right\} \begin{array}{l} (1) \\ (2) \end{array}$$

and find the limits, if any, between which the *real* values lie. [12/90]

48. (1517)

If semicircles be described, externally, on the sides of a given Triangle; and if their common tangents be drawn; and if their lengths be α, β, γ : prove that

$$\left(\frac{\beta\gamma}{\alpha} + \frac{\gamma\alpha}{\beta} + \frac{\alpha\beta}{\gamma} \right)$$

is equal to the semiperimeter of the Triangle. [9/2/81]

49. (1485, 1517)

If four equilateral Triangles be made the sides of a square Pyramid: find the ratio which its volume has to that of a Tetrahedron made of the Triangles. [16/11/86]

50. (1485, 1518)

There are 2 bags, H and K , each containing 2 counters: and it is known that each counter is either black or white. A white counter is added to bag H , the bag is shaken up, and one counter transferred (without looking at it) to bag K , where the process is repeated, a counter being transferred to bag H . What is now the chance of drawing a white counter from bag H ?

51. (1519)

From a given Point, in one side of a given Triangle, to draw a line, terminated by the other side, so that, if from its ends lines be drawn at right angles to the base, their sum shall be equal to the first line. [12/81]

52. (1485, 1520)

Five beggars sat down in a circle, and each piled up, in a heap before him, the pennies he had received that day: and the five heaps were equal.

Then spake the eldest and wisest of them, unfolding, as he spake, an empty sack.

“My friends, let me teach you a pretty little game! First, I name myself ‘Number One,’ my left-hand neighbour ‘Number Two,’ and so on to ‘Number Five.’ I then pour into this sack the whole of my earnings for the day, and hand it on to him who sits next but one on my left, that is, ‘Number Three.’ *His* part in the game is to take out of it, and give to his two neighbours, so many pennies as represent their names (that is, he must give four to ‘Number Four’ and two to ‘Number Two’); he must then put *into* the sack half as much as it contained when he received it; and he must then hand it on just as I did, that is, he must hand it to him who sits next but one on his left—who will of course be ‘Number Five.’ *He* must proceed in the same way, and hand it on to ‘Number Two,’ from whom the sack will find its way to ‘Number Four,’ and so to me again. If any player cannot furnish, from his own heap, the whole of what he has to put into the sack, he is at liberty to draw upon any of the other heaps, *except mine!*”

The other beggars entered into the game with much enthusiasm: and in due time the sack returned to ‘Number One,’ who put into it the two pennies he had received during the game, and carefully tied up the mouth of it with a string. Then, remarking “it is a *very* pretty little game,” he rose to his feet, and hastily quitted the spot. The other four beggars gazed at each other with rueful countenances. Not one of them had a penny left!

How much had each at first? [16/2/89]

53. (1485, 1520)

In a triangular billiard-table, a Point is given by its trilinear co-ordinates. A ball, starting from the given Point, strikes the three sides, and returns to the starting-point. Find, in terms of the trilinear co-ordinates and of the angles of the Triangle, the Point where the ball strikes the second side. [6/4/89]

54. (1486, 1522)

Cut off, from a given Triangle, by lines parallel to the sides, 3 Triangles, so that the remaining Hexagon may be equilateral. Also find the lengths of its sides in terms of the sides of the given Triangle: and the ratios in which the sides of the given Triangle are divided. [18/4/86]

55. (1522)

Given three cylindrical towers on a Plane: find a Point, on the Plane, from which they shall look the same width. [20/12/74]

56. (1486, 1523)

Given the 3 altitudes of a Triangle: construct it. [27/6/84]

57. (1486, 1523)

In a given Triangle describe three Squares, whose bases shall lie along the sides of the Triangle, and whose upper edges shall form a Triangle;

(1) geometrically; (2) trigonometrically. [27/1/91]

58. (1487, 1525)

Three Points are taken at random on an infinite Plane. Find the chance of their being the vertices of an obtuse-angled Triangle. [20/1/84]

59. (1487, 1526)

Given a Tetrahedron, having every edge equal to the opposite edge, so that its facets are all (when looked at from the outside) identically equal: find its volume in terms of its edges. [8/90]

60. (1487, 1528)

Given a Triangle ABC , and that its base BC is divided at D in the ratio m to n : find the angles BAD , CAD . [21/3/90]

61. (1529)

Prove that, if any 3 Numbers be taken, which cannot be arranged in $A.P.$, and whose sum is a multiple of 3, the sum of their squares is also the sum of another set of 3 squares, the 2 sets having no common term. [1/12/81]

Other version:
→ 9.16, p. 1461

62. (1530)

Given two Lines meeting at a Point, and given a Point lying within the angle contained by them: draw a line, through the given Point, and forming, with the given Lines, the least possible Triangle. [12/76]

63. (1487, 1531)

Given 2 equal Squares, in different horizontal planes, having their centres in the same vertical line, and so placed that the sides of each are parallel to the diagonals of the other, and at such a distance apart that, by joining neighbouring vertices, 8 equilateral Triangles are formed: find the volume of the solid thus enclosed. [3, 4/9/90]

64. (1532)

Given a Triangle, and a Point within it such that its distance from one of the sides is less than its distance from either of the others: describe a Circle, with given Point as centre, such that its intercepts on the sides may be equal to the sides of a right-angled Triangle. [18/12/74]

65. (1532)

How many shapes are there for Triangles which have all their angles aliquot parts of 360° ? [5/89]

66. (1487, 1534)

Given that there are 2 counters in a bag, as to which all that was originally known was that each was either white or black. Also given that the experiment has been tried, a certain number of times, of drawing a counter, looking at it, and replacing it; that it has been white every time; and that, as a result, the chance of drawing white, next time, is $\frac{\alpha}{\alpha+\beta}$. Also given that the same experiment is repeated m times more, and that it still continues to be white every time. What would then be the chance of drawing white? [9/89]

67. (1487, 1536)

If a regular Tetrahedron be placed, with one vertex downwards, in a socket which exactly fits it, and be turned round its vertical axis, through an angle of 120° , raising it only so much as is necessary, until it again fits the socket: find the Locus of one of the revolving vertices. [27/1/72]

68. (1487, 1537)

Five friends agreed to form themselves into a Wine-Company (Limited). They contributed equal amounts of wine, which had been bought at the same price. They then elected one of themselves to act as Treasurer; and another of them undertook to act as Salesman, and to sell the wine at 10% over cost-price.

The first day the Salesman drank one bottle, sold some, and handed over the receipts to the Treasurer.

The second day he drank none, but pocketed the profits on one bottle sold, and handed over the rest of the receipts to the Treasurer.

That night the Treasurer visited the Cellars, and counted the remaining wine. "It will fetch just £11," he muttered to himself as he left the Cellars.

The third day the Salesman drank one bottle, pocketed the profits on another, and handed over the rest of the receipts to the Treasurer.

The wine was now all gone: the Company held a Meeting, and found to their chagrin that their profits (i. e. the Treasurer's receipts, less the original value of the wine) only cleared $6d.$ a bottle on the whole stock. These profits had accrued in 3 equal sums on the 3 days (i. e. the Treasurer's receipts for the day, less the original value of the wine taken out during the day, had come to the same amount every time); but of course only the Salesman knew this

(1) How much wine had they bought? (2) At what price? [28/2/89]

69. (1487, 1537)

If, from each of the angles of a given Triangle ABC , taken cyclically, a certain proper fraction of it be cut off, the arithmetical values of the 3 fractions being represented by ' k, l, m '; and if it be given that the Triangle, formed by the lines so drawn, is similar to the given one, the angle, formed by the lines drawn from B and C , being equal to A , and so on: find k, l, m , as similar functions of a

single variable. Also find the ratio which each side of the second Triangle bears to the corresponding side of the first. [8/89]

70. (1488, 1539)

Let an equilateral and equiangular Tetrahedron be placed with one facet in front: and suppose a series of triangles, equal to that facet, constructed in the Plane containing that facet, and having a base common with it; and that they are all wrapped round the Tetrahedron as far as they will go. Find (1) the locus of their vertices; (2) the situation of the vertex of the one whose left-hand base-angle is 15° ; (3) the left-hand base-angle of the one which (wrapped round towards the right) covers portions of all four facets of the Tetrahedron, and whose vertex coincides with *its* vertex; (4) the left-hand base-angle of the one which (similarly treated) occupies all four facets, and then the front and right-hand facet for the second time, and whose vertex coincides with the distal vertex of the base of the Tetrahedron.

71. (1540)

In a given Triangle place a Hexagon having its opposite sides equal and parallel, and three of them lying along the sides of the Triangle, and such that its diagonals intersect in a given Point. [14/12/74]

72. (1488, 1541)

A bag contains 2 counters, as to which nothing is known except that each is either black or white. Ascertain their colours without taking them out of the bag. [8/9/87]

Chapter II.

Answers

5. (1472, 1491)

Two-thirds.

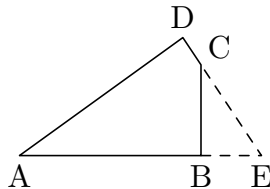
6. (1472, 1491)

Calling the sides ' $2a$ ', ' $2b$ ', ' $2c$ ', and the lines ' α ', ' β ', ' γ ', we have

$$a^2 = \frac{-\alpha^2 + 2\beta^2 + 2\gamma^2}{9},$$

$$\sphericalangle A = \frac{5\alpha^2 - \beta^2 - \gamma^2}{2\sqrt{2\alpha^2 - \beta^2 + 2\gamma^2} \cdot \sqrt{2\alpha^2 + 2\beta^2 - \gamma^2}}.$$

7. (1472, 1492)



Let AB, AD be given sides, and B, D the right \angle s; and let $AB = b, AD = d$.

$$(1) BC = \frac{d - b \cos A}{\sin A}; CD = \frac{b - d \cos A}{\sin A};$$

$$(2) \text{area} = \frac{2bd - (b^2 + d^2) \cos A}{2 \sin A}.$$

8. (1473, 1492)

7 men; 2 shillings.

10. (1473, 1494)

Either 2 florins and a sixpence; or else a half-crown and 2 shillings.

11. (1473, 1494)

The required ratio is equal to

$$\frac{\cos A \cos B \cos C}{\cos \theta (1 + \cos A \cos B \cos C) + \cos \theta \cos A \cos B \cos C}.$$

If $\theta = 90^\circ$, this = $\frac{\cos A \cos B \cos C}{1 + \cos A \cos B \cos C}$.

12. (1473, 1495)

If s = semi-perimeter, m = area, v = volume; then

$$a^2 + b^2 + c^2 = 2 \left(s^2 - \frac{v}{s} - \frac{m^2}{s^2} \right).$$

13. (1474, 1495)

If '2M' = area of Tetragon whose vertices are the Centres and the Points of intersection; and if its sides be 'a', 'b', and its diagonal, joining the Centres, 'c': required area

$$= \frac{32M^3}{(b^2 + c^2 - a^2) \cdot (c^2 + a^2 - b^2)}.$$

16. (1474, 1497)

The first course gives chance = $\frac{1}{2}$, the second, $\frac{5}{12}$. Hence the first is best.

18. (1474, 1498)

(1) Divide base BC , at E , so that $\frac{BE}{EC} = \frac{\cap 2C}{\cap 2B}$.

(2) At B, C , make right angles ABD, ACD ; and join AD cutting BC at E , which is the required Point.

19. (1474, 1498)

Eleven-seventeenths.

21. (1475, 1500)

(1) $\frac{n \cdot \overline{n+1} \cdot \overline{n+4} \cdot \overline{n+5}}{4}$; (2) 27,573,000.

22. (1475, 1500)

Calling the given altitudes ' α, β, γ '; and the fraction $\frac{2\alpha^2\beta^2\gamma^2 \cdot (\alpha^2 + \beta^2 + \gamma^2) - (\beta^4\gamma^4 + \gamma^4\alpha^4 + \alpha^4\beta^4)}{4\alpha^4\beta^4\gamma^4}$

' k^2 ,

(1) $a = \frac{1}{k\alpha}$, &c.;

(2) $\cap A = k\beta\gamma$, &c.;

(3) area = $\frac{1}{2k}$

23. (1475, 1501)

Two-fifths.

24. (1475, 1502)

$\frac{DO}{DA} + \frac{EO}{EB} + \frac{FO}{FC} = 1$; whence any one can be found in terms of the other two.

25. (1475, 1502)

$\epsilon + \alpha + \lambda - 2$.

27. (1475, 1504)

Seventeen-twentyfifths.

28. (1476, 1504)

$7 - 3\sqrt{5}$.

31. (1476, 1506)

When the clock says '12h. 2m. 29 $\frac{277}{288}$ sec.'

32. (1476, 1506)

(1) $\frac{n \cdot (n+1) \cdot (2n+13)}{6}$;

(2) 358550.

37. (1477, 1509)

$\frac{4+\sqrt{3}}{12} - \frac{1+\sqrt{3}}{2\pi}$; i. e. about .044.

38. (1477, 1510)

Fortynine-seventytwoths.

39. (1477, 1510)

They meet at end of $2d$. $6h.$, and at end of $4d.$: and the distances are 23 miles, and 34 miles.

41. (1477, 1512)

(1) Seven-twelfths. (2) One-half.

42. (1477, 1512)

$$\frac{abc}{2(s-a).(s-b).(s-c)}$$

45. (1478, 1514)

.6321207 &c.

47. (1478, 1516)

One set of values is 0, 0, 0.

A 2nd set is $x = y = 0$; z has any value.

A 3rd is $x = z = 0$; y has any value.

And the 4th set is $x = \frac{k^2}{k-1}$, $y = z = k$; where k has any value.

If x has any positive value less than 4, y and z are unreal.

49. (1478, 1517)

Two.

50. (1478, 1518)

Seventeen-twentysevenths.

52. (1479, 1520)

$2l$. $18s$. $0d$.

53. (1479, 1520)

The portion, cut off from the second side, is equal to

$$\frac{(\alpha \cap C + \gamma \cap A)(2\gamma \sqcup A + \beta)}{\alpha \sqcup C + \gamma \sqcup A + \beta} + \frac{\beta \sqcup A + \gamma \sqcup 2A}{\cap A}.$$

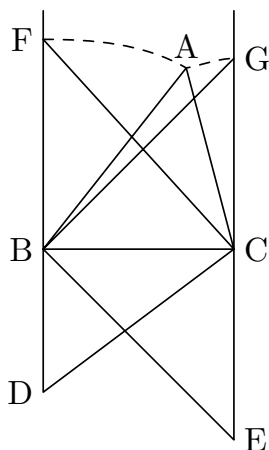
54. (1479, 1522)

Side AB must be divided at D, G , so that

$$AD : DG : GB :: \frac{1}{a} : \frac{1}{c} : \frac{1}{b};$$

and similarly for the other sides. Also each side of the Hexagon = $\frac{1}{\frac{1}{a} + \frac{1}{b} + \frac{1}{c}}$.

56. (1480, 1523)



Draw BC, CE, BD equal to the given altitudes, so as to form right \angle s at B and C : and produce DB, EC . Join DC , and draw $CF \perp$ to it. Join EB , and draw $BG \perp$ to it. With centre B , and distance BF , describe a circle: with centre C , and distance CG describe another: let them meet at A : and join AB, AC . Triangle ABC may be proved to be similar to required Triangle. The rest of the construction is obvious.

57. (1480, 1523)

(1) *Geometrically.*

If Squares be described externally on the sides of the given Triangle; and if their outer edges be produced to form a new Triangle; and if the sides of the given Triangle be divided similarly to those of the new Triangle: their cenral portions will be the bases of the required Squares.

(2) *Trigonometrically.*

If a, b, c be the sides of the given Triangle, and m its area; and if x, y, z be the sides of the required Squares: then

$$\frac{a}{x} = \frac{b}{y} = \frac{c}{z} = \frac{a^2 + b^2 + c^2}{2m} + 1.$$

58. (1480, 1525)

$$\frac{3}{8 - \frac{6\sqrt{3}}{\pi}}$$

59. (1480, 1526)

Calling lengths of the 3 pairs of edges 'a, b, c', and the corresponding \angle s, in each facet, 'A, B, C'; volume =

$$\frac{abc}{6} \cdot \sqrt{1 - (\Delta^2 A + \Delta^2 B + \Delta^2 C) + 2\Delta A \Delta B \Delta C}$$

60. (1480, 1528)

$\cot BAD = \frac{(m+n)\cot A + n\cot B}{m}$; similarly, $\cot CAD = \frac{(m+n)\cot A + m\cot C}{n}$.

63. (1480, 1531)

If each side of each Square = 2, the volume =

$$\frac{8 \cdot 2^{\frac{1}{4}} \cdot (\sqrt{2} + 1)}{3}$$

66. (1481, 1534)

$$\frac{2^m \cdot (\alpha - \beta) + \beta}{2^m \cdot (\alpha - \beta) + 2\beta}$$

67. (1481, 1536)

If the centre of the horizontal facet be taken as the Origin, and if the X-axis pass through one of the vertices of that facet, and the Y-axis be parallel to the opposite edge of that facet, and the Z-axis be perpendicular to that facet: and if the altitude (measured downwards) of the Tetrahedron be called 'h', and the intercept on the X-axis be called 'a': the Equations to the Locus are

$$(x + \sqrt{3} \cdot y) \cdot (h - z) = ah;$$

$$x^2 + y^2 = a^2.$$

68. (1481, 1537)

(1) 5 dozen; (2) 8/4 a bottle.

69. (1481, 1537)

(1) $k = \frac{\theta - B}{A}$; $l = \frac{\theta - C}{B}$; $m = \frac{\theta - A}{C}$.
 (2) Calling new Triangle 'A'B'C',

$$\frac{a'}{a} = \frac{b'}{b} = \frac{c'}{c} = 2 \Delta \theta.$$

70. (1482, 1539)

(1) Down the back-edge; up again; and so on. (2) about .7 of the way down the back-edge. (3) About 18.65° . (4) About 14.53° .

72. (1482, 1541)

One is black, and the other white.

Chapter III.

Solutions

1. (1472)

Let u, v be the Nos.

$$\text{Then } u^2 + v^2 = 2.$$

Evidently ' $(1+k), (1-k)$ ' is a form for the squares.

Also, if we write ' $2m^2$ ' for ' 2 ' (which will not interfere with the problem, as we can divide by m^2 , and get $\frac{u^2}{m^2} + \frac{v^2}{m^2} = 2$), the above form becomes ' $(m^2+k), (m^2-k)$ '.

Now, as these are *squares*, their resemblance to

$$'(a^2 + b^2 + 2ab), (a^2 + b^2 - 2ab)'$$

at once suggests itself; so that the problem depends on the known one of finding a, b , such that $(a^2 + b^2)$ is a square; and we can then take $2ab$ as k .

A general form for this is

$$\begin{aligned} a &= x^2 - y^2, \\ b &= 2xy; \\ \therefore a^2 + b^2 &= (x^2 + y^2)^2; \end{aligned}$$

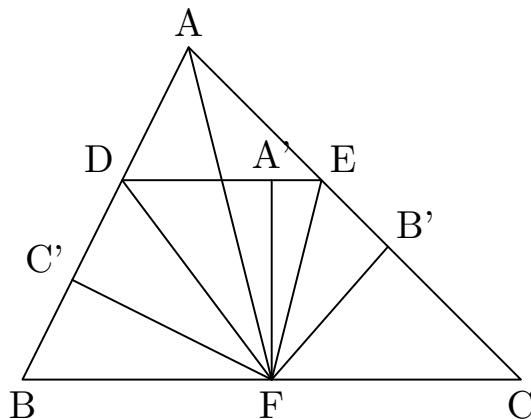
\therefore the formula ' $u^2 + v^2 = 2m^2$ ' becomes

$$(x^2 - y^2 + 2xy)^2 + (x^2 - y^2 - 2xy)^2 = 2(x^2 + y^2)^2;$$

i. e. $(\frac{x^2 - y^2 + 2xy}{x^2 + y^2})^2 + (\frac{x^2 - y^2 - 2xy}{x^2 + y^2})^2 = 2.$

Q. E. F.

2. (1472)



(Analysis.)

Let ABC be the Triangle, and DE the required line, so that $BD+CE = BC$.
From BC cut off BF equal to BD ; then $CF = CE$.

Join DF, EF .

Now $\angle BDF = \angle BFD =$ [by I. 29] $\angle FDE$;

Similarly $\angle CEF = \angle FED$;

$\therefore \angle s BDE, CED$, are bisected by DF, EF , and F is centre of \odot escribed to $\triangle ADE$.

Drop, from F , $\perp s$ on BD, DE, EC ; then these $\perp s$ are equal.

Hence, if AF be joined, it bisects $\angle A$.

Hence construction.

(Synthesis.)

Bisect $\angle A$ by AF : from F draw $FB', FC', \perp AC, AB$: also draw $FA' \perp BC$ and equal to FB' : and through A' draw $DE \perp FA'$, i. e. $\parallel BC$. Then DE shall be line required.

$\therefore \angle s$ at A', B', C' , are right, and $FA' = FB' = FC'$,

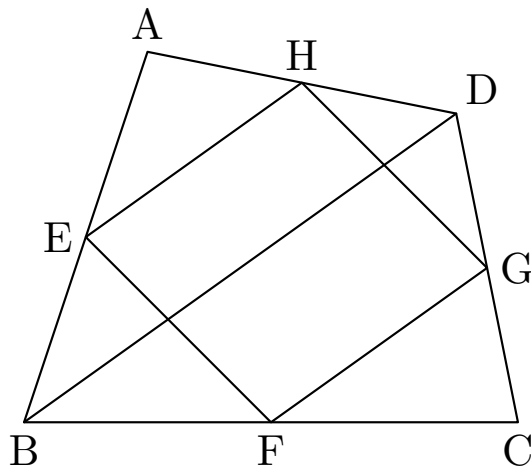
$\therefore \angle s BDE, CED$, are bisected by DF, EF .

Now $\angle BFD = \angle FDA'$; \therefore it = $\angle BDF$; $\therefore BF = BD$;

Similarly $CF = CE$; $\therefore BC = BD + CE$.

Q. E. F.

3. (1472)



Let $ABCD$ be the Tetragon; and let the 3 sides, AB , BC , CD , be bisected by vertices of the Parallelogram $EFGH$.

Join BD .

\therefore in Triangle BCD , sides BC , CD are bisected at F and G ,

$\therefore FG$ is parallel to BD ;

but EH is parallel to FG ;

$\therefore EH$ is parallel to BD ;

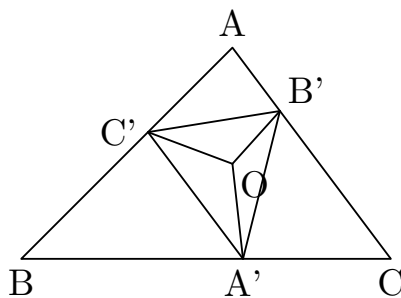
\therefore Triangles AEH , ABD are similar;

now AE is half of AB ;

$\therefore AH$ is half of AD .

Q. E. D.

4. (1472)



Let ABC be the given Triangle, and $A'B'C'$ the required Triangle, so that $\angle BA'C' = \angle CA'B'$, &c.

Evidently $A'C'$, $A'B'$ are equally inclined to a line drawn, from A' , $\perp BC$;

and so of the others; i. e. these \perp s bisect the \angle s at A' , B' , C' ;

\therefore they meet in the same Point. Draw them; let them meet at O ; and call the $\angle C'A'B'$ ' 2α ', and so on.

Now $(\beta + \gamma) = \pi - \angle B'OC' = A$;

$\therefore 2A = 2(\beta + \gamma) = \pi - 2\alpha$;

$\therefore \alpha = 90^\circ - A$;
 $\therefore \angle BA'C' = A$.
 Similarly, $\angle BC'A' = C$.
 \therefore Triangle $BC'A'$ is similar to Triangle BCA ; and so of the others;

$$\begin{aligned}
 \therefore BA' &= \frac{c}{a} \cdot BC' = \frac{c}{a} \cdot (c - AC'), \\
 &= \frac{c}{a} \cdot (c - \frac{b}{c} \cdot AB'), \\
 &= \frac{c^2}{a} - \frac{b}{a} \cdot (b - CB'), \\
 &= \frac{c^2}{a} - \frac{b^2}{a} + \frac{b}{a} \cdot \frac{a}{b} \cdot CA', \\
 &= \frac{c^2}{a} - \frac{b^2}{a} + a - BA'; \\
 \therefore 2BA' &= \frac{c^2 + a^2 - b^2}{a} = \frac{2ca \triangle B}{a}; \\
 \therefore BA' &= c \triangle B;
 \end{aligned}$$

$\therefore A'$ is foot of \perp dran, from A , to BC . Hence the construction is obvious.
 Q. E. F.

5. (1472, 1482)

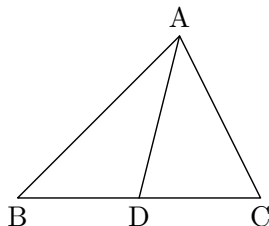
At first sight, it would appear that, as the state of the bag, *after* the operation, is necessarily identical with its state *before* it, the chance is just what it was, viz. $\frac{1}{2}$. This, however, is an error.

The chances, *before* the addition, that the bag contains (a) 1 white (b) 1 black, are (a) $\frac{1}{2}$ (b) $\frac{1}{2}$. Hence the chances *after* the addition, that it contains (a) 2 white (b) 1 white, 1 black, are the same, viz. (a) $\frac{1}{2}$ (b) $\frac{1}{2}$. Now the probabilities, which these 2 states give to the observed event, of drawing a white counter, are (a) certainty (b) $\frac{1}{2}$. Hence the chances, after drawing the white counter, that the bag, before drawing, contained (a) 2 white (b) 1 white, 1 black, are proportional to (a) $\frac{1}{2} \cdot 1$ (b) $\frac{1}{2} \cdot \frac{1}{2}$; i. e. (a) $\frac{1}{2}$ (b) $\frac{1}{4}$; i. e. (a) 2 (b) 1. Hence the chances are (a) $\frac{2}{3}$ (b) $\frac{1}{3}$. Hence, after the removal of a white counter, the chances, that the bag now contains (a) 1 white (b) 1 black, are for (a) $\frac{2}{3}$ and for (b) $\frac{1}{3}$.

Thus the chance, of now drawing a white counter, is $\frac{2}{3}$. Q. E. F.

6. (1472, 1482)

Call sides '2a, 2b, 2c', and lines in question ' α, β, γ '.



Now $\sphericalangle ADB + \sphericalangle ADC = 0$;
 $\therefore \frac{a^2+a^2-4c^2}{2\alpha a} + \frac{a^2+a^2-4b^2}{2\alpha a} = 0$;
 $\therefore 2\alpha^2 + 2a^2 - 4b^2 - 4c^2 = 0$;
 $\therefore \alpha^2 = -a^2 + 2b^2 + 2c^2$.
 Similarly, $\beta^2 = 2a^2 - b^2 + 2c^2$;

$\gamma^2 = 2a^2 + 2b^2 - c^2$.
 To eliminate b, c , let us multiply by k, l, m , so taken that

$$2k - l + 2m = 0,$$

$$\text{and } 2k + 2l - m = 0;$$

$$\therefore 3(l - m) = 0; \text{ i. e. } l = m;$$

$$\therefore 2k = -l = -m;$$

hence we may make $k = -1, l = 2, m = 2$;

$$\therefore -\alpha^2 + 2\beta^2 + 2\gamma^2 = 9a^2;$$

$$\text{i. e. } a^2 = \frac{-\alpha^2 + 2\beta^2 + 2\gamma^2}{9};$$

$$\therefore BC \text{ (which } = 2a) = \frac{2}{3}\sqrt{-\alpha^2 + 2\beta^2 + 2\gamma^2}, \&c.,$$

which gives lengths of sides.

$$\text{Also } \sphericalangle A = \frac{b^2+c^2-a^2}{2bc}$$

$$= \frac{2\alpha^2 - \beta^2 + 2\gamma^2 + 2\alpha^2 + 2\beta^2 - \gamma^2 + \alpha^2 - 2\beta^2 - 2\gamma^2}{2 \cdot \sqrt{2\alpha^2 - \beta^2 + 2\gamma^2} \cdot \sqrt{2\alpha^2 + 2\beta^2 - \gamma^2}}$$

$$= \frac{5\alpha^2 - \beta^2 - \gamma^2}{\text{den.}}; \text{ and so for other angles.}$$

Q. E. F.

7. (1472, 1483)

Let AB, AD be given sides, and B, D the right \sphericalangle s; and let $AB = b, AD = d$.

Produce DC to meet AB -produced at E .

Now $AE = AD \cdot \sec A = d \sec A$;

$\therefore BE = d \sec A - b$.

$$\text{Also } BC = BE \cdot \tan E = (d \sec A - b) \cot A,$$

$$= \frac{d-b \sphericalangle A}{\sphericalangle A};$$

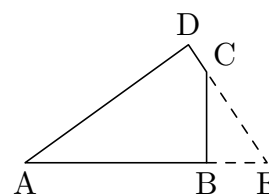
similarly, $CD = \frac{b-d \sphericalangle A}{\sphericalangle A}$, which answers (1).

Also area = $\frac{1}{2} \cdot (AB \cdot BC + AD \cdot DC)$,

$$= \frac{1}{2} \cdot \frac{b \cdot (d-b \sphericalangle A) + d \cdot (b-d \sphericalangle A)}{\sphericalangle A},$$

$$= \frac{2bd - (b^2 + d^2) \sphericalangle A}{2 \sphericalangle A}; \text{ which answers (2).}$$

Q. E. F.



8. (1473, 1483)

Let $m =$ No. of men, $k =$ No. of shillings possessed by the last (i. e. the poorest) man. After one circuit, each is a shilling poorer, and the moving heap contains

m shillings. Hence, after k circuits, each is k shillings poorer, the last man now having nothing, and the moving heap contains mk shillings. Hence the thing ends when the last man is again called on to hand on the heap, which then contains $(mk + m - 1)$ shillings, the penultimate man now having nothing, and the first man having $(m - 2)$ shillings.

It is evident that the first and the last man are the only 2 neighbours whose possessions can be in the ratio '4 to 1'. Hence either

$$mk + m - 1 = 4(m - 2),$$

ore else

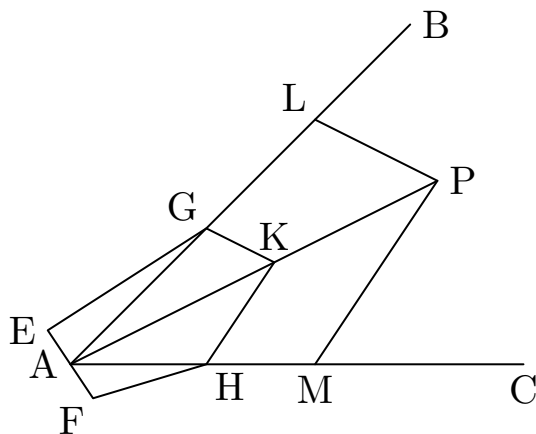
$$4(mk + m - 1) = m - 2.$$

The first equation gives $mk = 3m - 7$, i. e. $k = 3 - \frac{7}{m}$, which evidently gives no integral values other than $m = 7, k = 2$.

The second gives $4mk = 2 - 3m$, which evidently gives no positive integral values.

Hence the answer is '7 men; 2 shillings'.

9. (1473)



Let AB, AC , be the given Lines, and P the given Point; and join AP .

Through A draw $EAF, \perp AP$, and bisected at A ; from E, F , draw EG, FH , parallel to AP , and meeting AB, AC , at G, H ; join GH , and on it describe a semicircle cutting AP at K ; and join KG, KH . Then $\angle GKH$ is a right angle. From P draw PL, PM , parallel to KG, KH .

Now Triangle APL has, to Triangle AKG , the duplicate ratio of AP to AK ; but so also has triangle APM to Triangle AKH ;

also Triangles AKG, AKH , are equal, being on the same base AK , and having equal altitudes AE, AF ;

\therefore Triangles APL, APM are equal: and $\angle LPM$ is evidently equal to $\angle GKH$; \therefore it is a right angle. Q. E. F.

10. (1473, 1483)

Call them x, y, z ; and let $x + y + z = s$.

The chance, that the pocket contains 2 balls, is $\frac{2}{3}$; and, if it does, the 'expectation' is the average value of

$$(y + z), (z + x), (x + y); \text{ i. e. it is } \frac{2s}{3}.$$

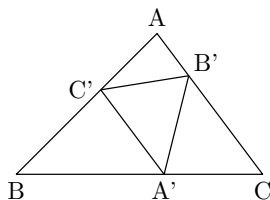
Also the chance, that it contains only one, is $\frac{1}{3}$; and, if it does, the 'expectation' is $\frac{s}{3}$.

$$\text{Hence total 'expectation' } = \frac{4s}{9} + \frac{s}{9} = \frac{5s}{9}.$$

$$\therefore \frac{5s}{9} = 30d.; \therefore s = 54d. = 4/6.$$

Hence the coins must be 2 florins and a sixpence; or else a half-crown and 2 shillings. Q. E. F.

11. (1473, 1483)



$$\text{Now } \frac{BA'}{A'C'} = \frac{\sin(B+\theta)}{\sin B}; \text{ and } \frac{A'C}{A'B'} = \frac{\sin \theta}{\sin C}.$$

$$\therefore BA = \frac{\sin(B+\theta)}{\sin B} \cdot ka; \text{ and } A'C = \frac{\sin \theta}{\sin C} \cdot kb$$

$$\text{but } BA' + A'C = a; \therefore k$$

$$\begin{aligned} &= \frac{a}{\frac{a \cdot \sin(B+\theta)}{\sin B} + \frac{b \sin \theta}{\sin C}} = \frac{\sin A}{\frac{\sin A \sin(B+\theta)}{\sin B} + \frac{\sin B \sin \theta}{\sin C}} \\ &= \frac{\sin A \sin B \sin C}{\sin A \sin(B+\theta) \sin C + \sin^2 B \sin \theta} \\ &= \frac{\sin A \sin B \sin C}{\sin A \sin C (\sin B \cos \theta + \cos B \sin \theta) + (1 - \sin^2 B) \sin \theta} \\ &= \frac{\sin A \sin B \sin C}{\sin \theta + \sin \theta (\sin A \sin C \cos B - \sin^2 B) + \cos \theta \sin A \sin B \sin C} \\ &= \frac{\sin A \sin B \sin C}{\sin \theta + \sin \theta \cos B (\sin A \sin C + \cos(A+C)) + \cos \theta \sin A \sin B \sin C} \\ &= \frac{\sin A \sin B \sin C}{\sin \theta (1 + \cos A \cos B \cos C) + \cos \theta \sin A \sin B \sin C}. \end{aligned}$$

Q. E. F.

$$\text{COR. Let } \theta = 90^\circ; \text{ then } k = \frac{\sin A \sin B \sin C}{1 + \cos A \cos B \cos C}.$$

12. (1473, 1483)

Let s = semi-perimeter, m = area, v = volume.

We know that $m = \sqrt{s \cdot (s - a) \cdot (s - b) \cdot (s - c)}$;

$$\therefore m^2 = s \cdot (s - a) \cdot (s - b) \cdot (s - c);$$

$$\begin{aligned} \therefore \frac{m^2}{s} &= s^2 - s^2 \cdot (a + b + c) + s \cdot (bc + ca + ab) - abc; \\ &= s^2 - 2s^2 + s \cdot (bc + ca + ab) - v; \end{aligned}$$

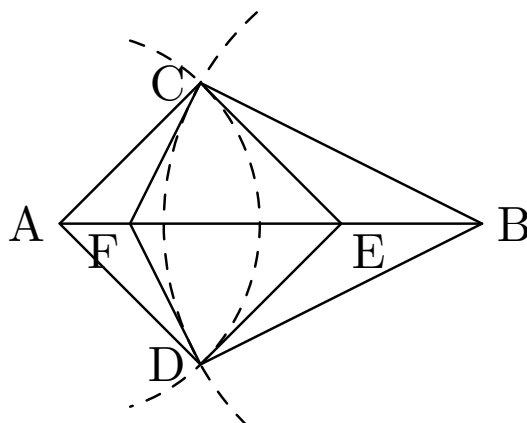
$$\therefore \frac{m^2}{s} + \frac{v}{s} + s^2 = bc + ca + ab;$$

$$\begin{aligned} \therefore 2 \cdot \left(\frac{m^2}{s} + \frac{v}{s} + s^2 \right) &= (a + b + c)^2 - (a^2 + b^2 + c^2); \\ &= 4s^2 - (a^2 + b^2 + c^2); \end{aligned}$$

$$\therefore a^2 + b^2 + c^2 = 2 \cdot \left(s^2 - \frac{v}{s} - \frac{m^2}{s^2} \right).$$

Q. E. F.

13. (1474, 1483)



Let A, B , be the centres of the Circles; C, D , their points of intersection; and $CFDE$ the Tetragon whose area is required.

Let the sides of the Triangle ABC be a, b, c ; and its $\angle s \alpha, \beta, \gamma$.

Then $CE = b \cdot \tan \alpha$, and $CF = a \cdot \tan \beta$.

Also $\angle FCE = \angle ACE + \angle FCB - \gamma = \pi - \gamma$;

$\therefore \cap FCE = \cap \gamma$.

Hence area of Triangle $FCE = \frac{1}{2} \cdot ab \cdot \tan \alpha \cdot \tan \beta \cdot \cap \gamma$;

\therefore area of Tetragon $= \frac{ab \cap \alpha \cap \beta \cap \gamma}{\cap \alpha \cap \beta}$.

Now, writing ' M ' for the area of Triangle ABC , we have

$$\cap \alpha = \frac{2M}{bc}, \cap \beta = \frac{2M}{ca}, \cap \gamma = \frac{2M}{ab};$$

$$\begin{aligned} \therefore \text{area of Tetragon} &= ab \cdot \frac{8M^3}{a^2b^2c^2} \cdot \frac{4bc.ca}{(b^2+c^2-a^2)(c^2+a^2-b^2)}; \\ &= \frac{32M^3}{(b^2+c^2-a^2) \cdot (c^2+a^2-b^2)}. \end{aligned}$$

Q. E. F.

14. (1474)

This simply expresses the identity

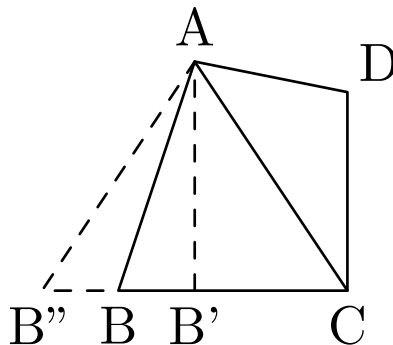
$$\begin{aligned} &3(a^2 + b^2 + c^2) \\ &= (a + b + c)^2 + (b^2 - 2bc + c^2) + (c^2 - 2ca + a^2) + (a^2 - 2ab + b^2) : \\ &= (a + b + c)^2 + (b - c)^2 + (c - a)^2 + (a - b)^2. \end{aligned}$$

Q. E. D.

Numerical Examples (not thought out).

$$\begin{aligned} 3(1^2 + 2^2 + 3^2) &= 6^2 + 1^2 + 2^2 + 1^2. \\ 3(1^2 + 3^2 + 7^2) &= 11^2 + 4^2 + 6^2 + 2^2. \end{aligned}$$

15. (1474)



Let $ABCD$ be an inscribed Tetragon. Join AC : and about Triangle ACD describe a Circle.

Now, if this Circle does not pass through B , let it cut CB , or CB produced, in B' or B'' . Join AB' , AB'' .

Then $\angle AB'C$, or $\angle AB''C$, is supplementary to $\angle ADC$;

\therefore it = $\angle ABC$; which is absurd;

\therefore this Circle does pass through B .

The same thing may be proved for any other Point on that portion, of the perimeter of the given Figure, which lies on the same side of AC as the Point D .

Similarly for the other portion.

Hence the Figure is a Circle.

Q. E. D.

16. (1474, 1483)

The 'a priori' chances of possible states of first bag are ' $W, \frac{1}{2}; B, \frac{1}{2}$ '. Hence chances, after putting W in, are ' $WW, \frac{1}{2}; WB, \frac{1}{2}$ '. The chances, which these give to the 'observed event', are $1, \frac{1}{2}$. Hence chances of possible states ' W, B ', after the event, are proportional to $1, \frac{1}{2}$; i. e. to $2, 1$; i. e. their actual values are $\frac{2}{3}, \frac{1}{3}$.

Now, in first course, chance of drawing W is $\frac{1}{2} \cdot \frac{2}{3} + \frac{1}{2} \cdot \frac{1}{3}$; i. e. $\frac{1}{2}$.

And, in second course, chances of possible states ' $WWBB, WBBB$ ' are $\frac{2}{3}, \frac{1}{3}$: hence chance of drawing W is $\frac{2}{3} \cdot \frac{1}{2} + \frac{1}{3} \cdot \frac{3}{4}$; i. e. $\frac{5}{12}$.

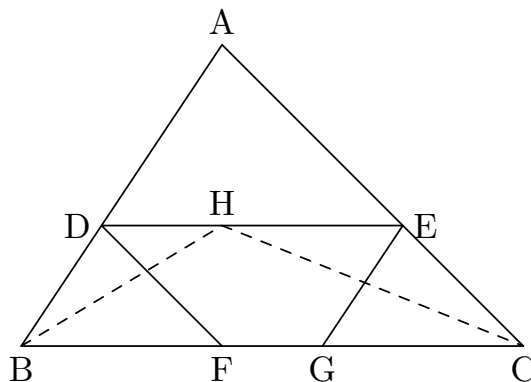
Hence *first* course gives best chance.

Q. E. F.

17. (1474)

(Analysis.)

Let ABC be the given Triangle, and DE the line required.



From D, E , draw DF, EG , parallel to the sides. Then $DF + EG = DE$.

Because BE is a Parallelogram, $\therefore DB = EG$;

similarly $EC = DF$;

$\therefore DB + EC = DE$.

Hence construction.

(Synthesis.)

Bisect $\angle s B, C$, by BH, CH , meeting at H ; through H draw DE parallel to BC ; and from D, E , draw DF, EG , parallel to AC, AB .

Because DE is parallel to BC ,

$\therefore \angle DHB = \text{alternate } \angle HBF = \angle DBH$;

$\therefore DB = DH$.

Similarly $EC = EH$.

$\therefore DB + EC = DE$.

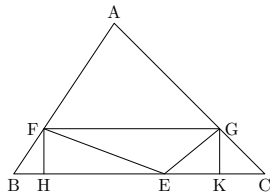
Because BE, DC are Parallelograms,

$\therefore EG = DB$, and $DF = EC$;

$\therefore DF + EG = DE$.

Q. E. F.

18. (1474, 1484)



(1) Call required Point E . From E draw EF, EG *perp* sides. Join FG . From F, G , draw FH, GK *perp* BC . Call BE ' x ', and EC ' y '.

Now FH must = GK .

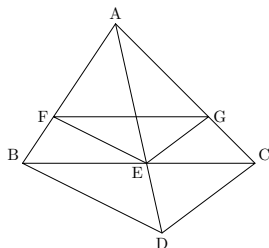
Also $EF = x \cap B$; and $FH = EF \cap FEH$,
 $= EF \cap B$,
 $= x \cap B \cap B$;

similarly, $GK = y \cap C \cap C$.

But $FH = GK$; $\therefore x \cap B \cap B = y \cap C \cap C$;

$$\therefore \frac{x}{y} = \frac{\cap 2C}{\cap 2B}.$$

Q. E. F.



(2) At B, C , make right angles ABD, ACD ; and join AD , cutting BC at E . From E draw $EF, EG \perp$ sides; and join FG .

$\therefore BD, FE$ are $\perp AB$, \therefore they are \parallel ; $\therefore AF : FB :: AE : ED$;

$\therefore CD, GE$ are $\perp AC$, \therefore they are \parallel ; $\therefore AG : GC :: AE : ED$;

$\therefore AF : FB :: AG : GC$;

$\therefore FG$ is parallel to BC .

Q. E. F.

19. (1474, 1484)

Call the bags A, B, C ; so that A contains a white counter and a black one; &c.

The chances of the orders $ABC, ACB, BAC, BCA, CAB, CBA$, are, a priori, $\frac{1}{6}$ each. Since they are equal, we may, instead of multiplying each by the probability it gives to the observed event, simply assume those probabilities as being proportional to the chances *after* the observed event.

These probabilities are:—

for ABC , $\frac{1}{2} \times \frac{1}{3}$; i. e. $\frac{1}{6}$.

ACB , $\frac{1}{2} \times \frac{1}{4}$; i. e. $\frac{1}{8}$.

BAC , $\frac{2}{3} \times \frac{1}{2}$; i. e. $\frac{1}{3}$.

$$\begin{aligned} BCA, & \frac{2}{3} \times \frac{1}{4}, \text{ i. e. } \frac{1}{6}, \\ CAB, & \frac{3}{4} \times \frac{1}{2}, \text{ i. e. } \frac{3}{8}, \\ CBA, & \frac{3}{4} \times \frac{1}{3}, \text{ i. e. } \frac{1}{4}. \end{aligned}$$

Hence the chances are proportional to 4, 3, 8, 4, 9, 6; i. e. they are these Nos. divided by 34.

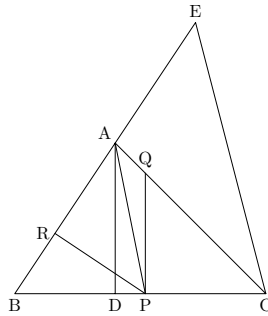
Hence the chance, of drawing a white counter from the remaining bag; is

$$\frac{1}{34} \cdot \left\{ 4 \times \frac{3}{4} + 3 \times \frac{2}{3} + 8 \times \frac{3}{4} + 4 \times \frac{1}{2} + 9 \times \frac{2}{3} + 6 \times \frac{1}{2} \right\};$$

$$\text{i. e. } \frac{1}{34} \times \{3 + 2 + 6 + 2 + 6 + 3\}; \text{ i. e. } \frac{22}{34}; \text{ i. e. } \frac{11}{17}.$$

20. (1474)

(Analysis)



Let ABC be the given Triangle, and P the required Point. Draw $PQ \perp BC$, and $PR \perp AB$. Then $PQ = PR$.

Hence $PC \tan C = PB \tan B$;

$\therefore PC : PB :: \tan B : \tan C$, (draw $AD \perp BC$.)

$$\therefore \frac{AD}{AB} : \frac{AD}{DC},$$

$$\therefore DC : AB.$$

Hence construction.

(Synthesis)

From A draw $AD \perp BC$. Produce BA to E , making AE equal to DC . Join EC . From A draw AP parallel to EC ; and from P draw $PQ \perp BC$, and $PB \perp AB$.

$$\begin{aligned} \text{Then } \frac{PQ}{PC} &= \frac{AC}{DC} = \frac{AD}{AB} \cdot \frac{AB}{DC}, \\ &= \frac{PR}{PB} \cdot \frac{AB}{AE}, \\ &= \frac{PR}{PB} \cdot \frac{PB}{PC} = \frac{PR}{PC}; \\ \therefore PQ &= PR. \end{aligned}$$

Q. E. F.

21. (1475, 1484)

(1) The n th term is $n \cdot \overline{n+2} \cdot \overline{n+4}$;
 \therefore the $(n+1)$ th term is $\overline{n+1} \cdot \overline{n+3} \cdot \overline{n+5}$;

$$\begin{aligned} &= (n+1) \cdot (\overline{n+2} + 1) \cdot (n+5); \\ &= \overline{n+1} \cdot \overline{n+2} \cdot \overline{n+5} + \overline{n+1} \cdot \overline{n+5} \\ &= \overline{n+1} \cdot \overline{n+2} \cdot (\overline{n+3} + 2) + \overline{n+1} \cdot (\overline{n+2} + 3); \\ &= \overline{n+1} \cdot \overline{n+2} \cdot \overline{n+3} + 2 \cdot \overline{n+1} \cdot \overline{n+2} + \overline{n+1} \cdot \overline{n+2} + 3 \cdot \overline{n+1}; \\ &= \overline{n+1} \cdot \overline{n+2} \cdot \overline{n+3} + 3 \cdot \overline{n+1} \cdot \overline{n+2} + 3 \cdot \overline{n+1}. \\ \therefore S &= \frac{n \cdot \overline{n+1} \cdot \overline{n+2} \cdot \overline{n+3}}{4} + n \cdot \overline{n+1} \cdot \overline{n+2} + \frac{5}{2} \cdot n \cdot \overline{n+1} + C; \end{aligned}$$

and $C = 0$.

$$\begin{aligned} \therefore S &= n \cdot \overline{n+1} \cdot \left(\frac{n^2 + 5n + 6}{4} + n + 2 + \frac{3}{2} \right); \\ &= n \cdot \overline{n+1} \cdot \frac{n^2 + 9n + 20}{4} = \frac{n \cdot \overline{n+1} \cdot \overline{n+4} \cdot \overline{n+5}}{4}. \end{aligned}$$

Q. E. F.

(2) S , to 100 terms,

$$= \frac{100 \cdot 101 \cdot 104 \cdot 105}{4} = 100 \cdot 101 \cdot 26 \cdot 105;$$

now $101 \cdot 105 = 10,605$;

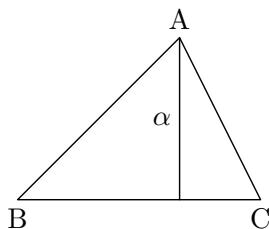
$\therefore 101 \cdot 105 \cdot 13 = 130,000 + 7800 + 65 = 137,865$;

and twice this $= 274,000 + 1730 = 275,730$;

$\therefore S = 27,573,000$.

Q. E. F.

22. (1475, 1484)



Call given altitudes ' α , β , γ '.

Now $a\alpha = b\beta = c\gamma$;

$\therefore \alpha \cap A = \beta \cap B = \gamma \cap C$;

$\frac{\cap A}{\beta\gamma} = \frac{\cap B}{\gamma\alpha} = \frac{\cap C}{\alpha\beta} = k$ (say);

$\cap A = k\beta\gamma$, $\cap B = k\gamma\alpha$, $\cap C = k\alpha\beta$.

Now $\cap(A+B) = \cap C$;

$\therefore \cap A \cap B + \cap A \cap B = \cap C$;

$\therefore m A \cap B = m C - \cap A \cap B$;
 $\therefore m^2 A(1 - m^2 B) = m^2 C + m^2 B(1 - m^2 A) - 2 m C \cap A \cap B$;
 $\therefore m^2 A - m^2 A m^2 B = m^2 C + m^2 B - m^2 A m^2 B - 2 m B m C \cap A$;
 $\therefore m^2 A - m^2 B - m^2 C = -2 m B m C \cap A$;
 \therefore , squaring, $(m^4 A + \&c.) - 2 m^2 A m^2 B - 2 m^2 A m^2 C + 2 m^2 B m^2 C =$
 $4 m^2 B m^2 C(1 - m^2 A)$;
 $\therefore (m^4 A + \&c.) - 2(m^2 B m^2 C + \&c.) + 4 m^2 A m^2 B m^2 C = 0$;
 \therefore , substituting for $m A$, &c., and dividing by k^4 ,

$$(\beta^4 \gamma^4 + \&c.) - 2\alpha^2 \beta^2 \gamma^2 \cdot (\alpha^2 + \&c.) + 4k^2 \alpha^4 \beta^4 \gamma^4 = 0;$$

$$\therefore k^2 = \frac{2\alpha^2 \beta^2 \gamma^2 (\alpha^2 + \&c.) - (\beta^4 \gamma^4 + \&c.)}{4\alpha^4 \beta^4 \gamma^4}.$$

Now $m A = k\beta\gamma$, &c.; which answers (2).

Also $\alpha = b m C$; and similarly $\gamma = a m B$;

$\therefore a = \frac{\gamma}{m B} = \frac{\gamma}{k\gamma\alpha} = \frac{1}{k\alpha}$, &c.; which answers (1).

Also area = $\frac{bc m A}{2} = \frac{1}{2} \cdot \frac{1}{k\beta} \cdot \frac{1}{k\gamma} \cdot k\beta\gamma = \frac{1}{2k}$; which answers (3). Q. E.

23. (1475, 1484)

The original chances, as to states of bag, are

for 2 W	.....	$\frac{1}{4}$;
1 W, 1 B	.....	$\frac{1}{2}$;
2 B	.....	$\frac{1}{4}$.

\therefore the chances, after adding 2 W and 1 B, are

for 4 W, 1 B	.....	$\frac{1}{4}$;
3 W, 2 B	.....	$\frac{1}{2}$;
2 W, 3 B	.....	$\frac{1}{4}$.

Now the chances, which these give to the observed event, drawing 2 W and 1 B, are $\frac{3}{5}, \frac{3}{5}, \frac{3}{10}$.

\therefore the chances, after this event, are proportional to $\frac{3}{20}, \frac{3}{10}, \frac{3}{40}$; i. e. to 2, 4,

1. Hence they are $\frac{2}{7}, \frac{4}{7}, \frac{1}{7}$.

Hence the chances, as to states now are

for 2 W	.....	$\frac{2}{7}$;
1 W, 1 B	.....	$\frac{4}{7}$;
2 B	.....	$\frac{1}{7}$.

\therefore the chances, after adding 1 W, are

for 3 W	.....	$\frac{2}{7}$;
2 W, 1 B	.....	$\frac{4}{7}$;
1 W, 2 B	.....	$\frac{1}{7}$.

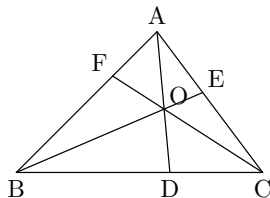
Now the chances, which these give to the observed event, of drawing 1 W, are $1, \frac{2}{3}, \frac{1}{3}$.

\therefore the chances, after this event, are proportional to $\frac{2}{7}, \frac{8}{21}, \frac{1}{21}$; i. e. to 6, 8, 1.

Hence they are $\frac{6}{15}, \frac{8}{15}, \frac{1}{15}$.

Hence the chance, that the bag now contains 2 white, is $\frac{6}{15}$; i. e. $\frac{2}{5}$. Q. E. F.

24. (1475, 1484)



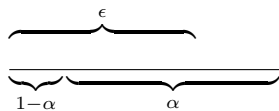
Because $\frac{DO}{OA} = \frac{\triangle DOC}{\triangle OAC} = \frac{\triangle DOB}{\triangle OAB} = \frac{\triangle OBC}{\triangle OCA + \triangle OAB}$;
 $\therefore \frac{DO}{DA} = \frac{\triangle OBC}{\triangle ABC}$.
 Similarly, $\frac{EO}{EB} = \frac{\triangle OCA}{\triangle ABC}$, and $\frac{FO}{FC} = \frac{\triangle OAB}{\triangle ABC}$.
 Hence $\frac{DO}{DA} + \frac{EO}{EB} + \frac{FO}{FC} = 1$.

Q. E. F.

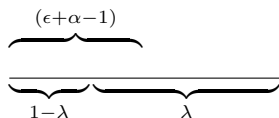
25. (1475, 1484)

Let 'E' mean 'having lost an eye', 'A' 'having lost an arm', and 'L' 'having lost a leg'.

Then the state of things which gives the least possible number of those who, being E and A, are also L, may evidently be found by arranging the patients in a row, so that the EA-class may begin from one end of the row, and the L-class from the other end, and counting the portion where they overlap; and, the smaller the EA-class, the smaller will be this common portion: hence we must make the EA-class a minimum.



This may be done by re-arranging the patients, so that the E-class may begin from one end of the row, and the A-class from the other: and the least possible number for the EA-class is the common portion, i. e. $(\epsilon - \overline{1 - \alpha})$, i. e. $(\epsilon + \alpha - 1)$.



Then, as already shown, the least possible number for the EAL-class is the common portion, i. e. $(\epsilon + \alpha - 1 - \overline{1 - \lambda})$, i. e. $(\epsilon + \alpha + \lambda - 2)$. Q. E. F.

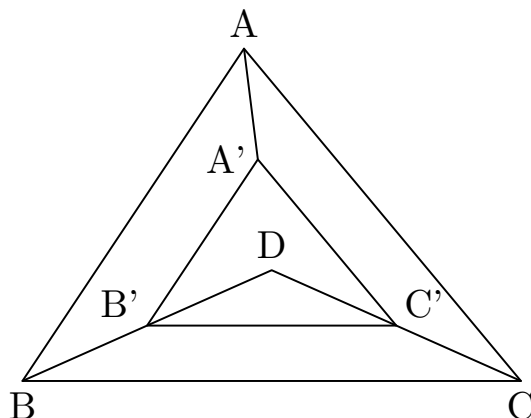
26. (1475)

(Analysis.)

Let ABC be the given Triangle, and $A'B'C'$ the required one; and let the ratio, which $B'C'$ has to BC , be ' k '; so that k is less than 1.

Since $BB' = CC'$, and that $BC, B'C'$, are parallel, it may easily be proved, by dropping perpendiculars from B', C' , upon BC , which must necessarily be equal, that $\angle s B'BC, C'CB$, are equal.

Similarly, $\angle s A'AC, C'CA$, are equal; and so are $\angle s A'AB, B'BA$.



Call $\angle B'BC$ ' θ '; then $\angle C'CB = \theta$;
 $\therefore \angle C'CA = C - \theta = \angle A'AC$;
 $\therefore \angle A'AB = A - (C - \theta) = \angle B'BA$.
 Now $\angle s B'BC, B'BA$, together = B ;
 $\therefore \theta + A - (C - \theta) = B$;
 $\therefore 2\theta = B + C - A = 180^\circ - 2A$;
 $\therefore \theta = 90^\circ - A$.

Hence, if BB', CC' , be produced to meet at D , Triangle DBC will be isosceles, with a vertical \angle equal to $2A$.

Now, if a Circle be drawn about ABC , and its centre joined to B and C , the Triangle, so formed, will fulfil the same conditions;

hence the centre of this Circle will be D ;
 hence the construction.

(Synthesis.)

Bisect the sides, and draw perpendiculars, meeting at D . Join D to the vertices B, C . From DB cut off $DB' = k.DB$. From B' draw $B'C'$ parallel to BC .

Then $B'C'$ is easily proved equal to $k.BC$.

And if, from B', C' , parallels to AB, AC , be drawn, it may easily be proved that they meet on DA , and that they are respectively equal to $k.AB, k.AC$.

Q. E. F.

27. (1475, 1484)

Call the bags A, B, C .

If remaining bag be A , chances of observed event = $\frac{1}{2}$ chance of drawing white from B and black from C + $\frac{1}{2}$ chance of drawing black from B and white from C :

$$\text{i. e. it} = \frac{1}{2} \cdot \left\{ \frac{2}{3} \times \frac{1}{2} + \frac{1}{3} \times \frac{1}{2} \right\} = \frac{1}{4}.$$

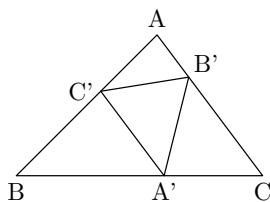
Similarly, if remaining bag be B , it is $\frac{1}{2} \cdot \left\{ \frac{5}{6} \cdot \frac{1}{2} + \frac{1}{6} \cdot \frac{1}{2} \right\} = \frac{1}{4}$; and, if it be C , it is $\frac{1}{2} \cdot \left\{ \frac{5}{6} \cdot \frac{1}{3} + \frac{1}{6} \cdot \frac{2}{3} \right\} = \frac{7}{36}$.

\therefore chances of remaining bag being A, B , or C , are as $\frac{1}{4}$ to $\frac{1}{4}$ to $\frac{7}{36}$; i. e. as 9 to 9 to 7. \therefore they are, in value, $\frac{9, 9, 7}{25}$.

Now, if remaining bag be A , chance of drawing white from it is $\frac{5}{6}$; \therefore chance, on this issue, is $\frac{5}{6} \cdot \frac{9}{25} = \frac{3}{10}$; similarly, for B , it is $\frac{2}{3} \cdot \frac{9}{25} = \frac{6}{25}$; and, for C , $\frac{1}{2} \cdot \frac{7}{25} = \frac{7}{50}$. And entire chance of drawing white from the remaining bag is the sum of these; i. e. $\frac{15+12+7}{50} = \frac{34}{50} = \frac{17}{25}$.

28. (1476, 1484)

Let ABC be the given Triangle; and let its sides be divided internally at A', B', C' , in extreme and mean ratio.



And let M be the area of ABC .

Let $BA' = x$; then $x^2 = a \cdot (a - x)$;

$$\text{i. e. } x^2 + ax - a^2 = 0;$$

$\therefore x = \frac{-a \pm a\sqrt{5}}{2} = \frac{a}{2} \cdot (\sqrt{5} - 1)$, the other sign being excluded by the terms of the question.

Then area of Triangle $AB'C'$

$$= \frac{1}{2} \cdot \frac{c}{2} \cdot (\sqrt{5} - 1) \cdot \left\{ b - \frac{b}{2} \cdot (\sqrt{5} - 1) \right\} \cdot \cap A,$$

$$= \frac{1}{8} \cdot (\sqrt{5} - 1)(3 - \sqrt{5})bc \cdot \cap A,$$

$$= \frac{1}{4} \cdot (4\sqrt{5} - 8) \cdot M = (\sqrt{5} - 2) \cdot M.$$

Similarly for $BC'A'$ and $CA'B'$.

Hence the sum of these 3 Triangles = $3 \cdot (\sqrt{5} - 2) \cdot M$, and area of Triangle $A'B'C' = (7 - 3\sqrt{5}) \cdot M$. Q. E. F.

29. (1476)

This may be deduced from the identity

$$(a^2 + b^2). (c^2 + d^2) = a^2c^2 + b^2d^2 + a^2d^2 + b^2c^2.$$

$$(a^2 + b^2). (c^2 + d^2) = a^2c^2 + b^2d^2 + a^2d^2 + b^2c^2;$$

$$\left. \begin{aligned} &= a^2c^2 + b^2d^2 + 2acbd + a^2d^2 + b^2c^2 - 2adbc, \\ \text{or else} &= a^2c^2 + b^2d^2 - 2acbd + a^2d^2 + b^2c^2 + 2adbc; \end{aligned} \right\}$$

$$\left. \begin{aligned} \text{i. e.} &= (ac + bd)^2 + (ad - bc)^2, \\ \text{or else} &= (ac - bd)^2 + (ad + bc)^2. \end{aligned} \right\}$$

Now, if these last 2 sets are *identical*, $(ac + bd)$ must = $(ad + bc)$; for it cannot = $(ac - bd)$;

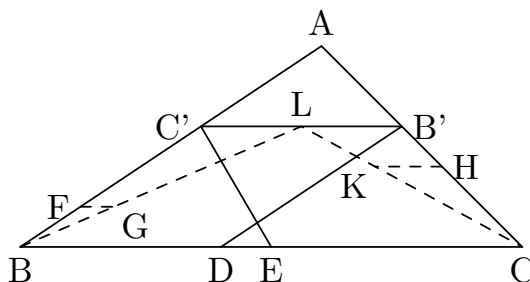
i. e., $a(c - d) - b(c - d)$ must = 0;

i. e., $(a - b). (c - d)$ must = 0;

i. e., one or other of the first 2 sets is the sum of 2 *identical* squares.

Hence, contranominally, if *each* of the original sets consists of 2 *different* squares, their product gives the sum of 2 squares in 2 *different* ways. Q. E. D.

30. (1476)



(Analysis.)

Let ABC be the Triangle: and suppose $B'C'$ so placed that $B'D$, $C'E$, drawn parallel to the sides, shall together = $2B'C'$.

By Euc. I. 34, $B'D = C'B$, and $C'E = B'C$:

$$\therefore B'C + C'B = 2B'C'.$$

Hence, if $B'L$ be cut off equal to half $B'C$, $C'L =$ half $C'B$.

Hence construction.

(Synthesis.)

In BC' take any point F : draw FG , $\parallel BC$, and equal to half BF : and join BG .

Similarly, in CB' take any point H : draw HK , $\parallel BC$, and equal to half HC : and join CK .

Produce BG , CK , to meet at L : and through L draw $C'B' \parallel BC$: and from B' , C' , draw $B'D$, $C'E$, \parallel the sides.

$\therefore FG =$ half FB ; \therefore , by similar Triangles, $C'L =$ half $C'B$;

Similarly $B'L = \text{half } B'C$;
 $\therefore C'B' = \text{half sum of } C'B, B'C$; i. e. $C'B + B'C = 2B'C'$;
 But, by Euc. I. 34, $C'B = B'D$, and $B'C = C'E$;
 $\therefore B'D + C'E = 2B'C'$.

Q. E. F.

31. (1476, 1484)

On July 1, watch gained on clock $5m.$ in $10h.$; i. e. $\frac{1}{2}m.$ per hour; i. e. $2m.$ in $4h.$
 Hence, when watch said 'noon', clock said ' $12h. 2m.$ '; i. e. clock was $3m.$ slow of true time, when true time was $12h. 5m.$

On July 30, watch lost on clock $1m.$ in $10h.$; i. e. $6sec.$ per hour; i. e. $19sec.$ in $3h. 10m.$ Hence, when watch said ' $12h. 10m.$ ', clock said ' $12h. 7m. 19sec.$ '; i. e. clock was $2m. 19sec.$ fast of true time, when true time was $12h. 5m.$

Hence clock gains, on true time, $5m. 19sec.$ in 29 days; i. e. $319sec.$ in 29 days; i. e. $11sec.$ per day; i. e. $\frac{11}{24 \times 12} sec.$ in $5m.$

Hence, while true time goes $5m.$, watch goes $5m. \frac{11}{288} sec.$

Now, when true time is $12h. 5m.$ on July 31, clock is $(2m. 19sec. + 11sec.)$ fast of it; i. e. says ' $12h. 7\frac{1}{2}m.$ ' Hence, if true time be put $5m.$ back, clock must be put $5m. \frac{11}{288} sec.$ back; i. e. must be put back to $12h. 2m. 29\frac{277}{288} sec.$

Hence, on July 31, when clock indicates this time, it is true noon. Q. E. F.

32. (1476, 1484)

The n th term is $n. (n + 4)$;

$$\therefore \text{the } (n + 1)\text{th term is } (n + 1). (n + 5) = (n + 1). \{(n + 2) + 3\},$$

$$= (n + 1). (n + 2) + 3(n + 1);$$

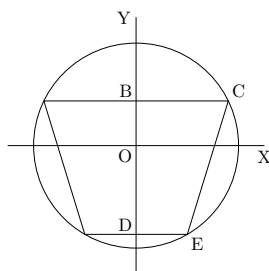
$$\therefore S_n = \frac{n.(n+1).(n+2)}{3} + 3. \frac{n.(n+1)}{2} + C; \text{ and } C = 0;$$

$$\therefore S_n = n. (n + 1). \left(\frac{n+2}{3} + \frac{3}{2}\right) = \frac{n.(n+1).(2n+13)}{6}.$$

Q. E. F.

$$\text{Also } S_{100} = \frac{100.101.213}{6} = \frac{100.101.71}{2} = \frac{6.100.7171}{2} = \frac{717100}{2} = 358550. \quad \text{Q. E. F.}$$

33. (1476)



Let $DE = x$; $\therefore BC = 2x$.

$$\text{Area} = 3x. (\sqrt{r^2 - x^2} + \sqrt{r^2 - 4x^2}) = \text{max.}$$

$$\text{let } v = x. (\sqrt{r^2 - x^2} + \sqrt{r^2 - 4x^2}) = \text{max.}$$

$$\therefore \frac{dv}{dx} = \sqrt{r^2 - x^2} + \sqrt{r^2 - 4x^2} - x^2. \left(\frac{1}{\sqrt{r^2 - x^2}} + \frac{4}{\sqrt{r^2 - 4x^2}}\right) = 0;$$

$$\therefore (r^2 - x^2). \sqrt{r^2 - 4x^2} + (r^2 - 4x^2). \sqrt{r^2 - x^2} = x^2. (4\sqrt{r^2 - x^2} + \sqrt{r^2 - 4x^2});$$

$$\therefore (r^2 - 2x^2). \sqrt{r^2 - 4x^2} = -(r^2 - 8x^2). \sqrt{r^2 - x^2};$$

$$\therefore r^4 - 4(r^2x^2 + 4x^4). (r^2 - 4x^2) = (r^4 - 16r^2x^2 + 64x^4). (r^2 - x^2);$$

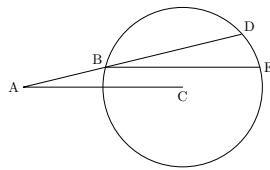
$\therefore r^6 - 8r^4x^2 + 20r^2x^4 - 16x^6 = r^6 - 17r^4x^2 + 80r^2x^4 - 64x^6$;
 \therefore , omitting r^6 , and dividing by x^2 ,

$$48x^4 - 60r^2x^2 + 9r^4 = 0;$$

i. e. $16x^4 - 20r^2x^2 + 3r^4 = 0$;

$\therefore \frac{x^2}{r^2} = \frac{20 \pm \sqrt{208}}{32} = \frac{5 \pm \sqrt{13}}{8}$ (upper sign being inadmissible, though this was not thought out.) Q. E. F.

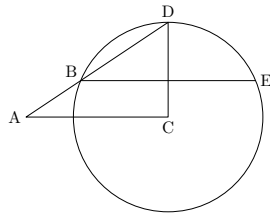
34. (1476)



(Analysis.)

Let A be the given Point, and C the centre of the given Circle. Join AC , and let ABD be the required Line. From B draw the Chord BE parallel to AC . Then $\angle DBE = \angle A$. Hence Arc $DE =$ Arc BD ; i. e. Arc BE is bisected by D ; i. e. D is on perpendicular from C .

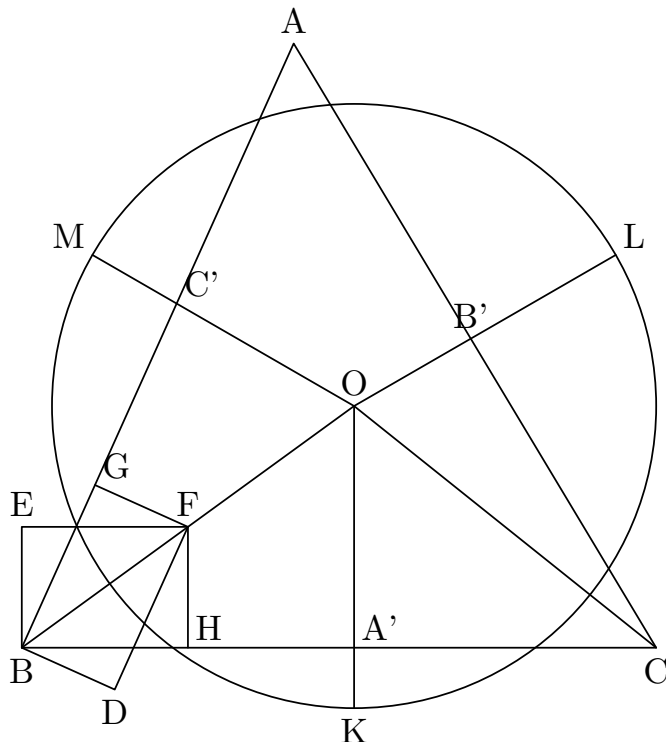
(Synthesis.)



Join AC . From C draw CD perpendicular to AC . Join AD cutting Circle at B . From B draw BE parallel to AC .

It is easily proved that Arc $BD =$ Arc DE . Hence Arc BD subtends, in the circle, to angle $= \angle DBE = \angle A$. Q. E. F.

35. (1476)



Let ABC be the given Triangle; and let the portions of the radii, outside the Triangle, have to the radius the given ratios $k : 1, l : 1, m : 1$. (N.B. k, l, m , are supposed to be proper fractions.)

From B draw $BD \perp BA$, and $BE \perp BC$; and make BD have, to BE , the ratio $1 - m : 1 - k$. Through D draw DF parallel to BA , and EF parallel to BC ; and join BF . From F draw $FG \perp BA$, and $FH \perp BC$.

Then $FG : FH :: 1 - m : 1 - k$.

Similarly, draw CO so that the \perp s, drawn from any Point of it to CA and CB , are in the ratio $1 - l : 1 - k$; and produce BF to meet it at O .

From O draw OA', OB', OC' , \perp the sides.

Then $OA' : OB' : OC' :: 1 - k : 1 - l : 1 - m$.

Produce OA' to K , so that $OK : OA' :: 1 : 1 - k$.

With centre O , and distance OK , describe a Circle; and produce OB', OC' , to meet it at L, M .

Now $OK : OA' :: 1 : 1 - k$;

$OA' : OB' :: 1 - k : 1 - l$;

$\therefore OK : OB' :: 1 : 1 - l$;

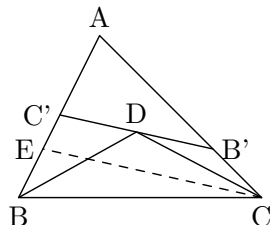
Similarly, $OK : OC' :: 1 : 1 - m$.

But $A'K : OK :: OK - OA' : OK :: k : 1$.

Similarly $BL' : radius :: l : 1$, and $C'M : radius :: m : 1$.

Q. E. F.

36. (1477)



(Analysis.)

Let $B'C'$ be required Line: and let \angle at C' be right.
 Cut off $C'D$ equal to $C'B$: then $DB' = B'C$.
 Join DB , DC : then $\angle DBC' = 45^\circ$, and $\angle B'DC = \angle B'CD$.
 From C draw $CE \perp AB$.
 Then $\angle B'DC = \angle DCE$; $\therefore \angle B'CD = \angle DCE$.

(Synthesis.)

Hence construction. Draw $CE \perp AB$: bisect $\angle ACE$: at B make $\angle ABD = 45^\circ$. Let these lines meet at D . Through D draw $B'DC' \perp AB$.

Then $\angle C'DB = \pi - (\angle DC'B + \angle C'BD) = 45^\circ = \angle C'BD$;
 $\therefore C'D = C'B$.

Also $\angle B'DC = \angle DCE = \angle DCB'$;

$\therefore DB' = B'C$;

$\therefore C'B' = \text{sum of } BC', CB'$.

Q. E. F.

Limits of possibility:—

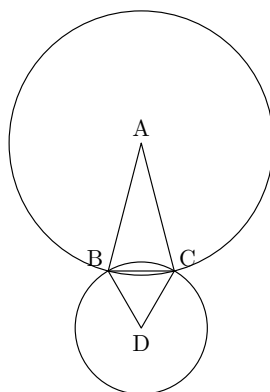
$\angle A$ must not be $> 90^\circ$;

$\angle B$ must not be $< 45^\circ$;

$\angle C$ must not be $<$ half complement of A ,

i. e. not $< (45^\circ - \frac{A}{2})$.

37. (1477, 1485)



Let BC be the common chord, and A, D , the centres.

Let $\angle A = 30^\circ$, and $\angle D = 60^\circ$.

And let BC (which = $DB = DC$) = 1.
 And let $AB = x$.
 Now $\sphericalangle A = \frac{\sqrt{3}}{2} = \frac{2x^2-1}{2x^2}$;
 $\therefore \frac{\sqrt{3}}{2} = 1 - \frac{1}{2x^2}$; $\therefore \frac{1}{2x^2} = \frac{2-\sqrt{3}}{2}$;
 $\therefore x^2 = \frac{1}{2-\sqrt{3}} = 2 + \sqrt{3}$;
 \therefore area of Circles are $\pi \cdot (2 + \sqrt{3})$ and π ;
 \therefore area of Sectors are $\pi \cdot \frac{2+\sqrt{3}}{12}$ and $\frac{\pi}{6}$;
 \therefore their sum = $\pi \cdot \frac{4+\sqrt{3}}{12}$.
 Again, area of Triangle $ABC = \frac{1}{2} \cdot (2 + \sqrt{3}) \cdot \frac{1}{2}$,
 = $\frac{2+\sqrt{3}}{4}$;

also area of Triangle $DBC = \frac{\sqrt{3}}{4}$;
 \therefore their sum = $\frac{2+2\sqrt{3}}{4} = \frac{1+\sqrt{3}}{2}$.

Now the portion, of the smaller Circle, that is within the larger one, is the difference between these two sum;

$$\therefore \text{it} = \pi \cdot \frac{4+\sqrt{3}}{12} - \frac{1+\sqrt{3}}{2}.$$

Hence its ratio, to the area of the smaller Circle, is this sum divided by π ;

$$\begin{aligned} \therefore \text{it} &= \frac{4+\sqrt{3}}{12} - \frac{1+\sqrt{3}}{2\pi}, \\ &= \frac{5 \cdot 732}{12} - \frac{2 \cdot 732}{\left(\frac{44}{7}\right)} = .478 - \frac{.248}{\left(\frac{4}{7}\right)}, \\ &= .478 - \frac{1 \cdot 736}{4} = .478 - .434 = .044. \end{aligned}$$

Q. E. F.

38. (1477, 1485)

Taking, in order, the bag from which this unknown counter is drawn, the bag from which a red one was twice drawn, and the remaining bag, we see that there are six possible arrangement of 'A', 'B', and 'C': viz.—

- (1) ABC , (4) BCA ,
- (2) ACB , (5) CAB ,
- (3) BAC , (6) CBA .

Now the chance of the observed event is, in case (1), $1 \times \frac{4}{9} = \frac{4}{9}$; in case (2), $1 \times \frac{1}{9} = \frac{1}{9}$; in case (3), $\frac{2}{3} \times 1 = \frac{2}{3}$; in case (4), $\frac{2}{3} \times \frac{1}{9} = \frac{2}{27}$; in case (5), $\frac{1}{3} \times 1 = \frac{1}{3}$; and in case (6), $\frac{1}{3} \times \frac{4}{9} = \frac{4}{27}$.

Hence the chances of existence, for these 6 states, are proportional to '12, 3, 18, 2, 9, 4'. Hence their actual values are $\frac{1}{4}, \frac{1}{16}, \frac{3}{8}, \frac{1}{24}, \frac{3}{16}, \frac{1}{12}$.

Hence the chance of the unknown counter being red is the sum of $\frac{1}{4} \times 1, \frac{1}{16} \times 1, \frac{3}{8} \times \frac{2}{3}, \frac{1}{24} \times \frac{2}{3}, \frac{3}{16} \times \frac{1}{3}, \frac{1}{12} \times \frac{1}{3}$; i. e. it is $\frac{36+9+36+4+9+4}{9 \times 16}$; which = $\frac{98}{9 \times 16} = \frac{49}{72}$.
 Q. E. F.

39. (1477, 1485)

Let x = no. of days.

$$\begin{aligned} \text{Then } (2 \times 10 - \overline{x-1}) \cdot \frac{x}{2} &= 14 + \{2 \times 2 + \overline{x-1} \cdot 2\} \cdot \frac{x}{2}; \text{ i. e. } \frac{21x}{2} - \frac{x^2}{2} = 14 + x + x^2; \\ \therefore 3x^2 - 19x + 28 &= 0; \therefore x = \frac{19 \pm 5}{6} = 4 \text{ or } \frac{7}{3}. \end{aligned}$$

Now the above solution has taken no account of the *discontinuity* of increase, or decrease of pace, and is the true solution only on the supposition that the increase or decrease is *continuous*, and such as to coincide with the above data at the end of each day. Hence '4' is a correct answer; but ' $\frac{7}{3}$ ' only indicates that a meeting occurs *during the third day*. To find the hour of this, let y = no. of hours.

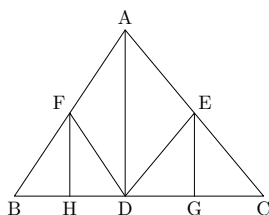
Now in 2 days A has got to the end of 19 miles, B to the end of $(14 + 6)$, i. e. 20.

$$\therefore 19 + y \cdot \frac{8}{12} = 20 + y \cdot \frac{6}{12}$$

$$\text{i. e. } y \cdot \frac{2}{3} = 1 + y \cdot \frac{1}{2}; \therefore y = 6.$$

Hence they meet at the end of $2d. 6h.$, and at the end of $4d.$: and the distances are 23 miles, and 34 miles. Q. E. F.

40. (1477)



(1) Let ABC be the given Triangle, and AD the line from the vertex. From D draw DE, DF , parallel to the sides; and from E and F draw $EG, FH, \perp BC$.

Then Triangles FBD, EDC , are similar to ABC ;

$$\therefore FH : AD :: BD : BC,$$

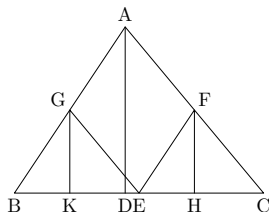
and $EG : AD :: DC : BC$;

$$\therefore (FH + EG) : AD :: BC : BC;$$

$$\therefore FH + EG = AD.$$

Also, \therefore Triangles AED, AFD , are equal and on the same base AD ,

\therefore their altitudes are equal; i. e. $DH = DG$. Q. E. F.



(2) Let ABC be the given Triangle, and AD the line from the vertex.

Make $CE = BD$; from E draw EF, EG , parallel to the sides; and from F, G , draw $FH, GK, \perp BC$.

Then Triangles GBE, FEC , are similar to ABC ;

$$\therefore GK : AD :: BE : BC,$$

and $FH : AD :: EC : BC$;

$$\therefore (GK + FH) : AD :: BC : BC;$$

$$\therefore GK + FH = AD.$$

Also $BK : BE :: BD : BC$;

$$\therefore BK : DC :: EC : BC;$$

$$\therefore HC : DC;$$

$$\therefore BK = HC. \quad \text{Q. E. F.}$$

41. (1477, 1485)

(1) As there was certainly at least one W in the bag at first, the 'a priori' chances for the various states of the bag, 'WWWW, WWWB, WWBB, WBBB,' were $\frac{1}{8}, \frac{3}{8}, \frac{3}{8}, \frac{1}{8}$.

These would have given, to the observed event, the chances $1, \frac{1}{2}, \frac{1}{6}, 0$ '.

Hence the chances, after the event, for the various states, are proportional to $\frac{1}{8} \cdot 1, \frac{3}{8} \cdot \frac{1}{2}, \frac{3}{8} \cdot \frac{1}{6}$; i. e. to $\frac{1}{8}, \frac{3}{16}, \frac{1}{16}$; i. e. to '2, 3, 1'. Hence their actual values are $\frac{1}{3}, \frac{1}{2}, \frac{1}{6}$.

Hence the chance, of now drawing W , is $\frac{1}{3} \cdot 1 + \frac{1}{2} \cdot \frac{1}{2}$; i. e. it is $\frac{7}{12}$. Q. E. F.

(2) If he had not spoken, the 'a priori' chances for the states 'WWWW, WWWB, WWBB, WBBB, BBBB', would have been $\frac{1,4,6,4,1}{16}$.

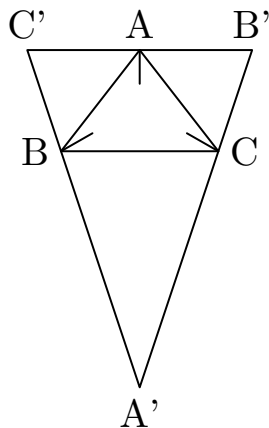
These would have given, to the observed event, the chances $1, \frac{1}{2}, \frac{1}{6}, 0, 0$ '.

Hence the chances, after the event, for the various states, are proportional to $\frac{1}{16} \cdot 1, \frac{1}{4} \cdot \frac{1}{2}, \frac{1}{6} \cdot \frac{3}{8}$; i. e. to '1, 2, 1'. Hence their actual values are $\frac{1}{4}, \frac{1}{2}, \frac{1}{4}$.

Hence the chance, of now drawing W , is $\frac{1}{4} \cdot 1 + \frac{1}{2} \cdot \frac{1}{2}$; i. e. it is $\frac{1}{2}$. Q. E. F.

42. (1477, 1485)

Let ABC be the given Triangle. Bisect its angles, and draw \perp s to them, forming the Triangle $A'B'C'$.



Now $\angle CBA' = 90^\circ - \frac{B}{2}$; and so of the others.

$$\therefore A' = 180^\circ - (CBA' + BCA') = \frac{B+C}{2} = 90^\circ - \frac{A}{2};$$

$$\therefore BA' = a \cdot \frac{\sin \frac{C}{2}}{\sin \frac{A}{2}}.$$

$$\text{Similarly, } BC' = c \cdot \frac{\sin \frac{A}{2}}{\sin \frac{C}{2}};$$

$$\therefore A'C' = \frac{a \sin^2 \frac{C}{2} + c \sin^2 \frac{A}{2}}{\sin \frac{A}{2} \sin \frac{C}{2}} = \frac{a \cdot \frac{s \cdot (s-c)}{ab} + c \cdot \frac{s \cdot (s-a)}{bc}}{\frac{s}{b} \cdot \sqrt{\frac{(s-a)(s-c)}{ac}}},$$

$$= \frac{s-c+s-a}{\sin \frac{B}{2}} = \frac{b}{\sin \frac{B}{2}}.$$

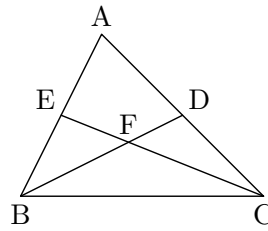
$$\text{Similarly, } A'B' = \frac{c}{\sin \frac{C}{2}};$$

$$\therefore \text{area of } A'B'C' = \frac{bc \sin \frac{A}{2}}{2 \sin \frac{B}{2} \sin \frac{C}{2}};$$

$$\begin{aligned}
\therefore \frac{\text{area of } A'B'C'}{\text{area of } ABC} &= \frac{bc \sin \frac{A}{2}}{2 \sin \frac{B}{2} \sin \frac{C}{2} bc \sin A}, \\
&= \frac{\sin \frac{A}{2}}{\sin \frac{B}{2} \sin \frac{C}{2} \cdot 2 \sin \frac{A}{2} \cos \frac{A}{2}}, \\
&= \frac{1}{2 \sin \frac{A}{2} \sin \frac{B}{2} \sin \frac{C}{2}}, \\
&= \frac{abc}{2(s-a)(s-b)(s-c)}.
\end{aligned}$$

Q. E. F.

43. (1478)



Let ABC be the given Triangle; and let BFD, CFB , be the required lines, so that $FB = FC$, and Tetragon $AEFD = \text{Triangle } FBC$. And call the angle FBC ' θ '. It will suffice to calculate this angle.

Because Triangle $FBC = \text{Tetragon } AEFD$,

$$\begin{aligned}
\therefore \text{Triangle } DBC &= \text{Triangle } AEC, \\
&= \text{Triangle } ABC - \text{Triangle } EBC;
\end{aligned}$$

$$\begin{aligned}
\therefore \text{Triangles } DBC, EBC, \text{ together} &= \text{Triangle } ABC; \\
\therefore \frac{1}{2} \cdot \frac{a^2}{\cot \theta + \cot C} + \frac{1}{2} \cdot \frac{a^2}{\cot \theta + \cot B} &= \frac{1}{2} \cdot \frac{a^2}{\cot B + \cot C}; \\
\therefore \frac{1}{\cot \theta + \cot C} + \frac{1}{\cot \theta + \cot B} &= \frac{1}{\cot B + \cot C}; \\
\therefore \frac{2 \cot \theta + (\cot B + \cot C)}{\cot^2 \theta + \cot \theta \cdot (\cot B + \cot C) + \cot B \cot C} &= \text{do.}; \\
\therefore \cot^2 \theta + \cot \theta \cdot (\cot B + \cot C) + \cot B \cot C &= 2 \cot \theta \cdot (\cot B + \cot C) + (\cot B + \cot C)^2; \\
\therefore \cot^2 \theta - \cot \theta \cdot (\cot B + \cot C) - (\cot^2 B + \cot B \cot C + \cot^2 C) &= 0; \\
\therefore \cot \theta = \frac{1}{2} \cdot \{ \cot B + \cot C \pm \sqrt{5 \cot^2 B + 6 \cot B \cot C + 5 \cot^2 C} \}. &\text{ Q. E. F.}
\end{aligned}$$

44. (1478)

Let k be a No. not containing 2 or 5 as a factor, i. e. let it be prime to 10. Then, if $\frac{1}{k}$ be reduced to a circulating decimal, and that to a vulgar fraction, the digits of the denominator will be a certain number of 9's; i. e. it will be of the form $(10^n - 1)$. And since this fraction = $\frac{1}{k}$, and that k is prime to 10, and so prime to $10^n - 1$, the factor $(10^n - 1)$ must be a multiple of k .

This evidently holds good in any other scale of notation. Hence, if a be the radix of the scale of notation, and b a No. prime to a , a value may be found for n , which will make $(a^n - 1)$ a multiple of b . Q. E. D.

Examples (not thought out)

(1) With radix 10, find a value, for n , which will make $(10^n - 1)$ a multiple of 7.

$$\frac{1}{7} = .\dot{1}4285\dot{7} = \frac{142857}{10^6 - 1}.$$

Ans. $n = 6$.

(2) Let the two given Nos. be 8, 9.

Taking 8 as radix, we get $\frac{1}{9} = .\dot{0}\dot{7} = \frac{7}{8^2-1}$.

Ans. $n = 2$.

(3) Let the two given Nos. be 7, 13.

Taken 7 as radix, we get

$$\frac{1}{13} = .\dot{0}3524563142\dot{1} = \frac{35245631421}{7^{12}-1}.$$

Ans. $n = 12$.

45. (1478, 1485)

Divide each rod into $(n + 1)$ parts, where n is assumed to be odd, and the n points of division are assumed to be the only points where the rod will break, and to be equally frangible.

The chance of one failure is $\frac{n-1}{n}$;

\therefore „ „ „ n failures is $(\frac{n-1}{n})^n$

$= (1 - \frac{1}{n})^n$.

Now, if $m = \frac{1}{n}$; then, when $n = \frac{1}{0}$, $m = 0$;

\therefore the chance that no rod is broke in the middle $= (1 - m)^{\frac{1}{m}}$, when $m = 0$;

i. e. it approaches the limit $(1 - 0)^{\frac{1}{0}}$.

And Ans. $= 1 - (1 - 0)^{\frac{1}{0}}$.

Now $(1 - 0)^{\frac{1}{0}} = e$. Hence if, in the series for e , we call the sum of the odd terms 'a', and of the even terms 'b'; then $e = a + b$; and $(1 - 0)^{\frac{1}{0}} = a - b = 2a - e$.

Q. E. F.

[N.B. What follows here was *not* thought out.]

Now $a = 1 + \frac{1}{2} + \frac{1}{4} + \&c.$

$$1 = 1$$

$$\frac{1}{2} = .5$$

$$\frac{1}{4} = .04166666\&c.$$

$$\frac{1}{6} = .00138888\&c.$$

$$\frac{1}{8} = .00002480\&c.$$

$$\frac{1}{10} = .00000027\&c.$$

$$\therefore a = 1.5430806\&c.$$

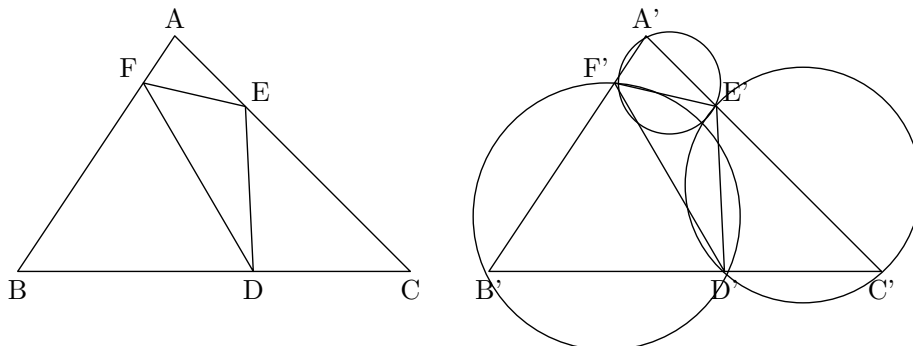
$$\therefore 2a = 3.0861612\&c.$$

$$e = 2.7182818\&c.$$

$$\therefore (1 - 0)^{\frac{1}{0}} = .3678793\&c.$$

$$\therefore \text{Ans.} = 1 - (1 - 0)^{\frac{1}{0}} = .6321207\&c.$$

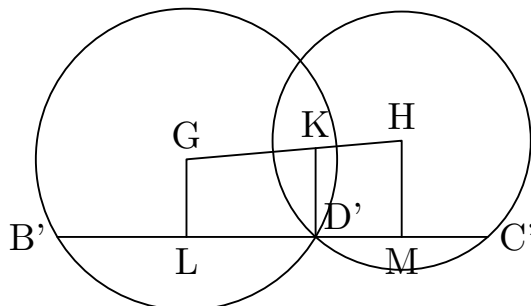
46. (1478)



Let ABC be the given Triangle, and D the given Point.

If we make a Triangle $D'E'F'$, having its angles equal to the given angles, and having D' as its assigned vertex, the Problem may be solved, if we can circumscribe, about the Triangle $D'E'F'$, a Triangle similar to ABC .

Now we can construct, on $E'F'$, $F'D'$, $D'E'$, segments of Circles containing angles equal to A , B , C . Hence the Problem may be solved, if we can place, in these Circles, a line $B'D'C'$, divided in the same proportion as BDC .



This Lemma may be solved as follows. Let G , H , be the centres of the Circles. Join GH , and divide it, at K , proportionally to BDC .

Join KD' ; through D' draw $B'D'C' \perp KD'$; and from G , H , draw GL , HM , $\perp B'C'$.

Now it may be easily proved that

$$LD' : D'M :: GK : KH :: BD : DC.$$

But $B'D'$, $D'C'$, are doubles of LD' , $D'M$;

$$\therefore B'D' : D'C' :: BD : DC.$$

Q. E. F.

[The construction is now obvious, viz. to join $B'F'$, $C'E'$, and produce them to meet, on the third Circle (as they may be easily proved to do), at A' ; then to divide AB , AC , at F and E , proportionally to $A'F'B'$, $A'E'C'$; and then to join DE , DF ..]

47. (1478, 1485)

By inspection, '0, 0, 0' are one set of values.

Subtracting, we get $x \cdot (\frac{1}{y} - \frac{1}{z}) = y - z$;

$\therefore x = yz \cdot \frac{y-z}{z-z} = -yz$, unless $y = z$, in which case $x = \frac{0}{0}$.

Now, by (1), $x = xy - yz$;

\therefore , when $y \neq z$, $x = xy + x$;

$\therefore xy = 0$, unless x be infinite.

Similarly, by (2), $xz = 0$, unless x be infinite.

Hence, if x be finite, and if $y \neq z$, either x or $y = 0$, and also either x or $z = 0$; i. e. either $x = 0$, or else $y = z = 0$. But the latter is excluded by our hypothesis. Hence $x = 0$. Hence $yz = 0$; i. e. either y or $z = 0$, and the other may take any value.

This gives us 2 more sets of values, viz.

$x = y = 0$; z has any value;

$x = z = 0$; y has any value.

We have now to ascertain what happens when $y = z$.

By (1), $\frac{x}{y} = x - y$;

$\therefore y^2 = x \cdot (y - 1)$; i. e. $x = \frac{y^2}{y-1}$.

Similarly, by (2), $x = \frac{z^2}{z-1}$.

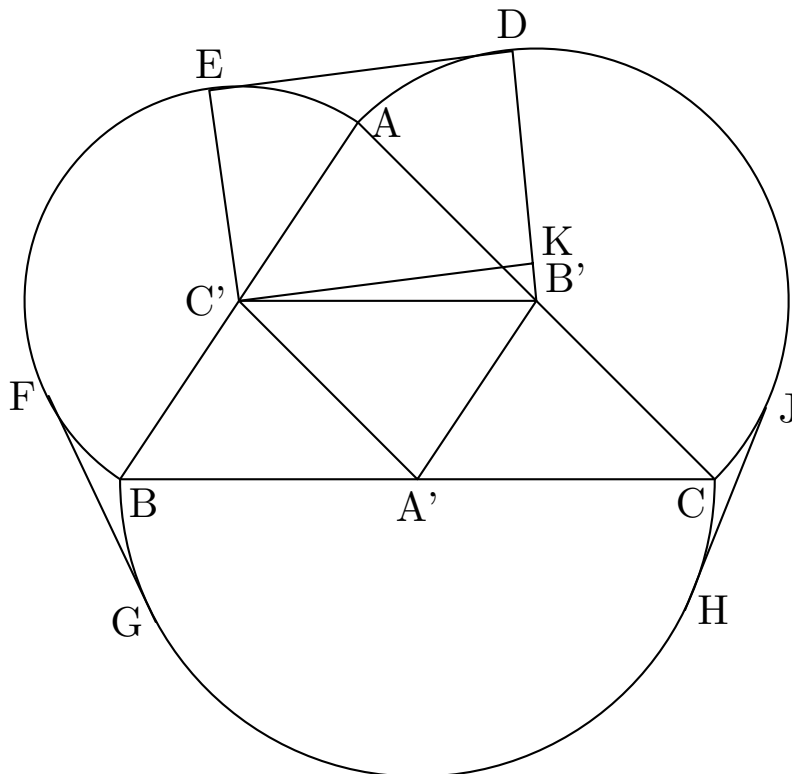
This gives us a 4th set of values, viz. $x = \frac{k^2}{k-1}$, $y = z = k$; where k has any value.

Now y and z may evidently have *any* real values, but x is restricted by the equation

$$y^2 - xy + x = 0,$$

in which y cannot be real, unless $(x^2 - 4x) > 0$. Hence x may have any negative value, and any positive value that is not less than 4; but it cannot have any positive value, less than 4, without making y unreal. Q. E. F.

48. (1478)



Let ABC be the given Triangle, A' , B' , C' , the centres of the semicircles, and DE , FG , HJ , the common tangents; so that $DE = \alpha$, $FG = \beta$, and $HJ = \gamma$.

Join $B'D$, $C'E$; and from C' draw $C'K \perp B'D$. Hence $CK = \alpha$.

Call sides of given Triangle ' $2a$, $2b$, $2c$ '.

Then $B'C' = a$, and $B'K = b - c$;

$$\therefore C'K = \sqrt{\{a^2 - (b - c)^2\}};$$

$$\text{i. e. } \alpha = \sqrt{\{(a - b + c) \cdot (a + b - c)\}};$$

$$\text{similarly, } \beta = \sqrt{\{(a + b - c) \cdot (-a + b + c)\}};$$

$$\text{and } \gamma = \sqrt{\{(-a + b + c) \cdot (a - b + c)\}};$$

$$\therefore \frac{\beta\gamma}{\alpha} = -a + b + c;$$

$$\text{similarly, } \frac{\gamma\alpha}{\beta} = a - b + c,$$

$$\text{and } \frac{\alpha\beta}{\gamma} = a + b - c;$$

$$\therefore \text{their sum} = a + b + c,$$

$$= \text{semi-perimeter of } ABC.$$

Q. E. D.

49. (1478, 1485)

Take, as unit, a side of one of the Triangles.

If the Tetrahedron be cut by a vertical Plane containing one of the slant edges, the section is a Triangle whose base is $\frac{\sqrt{3}}{2}$, and whose sides are $\frac{\sqrt{3}}{2}$, 1 ;

hence cosine of smaller base-angle

$$= \left(\frac{3}{4} + 1 - \frac{3}{4}\right) \cdot \frac{1}{\sqrt{3}} = \frac{1}{\sqrt{3}};$$

\therefore its sine = $\frac{\sqrt{2}}{\sqrt{3}}$ = its altitude;

and this is the altitude of the Tetrahedron;

\therefore volume of Tetrahedron = $\frac{1}{3} \cdot \frac{\sqrt{2}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{4} = \frac{\sqrt{2}}{12}$.

Also altitude of Pyramid = altitude of Triangle whose base is $\sqrt{2}$, and whose sides are 1, 1;

i. e. it = $\frac{\sqrt{2}}{2}$;

\therefore volume of Pyramid = $\frac{1}{3} \cdot \frac{\sqrt{2}}{2} = \frac{\sqrt{2}}{6}$.

Hence required ratio = $\frac{\sqrt{2}}{6} \cdot \frac{12}{\sqrt{2}} = 2$.

Q. E. F.

50. (1478, 1485)

At first, the chance that bag H shall contain

2 W counters, is $\frac{1}{4}$,

1 W and 1 B , is $\frac{1}{2}$.

2 B , is $\frac{1}{4}$,

\therefore , after adding a W , the chance that it shall contain

3 W , is $\frac{1}{4}$.

2 W , 1 B , is $\frac{1}{2}$.

1 W , 2 B , is $\frac{1}{4}$.

hence the chance of drawing a W from it is

$$\frac{1}{4} \times 1 + \frac{1}{2} \times \frac{2}{3} + \frac{1}{4} \times \frac{1}{3} : \text{i. e. } \frac{2}{3}.$$

\therefore the chance of drawing a B is $\frac{1}{3}$.

After transferring this (unseen) counter to bag K , the chance that it shall contain

3 W , is $\frac{2}{3} \times \frac{1}{4}$; i. e. $\frac{1}{6}$.

2 W , and 1 B , is $\frac{1}{2} \times \frac{1}{3} + \frac{1}{3} \times \frac{1}{4}$; i. e. $\frac{5}{12}$.

1 W , 2 B , is $\frac{1}{3} \times \frac{1}{4} + \frac{1}{3} \times \frac{1}{2}$; i. e. $\frac{1}{3}$.

3 B , is $\frac{1}{3} \times \frac{1}{4}$; i. e. $\frac{1}{12}$;

\therefore the chance of drawing a W from it is

$$\frac{1}{6} \times 1 + \frac{5}{12} \times \frac{2}{3} + \frac{1}{3} \times \frac{1}{3} : \text{i. e. } \frac{5}{9}.$$

\therefore the chance of drawing a B is $\frac{4}{9}$.

Before transferring this to bag H , the chance that bag H shall contain

2 W , is $\frac{1}{4} \times 1 + \frac{1}{2} \times \frac{1}{3}$; i. e. $\frac{5}{12}$.

1 W , 1 B , is $\frac{1}{2} \times \frac{2}{3} + \frac{1}{4} \times \frac{2}{3}$; i. e. $\frac{1}{2}$.

2 B , is $\frac{1}{4} \times \frac{1}{3}$; i. e. $\frac{1}{12}$.

\therefore , after transferring it, the chance that bag H shall contain

3 W , is $\frac{5}{12} \times \frac{5}{9}$; i. e. $\frac{25}{108}$.

2 W , 1 B , is $\frac{5}{12} \times \frac{4}{9} + \frac{1}{2} \times \frac{5}{9}$; i. e. $\frac{30}{108}$.

1 W , 2 B , is $\frac{1}{2} \times \frac{4}{9} + \frac{1}{12} \times \frac{3}{9}$; i. e. $\frac{19}{108}$.

3 B , is $\frac{1}{12} \times \frac{4}{9}$; i. e. $\frac{4}{108}$.

Hence the chance of drawing a W is

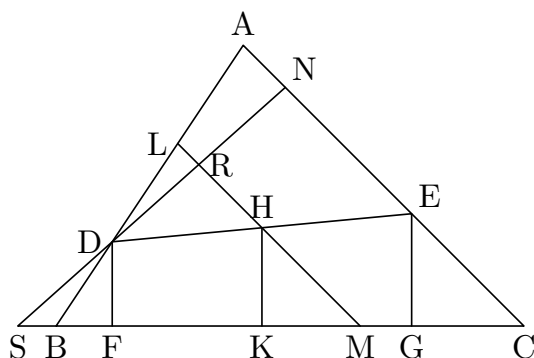
$$\frac{1}{108} \times \left\{ 25 \times 1 + 50 \times \frac{2}{3} + 29 \times \frac{1}{3} \right\}; \text{ i. e. } \frac{17}{27}.$$

i. e. the odds are 17 to 10 on its happening.

Q. E. F.

51. (1479)

Let ABC be the given Triangle, and D the given Point.



(Analysis.)

Let DE be the line required. Draw DF, EG, \perp the base. Then their sum is equal to DE .

Bisect DE at H , and draw $HK \perp$ the base: then it is evident that HK is the $A. M.$ of DF, EG , and is equal to half their sum; i. e. it is equal to half of DE . Hence a Circle, drawn with centre H and at distance HD , will pass through E and K , and will touch the base at K .

Through H draw LHM parallel to AC . Then DA is evidently bisected at L . Also LM passes through the centre of the Circle. Hence, if DN be drawn \perp LM (or CA), it is a chord of the Circle, and is bisected at R . Produce ND to meet the base produced at S . Hence SDN cuts the Circle, and SK touches it at K . But S can be found, and SK can then be taken, so that sq. of SK may be equal to rect. of SD, SN .

(Synthesis.)

From D draw $DN \perp AC$, and produce it to meet the base produced at S . Take SK , so that its square may be equal to rect. of SD, SN .

Bisect DA at L , and from L draw LM parallel to AC ; and from K draw $KH \perp$ the base, to meet LM at H . Join DH , and produce it to meet AC at E , and draw DF, EG, \perp the base.

Because $DL = LA$, and that LM is parallel to AC ,
 $\therefore DH = HE = HK; \therefore DE = 2HK$.

But $DF + EG = 2HK; \therefore DF + EG = DE$.

Q. E. F.

[N.B. This proof is incomplete. I have assumed, without proving it, that $DH = HK$. It may be proved thus. Because sq. of $SK =$ rect. of SD, SN , $\therefore DN$ is a chord of a Circle which touches the base at K ; $\therefore LM$, which bisects it at right angles, passes through the centre. But KH also passes through the centre; $\therefore H$ is the centre; $\therefore HD = HK$.]

52. (1479, 1485)

Let x be the number of pennies each had at first.

No. (3) received x , took out $(2 + 4)$, and put in $\frac{x}{2}$; so that the sack then contained $(x \cdot \frac{3}{2} - 6)$. Let us write 'a' for ' $\frac{3}{2}$.'

No. (5) received $(xa - 6)$, took out $(4 + 1)$, and put in enough to multiply, by a , its contents when he received it. The sack now contained $(xa^2 - 6a - 5)$.

No. (2) took out $(1 + 3)$, and handed on $(xa^3 - 6a^2 - 5a - 4)$.

No. (4) took out $(3 + 5)$, and handed on $(xa^4 - 6a^3 - 5a^2 - 4a - 8)$.

No. (1) put in 2. The sack now contained $5x$.

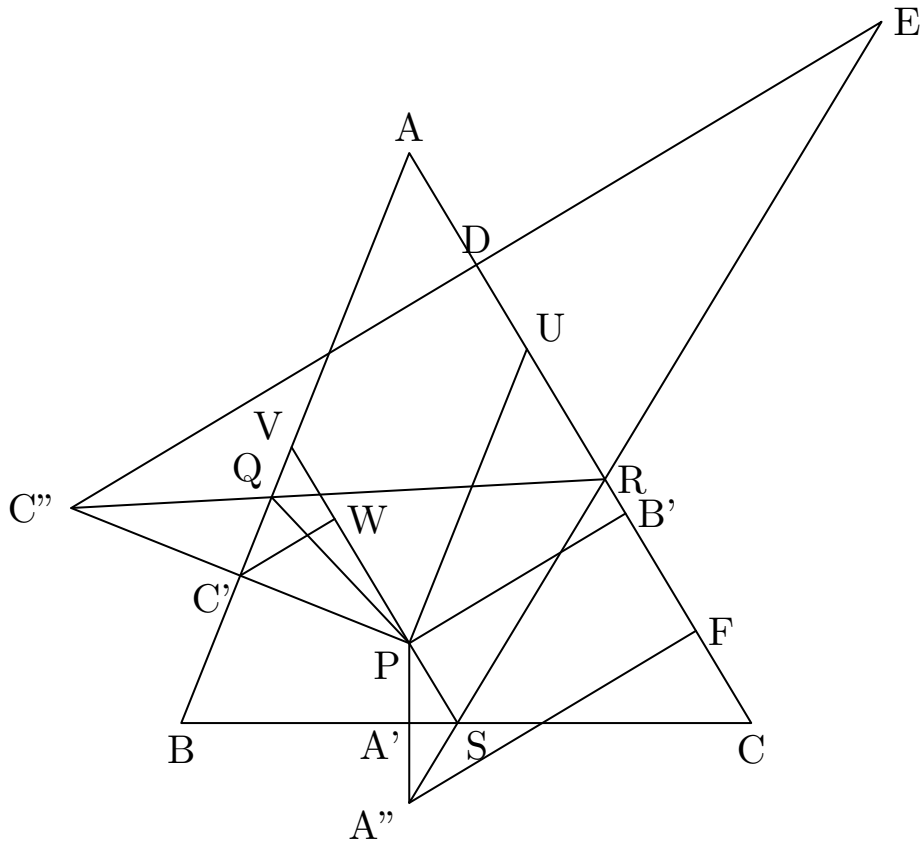
Hence $xa^4 - 6a^3 - 5a^2 - 4a - 6 = 5x$;

$$\begin{aligned} \therefore x &= \frac{6a^3 + 5a^2 + 4a + 6}{a^4 - 5}; \\ &= \frac{6 \cdot 3^3 + 5 \cdot 3^2 \cdot 2 + 4 \cdot 3 \cdot 2^2 + 6 \cdot 2^3}{3^4 - 5 \cdot 2^4} \cdot 2; \\ &= \frac{162 + 90 + 48 + 48}{81 - 80} = 696 = 2l. 18s. 0d. \end{aligned}$$

Q. E. F.

53. (1479, 1485)

Let ABC be the given Triangle, and P the given Point; and call its trilinear co-ordinates ' α, β, γ '.



From P draw PA' , PB' , PC' , \perp the sides, and therefore equal to α , β , γ . Produce PA' and PC' to A'' and C'' , making $A'A'' = PA'$, and $C'C'' = PC'$. From C'' draw $C''D \perp AC$, and produce it to E , making $DE = C''C$. Join EA'' , cutting AC in R , and BC in S . Join $C''R$, cutting AB in Q . Join PQ , PS .

The path of the ball is evidently $PQRSP$; and we have to calculate the length of AR .

Now $AR = DR + AD = DR + AB' - DB'$.

First, to calculate DR .

From P draw PU , PV , parallel to AB , AC ; from C' draw $C'W \perp PV$; and from A'' draw $A''F \perp AC$.

By similar Triangles, $DR : RF :: DE : A''F :: C''D : A''F$;

$\therefore DR : DF :: C''D : (C''D + A''F)$;

$\therefore DR = \frac{DF \cdot C''D}{C''D + A''F}$.

Now $\angle C'VP = A$; $\therefore \angle C'PV = 90^\circ - A$;

$\therefore WP = \gamma \cap A$;

$\therefore DB'$, which $= 2WP$, $= 2\gamma \cap A$.

Similarly, $B'F = 2\alpha \cap C$;

$\therefore DF = 2(\alpha \cap C + \gamma \cap A)$.

Again, $C'W = \gamma \cap A$;

$\therefore C''D$, which $= 2C'W + PB'$, $= 2\gamma \cap A + \beta$.

Similarly, $A''F = 2\alpha \cap C + \beta$;

$$\therefore C''D + A''F = 2(\alpha \sin C + \gamma \sin A + \beta);$$

$$\therefore DR = \frac{(a \sin C + \gamma \sin A) \cdot (2\gamma \sin A + \beta)}{\alpha \sin C + \gamma \sin A + \beta}.$$

$$\begin{aligned} \text{Now } AB' &= B'U + UA = B'U + PV, \\ &= \beta \cot A + \gamma \operatorname{cosec} A = \frac{\beta \sin A + \gamma}{\sin A}; \end{aligned}$$

$$\begin{aligned} \therefore AB' - DB' &= \frac{\beta \sin A + \gamma}{\sin A} - 2\gamma \sin A, \\ &= \frac{\beta \sin A + \gamma(1 - 2 \sin^2 A)}{\sin A} \\ &= \frac{\beta \sin A + \gamma \cos 2A}{\sin A}. \end{aligned}$$

$$\text{Now } AR = DR + AB' - DB';$$

$$\therefore AR = \frac{(a \sin C + \gamma \sin A) \cdot (2\gamma \sin A + \beta)}{\alpha \sin C + \gamma \sin A + \beta} + \frac{\beta \sin A + \gamma \cos 2A}{\sin A}.$$

Q. E. F.

54. (1479, 1486)

It is evident that Triangle ADE is similar to ABC .

$$\text{Let 'k' = ratio } \frac{DE}{a} = \frac{AE}{b} = \frac{AD}{c}.$$

$$\text{Now } DG = DE; \therefore DG = ka;$$

$$\therefore GB = c - ka - kc;$$

$$\therefore \frac{GB}{c} = 1 - k - k \cdot \frac{a}{c};$$

$$\therefore GF \text{ (which } = GB \cdot \frac{b}{c}) = b - kb - k \cdot \frac{ab}{c};$$

$$\text{but } GF = DE = ka;$$

$$\therefore b - kb - k \cdot \frac{ab}{c} = ka;$$

$$\therefore bc = k \cdot (bc + ca + ab);$$

$$\therefore k = \frac{bc}{bc+ca+ab} = \frac{\frac{1}{a}}{\frac{1}{a} + \frac{1}{b} + \frac{1}{c}} = \frac{1}{m} \text{ (say).}$$

$$\text{Hence } AD = \frac{c \cdot \frac{1}{m}}{1} = \frac{c}{m}; \quad DG = \frac{1}{m} = \frac{c \cdot \frac{1}{m}}{c}.$$

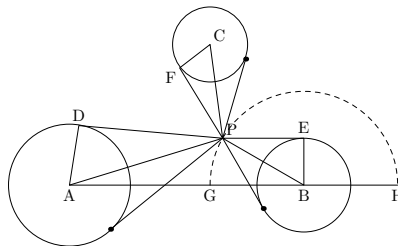
$$\therefore GB \text{ (which } = c - AD - DG) = \frac{c \cdot (m - \frac{1}{a} - \frac{1}{c})}{m} = \frac{c \cdot \frac{1}{b}}{m};$$

$$\therefore AD : DG : GB :: \frac{1}{a} : \frac{1}{b} : \frac{1}{c}.$$

$$\text{Also } DE = ka = \frac{1}{m} = \frac{1}{\frac{1}{a} + \frac{1}{b} + \frac{1}{c}}.$$

Q. E. F.

55. (1479)



Let A, B, C be the centres of the bases of the towers; and a, b, c their radii. Suppose P the required Point; and from P draw a pair of tangents to each circle,

and lines to the centres, which will evidently bisect the angles contained by the pairs of tangents.

Hence angles APD , BPE , CPF are equal;

$\therefore \cap APD = \cap BPE = \cap CPF$;

i. e. $AP : BP : CP :: a : b : c$.

Draw a Line through A , B , and on it take Points G , H , such that $AG : GB :: AH : HB :: a : b$.

Then the Semicircle, described on GH , is the locus of all Points whose distances, from A and B , are proportional to a , b .

Hence, if a Line be drawn through B , C , and a Semicircle described which shall be the locus of all Points whose distances, from B and C , are proportional to b , c ; the intersection of these two Semicircles will be the Point required. Q. E. F.

[*Note.* "The locus of all Points whose distances &c.," if represented algebraically, is evidently a Circle, whose centre is on the Line through A , B , and which passes through G and H .]

56. (1480, 1486)

Draw BC , CE , BD , equal to the given altitudes, so as to form right \angle s at B and C ; and produce DB , EC . Join DC , and draw $CF \perp$ to it. Join EB , and draw $BG \perp$ to it. With centre B , and distance BF , describe a circle: with centre C , and distance CG , describe another: let them meet at A : and join AB , AC .

Call the altitudes of ABC , ' α , β , γ '.

Now $\alpha \cdot BC = \beta \cdot CA = \gamma \cdot AB$

= twice area of ABC ;

also, taking BC as unit-line,

$BC = \frac{1}{BC}$, $CA = CG = \frac{1}{CE}$,

$$AB = BF = \frac{1}{BD};$$

$\therefore \frac{\alpha}{BC} = \frac{\beta}{CE} = \frac{\gamma}{BD}$;

i. e. α , β , γ are proportional to given altitudes;

\therefore Triangle ABC is similar to required Triangle.

The rest of the construction is obvious.

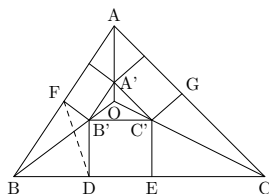
Q. E. F.

57. (1480, 1486)

(1) Geometrically.

Let ABC be given Triangle.

(Analysis.)



Suppose the 3 Squares described, and that their upper edges form the Triangle $A'B'C'$. Join AA' , BB' , CC' .

Now it is evident that, if BB' be produced, the perpendiculars dropped, from any Point of it, upon AB , BC , will be proportional to $B'F$, $B'D$.

Similarly for AA' and CC' .

Hence these 3 Lines will meet at the Point from which the perpendiculars, dropped upon the sides of ABC , are proportional to $B'C'$, $C'A'$, $A'B'$.

Hence, if Squares be described externally on the sides of ABC , and if their outer edges be produced to form a new Triangle $A''B''C''$: this Triangle, with these 3 Squares, will form a Diagram wholly similar to that formed by the Triangle ABC , with the 3 Squares inside it.

(Synthesis.)

Hence, if Squares be described externally on the sides of the given Triangle; and if their outer edges be produced to form a new Triangle; and if the sides of the given Triangle be divided similarly to thoses of the new Triangle: their central portions will be the bases of the required Squares. Q. E. F.

(2) Trigonometrically.

Let a , b , c be the sides of the given Triangle, and m its area; and let x , y , z be the sides of the required Squares.

It is evident that a Circle can be described about the Tetragon $BDB'F$.

Hence $\angle B'DD = \angle B'FD$.

Now, in Triangle $B'FD$, we know that

$$B'D \cap D = B'F \cap F;$$

$$\text{i. e. } x \cap (B' + F) = z \cap F;$$

$$\therefore x \cap B' \cap F + x \cap B' \cap F = z \cap F.$$

Now $\angle B$ is supplementary to $\angle B'$;

$$\therefore x \cap B \cap F = (z + x \cap B) \cap F;$$

$$\therefore \cot F = \frac{z+x \cap B}{x \cap B} = \cot B'BD.$$

Now $BD = x \cot B'BD$;

$$\therefore BD = \frac{z+x \cap B}{\cap B}.$$

Similarly, $EC = \frac{y+x \cap C}{\cap C}$.

But $BD + EC = a - x$;

$$\therefore \frac{z+x \cap B}{\cap B} + \frac{y+x \cap C}{\cap C} = a - x;$$

$$\therefore \frac{x \cap (B+C) + y \cap B + z \cap C}{\cap B \cap C} = a - x;$$

$$\text{i. e. } \frac{x \cap A + y \cap B + z \cap C}{\cap B \cap C} = a - x.$$

Now it is evident that these Triangles are similar; so that

$$\frac{a}{x} = \frac{b}{y} = \frac{c}{z}.$$

Hence, multiplying the last equation, throughout, by one or other of these equal fractions, we get

$$\frac{a \cap A + b \cap B + c \cap C}{\cap B \cap C} = \frac{a^2}{x} - a;$$

$$\begin{aligned} \therefore \frac{a \cap A + b \cap B + c \cap C}{a \cap B \cap C} &= \frac{a}{x} - 1; \\ \therefore \frac{a}{x} &= \frac{a \cap A + b \cap B + c \cap C}{a \cap B \cap C} + 1. \end{aligned}$$

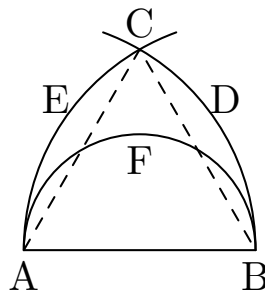
Hence, multiplying above and below by one or other of the equal fractions $\frac{a}{\cap A}$, $\frac{b}{\cap B}$, $\frac{c}{\cap C}$,

$$\begin{aligned} \frac{a}{x} &= \frac{a^2 + b^2 + c^2}{ab \cap C} + 1; \\ &= \frac{a^2 + b^2 + c^2}{2m} + 1 = \frac{b}{y} = \frac{c}{z}. \end{aligned}$$

Q. E. F.

58. (1480, 1487)

It may be assumed that the 3 Points form a Triangle, the chance of their lying in a straight Line being (practically) *nil*.



Take the longest side of the Triangle, and call it 'AB': and, on that side of it, on which the Triangle lies, draw the semicircle *AFB*. Also, with centres *A*, *B*, and distances *AB*, *BA*, draw the arcs *BDC*, *AEC*, intersecting at *C*.

Then it is evident that the vertex of the Triangle cannot fall outside the Figure *ABDCE*.

Also, if it fall inside the semicircle, the Triangle is obtuse-angled: if outside it, acute-angled. (The chance, of its falling *on* the semicircle, is practically *nil*.)

Hence required chance = $\frac{\text{area of semicircle}}{\text{area of fig. } ABDCE}$.

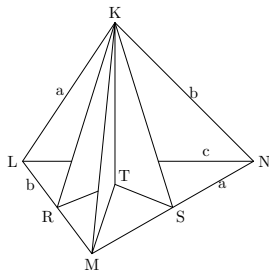
Now let $AB = 2a$: then area of semicircle = $\frac{\pi a^2}{2}$; and area of Fig. *ABDCE* = $2 \times \text{sector } ABDC - \text{Triangle } ABC$;

$$= 2 \cdot \frac{4\pi a^2}{6} - \sqrt{3} \cdot a^2 = a^2 \cdot \left(\frac{4\pi}{3} - \sqrt{3}\right);$$

$$\therefore \text{chance} = \frac{\frac{\pi}{2}}{\frac{4\pi}{3} - \sqrt{3}} = \frac{3}{8 - \frac{6\sqrt{3}}{\pi}}.$$

Q. E. F.

59. (1480, 1487)



Let $KL = MN = a$,
 $KN = LM = b$,
 $KM = LN = c$;

and let \angle s LMK, MKL, KLM be equal to 'A, B, C'; and similarly for the \angle s of the other facets.

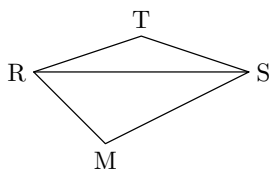
From K draw $KT \perp$ base-facet LMN . Also draw $KR, KS, \perp LM, MN$. And join TR, TM, TS .

It is easily proved that \angle s TRM, TSM are right.

The required volume is $\frac{1}{3} \cdot KT \cdot LMN$. The area of LMN is of course known. All we need is the length of KT . Now $KT^2 = KS^2 - TS^2$; and KS evidently = $c \cdot \cap B$. Hence all we need is the length of TS .

Now this requires a preliminary Lemma, in itself a very pretty problem, viz.—

Lemma (1).



Given, in Tetragon $RMST$, sides RM, MS , and $\angle RMS$, and that \angle s TRM, TSM are right: find TS .

Now $\frac{TS}{\cap TRS} = \frac{TR}{\cap TSR}$;

also $TS \cap TSR + TR \cap TRS = RS$;

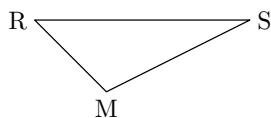
$$\begin{aligned} \therefore \frac{TS}{\cap TRS} &= \frac{TR}{\cap TSR}, \\ &= \frac{TS \cap TSR + TR \cap TRS}{\cap TRS \cap TSR + \cap TSR \cap TRS}, \\ &= \frac{RS}{\cap RMS} = \frac{MS}{\cap MRS}; \end{aligned}$$

$\therefore \frac{TS}{\cap MRS} = \frac{MS}{\cap MRS}$; i. e. $TS = MS \cot MRS$.

Q. E. F.

Hence this requires another Lemma, in order to find the value of $\cot MRS$ (or $\tan MRS$, which will do as well, and makes a prettier problem).

Lemma (2).



Given, in Triangle RMS , sides RM , MS , and $\angle RMS$: find $\tan MRS$.

$$\begin{aligned} \tan MRS &= \frac{\text{opposite}}{\text{adjacent}} = \frac{RS \text{ opposite } MRS}{RM \text{ adjacent } MRS} \\ &= \frac{MS \text{ opposite } RMS}{RM - MS \text{ adjacent } RMS}. \end{aligned}$$

Q. E. F.

Hence, in Tetragon $RMST$, we have by Lemma (1),

$$TS = MS \cot MRS;$$

and, by Lemma (2), $\cot MRS = \frac{RM - MS \text{ adjacent } RMS}{MS \text{ opposite } RMS}$,

$$= \frac{c \text{ adjacent } A - c \text{ adjacent } B \text{ adjacent } C}{c \text{ adjacent } B \text{ opposite } C} = \frac{\text{adjacent } A - \text{adjacent } B \text{ adjacent } C}{\text{adjacent } B \text{ opposite } C};$$

$$\therefore TS = \frac{c}{\text{opposite } C} \cdot (\text{adjacent } A - \text{adjacent } B \text{ adjacent } C).$$

$$\text{Now } KT^2 = KS^2 - TS^2;$$

$$\therefore \text{it} = (c \text{ opposite } B)^2 - \frac{c^2}{\text{opposite } C} \cdot (\text{adjacent } A - \text{adjacent } B \text{ adjacent } C)^2,$$

$$= \frac{c^2}{\text{opposite } C} \cdot \{(\text{opposite } B \text{ opposite } C)^2 - (\text{adjacent } A - \text{adjacent } B \text{ adjacent } C)^2\};$$

therefore $KT = \frac{c}{\text{opposite } C}$ multiplied by

$$\sqrt{\text{opposite } B \text{ opposite } C - \text{adjacent } B \text{ adjacent } C - \text{adjacent } A + 2 \text{ adjacent } A \text{ adjacent } B \text{ adjacent } C},$$

$= \frac{c}{\text{opposite } C}$ multiplied by

$$\begin{aligned} &\sqrt{(1 - \text{adjacent } B) \cdot (1 - \text{adjacent } C) - \text{adjacent } B \text{ adjacent } C - \text{adjacent } A + 2 \text{ adjacent } A \text{ adjacent } B \text{ adjacent } C}, \\ &= \frac{c}{\text{opposite } C} \cdot \sqrt{1(\text{adjacent } A + \text{adjacent } B + \text{adjacent } C) + 2 \text{ adjacent } A \text{ adjacent } B \text{ adjacent } C}, \end{aligned}$$

which is symmetrical, as it ought to be.

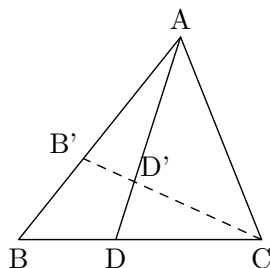
$$\text{Now area of } LMN = \frac{ab \text{ opposite } C}{2};$$

hence volume of Tetrahedron

$$\frac{abc}{6} \cdot \sqrt{1(\text{adjacent } A + \text{adjacent } B + \text{adjacent } C) + 2 \text{ adjacent } A \text{ adjacent } B \text{ adjacent } C}.$$

Q. E. F.

60. (1480, 1487)



Let $\angle BAD = \theta$, $\angle CAD = \phi$.

$$\begin{aligned} \text{Now } \frac{\sin(B+\theta)}{\sin \theta} &= \frac{c}{\left(\frac{ma}{m+n}\right)} \\ &= \frac{c \cdot (m+n)}{ma}; \end{aligned}$$

$$\therefore \sin B \cot \theta + \cos B = \frac{c \cdot (m+n)}{ma};$$

$$\begin{aligned} \therefore \cot \theta &= \frac{c \cdot (m+n)}{ma \cdot \sin B} - \cot B, \\ &= \frac{(m+n) \cdot (a \cos B + b \cos A) - ma \cos B}{ma \sin B}, \\ &= \frac{(m+n)b \cos A + na \cos B}{ma \sin B}; \end{aligned}$$

$$\begin{aligned} \text{i. e. } \cot \theta &= \frac{(m+n) \cdot \frac{b}{\sin B} \cdot \cos A + na \cot B}{ma}, \\ &= \frac{(m+n)a \cot A + na \cot B}{ma}, \\ &= \frac{(m+n) \cot A + n \cot B}{m}. \end{aligned}$$

$$\text{Similarly, } \cot \phi = \frac{(m+n) \cot A + m \cot C}{n}.$$

Q. E. F.

Corollaries.

- (1) $m \cot \theta - n \cot \phi = n \cot B - m \cot C$.
- (2) $\frac{\cot B + \cot \phi}{\cot C + \cot \theta} = \frac{m}{n}$.
- (3) If Triangle be equilateral,

$$\begin{aligned} \cot \theta &= \frac{m+2n}{m} \cdot \frac{1}{\sqrt{3}}, \\ \cot \phi &= \frac{n+2m}{n} \cdot \frac{1}{\sqrt{3}}; \\ \therefore \frac{\cot \theta}{\cot \phi} &= \frac{mn+2n^2}{mn+2m^2}; \end{aligned}$$

$$\therefore \frac{\tan \theta}{\tan \phi} = \frac{mn + 2m^2}{mn + 2n^2};$$

i. e., if $CD'B'$ be drawn \perp to AD , $\frac{B'D'}{D'C} = \frac{mn+2m^2}{mn+2n^2}$; e. g., if $\frac{m}{n} = \frac{1}{2}$, $\frac{B'D'}{D'C} = \frac{2}{5}$.

(4) Let $\tan A = 1$, $\tan B = 2$, $\tan C = 3$;

then $\cot \theta = \frac{m+n+n \cdot \frac{1}{2}}{m} = \frac{2m+3n}{2m}$,

$$\cot \phi = \frac{m + n + m \cdot \frac{1}{2}}{n} = \frac{3n + 4m}{2n};$$

$$\therefore \frac{\tan \theta}{\tan \phi} = \frac{6mn+8m^2}{6mn+9n^2};$$

from which, if $\frac{\tan \theta}{\tan \phi}$ were given, we could find $\frac{m}{n}$ from a Quadratic Equation.

I tried various values, to find one which would give rational values for m and n , and found that $\frac{2}{3}$ would do, as it leads to the Quadratic

$$2(6mn + 9n^2) - 3(6mn + 8m^2) = 0,$$

in which $(B^2 - 4AC)$ becomes, after dividing all through by 6, $(1^2 + 4 \cdot 4 \cdot 3)$, i. e. 49.

The Quadratic is $4m^2 + mn - 3n^2 = 0$;

whence $\frac{m}{n} = \frac{-1 \pm 7}{8} = \frac{3}{4}$; which solves the Problem 'Given a Triangle ABC , having the tangents of its angles equal to 1, 2, 3: divide BC at D , so that, if AD be joined, and $CD'B'$ drawn \perp to it, the ratio $\frac{B'D'}{D'C}$ may be $\frac{2}{3}$ '. The answer is 'Divide it so that $\frac{BD}{DC} = \frac{3}{4}$ '.

61. (1480)

We know that the equation

$$'(a^2 + 4b^2 + 4c^2) + (4a^2 + b^2 + 4c^2) + (4a^2 + 4b^2 + c^2) = 9(a^2 + b^2 + c^2)'$$

is identically true.

Hence $a^2 + b^2 + c^2$

$$= \frac{1}{9} \cdot \{(a^2 + 4b^2 + 4c^2) + (4a^2 + b^2 + 4c^2) + (4a^2 + 4b^2 + c^2)\};$$

$$= \frac{1}{9} \cdot \{(a^2 + 4b^2 + 4c^2 + 8bc - 4ca - 4ab) + (4a^2 + b^2 + 4c^2 - 4bc + 8ca - 4ab) + (4a^2 + 4b^2 + c^2 - 4bc - 4ca + 8ab)\};$$

$$= \frac{1}{9} \cdot \{(-a + 2b + 2c)^2 + (2a - b + 2c)^2 + (2a + 2b - c)^2\};$$

$$= \left(\frac{-a + 2b + 2c}{3}\right)^2 + \left(\frac{2a - b + 2c}{3}\right)^2 + \left(\frac{2a + 2b - c}{3}\right)^2.$$

Now $(-a + 2b + 2c) = 3(b + c) - (a + b + c)$;

\therefore , if $(a + b + c)$ be a multiple of 3, so also is $(-a + 2b + 2c)$;

$\therefore \frac{-a+2b+2c}{3}$ is an integer;

and similarly for the other 2 fractions.

Also it may be proved that, if $\frac{-a+2b+2c}{3}$ be equal to a , or b , or c , then a , b , c can be arranged in $A.P.$

First, let $\frac{-a+2b+2c}{3} = a$;

then $-a + 2b + 2c = 3a$; i. e. $b + c = 2a$;

secondly, let $\frac{-a+2b+2c}{3} = b$;
then $-a + 2b + 2c = 3b$; i. e. $2c = a + b$;
thirdly, let $\frac{-a+2b+2c}{3} = c$;
then $-a + 2b + 2c = 3c$; i. e. $2b = c + a$.

And similarly for the other 2 fractions.

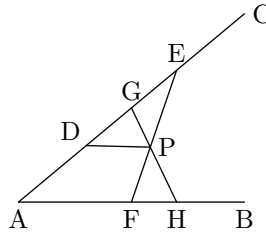
Hence, contranominally, if a, b, c can *not* be arranged in $A.P.$, then 2 sets of squares have no common term. Q. E. D.

Numerical Examples (not thought out).

a^2	b^2	c^2	$(\frac{-a+2b+2c}{3})^2$	$(\frac{2a-b+2c}{3})^2$	$(\frac{2a+2b-c}{3})^2$
1^2	4^2	4^2	5^2	2^2	2^2
3^2	4^2	8^2	7^2	6^2	2^2
4^2	5^2	9^2	8^2	7^2	3^2

62. (1480)

Let AB, AC , be the given Lines, and P the given Point.



Through P draw PD parallel to AB ; from DC cut off DE equal to AD ;
join EP , and produce it to meet AB at F .

Because $AD = DE$, and that DP is parallel to AB ,
 $\therefore FP = PE$.

Now let GPH be any other line through P ;
then $\angle PFH > \angle PEG$.

Because, in Triangles $PFH, PEG, PF = PE$, and
 $\angle FPH = \angle GPE$, and $\angle PFH > \angle PEG$,

$\therefore PH > PG$, and Triangle $PFH >$ Triangle PGE .

To each add Tetragon $AFPG$;

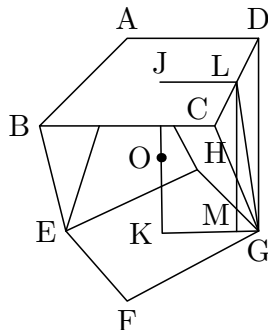
\therefore Triangle $AGH >$ Triangle AEF .

And so of any other line through P .

Hence AEF is the least possible Triangle.

Q. E. F.

63. (1480, 1487)



Let each side of each Square = 2.
Then $LG = \sqrt{3}$, $MG = (\sqrt{2} - 1)$;

$$\begin{aligned} \therefore LM(= JK) &= \sqrt{3 - (2 + 2 - 2\sqrt{2})} \\ &= 2^{\frac{3}{4}}; \\ \therefore OJ = OK &= \frac{1}{2^{\frac{1}{4}}}. \end{aligned}$$

Take O as origin, the X -axis \parallel to AD , and Y -axis to AB ; and let JK be part of the Z -axis.

Let equation to plane containing Triangle CDG be

$$x \cap \alpha + y \cap \beta + z \cap \gamma - p = 0,$$

where p is length of perpendicular dropped, from O , upon this plane, and meeting it somewhere in LG .

Hence we can find p from equation to LG , in the XZ -plane, which will be

$$x \cap \alpha + z \cap \gamma - p = 0;$$

now this line contains L , whose co-ordinates are $(1, \frac{1}{2^{\frac{1}{4}}})$, and G , whose co-ordinates are $(\sqrt{2}, -\frac{1}{2^{\frac{1}{4}}})$;

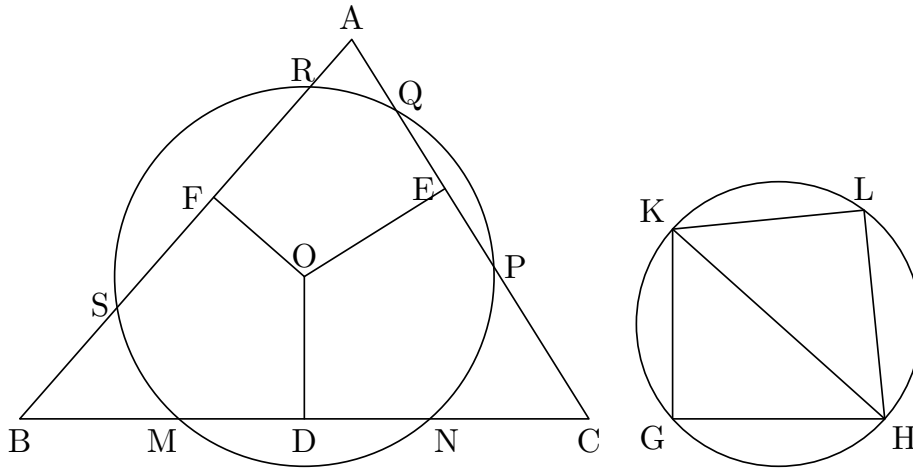
$$\begin{aligned} \therefore \cap \alpha + \frac{1}{2^{\frac{1}{4}}} \cdot \cap \gamma - p &= 0, \\ \text{and } \sqrt{2} \cdot \cap \alpha - \frac{1}{2^{\frac{1}{4}}} \cdot \cap \gamma - p &= 0; \\ \therefore (\sqrt{2} - 1) \cdot \cap \alpha &= \frac{2}{2^{\frac{1}{4}}} \cdot \cap \gamma = 2^{\frac{3}{4}} \cdot \cap \gamma; \\ \therefore \frac{\cap \alpha}{2^{\frac{3}{4}}} &= \frac{\cap \gamma}{\sqrt{2}-1} = \frac{1}{\sqrt{2^{\frac{3}{2}}+3-2^{\frac{3}{2}}}} = \frac{1}{\sqrt{3}}; \\ \therefore \cap \alpha &= \frac{2^{\frac{3}{4}}}{\sqrt{3}}, \cap \gamma = \frac{\sqrt{2}-1}{\sqrt{3}}; \\ \therefore p &= \frac{2^{\frac{3}{4}}}{\sqrt{3}} + \frac{\sqrt{2}-1}{2^{\frac{1}{4}} \cdot \sqrt{3}} = \frac{\sqrt{2}+1}{2^{\frac{1}{4}} \cdot \sqrt{3}}. \end{aligned}$$

Now area of $CDG = \sqrt{3}$;

\therefore volume of pyramid, whose base is CDG and whose vertex is O , = $\frac{\sqrt{2}+1}{3 \cdot 2^{\frac{1}{4}}}$;
and there are eight such pyramids in the solid;

\therefore their sum = $\frac{8(\sqrt{2}+1)}{3.2^{\frac{1}{4}}}$.
 Also volume of pyramid, whose base is $ABCD$, and whose vertex is O ,
 = $\frac{4}{3.2^{\frac{1}{4}}}$;
 and there are 2 such pyramids in the solid;
 \therefore their sum = $\frac{8}{3.2^{\frac{1}{4}}}$;
 \therefore volume of solid = $\frac{8(2+\sqrt{2})}{3.2^{\frac{1}{4}}} = \frac{8.2^{\frac{1}{4}}.(\sqrt{2}+1)}{3}$
Q. E. F.

64. (1480)



Let ABC be the given Triangle, and O the given Point; and let OD , its distance from BC , be less than either OE or OF , its distance from CA , AB .

Draw a line GH equal to OE , and $GK \perp$ it and equal to OF ; and join HK ; and about the Triangle GHK describe a Circle; and place in it a line KL equal to OD ; and join LH .

Because sqs of KL , $LH =$ sqs of KG , GH , and that KL is less than either KG or GH , $\therefore LH$ is greater than either;

\therefore a Circle, with centre O , and radius equal to LH , will cut all three Lines, in two Points each. Describe this Circle.

Then sqs of MD , $DO =$ sqs of PE , EO ;

also sq. of $LH =$ sqs of RF , FO ;

\therefore sqs of MD , DO , $LH =$ sqs of PE , RF , EO , FO ;

but sqs of DO , $LH =$ sqs of KL , LH ,

= sqs of GH , $GK =$ sqs of EO , FO ;

\therefore sq. of $MD =$ sqs of PE , RF ;

\therefore 4 times sq. of $MD = 4$ times sqs of PE , RF ;

i. e. sq. of $MN =$ sqs of PQ , RS .

Hence MN , PQ , RS , can be sides of a right-angled Triangle. Q. E. F.

65. (1481)

Calling the angles $\frac{1}{x}$, $\frac{1}{y}$, $\frac{1}{z}$, of 360° , we must have

$$\frac{1}{x} + \frac{1}{y} + \frac{1}{z} = \frac{1}{2};$$

an Indeterminate Equation with 3 unknowns.

Evidently none of them can be so small as 2.

(1) Let $x = 3$; then $\frac{1}{y} + \frac{1}{z} = \frac{1}{6}$.

Now, if $\frac{1}{y} = \frac{k}{k+l} \times \frac{1}{6}$, $\frac{1}{z}$ will = $\frac{l}{k+l} \times \frac{1}{6}$;

hence k can only be 1, or 2, or 3, or 6; and the same is true of l .

(N.B. It is assumed that the fractions $\frac{k}{k+l}$, $\frac{l}{k+l}$, are in their lowest terms.)

Let $\frac{1}{y}$ be $\neq \frac{1}{z}$. Then $\frac{k}{k+l} \neq \frac{1}{2}$.

Then its possible values are $\frac{1}{2}$, so that $\frac{l}{k+l} = \frac{1}{2}$
 $\frac{2}{3}$, $\frac{1}{3}$
 $\frac{3}{4}$, $\frac{1}{4}$
 $\frac{4}{5}$, $\frac{1}{5}$
 $\frac{6}{7}$, $\frac{1}{7}$.

This gives 5 sets of values for $\frac{1}{x}$, $\frac{1}{y}$, $\frac{1}{z}$, viz.:

$\frac{1}{3}$, $\frac{1}{12}$, $\frac{1}{12}$; $\frac{1}{3}$, $\frac{1}{9}$, $\frac{1}{18}$; $\frac{1}{3}$, $\frac{1}{8}$, $\frac{1}{24}$; $\frac{1}{3}$, $\frac{1}{10}$, $\frac{1}{15}$; $\frac{1}{3}$, $\frac{1}{7}$, $\frac{1}{42}$.

(2) Let $x = 4$. Then $\frac{1}{y} + \frac{1}{z} = \frac{1}{4}$, and, as before, k can only be 1, or 2, or 4, and the same is true of l .

Hence the possible values for $\frac{k}{k+l}$ are $\frac{1}{2}$, so that $\frac{l}{k+l} = \frac{1}{2}$
 $\frac{2}{3}$, $\frac{1}{3}$
 $\frac{4}{5}$, $\frac{1}{5}$.

This gives 3 more sets of values for $\frac{1}{x}$, $\frac{1}{y}$, $\frac{1}{z}$, viz.

$\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{8}$; $\frac{1}{4}$, $\frac{1}{6}$, $\frac{1}{12}$; $\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{20}$.

(3) Let $x = 5$; then $\frac{1}{y} + \frac{1}{z} = \frac{9}{10}$.

Hence denominator must contain factor "3", and k can be only 1, or 2, or 5, or 10; and the same is true of l .

Hence possible values of $\frac{k}{k+l}$ are $\frac{1}{2}$, so that $\frac{l}{k+l} = \frac{1}{2}$
 $\frac{2}{3}$, $\frac{1}{3}$
 $\frac{5}{6}$, $\frac{1}{5}$.

This gives 2 sets of values for $\frac{1}{x}$, $\frac{1}{y}$, $\frac{1}{z}$, viz.:—

$\frac{1}{5}$, $\frac{1}{5}$, $\frac{1}{10}$; $\frac{1}{5}$, $\frac{1}{4}$, $\frac{1}{20}$;

but the latter (a fact overlooked in thinking out) we have had already.

(4) Let $x = 6$; then $\frac{1}{y} + \frac{1}{z} = \frac{1}{3}$.

Hence k can be only 1, or 3, and the same is true of l .

Hence possible values of $\frac{k}{k+l}$ are $\frac{1}{2}$, so that $\frac{l}{k+l} = \frac{1}{2}$
 $\frac{3}{4}$, $\frac{1}{4}$.

This gives 2 sets of values, viz.:—

$\frac{1}{6}$, $\frac{1}{6}$, $\frac{1}{6}$; $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{12}$;

but the latter (a fact overlooked in thinking out) we have had already.

There is no use in giving, to x , any values greater than 6; for these would make $\frac{1}{y} + \frac{1}{z} > \frac{1}{3}$; so that one or other must be $> \frac{1}{6}$; i. e. either y or z must < 6 , and we should get old values over again.

Hence there are 10 different shapes.

Q. E. F.

The 10 sets of angles (I am not certain that they were all thought out) are

- (1) 120°, 30°, 30°;
- (2) 120°, 40°, 20°;
- (3) 120°, 45°, 15°;
- (4) 120°, 36°, 24°;
- (5) 120°, 51 $\frac{3}{7}$ °, 8 $\frac{4}{7}$ °;
- (6) 90°, 45°, 45°;
- (7) 90°, 60°, 30°;
- (8) 90°, 72°, 18°;
- (9) 72°, 72°, 36°;
- (10) 60°, 60°, 60°.

66. (1481, 1487)

Write k for $\frac{\alpha}{\alpha+\beta}$. Now the counters must be either both white, or one white and one black. Let chance of first condition be x ; hence chance of second is $(1-x)$. Hence chance of drawing white is $x \times 1 + (1-x) \times \frac{1}{2}$.

$$\therefore x + \frac{1-x}{2} = k; \therefore x = 2k - 1;$$

$$\therefore (1-x) = 2 - 2k.$$

Let a counter now be drawn and prove white; then chance of 'observed event,' in 1st condition, is 1, and, in 2nd condition, $\frac{1}{2}$;

Hence the chances, of the existence of these two conditions, are proportional to $(2k-1) \times 1$, $(2-2k) \times \frac{1}{2}$; i. e. are proportional to $2k-1$, $1-k$;

hence these chances actually are $\frac{2k-1}{k}$, $\frac{1-k}{k}$;

hence the chance of now drawing white,

is $\frac{2k-1}{k} \times 1 + \frac{1-k}{k} \times \frac{1}{2}$;

i. e. $\frac{3k-1}{2k}$.

Hence the effect of *one* repetition of the experiment has been to change k into $\frac{3k-1}{2k}$.

Hence a second repetition of it will change $\frac{3k-1}{2k}$ into $\frac{3 \times \frac{3k-1}{2k} - 1}{2 \times \frac{3k-1}{2k}}$; i. e. into $\frac{7k-3}{6k-2}$.

We have now to discover the law (if there is one) for the series

$$k, \frac{3k-1}{2k}, \frac{7k-3}{6k-2},$$

regarding these as identical functions of 1, 2, 3.

We can write the 1st and 2nd term in the form of the 3rd, thus:—

$$\frac{k-0}{0 \times k - (-1)}, \frac{3k-1}{2k-0}, \frac{7k-3}{6k-2}$$

and, by inspection, we see that each is of the form

$$\frac{(2^n - 1) \times k - (2^{n-1} - 1)}{(2^n - 2) \times k - (2^{n-1} - 2)},$$

where n denotes the place of the term.

Suppose this law to hold for n terms, what will be the effect of repeating the experiment once more?

We know that it changes k into $\frac{3k-1}{2k}$. Hence the new chance will be

$$\frac{3 \times \frac{(2^n-1) \times k - (2^{n-1}-1)}{(2^n-2) \times k - (2^{n-1}-2)} - 1}{2 \times \frac{(2^n-1) \times k - (2^{n-1}-1)}{(2^n-2) \times k - (2^{n-1}-2)}};$$

i. e. $\frac{k \times (3 \cdot 2^n - 3 - 2^n + 2) - 3 \cdot 2^{n-1} + 3 + 2^{n-1} - 2}{(2^{n+1}-2) \times k - (2^n-2)}$;

i. e. $\frac{(2^{n+1}-1) \times k - (2^n-1)}{(2^{n+1}-2) \times k - (2^n-2)}$;

i. e. the $n+1^{\text{th}}$ term of the series will follow the same law. But we know that the law holds for the 1st, 2nd, and 3rd terms. Hence it holds universally.

Hence, after m repetitions of the experiment, the chance of drawing white will be the $m+1^{\text{th}}$ term of the above series; i. e. it will be

$$\frac{(2^{m+1}-1) \times k - (2^m-1)}{(2^{m+1}-2) \times k - (2^m-2)}.$$

Now, for k , write $\frac{\alpha}{\alpha+\beta}$.

Then chance is $\frac{(2^{m+1}-1) \times \alpha - (2^m-1) \cdot (\alpha+\beta)}{(2^{m+1}-2) \times \alpha - (2^m-2) \cdot (\alpha+\beta)}$;

i. e. $\frac{(2^{m+1}-2^m) \alpha - (2^m-1) \cdot \beta}{(2^{m+1}-2^m) \alpha - (2^m-2) \cdot \beta}$;

i. e. $\frac{2^m \cdot (\alpha-\beta) + \beta}{2^m \cdot (\alpha-\beta) + 2\beta}$.

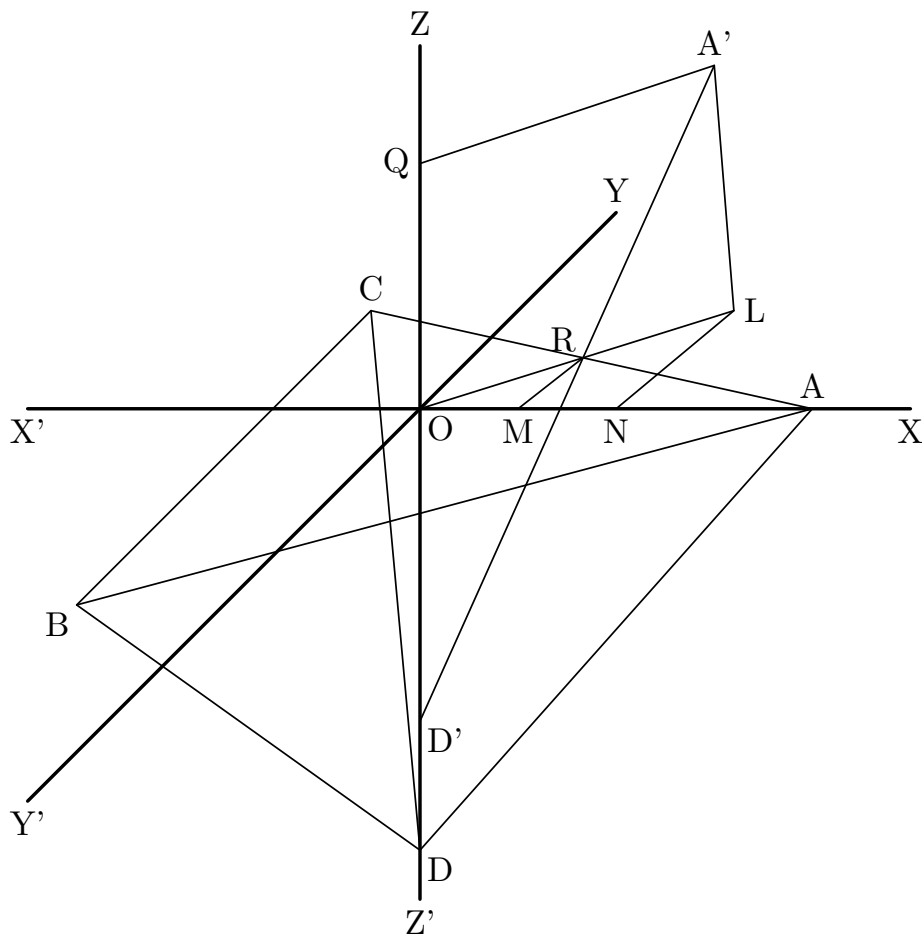
Q. E. F.

EXAMPLE—Let chance be $\frac{2}{10}$; and then 1st experiment be repeated 5 times more.

Hence $\alpha = 9$, $\beta = 1$;

\therefore chance becomes $\frac{32 \times 8 + 1}{32 \times 8 + 2}$, i. e. $\frac{257}{258}$.

67. (1481, 1487)



Let $ABCD$ be the socket. Revolve the Tetrahedron until the plane, in it, DOA has taken the new position, meet the socket-rim AC at R . From A' draw $A'L \perp XY$ -plane. Join OR , and produce it to L . And draw RM , LN , the y -ordinates of R and L .

Then co-ordinates of A' are ON , NL , LA' .

Call OM , MR , ' x' ', ' y' '; and OA , OR , OD , ' a ', ' a' ', ' h '; and $\angle XOR$ ' θ '.

It is evident that the vertical axis of the Tetrahedron always coincides with the Z -axis.

Hence A moves on the surface of a cylinder,

$$\text{i. e. } x^2 + y^2 = a^2 \dots\dots\dots (1)$$

Now $\angle XAC = 150^\circ$;

$$\therefore \text{Equation to } AC \text{ is } y = -\frac{1}{\sqrt{3}} \cdot (x - a);$$

$$\text{i. e. } x + \sqrt{3} \cdot y = a \dots\dots\dots (2)$$

Also Equation to OR is $\frac{x}{\sin \theta} = \frac{y}{\cos \theta} = \delta$;

$$\therefore, \text{ at } R, \frac{x'}{\sin \theta} = \frac{y'}{\cos \theta} = a'; \dots\dots\dots (3)$$

$$\therefore \text{by (2), } a' \cdot \sphericalangle \theta + \sqrt{3} \cdot a' \cdot \cap \theta = a;$$

$$\therefore a' = \frac{a}{\sphericalangle \theta + \sqrt{3} \cdot \cap \theta} \dots \dots \dots (4)$$

Also, by similar $\triangle s D'QA', D'OR, QA' : QD' :: OR : OD'$

$$\text{i. e. } a : h :: \frac{a}{\sphericalangle \theta + \sqrt{3} \cdot \cap \theta} : h - z;$$

$$\therefore h - z = \frac{h}{\sphericalangle \theta + \sqrt{3} \cdot \cap \theta};$$

$$\text{but } \sphericalangle \theta = \frac{x}{a}, \text{ and } \cap \theta = \frac{y}{a};$$

$$\therefore h - z = \frac{ah}{x + \sqrt{3} \cdot y};$$

$$\text{i. e. } (x + \sqrt{3} \cdot y) \cdot (h - z) = ah \dots \dots \dots (5)$$

Equations (1) and (5) give the required Locus. Q. E. F.

68. (1481, 1487)

Let the Nos of bottles, taken out on the 3 days, be ' x, y, z '. Let each bottle have cost $10v$ pence, and therefore be sold for $11v$ pence.

Then the Treasurer's receipts, on the 3 days, were $(x - 1) \cdot 11v, y \cdot 11v - v, (z - 1) \cdot 11v - v$; yielding, as profits (i. e. as remainders after deducting cost-price of bottles taken out), $xv - 11v, yv - v, zv - 12v$. Then these 3 quantities are equal.

$$\text{Hence } y = x - 10, \text{ and } z = x + 1;$$

$$\therefore \text{total No. of bottles, being } (x + y + z), = 3x - 9.$$

$$\text{Now total profits are } (x + y + z) \cdot v - 24v; \text{ i. e. } (3x - 33)v;$$

$$\therefore \text{profit, per bottle} = \frac{(3x - 33)v}{3x - 9}; \text{ and this must} = 6;$$

$$\therefore (x - 11) \cdot v = (x - 3) \cdot 6.$$

$$\text{Also } z \cdot 11v = 11 \times 240; \text{ i. e. } (x + 1) \cdot 11v = 11 \times 240;$$

$$\therefore \frac{x - 11}{x + 1} = \frac{6 \cdot (x - 3)}{240};$$

$$\therefore (x + 1) \cdot (x - 3) = 40 \cdot (x - 11);$$

$$\therefore x^2 - 2x - 3 = 40x - 440;$$

$$\therefore x^2 - 42x + 437 = 0.$$

$$\text{Now } 42^2 - 4 \times 437 = 1764 - 1748 = 16;$$

$$\therefore x = \frac{42 \pm 4}{2} = 23 \text{ or } 19;$$

$$\therefore \text{No. of bottles} = 60 \text{ or } 48; \text{ but it is a multiple of } 5; \therefore \text{it} = 60.$$

$$\text{Also } (x + 1) \cdot 11v = 11 \times 240; \text{ i. e. } 24v = 240;$$

$$\therefore v = 10;$$

i. e. the wine was bought @ $8/4$ a bottle, and sold @ $9/2$ a bottle. Q. E. F.

69. (1481, 1487)

§ 1. Let $\angle BAD = k \cdot A, \angle CBE = l \cdot B, \angle ACF = m \cdot C$.

$$\text{Then } \angle ABE = (1 - l) \cdot B.$$

$$\text{Now } \angle BC'D = \angle C'AB + \angle C'BA.$$

$$\text{i. e. } k \cdot A + (1 - l) \cdot B = C. \dots \dots \dots (1)$$

$$\text{Similarly, } l \cdot B + (1 - m) \cdot C = A; \dots \dots \dots (2)$$

$$\text{and } m \cdot C + (1 - k) \cdot A = B. \dots \dots \dots (3)$$

From equations (1) and (3), l and m may be found in terms of k : but these, taken along with k , will not be *similar* functions of the single variable k . We

must have k a certain function of A, B, C , and θ (say); l a similar functions of B, C, A , and θ ; and m a similar function of C, A, B , and θ ; i. e. we must have

$$\begin{aligned} k &= f(A, B, C, \theta), \\ l &= f(B, C, A, \theta), \\ m &= f(C, A, B, \theta). \end{aligned}$$

Now we know, by (1), that $kA - lB = C - B$;
i. e. $A \cdot f(A, B, C, \theta) - B \cdot f(B, C, A, \theta) = C - B$.
Now, as an experiment, let

$$\begin{aligned} k \cdot A &= xA + yB + zC + \theta, \\ l \cdot B &= xB + yC + zA + \theta; \end{aligned}$$

then $kA - lB = (x - z) \cdot A + (y - x) \cdot B + (z - y) \cdot C$;

$\therefore x - z = 0$; i. e. $x = z$;

$z - y = 1$; i. e. $z = y + 1$.

These conditions will be fulfilled, if we make $y = 1$, and $x = z = 2$; so that

$$\begin{aligned} kA &= 2A + B + 2C + \theta, \\ lB &= 2B + C + 2A + \theta; \end{aligned}$$

which would make

$$f(A, B, C, \theta) \text{ mean } \frac{2A + B + 2C + \theta}{A}.$$

Now this may evidently be simplified by omitting $(A + B + C)$, which is constant; and we then have $k = \frac{A+C+\theta}{A}$; or, in a yet simpler form, by again subtracting 180° , $k = \frac{\theta - B}{A}$.

Similarly $l = \frac{\theta - C}{B}$,

$m = \frac{\theta - A}{C}$.

Q. E. F.

§ 2. We see that $kA = \theta - B$, so that $\angle ADC$ is evidently equal to θ ; and so are $\angle s BEA, CFB$.

This gives us a geometrical construction, viz. to draw lines from A, B, C , so that each makes the same angle θ whith the opposite side.

§ 3. Let us now ascertain the limits within which the value of θ must lie.

We know that $kA = \theta - B$.

Now $kA \not\asymp A$; $\therefore \theta - B \not\asymp A$; i. e. $\theta \not\asymp A + B$;

i. e. $\theta \not\asymp$ the supplement of C ;

and of course this is true for *each* of the three angles A, B, C ; i. e. if A, B, C , be the order of the angles in a descending order of magnitude, $\theta \not\asymp$ supplement of A .

Again $kA \not\asymp 0$.

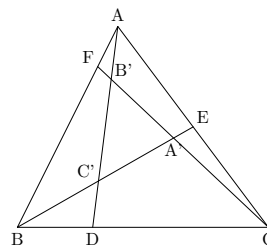
Hence $\theta - B \not\asymp 0$; i. e. $\theta \not\asymp B$;

and of course this is true for *each* angle.

Hence if A, B, C , be the order in a descending order of mangitude, $\theta \not\asymp A$, and $\not\asymp 180^\circ - A$.

Q. E. F.

§ 4. We have now to ascertain the ratio which $B'C'$ bears to BC .



In Triangle ABC' , whose \angle s are $(\theta - B)$, $(180^\circ - \theta - A)$, $(180^\circ - C)$, we have

$$AC' = \frac{AB}{\sin AC'B} \cdot \sin ABC' = \frac{c}{\sin C} \cdot \sin(\theta + A) = \frac{a}{\sin A} \cdot \sin(\theta + A);$$

$$BC' = \frac{AB}{\sin AC'B} \cdot \sin BAC' = \frac{c}{\sin C} \cdot \sin(\theta - B) = \frac{a}{\sin A} \cdot \sin(\theta - B)$$

\therefore , by symmetry, $AB' = \frac{a}{\sin A} \cdot \sin(\theta - A)$.

Now $B'C' = AC' - AB'$;

\therefore it = $\frac{a}{\sin A} \{ \sin(\theta + A) - \sin(\theta - A) \}$,

$$= \frac{a}{\sin A} \cdot 2 \sin \theta \sin A = a 2 \sin \theta.$$

Hence $\frac{a'}{a} = \frac{b'}{b} = \frac{c'}{c} = 2 \sin \theta$.

Q. E. F.

70. (1482, 1488)

Before folding the Plane containing the Triangles, the locus of their vertices is evidently a Line parallel to their common base. Hence, if the base of the Tetrahedron = 1, we may imagine a slip of paper, whose width is $\frac{\sqrt{3}}{2}$, attached to the front facet of the Tetrahedron, and wrapped round towards the right; and the upper edge of this slip will evidently be the locus of the vertices. This slip may be conveniently regarded as divided into equilateral Triangles, placed base-downwards and base-upwards alternately, and it is evident that these Triangles will successively cover the facets of the Tetrahedron, in the order 'front, right side, base, left side, front, &c.:'; and its *upper* edge, made up of the bases of the inverted constituent Triangles, will evidently run as follows. Calling the successive Triangles, after the first (which occupies the front facet of the Tetrahedron), ' α ' (base-up), ' β ' (base-down), ' γ ' (base-up), ' δ ' (base-down), ' ϵ ' (base-up), and so on, the locus consists of the bases of α , γ , &c. Now ' α ' will occupy the right facet, its base coinciding with the back-edge of the Tetrahedron; ' β ' will occupy the base of the Tetrahedron, its base coinciding with the front-edge; ' γ ' will occupy the left facet, its base coinciding with the back-edge; and so on. Hence the locus runs down the back-edge; up again; and so on. Which answers Question (1). Q. E. F.

We may therefore, in answering the other three questions, consider the slip *before* it is folded, and calculate the positions of the vertices along its *upper* edge: and the problems thus become '*plane*' ones.

(2) Gives us a right-angled Triangle, whose left-hand base-angle is 15° , and whose altitude is $\frac{\sqrt{3}}{2}$. We must calculate its base, and then, deducting half the base of the initial Triangle (i. e. deducting $\frac{1}{2}$), we shall get the distance, measured along the upper edge of the slip, from the vertex of the initial Triangle to the vertex of the given Triangle; and from that we can calculate how many times we must go down and up the back-edge to reach it. Call the base of this right-angled Triangle ' x '. Then $\frac{\sqrt{3}}{2} \div x = \tan 15^\circ$.

Now call $\tan 15^\circ$ ' t '; then $\frac{2t}{1-t^2} = \tan 30^\circ = \frac{1}{\sqrt{3}}$;

$$\therefore 1 - t^2 = 2\sqrt{3} \cdot t; t^2 + 2\sqrt{3} \cdot t - 1 = 0;$$

$$\therefore t = \frac{-2\sqrt{3} \pm 4}{2} = (\text{rejecting negative value}) 2 - \sqrt{3}.$$

$$\therefore x = \frac{\sqrt{3}}{2(2-\sqrt{3})} = \frac{\sqrt{3}}{2} (2 + \sqrt{3}) = \sqrt{3} + \frac{3}{2}.$$

Deducting $\frac{1}{2}$, we get $(\sqrt{3} + 1)$ as the required distance.

Now $\sqrt{3} = 1.7\&c.$; \therefore distance = $2.7\&c.$

Hence we must go *down* back-edge, up again, and then about 7 down again.

This answers question (2).

(3) We need to go down the back-edge, and up again; i. e. we must use up the upward bases of ' α ' and ' γ '. Hence the base of the required right-angled Triangle is $2\frac{1}{2}$. Hence the required left-hand base-angle is

$$\tan^{-1}\left(\frac{\sqrt{3}}{2} \div \frac{5}{2}\right); \text{ i. e. } \tan^{-1} \frac{\sqrt{3}}{5}.$$

Hence, for the required base-angle, we have $\frac{\sin}{\cos} = \frac{\sqrt{3}}{5}$;

$$\therefore \frac{\sin}{\sqrt{3}} = \frac{\cos}{5} = \frac{1}{\sqrt{28}}; \therefore \sin = \sqrt{\frac{3}{28}} = \frac{\sqrt{84}}{28}, = \frac{\text{rather over } 9}{28};$$

$$\begin{array}{r} 7 \mid 9. \\ \hline 4 \mid 1.28\&c. \\ \hline \mid .32\&c. \end{array}$$

Now (by mem. tech.) $\sin^{-1} \cdot 3 = 17.45\&c^\circ$.

$\sin^{-1} \cdot 4 = 23.57\&c^\circ$.

and the required angle is about $\frac{1}{5}$ of the way from one to the other. But the difference is almost exactly 6° . Hence we must add, to the lesser, about $1\frac{1}{2}$ degrees, or 1.20° . And the total will be about 18.65° .

(4) Here the right-angled Triangle has, for its base, $3\frac{1}{2}$.

\therefore the required base-angle has, for its tangent,

$$\left(\frac{\sqrt{3}}{2} \div \frac{7}{2}\right); \text{ i. e. } \frac{\sqrt{3}}{7};$$

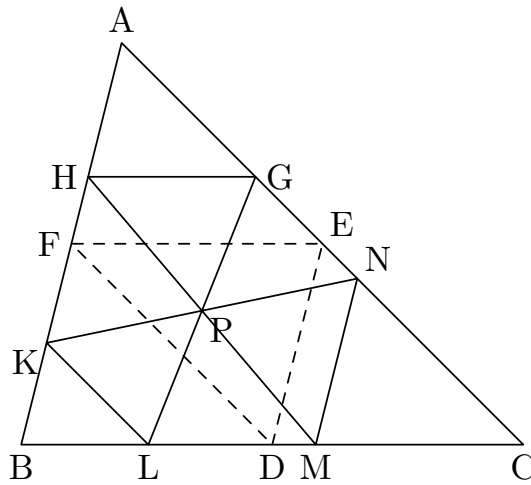
$$\therefore \frac{\sin}{\sqrt{3}} = \frac{\cos}{7} = \frac{1}{\sqrt{52}}; \therefore \sin = \sqrt{\frac{3}{52}} = \text{nearly } \sqrt{\frac{1}{17}},$$

= nearly $\frac{\sqrt{17}}{17}$. Now $\sqrt{17} = 4.12\&c.$ \therefore $\sin = .24\&c.$

Now $\sin^{-1} \cdot 2 = 11.53\&c^\circ$; and we must go about half-way to the next angle, viz. $17.45\&c^\circ$. The difference is about 6° ; \therefore we must add about 3° . Hence the answer is about 14.53° .

71. (1482)

Let ABC be the given Triangle, and P the given Point.



Bisect the sides of ABC at D, E, F ; and join these Points.
 First, let P be within the Triangle DEF .

Draw HG parallel to BC , so that its distance from BC may be double the distance of P from BC ; join GP, HP , and produce them to meet BC in L, M . From L draw LK parallel to AC ; join KP , and produce it to meet AC at N : join MN .

Because HG is parallel to LM ,
 $\therefore GP = PL$, and $HP = PM$;
 $\because KL$ is parallel to GN , and that $LP = PG$,
 $\therefore KP = PN$; $\therefore MN$ is parallel to HK .

Now the Triangles PGH, PLM , are equal in all respects;
 $\therefore GH = LM$. Similarly $KL = GN$, and $MN = HK$.

If P lies on FE , HG and LM vanish, and the Hexagon becomes a Parallelogram.

If P lies at D , the Hexagon becomes the line BC .

If P lies outside the Triangle DEF , the Problem is insoluble. Q. E. F.

72. (1482, 1488)

We know that, if a bag contained 3 counters, 2 being black and one white, the chance of drawing a black one would be $\frac{2}{3}$; and that any *other* state of things would *not* give this chance.

Now the chances, that the given bag contains $(\alpha) BB, (\beta) BW, (\gamma) WW$, are respectively $\frac{1}{4}, \frac{1}{2}, \frac{1}{4}$.

Add a black counter.

The the chances, that it contains $(\alpha) BBB, (\beta) BWB, (\gamma) WWB$, are, as before, $\frac{1}{4}, \frac{1}{2}, \frac{1}{4}$.

Hence the chance, of now drawing a black one,

$$= \frac{1}{4} \cdot 1 + \frac{1}{2} \cdot \frac{2}{3} + \frac{1}{4} \cdot \frac{1}{3} = \frac{2}{3}.$$

Hence the bag now contains BBW (since any *other* state of things would *not* give this chance).

Hence, before the black counter was added, it contained BW , i. e. one black counter and one white. Q. E. F.

9.22 Number-guessing

Source: manuscript written 1896

6/2/96 → 9.19, p. 1464
Other version:

- A. "Think of a number."
B. [thinks of 23]
A. "Multiply by 3. Is the result odd or even?"
B. [obtains 69] "It is odd."
A. "Add 5, or 9, whichever you like."¹
B. [adds 9, & obtains 78]
A. "Divide by 2, & add 1."
B. [obtains 40]
A. "Multiply by 3. Is the result odd or even?"
B. [obtains 120] "It is even."
A. "Subtract 2, or 6, whichever you like."²
B. [subtracts 6, & obtains 114]
A. "Divide by 2, & add 29, or 38, or 47, whichever you like."³
B. [adds 38, & obtains 95]
A. "Add 19 to the original number, & tack on any figure you like."
B. [tacks on 5, & obtains 425]
A. "Add the previous result."
B. [obtains 520]
A. "Divide by 7, neglecting remainder."
B. [obtains 74]
A. "Again divide by 7. How often does it go?"
B. "Ten times."
A. "The number you thought of was 23."⁴

[This is an improvement on the puzzle containing the direction "Multiply by 3. Is the result odd or even?" & afterwards "Divide by 2." Four times, in the course of it, B has the choice of certain numbers, & *need not say which he uses!* I don't think this phenomenon occurs in any other such puzzle.]

¹A version from February 3 also allows adding 1. For even numbers B can add 4, 8, or 12.

²The earlier version also allows subtracting 4. For odd numbers B can add 3, 5, or 7. A should calculate the "increment". For answers "odd"—"even" it is 3. "Even"—"odd" is 0, "odd"—"odd" is 1, and "even"—"even" is 2. The mnemonics are "zErO", "fOOt", "fEEt", and "mOrE".

³In the earlier version all numbers from 20 to 50 are allowed for increment 3. For increment 2 B can add any number from 30 to 60, for 1 from 40 to 70, for 0 from 50 to 80.

⁴The instruction in the earlier version is: Subtract 5, multiply by 4, add increment.

9.23 A Mysterious Number

Source: Chatterbox, February 1897 (authorship not certain, but a very similar manuscript exists)

The number 142,857 does not at first sight appear to have anything odd about it, yet there are some strange things about it.

Let us multiply it by the numbers 2 to 7 and see the result.

142,857 by 2 is 285,714.

142,857 by 3 is 428,571.

142,857 by 4 is 571,428.

142,857 by 5 is 714,285.

142,857 by 6 is 857,142.

142,857 by 7 is 999,999.

The first five products, you will observe, are composed not only of the same figures, but of the same figures in the same order, though beginning with a different figure each time. And the strangest part of it all is that 142,857 multiplied by 7 is 999,999, but after that point the products lose their oddity.

Part 10

Games

This chapter contains all text about games, with the exception of Co-operative Backgammon, which is found as part of a notice in the *Times* (→ 19.5, p. 2461).

10.1 Rules for Court Circular (1860)

Source: printed 1860

(A New Game of Cards for Two or More Players)

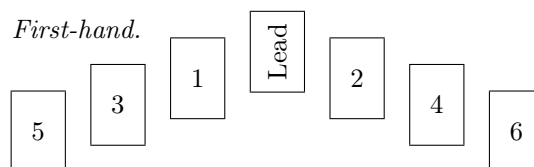
Section I. (For Two Players)

I.

Cut for precedence. Highest is “first-hand;” lowest “dealer.” Dealer gives 6 cards to each, one by one, beginning with first-hand, and turns up the 13th, which is called the “Lead.” It is convenient that the same player should be dealer for the whole of each game.

II.

First-hand then plays a card; then the other player, and so on, until 6 cards have been played, when the trick is complete, and he who can make, (out of the 3 cards he has played, with or without the Lead) the best “Line,” wins it.



N.B. The cards in the figure are numbered in the order of playing.

III.

A "Line" consists of 2, or all 3, of the cards put down by either player, with or without the Lead. In making a Line, it does not matter in what order the 3 cards have been put down. Lines rank as follows:

(1) 3, OR 4 CARDS, (LEAD *included*.)

Trio—i. e. 3 of a sort, (e. g. 3 Kings, or 3 Nines.)

Sequence—i. e. 3, or 4, in Sequence, (e. g. Eight, Nine, Ten, Knave.)

Sympathy—i. e. 3, or 4, Hearts.

Court—i. e. 3, or 4, Court-cards, (if 4, it is called **Court Circular**.)

N.B. In this Class a Line of 4 cards beats a *similar* Line of 3. The Lead must not be reckoned in the middle of a Sequence.

(2) 3 CARDS, (LEAD *excluded*)

Names as above.

N.B. In making a Sequence, the Ace may be reckoned either with King, Queen, or with Two, Three.

(3) 2 CARDS, (LEAD *excluded*)

Pair—i. e. 2 of a sort.

Valentine—i. e. 2 Hearts.

Etiquette—i. e. 2 Court-cards.

IV.

If both have made Lines of the same kind, he whose Line contains the best card wins the trick; and if neither has made a Line, he who has played the best card wins it. Cards rank as follows:

(1) Hearts.

(2) The rest of the pack, in the order Aces, Kings, &c.

N.B. If no Hearts have been played, and the highest cards on each side are equal, (e. g. if each have played an Ace,) they rank in the order Diamonds, Clubs, Spades.

V.

The winner of a trick chooses, as Lead for the next trick, any one of the cards on the table, except the old Lead; he then takes the rest, turning them face upwards, if he be first-hand, but if not, face downwards; and he becomes first-hand for the next trick.

VI.

The dealer then gives cards to each, one by one, beginning with first-hand, until each hand is made up again to 6 cards.

VII.

At any time during a trick, after the first card of it has been played, and before either has played 3 cards, he whose turn it is to play may “resign” instead; in which case no more cards are played in that trick, and the other player wins it and proceeds as in Rule V. But when either has played 3 cards, the other must not resign.

VIII.

When the pack is exhausted neither player may resign. The winner of the last trick clears the board. Each then reckons up the cards he has won, which count as follows:

Cards face upwards	2 each.
downwards	1
Hearts.....	1
Court-cards	1

(so that a Court-Heart, if face upwards, counts 4 altogether.) The winner scores the difference between his own and the loser’s marks, the loser scoring nothing. Game is 20 or 50.

Section II. (For Three or More Players.)

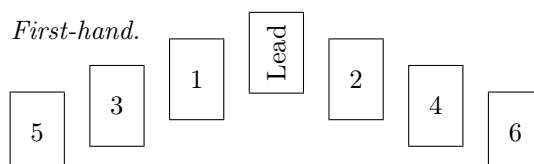
The same rules apply, with the following necessary changes. The Lead is placed in the middle; first-hand then plays a card; then the player on his left-hand, and so on all round, each putting down his 3 cards in a row from the Lead towards himself. He who makes the best Line wins the trick, and is first-hand for the next trick. At any time during a trick, after the first card of it has been played, and before any one has played 3 cards, he whose turn it is to play may “resign” instead; in which case he loses his chance of winning that trick, and the other players go on without him. But when any one has played 3 cards, no other player may resign. In the case where all players but one “resign,” he who is left to the last wins the trick. At the end of each game all the players but the lowest score the difference between their own marks and those of the lowest, the lowest scoring nothing. Game is 50.

January, 1860.

10.2 Rules for Court Circular (1862)

Source: printed 1862

(A New Game of Cards for Two Players)



I

Cut for deal; highest is “first-hand”, lowest is dealer, gives 6 cards to each, 3 at a time, turning up 13th as “Lead”. First-hand plays a card, then dealer, and so on, as numbered in the diagram, till 6 have been played, when the trick is complete. No. 5 is kept face down until No. 6 has been played.

II

Whichever has, on his side of the trick, (Lead reckoning on each side) the best “Line” of 3 cards, (“Lines” being of 3 kinds, which rank as follows: Trio, e. g. 3 Kings or 3 Nines; Sequence, e. g. Nine of Hearts, Eight of Spades, Seven of Hearts; Suit, e. g. 3 Diamonds) wins it. It does not matter in what order the cards have been played, (e. g. if “Lead” be Five of Hearts, and one of the players play Ace of Spades, Seven of Clubs, Six of Diamonds, his side contains a sequence). Trio containing “Lead” ranks above Trio not containing it, and so of Sequence and Suit. “Lead” must not be reckoned as middle card of a Sequence. An Ace will form a Sequence with Two, Three, or with King, Queen.

III

If equal Lines be made, he who has played, among the cards forming his Line, the best card (cards ranking thus: Ace of Hearts, of Diamonds, of Clubs, of Spades, King of Hearts, etc.) wins the trick; if no Line be made, he who has played the best card wins it.

IV

When the trick is won by superiority of Line, the winner adds the value of his own Line, (reckoned thus: Trio 1, Sequence 2, Suit 3,) to that of the loser’s, if any, (reckoned thus: Trio 5, Sequence 3, Suit 1) and takes so many cards; when by superiority of cards, he takes one only. Lead for the next trick is then chosen from the cards left on the table, (by the winner, if both or neither have made a Line; otherwise by the loser), and the others laid aside. The loser is dealer for the next trick, and gives 3 cards to each.

V

When only 3 cards remain to be dealt, they are turned up, and each plays, either from the 3 cards in his hand, or from these 3, supplying its place from his own hand.

VI

When the pack is out, every trick (after four) counts 1; most cards, 2; most court-cards, (Aces reckoning as court-cards) 1. A Hit is 5, and two Hits make a Rubber.

April, 1862

10.3 Croquet Castles

Source: printed 1863

For Five Players

I.

This Game requires the 10 arches, and 5 of the 8 balls used in the ordinary game, and, in addition to them, another set of 5 balls, (matching these in colour, but marked so as to be distinct from them), and 5 flags, also matching them. One set of balls is called "soldiers"; the other, "sentinels." The arches and flags are set up as in the figure, making 5 "castles," and each player has a castle, a soldier, and a sentinel; the sentinel's "post" is half-way between the "gate" and the "door" of the castle, and the soldier is placed, to begin the game, just within the gate.

(N.B.—The distance from one gate to the next should be 6 or 8 yards, and from the gate of a castle to the door 4 yards; and the distance from the door to the flag should be equal to the width of the door.)

II.

The soldiers are played in order, as marked above; then the sentinels, in the same order, and so on. Each soldier has to "invade" the other 4 castles, in order, (*e. g.* soldier No. 3 has to invade castles Nos. 4, 5, 1, 2,) then to re-enter his own, and touch the flag; and whoever does this first, wins. To "invade" a castle, he must enter the gate, go through the door, then between the door and the flag, then out at the gate again: but he cannot enter a castle, unless either the sentinel of that castle, or his own sentinel, be out of its castle.

(N.B. No ball can enter or leave a castle, except by passing through the gate.

III.

If a sentinel touch a soldier, both being in the sentinel's castle, the soldier is "prisoner;" he is replaced (if necessary) where he was when touched, the sentinel is placed in the gate, and the castle is "fortified." The prisoner cannot move, and nothing can go through the gate, till the castle is opened again, which is done either by the prisoner's comrade coming and touching the sentinel in the gate, or by the sentinel leaving the gate to go and rescue his own comrade: in the former case, both sentinels are replaced at their posts.

IV.

When a prisoner is set free, he cannot be again taken prisoner until after his next turn.

V.

If a ball touch another, (except a prisoner, or a sentinel in his castle,) the player may, if he likes, replace it where it was when touched, and use it to croquet his own with: in the excepted cases, he must replace it, but can do no more.

VI.

If a soldier go through an arch, or between a door and flag, in his proper course, or if a sentinel go through the gate of his castle, the player has another turn.

VII.

A player whose soldier is a prisoner, plays all his turns with his sentinel; and one, whose castle is fortified, with his soldier, unless it be taken prisoner, when he must play his sentinel to rescue it.

VIII.

The sentinel of a fortified castle is considered to be in, or out of, the castle, as the owner chooses: that is, if he wishes to invade a castle, the sentinel of which is within it, he may consider his own sentinel as *out of* its castle, (which gives him the right of invasion): or, if he wishes to go and rescue his soldier, he may consider it as *in*, (so that he first plays it *through* the gate, and then has another turn).

Ch. Ch., Oxford, May 4, 1863.

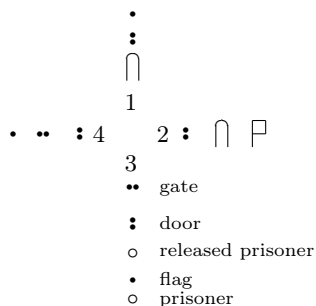
N.B. This game does not absolutely require more than *two* additional balls, beside those used in the ordinary game; these may be Light Blue and Light Green, and the 10 balls may be arranged as follows:—

<i>Soldiers.</i>	<i>Sentinels.</i>
BLUE.	LIGHT BLUE.
BLACK.	BROWN.
ORANGE.	YELLOW.
GREEN.	LIGHT GREEN.
RED.	PINK.

10.4 Castle Croquet (1863?)

Source: printed 1863?

For Four Players.



I.

This game requires 8 balls, 8 arches, and 4 flags; 4 of the balls are called “soldiers,” the others “sentinels.” The arches and flags are set up as in the figure, making 4 “castles,” and each player has a castle, a soldier, and a sentinel. To begin the game, the soldier is placed just within the gate, and the sentinel half-way between the gate and the door.

(N.B.—The distance from one gate to the next should be 6 or 8 yards, and the distance from the gate to the door, or from the door to the flag, 2 or 3 yards.)

II.

The soldiers are played first, in the order given in the figure, then the sentinels in the same order, and so on. Each player has to bring his soldier out of its castle, and with it “invade” the other castles in order (*e. g.*, No. 3 has to invade castles 4, 1, 2), re-enter his own, and touch the flag, and then to touch it with his sentinel (which, if out of the castle, must re-enter for this purpose); and whoever does all this first, wins. To “invade” a castle, the soldier must enter at the gate, go through the door (either way), touch the flag, and come out at the gate again.

(N.B.—No ball can enter or leave a castle except at the gate. A sentinel, that has not left his castle, is said to be “on duty,” wherever he happen to be.)

III.

If a sentinel and soldier touch, while both are within the sentinel’s castle, or if a soldier enter a castle while its sentinel and his own are both “on duty,” the soldier becomes “prisoner” and is placed behind the flag. He cannot move till released which is done either by his own sentinel (on duty) coming and touching

the flag, or by the sentinel leaving the castle. In the former case, his own sentinel is put back where he was at the beginning of the game; and in either case the released soldier is placed behind the door, and cannot be again taken prisoner until after his next turn.

IV.

When a soldier goes through an arch, or touches a flag, in his proper course, or plays after being released, or when a sentinel enters or leaves his castle, or takes a prisoner, he may be played again; but a sentinel may not enter or leave his castle twice in one turn.

(N.B.—A sentinel can only enter or leave *his own* castle: no account is taken of his going through any arch other than his own gate.)

V.

If a ball touch another (except a sentinel on duty, a prisoner, or a released prisoner who has not played since his release), the player may use it to croquet his own with; but may not move it in doing so, unless it be his own sentinel (not on duty). He may not croquet himself twice in one turn with the same ball, unless he has done one of the things mentioned in Rule IV. meanwhile. In this game, croqueting does not give (as in the ordinary game) the right of playing again.

N.B.—The following arrangement of the 8 balls as soldiers and sentinels will be found convenient:—

<i>Soldier.</i>	<i>Sentinel.</i>
Blue	Green
Black	Brown
Orange	Yellow
Red	Pink

The flags should match the soldiers in colour.

This game may be adapted for five players, by the addition of a light-blue and a light-green ball, and the 10 balls may be arranged thus:—

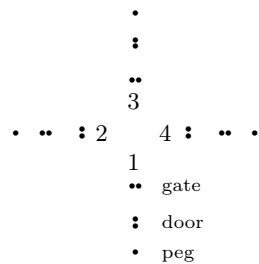
<i>Soldier.</i>	<i>Sentinel.</i>
Blue	Light Blue
Black	Brown
Orange	Yellow
Green	Light Green
Red	Pink

10.5 Castle Croquet (1866)

Source: printed 1866 as Castle-Croqêt (without author, and dated “*Aug. 1866*” at the end); Aunt Judy’s Magazine, August 1867

For Four Players.

By Lewis Carroll



Rules

I.

This game requires 8 balls, 8 arches, and 4 pegs: 4 of the balls are called “soldiers;” the others “sentinels.” The arches and pegs are set up as in the figure, making 4 “castles;” and each player has a castle, a soldier, and a sentinel. Before the game begins, each player places his sentinel within a mallet’s length of his peg, and does the same with his soldier when his turn comes to play.

(N.B. The distance from one gate to the next should be 6 or 8 yards, and the distance from the gate to the door, or from the door to the peg, 2 or 3 yards.)

II.

If a sentinel goes through the gate of his castle, in the direction *from* his peg, he is said to “leave” the castle; when next he goes through it in the opposite direction, he is said to “re-enter” it, and so on. A sentinel, that has not left his castle, is said to be “on duty;” if he leaves it, he is said to be “off duty;” if he re-enters it, to be “on duty” again, and so on.

III.

To begin the game, the owner of Castle No. 1 places and plays his soldier, and then plays his sentinel; then the owner of Castle No. 2, and so on. Each player has to bring his soldier out of his castle (by playing it through the gate), and with it “invade” the other castles in order (*e. g.*, No. 3 has to invade castles 4, 1, 2), re-enter his own castle, and lastly, touch his peg, his sentinel being “on duty” at the time; and whoever does all this first, wins. To “invade” a castle, the soldier must enter at the gate, go through the door (either way), touch the peg, and go out at the gate again.

IV.

If an invading soldier touch, or be touched by, the sentinel “on duty” of the castle he is invading, he becomes “prisoner,” and is placed behind the peg. He may be released by the sentinel going “off duty,” or by his own sentinel “on duty” coming and touching the peg: in the latter case, his sentinel is at once replaced as at the beginning of the game. The released soldier is “in hand” till his next turn, when he is placed as at the beginning of the game.

V.

When a soldier goes through an arch, or touches a peg, “in order,” or when a sentinel takes a prisoner, he may be played again. Also when a sentinel leaves, or re-enters, his castle, he may be played again, but may not exercise either of these privileges twice in one turn.

VI.

If the ball played touch another (neither of them being a sentinel “on duty”), the player may “take two” off the ball so touched, but must not move it in doing so. If, however, the ball so touched be his own sentinel “off duty,” he may take a croquet of any kind, as in the ordinary game. He may not “take two,” or take a croquet twice in one turn off the same ball, unless he has meanwhile gone through an arch, or touched a peg “in order.”

N.B. The following arrangement of the 8 balls as soldiers and sentinels will be found convenient:—

<i>Castle.</i>	<i>Soldier.</i>	<i>Sentinel.</i>
I.	Blue	Pink
II.	Black	Yellow
III.	Brown	Orange
IV.	Green	Red

Advice to the Player

As it is not easy, in a new game, to see at once what is the best method of play in the various situations that may occur, the following suggestions may be of use to the player.

There are two distinct methods of play, which you may adopt in this game, and each has its own special advantages: the one consists in keeping your sentinel “on duty;” the other, in bringing it “off duty.”

In the first method, your sentinel remains constantly at home, except when your soldier is in danger of being taken prisoner, when it is played up to the peg of the castle you are invading, so as to be ready to release your soldier. In this method, the best position for your sentinel is opposite to the centre of your gate, and a ball’s width from it, so that if a soldier, trying to invade your castle, should touch it, it must have previously passed through the gate. From this position it is easy to take a prisoner in any part of your castle by the following rule:—Play your sentinel just through the gate; this gives you another turn, in which you play it again, getting as near as possible to the invading soldier: this gives you another turn, in which you may take it prisoner. The same process

may be employed for playing your sentinel up to the peg of the castle you are invading, if it should happen that you cannot play it straight for the peg. This process, however, must not be employed when you have a prisoner in your castle, as it would be released by your sentinel going out.

In the second method, your sentinel keeps with your soldier: when playing your soldier, you carry the sentinel along with it, through one or more arches, by taking "loose croquêts" or "split strokes;" and when your soldier can do no more, you either play your sentinel close up to it, ready for the next turn, or, if your soldier is in danger of being taken prisoner, you "take two" off it, getting as close as possible to the enemy's sentinel in the first stroke, and driving it to a safe distance in the second.

The first method is the safest, when any one of the other players is better than yourself, as it enables you to prevent his entering your castle and so to delay him; but as soon as all the players, whom you have reason to fear, have passed through your castle, you had better bring your sentinel "off duty," and help on your soldier.

The second method enables you to make rapid progress in invading the other castles: you can also take prisoners almost as easily as in the first method, by "taking tow" off your soldier, getting near your gate in the first stroke, and entering your castle in the second: this gives you another turn, in which you may take a prisoner. It has, however, the disadvantage of loss of time if your soldier should be made a prisoner, as in this case your sentinel has to go home, get "on duty," and return, before it can release your soldier.

If your soldier is taken prisoner, and you release it by touching the enemy's peg with your sentinel, you are in a position in which you may often retard the other players: first, by placing your sentinel (which is done directly after the release) in a line between your peg and an invading soldier which is aiming at it; secondly, by placing your soldier (which is done when your next turn comes) close to your sentinel, playing it so as to drive your sentinel in the direction of an invading soldier, and then taking it prisoner.

It evidently follows from this that, when you have yourself taken a prisoner, and happen to be invading the castle from which it came, you should not wait till the enemy's sentinel has touched your peg and so released the prisoner, but you should yourself release it (as soon as the enemy's sentinel has nearly reached your peg) by playing your own sentinel out through your gate and in again: in this case the sentinel, which was on its way to your peg, cannot be carried back at once, but must be played all the way home.

In "taking two" off a ball you may, if you choose, play your own ball so as only just to move it, and then strike it in the direction of the other, and thus drive it to a distance. This has nearly the same effect as the "loose croquêt" of the ordinary game, but with this difference, that it does not give you the right of playing again.

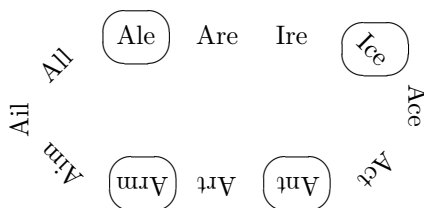
If a soldier, about to invade your castle, is lying near your gate, you may take it prisoner thus:—Play your sentinel out, near the soldier; then hit it with your sentinel, and "take two" off it, so as only just to move your ball, taking care to have the soldier in a line between your sentinel and your gate; then drive both in together; this gives you another turn, in which you may take it prisoner.

10.6 Word-Links (cyclostyled)

Source: cyclostyled 1878

A Game for two Players, or a round Game

The principal feature of this game consists in the linking together of words, so that any two consecutive words may differ in one letter only. Such a series of words is called a "Chain." The simplest form of a Chain is where two words are given, and the Chain is so made as to have the given words at the two ends (such as "*Head, Heal, Teal, Tell, Tall, Tail.*") The two given words are called a "Doublet," and the words introduced to make the Chain are called "Links." A more elaborate form of Chain is where there are three or more words given, (such as "*Ale, Ice, Arm, Ant.*") and the Chain is so made as to have two of them at the ends, and the others in the Chain, (such as "*Ale, Are, Ire, Ice, Ace, Act, Ant, Art, Arm.*"). The given words are called "Jewels," and all that have chain on both sides of them are said to be "set." If Links can be found to unite the two ends (such as "*Aim, Ail, All,*" which would unite "*Arm*" to "*Ale*") the Chain is called a "Necklace", and *all* the Jewels in it are then said to be "set." The above Necklace may be written in this form:—



In making a Chain or Necklace, it is not allowable to use a word twice.

We will now suppose that each of the Players is provided with a large sheet of paper to work on, a number of slips to write out Chains on, a limited stock of patience, and an *unlimited* stock of good-temper. We proceed to the

Rules for 2 Players.

One player opens a book at random and hands it to the other, who selects, at the open place, 3 words of 3 letters each, 3 of 4, and 3 of 5: he then opens it in another place and returns it to the first Player, who selects 9 words in the same manner. These 18 words are written down by each Player, and are the "Jewels."

The first Player then opens the book again and hands it to the other, who selects a word of 3, or 4, or 5 letters, as may be agreed: he then opens it in another place and returns it to the first Player, who selects another word of the same length. These words form the first "Doublet."

Each Player then works this Doublet into a Chain, which he writes out on a slip of paper and lays face-downwards on the table.

When both are written, the papers are turned up, and the one who finished the first gets 2 marks for "speed": and, if the Chains are of different lengths,

the writer of the shortest gets so many marks, as represent the difference, for "brevity." Another Doublet is then selected, and the game proceeds as before.

If one Player abandons the attempt to make a Chain, but the other succeeds; the successful one gets 2 marks for "speed" and 4 for "brevity."

If both abandon the attempt, another Doublet is selected.

A Chain which contains an inadmissible word, or which violates any of the rules, is called "null."

If both Players fail in making a Chain, he who first declared his to be "abandoned" gets 3 marks for "decision," but, if both Chains be "null," neither Player gets marks.

The Player who first finishes (or abandons) his Chain may occupy his time, till the other has finished, in making "extra-Chains" of the Jewels. These are marked at the end of the game, by the following rule:— a Jewel at the end of a Chain gets as many marks as it has letters; a "set" Jewel twice as many; and every Link loses a mark. Thus, a Chain of 6 Jewels of 4 letters each, containing 30 Links, gets 10 marks: if, by adding 6 more Links, it is made into a Necklace, it gets 12.

In making a set of "extra-Chains," it is not allowable to use any Jewel twice; but a word may be used more than once as a Link, so long as it only occurs once in each Chain.

If a set of extra-Chains violate any rule, there may still be portions which can get marks, and the writer is allowed to erase the faulty portions.

We now proceed to the

Rules for a Round Game,

which are the same as for 2 Players, with the following exceptions:—

A President is chosen to score the marks: he may play himself.

The President opens a book at random, and hands it to one of the players, who selects, at the open place, a word of 3 letters, a word of 4, and a word of 5. He then does the same with another Player, and so on, till the 18 Jewels have been selected.

The first Doublet is selected in the same way. As soon as any Player has finished his Chain, he writes it on a slip of paper and hands it, face-downwards, to the President, who places the slips in a heap.

When all have handed in (or abandoned) their Chains, the President turns over the heap, and marks for "speed" by the following rule — the first correct Chain finished gets as many marks as there are Players; the next gets one mark less, and so on, the last getting none. He then marks for "brevity" as follows:— the longest Chain gets no marks, and every shorter Chain gets as many marks as represent the difference. If any Chain be abandoned or null, it is taken as "longest" and considered to be 4 Links longer than the longest successful one.

If *all* fail in making a Chain, he who first declared his to be abandoned gets 3 marks for "decision," and the one who declared next gets 2.

Before beginning a game, it should be settled how many Doublets it is to consist of: six will be found a convenient number.

The following form of scoring-paper is recommended:— [N.B. The first figure in a "Doublet" column is for "speed," the second for "brevity." "A" stands for "abandoned the first"; "a" for "abandoned second"; "0" represents "no marks."]

Date	Names	1	2	3	4	5	6	Jewels	Total
Ap 1/78	Smith	2, 0	a	4, 3	3, 6	2, 4	0	8	34
	Brown	4, 4	A	3, 0	á	4, 8	4, 4	11	45
	Jones	0	0	2, 0	4, 8	0	A	4	18
	Robinson	3, 5	0	0, 3	A	3, 6	á	8	28

Ap 11. 1878
Lewis Carroll

10.7 Word-Links (printed)

Source: printed 1878

A Game for two Players, or a Round Game.

A series of words of the same length, where any two consecutive ones differ in one letter only (e. g. 'Head, Heal, Teal, Tell, Tall, Tail'), is called a 'Chain.' The game consist in forming Chains so as to contain two or more given words, one of which must be at each end. Two given words are called a 'Doublet'; three or more, 'Jewels'; connecting words are called 'Links.' (Thus the above Chain might have been made for the 'Doublet' 'Head, Tail,' or for the four Jewels 'Head, Teal, Tell, Tail.')

A Jewel that has chain on both sides (e. g. 'Teal' in the above Chain) is said to be 'set.' If Links be found to unite the two ends (e. g. 'Hail, Hair, Heir, Hear,' which unite 'Tail' to 'Head'), the Chain is called a 'Necklace,' and *all* the Jewels in it are said to be 'set.' A Necklace must contain at least three Jewels. The above Necklace might be written thus:—

<i>Head</i>	Heal	<i>Teal</i>	<i>Tell</i>
Hear			Tall
Heir	Hair	Hail	<i>Tail</i>

In making a Chain or Necklace, it is not allowed to use a word twice; and no word is admissable that is not in ordinary use in good society.

The Rules for Two Players.

Each Player should be provided with writing-materials and an English book; and one of them should also have a scoring-paper, ruled as follows:—

NAMES.	DECLARATIONS, &c.				MARKS.					
	1	2	3	4	1	2	3	4	Jewels.	Total.
<i>Brown.</i>	|	|	|	|	|	|	|	|	|	|
<i>Jones.</i>	|	|	|	|	|	|	|	|	|	|

Each opens a book, and selects two words of three letters, two of four, and two of five. These twelve words are written down by each, and are the 'Jewels.'

Each again opens a book, and selects a word of three, four, five, or any other number of letters, as may be agreed. When both words are fixed on they are read out, and are the first 'Doublet.'

Each now tries to make a Chain of this. As soon as a Player has decided with how many Links he will undertake to make it, or that he will abandon the attempt, he says, '— Links,' or 'Abandoned,' as the case may be. He who does this first is marked 'I' in the first 'Declaration'-column, followed by the number he named or by the letter 'a': the other is marked 'II' in the same way.

A Chain is reckoned as having the 'declared' number of Links, even if it really have fewer: if it have more, it is 'null.'

When both have 'declared,' each must at once write out his Chain (if he has not already done so); if he cannot do this, it is 'null.'

The Chains are now examined, and correct Chains are marked as follows:—He who first 'declared' the length of his Chain gets 2 for 'decision;' also the writer of the shorter gets, for 'brevity,' 3 for every Link saved. (N.B. A 'null' Chain is reckoned as being two Links longer than a correct one.) If neither be correct, he who first 'abandoned' gets 2 for 'decision.' All these numbers are entered in the first 'Marks' column.

A second Doublet is then selected, and the game proceeds as before, four Doublets making one Game.

Each Player may employ his spare time in making extra Chains or Necklaces of the Jewels. These are marked at the end of the game, thus:—A Jewel at the end of a Chain gets as many marks as it has letters; a 'set' Jewel twice as many; and every Link loses a mark. (Thus a Chain with three Jewels, of four letters each, and seven links, gets 9; if, by adding four links, it be made into a Necklace, it gets 13.)

In making extra Chains, it is not allowed to use any Jewel twice; but a word may be used more than once as a Link, provided it does not occur twice in one Chain.

If a set of extra Chains transgress any rule, there may still be portions which can get marks; and the writer is allowed to withdraw the faulty portions.

The Rules for a Round Game

are the same as the above, with the following alterations:—

Each Player should have, besides a large sheet of paper for working on, a number of slips for writing out Chains when finished.

One of the Players is chosen as President: he keeps the score, and settles all disputed points.

Each Player in turn opens a book and selects a word of three letters, one of four, and one of five; till the twelve jewels have been selected.

Two Players, named by the President, select the first Doublet.

Correct Chains are marked as follows:—He who first 'declared' the length of his Chain gets, for 'decision,' as many marks as there are Players, the next gets one mark less, and so on down to '2,' which is the lowest mark given; also the writer of any Chain that is not the longest gets, for 'brevity,' 3 for every link saved. (N.B. A 'null' chain is reckoned as being two links longer than the longest correct one.) If none be correct, he who first 'abandoned' gets 4 for 'decision,' and the next gets 2.

The following Doublets may be useful for practice in making Chains:—

'Hare, Soup,' has been done with six links; 'Tree, Wood,' with eight; 'Pen, Ink,' with eight; 'Castle, Butler,' with ten; 'Mine, Coal,' with six; 'Grub, Moth,' with twelve; 'Quilt, Sheet,' with eighteen; 'Bread, Toast,' with twenty-one.

10.8 Doublets. A Word-Puzzle

Source: Doublets. A Word-Puzzle. First edition from 1879

Later editions contain more doublets, and also differ a bit in layout, especially the number of necessary links is added to the doublets.

Most of the content is reprinted with minor differences from *Vanity Fair*. The following list gives the dates of publication there, as well as the major differences:

Preface: March 29, 1879, starting from the headline “A New Puzzle”, with a few additions.

Rules: April 19, 1879; July 26, 1879 (titled “Doublet Rules” from then on); August 2, 1879; November 1, 1879; February 7, 1880. In the April version the fourth rule is: . . . found in some known Dictionary, and is also a word which might be used, and would be universally understood, in good Society.

The following are inadmissible:—

- a. Words marked “local” in the Dictionary, and Scotticisms such as “auld” and “ain.”
- b. French, Latin, and other foreign words, with the exception of those which (like “ennui,” “minimum,” “kudos,” “loot”) have been so thoroughly naturalised as to be virtually English words.
- c. Proper names.
- d. Abbreviations such as “stept” for “stepped,” “e’en” for “even,” “e’er” for “ever.”
- e. A combination of two words which is usually printed without a hyphen (such as “teapot”) is admissible as a Link; but not if (like “tea-set”) it is usually printed as two words. The diphthong *æ*, *æ*, and *qu* are counted as single letters.

Method of Scoring: April 19, 1879 (only rules 1 and 2, as rules 5 and 6 in the “Rules” section); July 26, 1879 (titled “Rules for Scoring” from then on, only rules 1 to 3); August 2, 1879; November 1, 1879; February 7, 1880.

In the version of Apr. 19, 1879, the rules are followed by:

Difficulties will, no doubt, sometimes arise in the application of Rule 4, whenever a word is used as a Link which lies close on the border-line dividing the Admissible from the Inadmissible. All such “Hard Cases” will be settled by the exercise of a dictatorial authority on the part of CHOKER, *from whose decision there is no appeal*. Any competitor who feels doubtful as to the admissibility of any word which he has uses as a Link is recommended to send in a second Chain, not containing the doubtful word; and if more than one of the Chains thus sent in are found to be admissible, CHOKER will give him credit for the shortest of them.

The version of Nov. 1, 1879 has additionally the following rule:

4. The forthcoming competition for prizes begins with the Doublets set in the present number, and will end with those set in the number of 31st January, 1880. Three prizes will be given, a proof album to the highest score and an ordinary album to each of the next two highest.

A similar rule also appears on Feb. 7, 1880.

Doublets Already Set: May 3, 1879, with the doublets up to and including that date.

Preface to Glossary: May 17, 1879, the quoted passage only.

The solutions were also published in *Vanity Fair*, but the early ones differ in some cases due to the different rules.

*“Double, double,
Toil and trouble.”*

**Quoted from *Macbeth*
by William
Shakespeare**

Preface

On the 29th of March, 1879, the following article appeared in "VANITY FAIR:"—

A New Puzzle

The readers of *Vanity Fair* have during the last ten years shown so much interest in the Acrostics and Hard Cases which were first made the object of sustained competition for prizes in this journal, that it has been sought to invent for them an entirely new kind of Puzzle, such as would interest them equally with those that have already been so successful. The subjoined letter from Mr. Lewis Carroll will explain itself, and will introduce a Puzzle so entirely novel and withal so interesting, that the transmutation of the original into the final word of the Doublets may be expected to become an occupation to the full as amusing as the guessing of the Double Acrostics has already proved.

In order to enable readers to become acquainted with the new Puzzle, preliminary Doublets will be given during the next three weeks—that is to say, in the present number of *Vanity Fair* and in those of the 5th and 12th April. A competition will then be opened—beginning with the Doublets published on the 19th April, and including all those published subsequently up to and including the number of the 26th July—for three prizes, consisting respectively of a Proof Album for the first and of Ordinary Albums for the second and third prizes.

The rule of scoring will be as follows:—A number of marks will be apportioned to each Doublet equal to the number of letters in the two words given. For example, in the instance given below of "Head" and "Tail," the number of possible marks to be gained would be eight; and this maximum will be gained by each one of those who make the chain with the least possible number of changes. If it be assumed that in this instance the chain cannot be completed with less than the four links given, then those who complete it with four links only will receive eight marks, while a mark will be deducted for every extra link used beyond four. Any competitor, therefore, using five links would score seven marks, any competitor using eight links would score four, and any using twelve links or more would score nothing. The marks gained by each competitor will be published each week.

Dear Vanity,—Just a year ago last Christmas, two young ladies—smarting under that sorest scourge of feminine hupianity, the having "nothing to do"—besought me to send them "some riddles." But riddles I had none at hand, and therefore set myself to devise some other form of verbal torture which should serve the same purpose. The result of my meditations was a new kind of Puzzle—new at least to me—which, now that it has been fairly tested by a year's experience and commended by many friends, I offer to you, as a newly-gathered nut, to be cracked by the omnivorous teeth which have already masticated so many of your Double Acrostics.

The rules of the Puzzle are simple enough. Two words are proposed, of the same length; and the Puzzle consists in linking these together by interposing other words, each of which shall differ from the next word *in one letter only*. That is to say, one letter may be changed in one of the given words, then one letter in the word so obtained, and so on, till we arrive at the other given word. The letters must not be interchanged among themselves, but each must keep to its own place. As an example, the word "head" may be changed into

“tail” by interposing the words “heal, teal, tell, tall.” I call the two given words “a Doublet,” the interposed words “Links,” and the entire series “a Chain,” of which I here append an example:—

H	E	A	D
h	e	a	l
t	e	a	l
t	e	l	l
t	a	l	l
T	A	I	L

It is, perhaps, needless to state that it is *de rigueur* that the links should be English words, such as might be used in good society.

The easiest “Doublets” are those in which the consonants in one word answer to consonants in the other, and the vowels to vowels; “head” and “tail” constitute a Doublet of this kind. Where this is not the case, as in “head” and “hare,” the first thing to be done is to transform one member of the Doublet into a word whose consonants and vowels shall answer to those in the other member (*e. g.*, “head, herd, here”), after which there is seldom much difficulty in completing the “Chain.”

I am told that there is an American game involving a similar principle. I have never seen it, and can only say of its inventors, “*pereant qui ante nos nostra dixerunt!*”

Quoted from Aelius Donatus according to St. Jerome

Lewis Carroll

Rules

1. The words given to be linked together constitute a “Doublet;” the interposed words are the “Links;” and the entire series a “Chain.” The object is to complete the Chain with the least possible number of Links.

2. Each word in the Chain must be formed from the preceding word by changing one letter in it, and one only. The substituted letter must occupy the same place, in the word so formed, which the discarded letter occupied in the preceding word, and all the other letters must retain their places.

3. When three or more words are given to be made into a Chain, the first and last constitute the “Doublet.” The others are called “Set Links,” and must be introduced into the Chain in the order in which they are given. A Chain of this kind must not contain any word twice over.

4. No word is admissible as a Link unless it (or, if it be an inflection, a word from which it comes) is to be found in the following Glossary. Comparatives and superlatives of adjectives and adverbs, when regularly formed, are regarded as inflections of the positive form, and are not given separately: *e. g.* the word ‘new’ being given, it is to be understood that ‘newer’ and ‘newest’ are also admissible. But nouns formed from verbs (as ‘reader’ from ‘read’) are *not* so regarded, and may not be used as Links unless they are to be found in the Glossary.

Method of Scoring, &c. Adopted in “Vanity Fair”

1. The marks assigned to each Doublet are as follows:—If it be given without any Set Links, so many marks are assigned to it as there are letters in the two

words together (*e. g.*, a four-letter Doublet would have eight marks assigned to it). If it be given with Set Links, so that the Chain is made up of two or more portions, so many marks are assigned to it as would have been assigned if each portion had been a separate Chain (*e. g.*, a four-letter Doublet which has two Set Links, so that the Chain is made up of three portions, would have twenty-four marks assigned to it).

2. Each competitor, who completes the Chain with the least possible number of Links, will receive the full number of marks assigned; and each who uses more than the least possible number of Links will lose a mark for every additional Link.

3. Each competitor is required to send his three Chains, with his signature attached, written on one piece of paper.

4. The Editor of 'Vanity Fair' will be glad to receive any suggestions, both as to words which it seems desirable to omit, and as to omitted words which it seems desirable to insert: but any word proposed for insertion or for omission *should be exhibited as a Link between two other words.*

5. Alterations will not be made in this Glossary during any competition, but will be duly announced before the commencement of a new competition, so that those who already possess copies will be able to correct them, and will not be obliged to buy a new edition.

*"Vanity Fair" Office,
18, Tavistock Street,
Covent Garden,
London.*

Doublets Already Set in "Vanity Fair"

March 29.— Drive PIG into STY.
Raise FOUR to FIVE.
Make WHEAT into BREAD.

April 5.— Dip PEN into INK.
Touch CHIN with NOSE.
Change TEARS into SMILE.

April 12.— Change WET to DRY.
Make HARE into SOUP.
PITCH TENTS.

April 19.— Cover EYE with LID.
Prove PITY to be GOOD.
STEAL COINS.

April 26.— Make EEL into PIE.
Turn POOR into RICH.
Prove RAVEN to be MISER.

May 3.— Change OAT to RYE.
Get WOOD from TREE.
Prove GRASS to be GREEN.

- May 10.*— Evolve MAN from APE.
Change CAIN into ABEL.
Make FLOUR into BREAD.
- May 17.*— Make TEA HOT.
Run COMB into HAIR.
Prove a ROGUE to be a BEAST.
- May 24.*— Change ELM into OAK.
Combine ARMY and NAVY.
Place BEANS on SHELF.
- May 31.*— HOOK FISH.
QUELL a BRAVO.
Stow FURIES in BARREL.
- June 7.*— BUY an ASS.
Get COAL from MINE.
Pay COSTS in PENCE.
- June 14.*— Raise ONE to TWO.
Change BLUE to PINK.
Change BLACK to WHITE.
- June 21.*— Change FISH to BIRD.
Sell SHOES for CRUST.
Make KETTLE HOLDER.

N.B. Solutions of these Doublets will be found at p. 1568.

Preface to Glossary

The following Glossary is intended to contain all well-known English words (or, if they are inflections, words from which they come) of 3, 4, 5, or 6 letters each, which may be used in good Society, and which can serve as Links. It is not intended to be used as a source from which words may be obtained, but only as a test of their being admissible.

That such a Glossary is needed may best be proved by quoting the following passage from ‘Vanity Fair’ of May 17, 1879, premising that all the strange words, here used, had actually occurred in Chains sent in by competitors:—

“CHOKER humbly presents his compliments to the four thousand three hundred and seventeen (or thereabouts) indignant Doubleteers who have so strongly shent him, and pre to being stoaked in the spate of their wrath, asks for a fiver of minutes for reflection. CHOKER is in a state of complete pye. He feels that there must be a stent to the admission of spick words. He is quite unable to sweal the chaffy spelt, to sile the pory cole, or to swill a spate from a piny ait to the song of the spink. Frils and the mystic Gole are strangers in his sheal: the chanceful Gord hath never brought him gold, nor ever did a cate become his ain. The Doubleteers will no doubt spank him sore, with slick quotations and

wild words of yore, will pour upon his head whole stores of steens and poods of spiles points downwards. But he trusts that those alone who habitually use such words as these in Good Society, and whose discourse is uniyersally there understood, will be the first to cast a stean at him.”

As the chief object aimed at has been to furnish a puzzle which shall be an amusing mental occupation at *all* times, whether a dictionary is at hand or not, it has been sought to include in this Glossary only such words as most educated people carry in their memories. If any doubt should arise as to whether any word that suggests itself is an admissible one, it may be settled by referring to the Glossary.

When there are two words spelt alike, one a noun and one a verb, or any other such combination, it has not been thought necessary to include *both*, so long as all the inflections can be obtained from *one*: e. g. ‘aim’ is given only as a verb, since ‘aims,’ the plural of the noun, is also the third person of the verb; but ‘hale, *v.a.*,’ and ‘hale, *a.*,’ are both given, the one being needed to supply ‘hales’ and ‘haled,’ and the other to supply ‘haler.’

Two abbreviations, ‘e’en’ and ‘e’er,’ have been included.

As to the many words which, though used and understood in good Society, are yet not available as Links, owing to there being no other words into which they can be changed, it has been regarded as a matter of indifference whether they are included or not.

Abbreviations Used in Glossary

- a.* adjective.
- ad.* adverb.
- c.* conjunction.
- int.* interjection.
- n.s.* noun (only used in singular).
- n.pl.* noun (only used in plural).
- n.* noun (used in both).
- pre.* preposition.
- pro.* pronoun.
- v.a.* verb (active only).
- v.n.* verb (neuter only).
- v.* verb (both active and neuter).

Glossary

“*Words, words, words.*”

Quoted from *Hamlet*
by William
Shakespeare

A

aback, *ad.*
abaft, *prep.*
abase, *v.a.*
...¹

¹Remark: rest of glossary ommited here

Z

zany, *n.*
zeal, *n.*
zero, *n.*
zest, *n.s.*
zone, *n.*
zoned, *a.*

Solutions of Doublets. (See p. 1565.)

P I G
p i t
s i t
s a t
s a y
S T Y

P E N
e' e n
e e l
e l l
i l l
i l k
I N K

W E T
b e t
b e y
d e y
D R Y

E Y E
d y e
d i e
d i d
L I D

E E L
e' e n
p e n
p i n
P I E

A P E
a r e
e r e
e r r
e a r
m a r
M A N

O A T
r a t
r o t
r o e
R Y E

T E A
s e a
s e t
s o t
H O T

E L M
e l l
a l l
a i l
a i r
f i r
f a r
o a r
O A K

B U Y
b u d
b i d
a i d
a i m
a r m
a r k
a s k
A S S

O N E
o r e
e r e
e r r
e a r
t a r
t a p
t o p
t o o
T W O

F O U R
f o u l
f o o l
f o o t
f o r t
f o r e
f i r e
F I V E

N O S E
n o t e
c o t e
c o r e
c o r n
c o i n
C H I N

H A R E
h a r k
h a c k
s a c k
s o c k
s o a k
s o a p
S O U P

P I T Y
p i t s
p i n s
f i n s
f i n d
f o n d
f o o d
G O O D

C A I N
c h i n
s h i n
s p i n
s p u n
s p u d
s p e d
a p e d
a b e d
A B E L

P O O R
b o o r
b o o k
r o o k
r o c k
r i c k
R I C H

T R E E
f r e e
f l e e
f l e e d
f e e d
w e e d
w e l d
w o l d
W O O D

C O M B
c o m e
h o m e
h o l e
h a l l e
h a l l l
h a i l
H A I R

A R M Y
a r m s
a i m s
d i m s
d a m s
d a m e
n a m e
n a v e
N A V Y

H O O K
h o c k
r o c k
r i c k
r i s k
d i s k
d i s h
F I S H

M I N E
m i n t
m i s t
m o s t
m o a t
c o a t
C O A L

B L U E
f l u e
f l o e
f l o g
f l a g
f l a t
f e a t
p e a t
p e n t
p i n t
P I N K

F I S H
w i s h
w i s e
w i r e
w a r e
w a r d
b a r d
B I R D

W H E A T
c h e a t
c h e a p
c h e e p
c r e e p
c r e e d
b r e e d
B R E A D

T E A R S
s e a r s
s t a r s
s t a r e
s t a l e
s t i l e
S M I L E

P I T C H
p i n c h
w i n c h
w e n c h
t e n c h
t e n t h
T E N T S

S T E A L
s t e e l
s t e e r
s h e e r
s h i e r
s h i e s
s h i n s
c h i n s
C O I N S

R A V E N
r i v e n
r i v e r
r i s e r
M I S E R

G R A S S
c r a s s
c r e s s
t r e s s
t r e e s
f r e e s
f r e e d
g r e e d
G R E E N

F L O U R
f l o o r
f l o o d
b l o o d
b r o o d
b r o a d
B R E A D

R O G U E
v o g u e
v a g u e
v a l u e
v a l v e
h a l v e
h e l v e
h e a v e
l e a v e
l e a s e
l e a s t
B E A S T

B E A N S
b e a m s
s e a m s
s h a m e
s h a l l
s h e l l
S H E L F

Q U E L L
q u i l l
q u i l t
g u i l t
g u i l e
g u i d e
g l i d e
g l a d e
g r a d e
g r a v e
b r a v e
B R A V O

C O S T S
p o s t s
p e s t s
t e s t s
t e n t s
t e n t h
t e n c h
t e a c h
p e a c h
p e a c e
P E N C E

B L A C K
c l a c k
c r a c k
t r a c k
t r i c k
t r i c e
t r i t e
w r i t e
W H I T E

S H O E S
s l o e s
f l o e s
f l o s s
g l o s s
g l a s s
c l a s s
c r a s s
c r e s s
c r e s t
C R U S T

F U R I E S
b u r i e s
b u r i e d
b u r k e d
b a r k e d
b a r r e d
B A R R E L

K E T T L E
s e t t l e
s e t t e e
s e t t e r
b e t t e r
b e t t e d
b e l t e d
b e l t e r
b o l t e r
b o l d e r
H O L D E R

10.9 Doublets (1879–1881)

Source: *Vanity Fair*, March 29, 1879–April 9, 1881 (weekly, 107 issues, mostly managed by Choker)

Only the doublets are reproduced here, not other content. For the Doublets set from March 29 to June 21, 1879, as well as some other content, see the previous section.

No new Doublets were set on April 2 and April 9, 1881.

See also <https://lewiscarrollresources.net/doublets/puzzles.html>, especially for the solutions.

Jun. 28, 1879

REST on SOFA.
Trace RIVER to SHORE.
CARESS PARENT.

Jul. 5, 1879

Develop GRUB into MOTH.
Turn WITCH into FAIRY.
Make WINTER SUMMER.

Jul. 12, 1879

Reconcile LION and LAMB.
Crown TIGER with ROSES.
Put SHEET under QUILT.

Jul. 19, 1879

Put LOAF into OVEN.
Make BREAD into TOAST.
Put ROUGE on CHEEK.

Jul. 26, 1879

WHY is it wisest NOT to marry?
MANY WILL FAIL to get
PRIZES from CHOKER.

[N.B.—The chain made on the first Doublet should embody the following observation: that lovers, during the temporary insanity of courtship, too often fail to recognise the grave prudential reasons which should deter them from taking this fatal step.]

Aug. 2, 1879 (First Set of the Second Competition.)

Get GAS from OIL.
Turn JOHN into JACK.
SHAVE BEARD.

Aug. 9, 1879

Lead KID to EWE.
Let GNAT BITE.
Turn BROWN into BLACK.

Aug. 16, 1879

Find GEM in ORE.

Mend DOOR with GLUE.
Make SORRY HAPPY.

Aug. 23, 1879

Set ONE a JOB.
Trace SEED to HEMP, ROPE, and KNOT.

Aug. 30, 1879

Dip IVY in SEA.
Go from WORK to PLAY.
Send MILLER to MARKET.

Sep. 6, 1879

Write ODE to SUN.
Make MALT and HOPS into BEER.
Get TOOTH DRAWN.

Sep. 13, 1879

Pour OIL into SEA.
Change FEAR into HOPE.
Change LAMBS into SHEEP.

Sep. 20, 1879

Read THE ERA.
Turn IDEA into FACT.
Make ETHEL WISER.

Sep. 27, 1879

Feed OWL on JAM.
Change MUCH to MORE and MOST.
Pay DEBTS that are OWING.

Oct. 4, 1879

Change SHE to YOU.
BEND KNEE.
Send HOYDEN for GLOVES.

Oct. 11, 1879

SEE an ELK.
WEEP under ELMS.
Cheer BEAVER with BRANDY.

Oct. 18, 1879

FLY from ILL.
Draw TEARS from GLAND.
Change SMALL to GREAT.

Oct. 25, 1879

Take TEN with ACE.
SCORE for PRIZE.
Get TRUNKS PACKED.

Nov. 1, 1879 (First Set of the Third Competition.)

Send JOE to ANN.

Feed CHUB with FROG.
Change TILES into SLATE.

Nov. 8, 1879

AIM GUN at FOE.
Connect THUR-SDAY.
Pluck ACORN from STALK.

Nov. 15, 1879

HOAX a FOOL into harnessing a
PONY to a TRAP to drive from
DOVER to PARIS.

Nov. 22, 1879

Feed WOLF with TART.
Unite JACK and JILL.
Bring COFFEE after DINNER.

Nov. 29, 1879

Stow OARS in BOAT.
Turn LOSS to GAIN.
THANK ALICE.

Dec. 6, 1879

Change VEAL to BEEF.
Convert WHIG to TORY.
Take CANDLE to SICILY.

Dec. 13, 1879

Change NOUN to VERB.
Bring SHIP to DOCK.
PLANT BEANS.

Dec. 20, 1879

Punish DUP-LIC-ITY.
Send MONK to ROME.
Change MOSES to AARON.

Dec. 27, 1879

WASH WELL
WIDTH SOAP.
UNITE HANDS.

Jan. 3, 1880

Reward INT-EGR-ITY.
Raise UNIT to FOUR.
Show COMET to GAZER.

Jan. 10, 1880

Go from YORK to BATH.
Prove LIES to be TRUE.
WAITER! DINNER!

Jan. 17, 1880

Give ADA a FAN.
Frame PICT-URES.
Turn out HORSE to GRASS.

Jan. 24, 1880

Prove AYE to be YES.
Transmute COPPER to SILVER.
Lay GRAVEL in GARDEN.

Jan. 31, 1880

OPEN GATE.
Find THORN in ROSES.
Win SMILES from CHOKER.

Feb. 7, 1880 (First Set of the Fourth Competition.)

FLY in AIR.
Bring EASE after PAIN.
Turn PAPER into MONEY.

Feb. 14, 1880

CRY OUT.
Make TOWN into CITY.
Send BOWLER to WICKET.

Feb. 21, 1880

Fill CUP with ALE.
CURL HAIR.
Get BACON CURED.

Feb. 28, 1880

LIE NOT.
Connect FEBR-UARY.
Drive NAILS into BOARD.

Mar. 6, 1880

TIE up ARM.
Unite DRUM and FIFE.
STUDY till FAINT.

Mar. 13, 1880

Turn MIST to RAIN, HAIL, and SNOW.
Cure WASP'S STING.

Mar. 20, 1880

Put END to WOE.
HUNT STAG.
BUTTER LOAVES.

Mar. 27, 1880

Get ICE from PIT.
Put CRAB into BOAT.
Get MASTERS over SLAVES.

Apr. 3, 1880

Change OLD to NEW.
Make CORN to GROW.
WEAVE CLOTH.

Apr. 10, 1880

Set up COS-TER-MON-GER.
Mend FRAC-TURE.
Change WEEK into DAYS.

Apr. 17, 1880

Go from SPAIN to CHINA.
SHOOT DUCKS.
Fill BEAKER with SHERRY.

Apr. 24, 1880

GOOD LUCK to the FAIR
of VAN-ITY and
DOUB-LETS by
CHO-KER.

May 1, 1880 (First Set of the Fifth Competition.)

ART-HUR THE FAM-OUS.
DUKE BORN.

May 8, 1880

SHUT DOOR.
BEAT BOYS.
TEACH GIRLS.

May 15, 1880

Raise HUE and CRY.
Mend PITC-HERS.
GRIND DRUGS.

May 22, 1880

PAY what you OWE.
Mend GARM-ENTS.
Make a DUCK SWIM.

May 29, 1880

SPY OAK.
CROM-WELL!
SEEK YOUR KING!

Jun. 5, 1880

Visit AFR-ICA.
Let WIND BLOW.
SEND JACK to MILL.

Jun. 12, 1880

SEAL NOTE.
Fit KEYS to LOCK.
DIVIDE STRING.

Jun. 19, 1880

Carve MAR-BEL.
PLAY GAME.
Make DRUNK SOBER.

Jun. 26, 1880

Take OWL from BOY.
Change JUNE to JULY.
Go from NORTH to SOUTH.

Jul. 3, 1880

Tame EAG-LES.
CURE YOUR-SELF.
Prove that a BIPED WALKS.

Jul. 10, 1880

Mend TAS-SEL.
Connect FOUR-TEEN.
Turn SWINE into BACON.

Jul. 17, 1880

Decipher LEG-END.
FLOG LIAR.
Put SPIRE on TOWER.

Jul. 24, 1880

Avoid OLD TOM.
Plant ALOE on BANK.
DREAM of STARS.

Jul. 31, 1880

Trace the history of the Baby's day:—BABY, WAKE, RISE, BATH,
HOWL, COAK, FEED, GOOD, FINE, WALK, RAIN, HOME.

Aug. 7, 1880 (First Set of the Sixth Competition.)

Build CAS-TLE.
SEEK and FIND
a SOLU-TION.

Aug. 14, 1880

Turn CALF to VEAL.
Baffle ARTS of ROUE.
ENTER HAVEN.

Aug. 21, 1880

MIX TEA.
Bring LAMP from JEWS.
PULL PLUM.

Aug. 28, 1880

WHO ARE YOU?
WRITE POEMS.

Sep. 4, 1880

Visit FRA-NCE.
WHAT do you WANT?
WHOM do you SEEK?

Sep. 11, 1880

Mark UNIT on BELL.
Make LOVER HAPPY.

Sep. 18, 1880

Mend VES-SEL.
SPIN COIN.
RULE THUS.

Sep. 25, 1880

Roast TUR-KEY.
WARM TOES.
SMOKE PIPES.

Oct. 2, 1880

MELT ICES.
Seek RILL in GLEN.
Buy SYROPS in THRACE.

Oct. 9, 1880

TAME APES.
Mix SODA with TOLU.
CARRY BOOTY.

Oct. 16, 1880

Paint VIEW in OILS.
SPELL WORDS.

Oct. 23, 1880

COPY ITEM.
Fill BRUSH with PAINT.

Oct. 30, 1880

STEW EELS.
WHET FURY.
Drop CINDER into FLAMES.

Nov. 6, 1880 (First Set of the Seventh Competition.)

Make GOLD LACE.
CAST LOTS.
STAND STILL.

Nov. 13, 1880

Fill KEG with ALE.
KISS BABY.
SELL OXEN.

Nov. 20, 1880

Kill BOA with AXE.
Take TRIP by RAIL.

Take PULL at GROG.

Nov. 27, 1880

TRY to ACT.
SNAP at BAIT.
WHOSE MINES?

Dec. 4, 1880

FRY EEL FOR INN.
CROSS RIVER.

Dec. 11, 1880

WAS it long AGO?
BURY GOLD.
SPILL GRAVY.

Dec. 18, 1880

ASK your WAY.
Plant ELMS on HILL.
Cure CRABS of SLOTH.

Dec. 25, 1880

Wave IVY to and FRO.
CHECK NOISE.
Send GREEKS to CRIMEA.

Jan. 1, 1881 (First Set of the Eighth Competition.)

WHY make such ADO?
Set WREN on NEST.
COURT WORLD.

Jan. 8, 1881

PUT up at INN.
WASH FACE.
BREAK CHINA.

Jan. 15, 1881

FRY APE.
WEAR GEMS.
SHUT EYES.

Jan. 22, 1881

Light GAS at EVE.
TELL colour of LIPS.
BRING PEACE.

Jan. 29, 1881

Give OAT to ASS.
DUST ROOM.
CLASP CLOAK.

Feb. 5, 1881

Spend DAY on ICE.
Change BEER for WINE.

OPEN CELL.

Feb. 12, 1881

Find ASP in HAY.
HELP the AGED.
Make HONEY BROTH.

Feb. 19, 1881

WHY do you ERR?
Get BULL from ROME.
Plant BULB on ISLE.

Feb. 26, 1881

Make CAP in ICE.
Set RUBY in CORN.
Get RUSKS BAKED.

Mar. 5, 1881

Turn AWE to JOY.
Feed BULL on FIGS.
YELL at IBIS.

Mar. 12, 1881

CRY "AYE!"
KEEP OATH.
Heal DISC-ORDS.

Mar. 19, 1881

Run AWL into WAX.
WHIP CURS.
ROAST DUCKS.

Mar. 26, 1881

Keep ANT in BOX.
Find APEX of CONE.
Mix CURDS and CREAM.

10.10 New Method of Scoring

Source: *Vanity Fair*, April 17, 1880 and April 24, 1880

Dear Vanity,—The commencement of the second year of the Doublets competition seems to afford a good opportunity for introducing a change into the system of marking. I have considered the subject very carefully, and have come to the conclusion that the present system does not accurately measure the skill employed, and that I can suggest one which will do more justice to the rival merits of your little army of Doubleteers.

I propose, then, to substitute for Rules 1, 2, in the chapter headed “Method of Scoring,” the following:—

1. The shortest Chain which can be made on a given Doublet will have so many marks assigned to it as there are letters in the Links employed, “Set Links” counting as ordinary Links.
2. Each competitor who completes his Chain with the least possible number of Links will receive the marks assigned by Rule 1; and each who uses more than the least possible number will forfeit, for every extra Link, as many marks as there are letters in it.

To illustrate the New Rules, let us take the Doublet (the first one ever published) “Drive PIG into STY.” The shortest known Chain for this (“PIG, wig, wag, way, say, STY”) contains 4 Links. Here a competitor using only 4 Links would score 12 marks; one using 5 Links, 9 marks; 6 Links, 6 marks; 7 Links, 3 marks; and any competitor using 8 or more Links would score nothing.

The points of agreement and of difference between the two systems will be best illustrated by examples.

Take a 3-Letter Doublet and a 4-Letter Doublet, and suppose that the shortest Chains made on them contain 5 Links each. By the present system one would score 6, the other 8; by the new, one would score 15, the other 20. Here, so far as the proportion is concerned, the two systems agree.

Again, take two 3-letter Doublets, and suppose that the shortest Chains made on them contain, respectively, 4 Links and 8 Links. By the present system each would score 6; by the new, one would score 12, the other 24. This is surely more just, since the second would require about twice as much mental labour as the first.

Again, take a 3-letter Doublet and a 6-letter Doublet, and suppose there are two competitors, one of whom beats the other, on each Doublet, by one Link. By the present system he would gain one mark in each case; by the new, he would gain 3 marks in the first, and 6 in the second. And surely this also is more just, since it would require about twice as much mental labour to save a 6-letter Link as to save a 3-letter one.

I feel confident that your adoption of the new system will prove satisfactory to your readers, and that the future drivers of (mental) Pigs into (mental) Sties will find their skill more exactly measured, and therefore more justly rewarded.

Lewis Carroll

10.11 Lanrick (Jan. 1879)

Source: printed 1879, title and motto added by hand, as well as one correction as noted

A Game for Two Players

"The muster-place be Lanrick mead."

Quoted from *The Lady of the Lake* by Sir Walter Scott

The Game is played on a chess-board, each Player having 5 men; the other requisites are a die and dice-box, and something (such as a coin) to mark a square.

The interior of the board, excluding the border-squares, is regarded as containing 6 'rows' and 6 'columns.' It must be agreed which is the first row and first column.

1.—The Players set the men in turn, on any border-squares they like.¹

2.—The die is thrown twice, and a square marked accordingly, the first throw fixing the row, the second the column; the marked square, with the 8 surrounding squares, forms the first 'rendezvous,' into which the men are to be played.

3.—The men move like chess-queens; in playing for the first 'rendezvous,' each Player may move over 6 squares, either with one man, or dividing the move among several.

4.—When one Player has got all his men into the 'rendezvous' the other must remove from the board one of his men that has failed to get in; the die is then thrown for a new 'rendezvous,' for which each Player may move over as many squares as he had men in the last 'rendezvous,' and one more.

5.—If it be found that either Player has all his men already in the new 'rendezvous,' the die must be thrown again, till a 'rendezvous' is found where this is not the case.

6.—The Game ends when one Player has lost all his men.

Jan. 16, 1879

¹The men are set, alternately, on any border-squares.

10.12 Lanrick (Feb./Mar. 1879)

Source: printed 1879 (version from February with minor differences as noted and some errors silently corrected)

A Game for Two Players

"The muster-place be Lanrick mead."

Quoted from *The Lady of the Lake* by Sir Walter Scott

The game is played on a chess-board, each Player having five men. The other requisites are a die and dice-box (or a teetotum with four sides), and something (such as a coin) to mark a square.

The board is regarded as containing eight 'rows' and eight 'columns.' It must be agreed which is the first row and which is the first column.

1.—Each Player throws the die, and the one who throws highest is 'first Player.'

2.—The 'first Player' sets his men on any border-squares he likes¹: then the 'second Player' does the same.

3.—The die is thrown twice, all throws less than 'three' being neglected, and a square is marked accordingly, the first throw fixing the row, the second the column. The marked square forms, with the surrounding eight squares, the first 'rendezvous,' into which the men are to be played. [N.B.—Instead of neglecting all throws less than 'three,' the following rule may be adopted: If the throw be less than three, throw again; if it be then three or more, neglect the first throw; but if it be again less than three, double the first throw and add the second.]²

4.—Each Player may move as many squares as there are men belonging to the one who has fewest, or any lesser number, either with one man, or dividing the move among several. Each man that is moved must be kept to one line, viz: either a line parallel to an edge of the board, like a rook, or a diagonal line, like a bishop.

5.—When one Player has got all his men into the 'rendezvous,' he removes from the board one of the men that have not got in, and sets the others (called 'wanderers') in the 'rendezvous.'

6.—The men in the 'rendezvous' then 'radiate,' i. e., are moved to border-squares along the eight lines which radiate from the centre of the 'rendezvous.' For all but the centre man there is no choice of direction: each must be moved along the line on which he stands: but the owner of the centre man may move it along any vacant line: if all eight be occupied, he may set it on any vacant border-square.³

7.—If there were any 'wanderers,' the winner of the last 'rendezvous' may⁴ then move his men to other border-squares, moving twice as many squares as

¹border squares

²[N.B.—The centre of the 'rendezvous' is limited to the central sixteen squares, i. e., the squares belonging to rows 3 to 6 and columns 3 to 6. Hence, if a teetotum with four sides be used, '1' must be taken to mean 'row 3,' '2' to mean 'row 4,' and so on.]

³The men in the 'rendezvous,' all but the centre man, then 'radiate,' i. e., are moved straight away from the centre to border-squares: then the owner of the centre man moves it to a border-square; if none of the eight border squares, to which it can be lawfully moved, be vacant, he sets it on any vacant one. [N.B. The four men at the four corners of the 'rendezvous' will of course move on diagonal lines, like bishops, the others will move like rooks: the centre man can move on any one of these eight lines that happen to be vacant.]

⁴the winner may

there were 'wanderers,' and not being obliged (as in Rule 4) to keep each man to one line.

8.—A new 'rendezvous' is then marked, as in Rule 3, for which the winner of last ⁵is 'first Player.'

9.—When one Player has only two men left, the other scores as many marks as he has ⁶men: the ten men are then set again, as in rule 2, the one, who was 'second Player' when last they were set, being now 'first Player,' and the game proceeds as before.

10.—The Player, who first scores ⁷five, wins the game.

March 1⁸, 1879

⁵is the 'first Player.'

⁶above tow

⁷three

⁸Feb. 20

10.13 Lanrick (Oct. 1880)

Source: cyclostyled 1880

A Game for Two Players

“The muster-place be Lanrick mead.”

Quoted from *The Lady of the Lake* by Sir Walter Scott

The game is played on a chess-board, each Player having five men.

1. One Player sets all the men on any border-squares he likes.
2. The other then selects a square (not a border-square) and lays on it something (such as a coin) to mark it. This, with the eight surrounding squares, forms the first ‘rendenzvous’, into which the men are to be played; the one, who did not select the ‘rendenzvous’, having the first move.
3. Each may move as many squares (or any lesser number) as he has men on the board, either with one man, or dividing the move among several. He must move each man like a rook, or else like a bishop.
4. When a player has all his men in the ‘rendenzvous’, he removes from the board one of the ‘wanderers’ (i. e. the men who have not got in), and plays the others to border-squares.
5. The other then selects a new ‘rendenzvous’ (which must be clear of the old one, and also, if possible, empty), and the game proceeds, as in Rule 2, until one of the Players has lost all his men.

Oct. 25. 1880.

10.14 Lanrick (Dec. 1880)

Source: The Monthly Packet, December 1880 (after “A Tangled Tale”); also printed 1880 (without the introduction and later remarks)

The Editor kindly allows me a little additional space, this month, in order to ask a favour of the diligent band of Knot-untiers, and of any others of her readers who take an interest in such trifles as Puzzles and Games.

I have been about two years inventing (or trying to invent) a new game, constantly altering the rules as experience suggested, until it has scarcely one of its original features left. It seems now to work fairly well, but my ambition is to make it a thoroughly good game, and I shall be deeply obliged to any reader of the *Monthly Packet* who will try it, and will send suggestions of improvement to be introduced into the game or the wording of the rules. The original idea of it was taken from the child’s game of ‘Musical Chairs.’

I append the Rules of

Lanrick

A Game for Two Players

‘The muster-place be Lanrick mead.’

Quoted from *The Lady of the Lake* by Sir Walter Scott

1. The game is played on a chess-board, each Player having five men.
2. To begin the game, one Player sets all the men on border-squares.
3. The other then selects a square set of nine squares, called a ‘rendenzvous,’ which must not include any of his own men, and lays a mark on its centre square.
4. Both then try to get their men into this rendenzvous. Each may move as many squares as he has men, or any less number, either with one man or dividing the move among several men: each man may be moved in any direction, but must, during any one turn, keep to one line of squares, whether it be straight or slanting.
5. He who did not select the rendenzvous plays first. He may, instead of moving his own men, move the rendenzvous-mark one square, in any direction, thus changing the position of the whole rendenzvous, provided he does not move it to a border-square or so as to make the rendenzvous include any of his own men; and this he may do every turn so long as he has not moved any of his own men. When the mark is thus moved one square, any men who have got into the rendenzvous must also be moved one square, so as to take the same places in the new rendenzvous as they had in the one they are leaving. But whenever this would bring two men upon the same square, the mark must not be moved in that direction. This privilege, of moving the rendenzvous-mark, is not allowed to the Player who laid it down.
6. When a Player has all his men in the rendenzvous, he takes off the board one of those who are not in, called ‘wanderers,’ and moves to border-squares, in any direction, keeping each such man to one line of squares, all wanderers not already on border-squares. All other men, on both sides, keep their places, and are played from them for the next rendenzvous. The other Player then selects a new rendenzvous, as in Rule 3, and the game proceeds as before, until one Player has no men left.

Lewis Carroll

Notices to Correspondents. Acknowledgements

Source: The Monthly Packet, February 1881

Mr. Lewis Carroll acknowledges, with many thanks, several kind communications on the subject of 'Lanrick,' which will be of great service to him in revising the rules.

Remarks (March)

Source: The Monthly Packet, March 1881 (untitled, after "A Tangled Tale")

P.S.—I return my sincere thanks to the many correspondents who have kindly sent suggestions on the subject of 'Lanrick,' which will be of great service in revising the language of the Rules, though I do not at present see that any change is needed in their substance. I add a few notes in explanation of the difficulties that have been found in interpreting them.

Line 1. 'chess-board' or draughts-board.

L. 1. 'men' or counters.

L. 4. 'lays a mark on its centre square.' This mark is not supposed to *fill* the square; a man may be played upon it.

L. 7. 'each man.' *i. e.* each for himself, independently of the moves of the others.

L. 9. Men in the rendezvous are still free to move. Men may not be moved *over* other men.

L. 13. 'it' *i. e.* the mark.

L. 15. 'any' *i. e.* all.

L. 16. 'must also be moved one square.' This is *not* to be deducted from their next move.

L. 22. 'one of those who are not in' whether on the border or not.

L. 22. 'and moves.' The nominative is 'he,' the player who has won the rendezvous.

L. 25. 'The other Player' *i. e.* the one who did *not* win the rendezvous.

Two difficulties I will give in the words of the writers:—

'The Player who both places the men and has the first move may always win.'

'When the game comes near the end, it seems impossible to avoid its being won by the player who has the last turn to choose the rendezvous.'

How one would like to see a game between these two, one placing the men and having first move, the other choosing the last rendezvous!

One most startling suggestion has reached me. N. E. T. proposes to diversify the game 'by changing the 5 men into the King, Queen, Bishop, Knight, and Castle of Chess, each with his own moves, and by allowing only one man to move at once. By this means,' he (or she) adds, 'each man becomes a distinct individual.' The effect on *me* would be, I believe, a sensation of having become *two* 'distinct individuals,' if not more; but I speak diffidently, not having had the courage to try this bewildering medley of games. Nightmare would be nothing to it.

L. C.

Remarks (June)

Source: The Monthly Packet, June 1881 (untitled, after "A Tangled Tale")

With regard to 'Lanrick,' E. V. W. asks:—

'May men, when in the rendenzvous, move out?' *Ans.* 'Yes.'

'Can a man be moved *twice* in one turn, so long as he keeps to the same line of squares, straight or slanting?' *Ans.* 'The only objection is the diffidently of remembering what line he is on. The safest rule, to avoid disputes, seems to be to touch each man *once only* in a turn.'

'Can a player fix a rendenzvous which includes one of his adversary's men?' *Ans.* 'Yes.'

CHARLES CLARKE sends a most interesting letter of suggestions about 'Lanrick,' for which I am much obliged. He asks:—

'Can the winner of a rendenzvous take off the board *any* wanderer, whether on a border-square or not?' *Ans.* 'Yes.'

'In moving to the border wanderers not on border-squares, can he take *any* direction?' *Ans.* 'Yes.'

C. C. also points out that he who sets the men may secure the *first* rendenzvous by massing the adversary's men to command the centre. He forgets apparently that the adversary's proper game, in this case, is to fix the rendenzvous in the most distant corner, and not attempt to play into it, but simply mass his men in the opposite corner, thus securing the *second* rendenzvous.

He also asks what must be done if neither side will move his last man into the rendenzvous. This, I think, ought to be a drawn game.

L. C.

10.15 Lanrick (1881)

Source: The Monthly Packet, August 1881 (with minor differences as noted); The Monthly Packet, November 1881; Third Edition, with signature “October, 1881” also printed separately

A Game for Two Players. Third¹ Edition

‘The muster-place be Lanrick-mead.’

Quoted from *The Lady of the Lake* by Sir Walter Scott

1. The game requires a chess-board, five white and five black men, and something, such as a coin, with which to mark a square. The twenty-eight border-squares form ‘the border’: the other thirty-six form ‘the field.’²

2. The men are moved like chess-queens, that is, along any line of squares, straight or slanting.

3. The mark may be set on any square in the field³. The marked square forms, with the surrounding eight, a ‘rendezvous,’ into which both Players try to get their men: it counts as a vacant square, so that a man may be moved into or over it.

4. When playing for a rendezvous, he who plays first may not move in that turn more than two squares: in any other turn a Player may not move more squares than he has men on the board. He may move all these squares⁴ with one man, or may divide them among two or more men. He may move a man more than once in one turn, provided it be along the same line of squares.

5. He who begins sets on the border one of his men: the other does the same, and so on alternately. The Player named first in this Rule then sets the mark, taking care that none of his men are in the rendezvous, and that he cannot, in one turn, move them all in. Both then play for this rendezvous, he who did not set the mark playing first.

6. As soon as either Player has ‘won’ the rendezvous, *i. e.* has all his men in it,⁵ he takes off the board some one of his adversary’s men⁶ who is not in, and moves to the border, in accordance with⁷ Rule 2, all others of his adversary’s men who are not in and not already on the border⁸.

7. Then, if the Players have unequal numbers of men in the field, he who has most makes⁹ the numbers equal by moving to the border one or more of his men.¹⁰

8. Then he who has fewest men on the board, or in case of equality he who lost the last rendezvous, moves to the border one of his men, unless all be already on it: the other does the same, and so on alternately. The Player named first in this Rule then sets the mark as in Rule 5, and the game proceeds

¹Second

²(missing in second edition)

³but a border-square

⁴them all

⁵all his men in the rendezvous

⁶some man

⁷as in

⁸other men who are not in and not already on it

⁹if either Player has more men off the border than the other has, he makes

¹⁰moving men to the border

as before till one Player has taken four of his adversary's men, which wins the game.¹¹

¹¹has lost four men.

I shall be very grateful to any of the Knot-untiers or any other readers of the *Monthly Packet*, who will try this new version of 'Lanrick' and make suggestions for its further improvement. I shall also be very glad to have records of sets of games between the same two players, where each begins half the entire set, with results, in the following form:—

100 games between *A* and *B*.

A began 50, of which *A* won 32;

B began 50, of which *A* won 27.

I beg to thank H. M. S. PINAFORE for her suggestion about 'Mischmasch,' which deserves, and shall have, careful consideration.

Lewis Carroll.

10.16 Lanrick. A Game for Two Players

Source: Syzygies and Lanrick, published 1893; private second edition with minor differences as noted

“The muster-place be Lanrick-mead.”

Quoted from *The Lady of the Lake* by Sir Walter Scott

§ 1. Requisites for the Game

This Game requires a chess or draughts board, 8 men of one colour and 8 of another (chess-pawns, draughts, or counters), 8 pieces of card cut to the size of a square, and something (*e. g.* a coin) with which to mark a square.

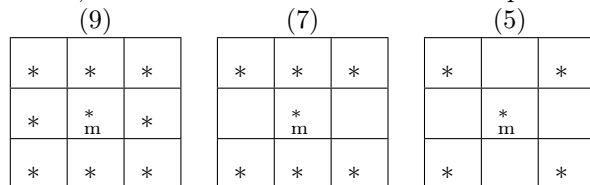
§ 2. Definitions

Def. 1

A “Rendezvous” is a set of squares, into which each Player tries to get his men. Its position¹ is determined by that of the Mark, and the number of its square is always one less than that of the men which are on the Board when the Mark is set. There are two kinds of Rendezvous, “close” and “open”.

Def. 2

A Rendezvous must be “close,” when the number of its squares is odd. It consists of the marked square and certain adjacent squares, as shown in the following diagrams, in which the Players are supposed to be at the upper and lower edges. The numerals indicate the number of Rendezvous-squares, the letter “m” the Mark, and the asterisks the Rendezvous-squares.

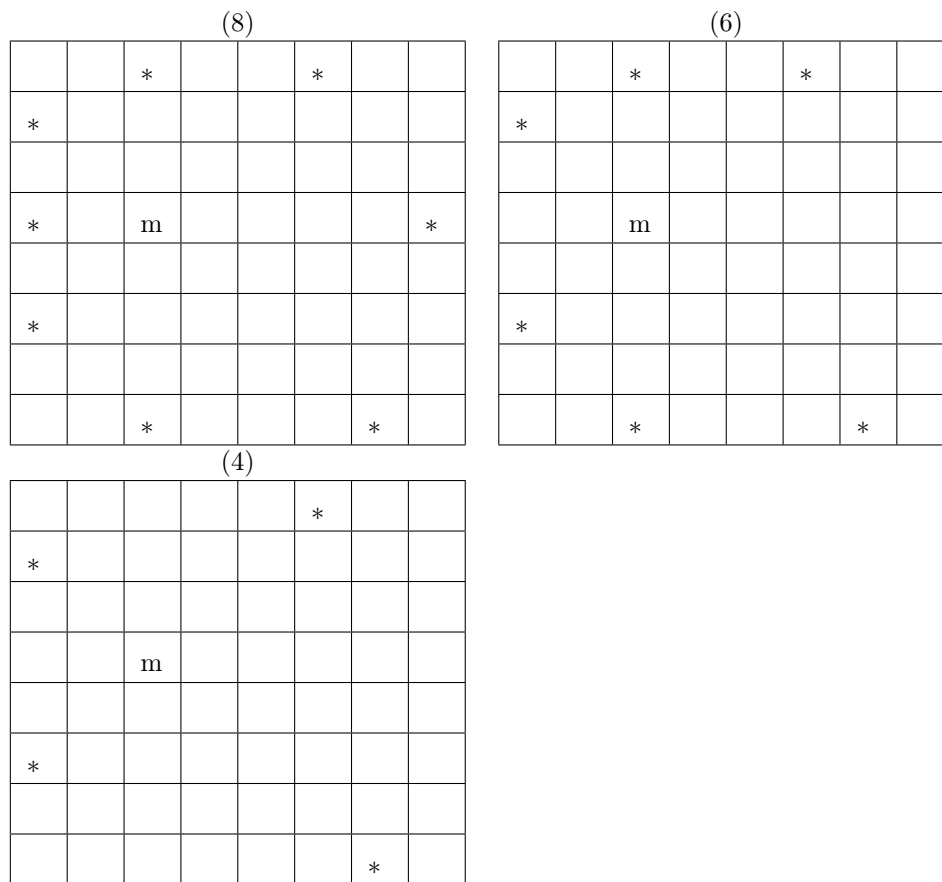


A 3-square Rendezvous consists of a line of 3 squares, having the marked square in the middle, in any position, straight or slanting, chosen by the Player who sets the Mark.

Def. 3

A Rendezvous must be “open,” when the number of its squares is even. It consists of certain border-squares, which would be “in check” if the Mark were a chess queen, as shown in the following diagrams, which are to be interpreted as in Def. 2.

¹The position of its central square



For any but a 9-square Rendezvous, it will be found convenient to mark the Rendezvous-squares with pieces of card.

§ 3. Rules

Rule 1

Each man may be moved along any line of unoccupied squares, straight or slanting; but it may not (except in the case named in Rule 6) change its direction.

Rule 2

To begin the game, ten men are set as in this diagram, in which the five *B*'s indicate black men, and the five *Y*'s yellow² men. Then one Player sets the Mark on any one of the central four squares (indicated in this diagram by the letter '*m*') of the diagonal *not* containing men. Both then try to play their men into the Rendezvous thus determined, he, who did not set the Mark, having the first turn.

²Second edition has "W's white", also in the diagram

BLACK.

	B			Y			B
Y							
		m					
			m				Y
B				m			
					m		
							B
Y			B			Y	

YELLOW.

Rule 3

In playing the first turn for a Rendezvous, a Player may move 2 squares only. In any other turn he may move 5, 4, or 3 squares, according as he has on the Board more than 4, 4, or less than 4 men. He may divide these squares among his men as he likes, but may not move more than 3 of them with any one man, unless it be his only man outside the Rendezvous. He need not move more than one square in one turn. While playing, he should count aloud the squares through or into which he moves a man. After once playing a man and letting go of it, he may not move it again in that turn.

Rule 4

The Mark, for any Rendezvous after the first, may be set on any square that has enough squares round it to form the Rendezvous.³

Rule 5

When the Mark has been set, he, who did not set it, may, before playing, demand an "interchange"; in which case he, who set the Mark, must interchange all his own men with whichever he chooses of the others. He, who claims an "interchange," must move one of the enemy's men into a corner of its square, and cannot, after letting go of it, revoke his claim.⁴

Rule 6

In playing for an open Rendezvous, a Player may move any man, that is on the border, along it, without regarding the corners, as if it were one continuous line of squares: and any such man, if not moved beyond the first Rendezvous-square, reckons as having been moved *one* square only; but, if it be moved beyond, each square⁵ must be counted as in Rule 3.

³The Mark, for any Rendezvous, may be set on any but a border-square; for a 3-square one, on any but a corner-square; provided that he, who sets it, has no man in the Rendezvous.

⁴missing in the second edition

⁵square so moved

Rule 7

When a Player gets all his men into the Rendezvous, it being not yet full, he removes one of the outlying men from the Board, replacing it with a fresh man of his own colour; and this ends his turn.

Rule 8

When a Player has got all his men into the Rendezvous, it being now full, he removes the outlying man from the Board. Then he who has fewest men on the Board, or in the case of equality he who has just lost a man, sets the Mark for the next Rendezvous, as in Rule 4.

Rule 9

When a Player has only one man left, he has lost the Game.

§ 4. Hints to Players

In playing for a ‘close’ Rendezvous, remember that you have *two* objects in view—one to get your own men *in*, the other to keep the enemy’s men *out*. A mere race for the Rendezvous is not always your best course: much may be done by getting into the way of the enemy’s men, and checking *their* advance. Do not try to block *all* his men; *one* is generally as much as you can hope ultimately to exclude: hence it is often good play to select that man, of the enemy’s, who is furthest from the Rendezvous, and to devote, to his especial benefit, the services of (say) *three* of your own men, whose duty it will be to march, in close rank, in front of him, as a kind of ‘guard of honour’, taking care to march *in*, in front of him, so as to be able to announce his approach, and secure his being received with all proper respect!

It is an advantage to get hold of the *central* square of a “close” Rendezvous, and also of a square at that corner (or side) of it, where you wish to bring in another man. As soon as the outsider has reached a square adjacent to this corner-man, he can be played in, in the following turn, by first moving the central man into some vacant Rendezvous-square, then the corner-man into the central square, and then the outsider into the corner-square.

B	C	D	E
a	A	d	e
b	c		

For instance, supposing it to be a nine-square Rendezvous, and that your 5 men are A, B, C, D, E, (A being in the centre), and that the enemy’s 5 men are *a, b, c, d, e*, and that it is your turn to play; you may win the Rendezvous by moving A into the vacant square, D into A’s place, and E into D’s.

a	C	D	E
B	c	d	e
b	A		

Or, if the men be arranged thus (*c* being in the centre), you may win it by moving *A* into the vacant square, *B* into *A*'s place, *C* into *B*'s, *D* into *C*'s, and *E* into *D*'s.

		*		*			
		<i>c</i>		<i>d</i>			
*	<i>b</i>						
						<i>e</i>	
*	<i>a</i>		<i>m</i>				*
		<i>D</i>					
*	<i>C</i>						
		<i>B</i>				<i>A</i>	
		*		*			

Similarly, in playing for an “open” Rendezvous, supposing it to consist of 8 squares (here marked by asterisks), and that your 4 men are *A*, *B*, *C*, *D*, and the enemy's 5 men *a*, *b*, *c*, *d*, *e*, and that it is your turn to play; you may win the Rendezvous by moving *A* into the vacant Rendezvous-square, *B* into *A*'s place, *C* into *B*'s, and *D* into *C*'s.

	*	
	*	
	*	
	*	
	*	*

You should also arrange your men, that are already *in* the Rendezvous, so as to make things comfortable for those, of the enemy's men, who are on their way towards it. For instance, if it be a 9-square Rendezvous, and if there are four such men approaching from the East: by placing three of your men in the squares marked with asterisks, you may form an impenetrable wall across the Rendezvous, and thus provide a set of *three* vacant squares to accommodate the *four* weary travellers—a polite attention which they will not soon forget. Similarly, if there are *two* of the enemy's men approaching from the North-East: by placing three of your men, as here indicated, you will provide *one* vacant square for the two guests, who will probably indulge in the pathetic strain, “For⁶ one of us must stop outside, But that one won't be *me!* So, Tommy, make room for your Uncle!”

Quoted from *Tommy Make Room for Your Uncle* by T. S. Lonsdale

Should you find that the enemy is likely to get all his men into the Rendezvous, while you still have two or three men outside, remember that, as soon as all his men are in, he will replace one of your outlying men with a fresh

⁶Now

man of his own colour; and that he will most certainly choose for this purpose whichever of the outlying men is *nearest* to the Rendezvous. Consequently, *your* best course is to have no one of them nearer than the others. Keep them all together, at the same distance from the Rendezvous, so that, whichever of them he transforms into an enemy, you can at once bar its progress with your other outlying men.

The advice I have given, as to barring the progress of the enemy's men rather than merely hurrying on with your own, is also worth remembering when playing for an "open" Rendezvous.

In carrying out the operation described in Rule 5—the interchanging of the two sets of men—difficulties may arise, when men have been taken off their squares, in settling *which* squares they came from. These difficulties may lead to angry disputes; thence to mutual accusations of unverity; thence to estrangement of friends; and thence to family feuds, lasting through several generations. These deplorable results may all be avoided by observing the following simple Rule:—

Move every one of the men, which are to be interchanged, into a corner of its square. Place a card-marker on a square occupied by a *yellow*⁷ man (I am supposing the two colours to be "yellow" and "black"), and take the yellow man off its square. Place this yellow man in the centre of a square occupied by a *black* man, and take the *black* man off its square. Place this *black* man in the centre of a square occupied by another *yellow* man. Proceed thus, till all the men on the Board are in the centres of squares, and you have one black man in hand, which of course you place on the square indicated by the card-marker.

Rule 5 serves to prevent the Mark from being so set that he, who set it, is *absolutely*⁷⁸ certain to get his men in first—which certainly would rob the Game of much of its interest. In playing for a final 3-square Rendezvous, the mere setting of the Mark would, but for this Rule, decide the Game.

⁷In the second edition here and everywhere in this paragraph: "white"

⁸quite

10.17 Mischmasch (1881)

Source: The Monthly Packet, June 1881

Though this text logically follows the entry on “A Tangled Tale” it is in a separate section.

P.P.S.—I beg to offer, for the consideration of the Knot-untiers, the rules for another new Game, and shall gratefully receive suggestions for its improvement.

Mischmasch

A Game for Two Players, or Two Sets of Players

1. An ‘extract’ is a selected portion of a word (*e. g.* ‘ati,’ ‘tigu,’ and ‘gue’ are all extracts from ‘fatigue’). To ‘guess an extract’ is to guess any ‘admissible’ word (*i. e.* a word correctly spelt, and understood and used in good society) containing it: this need not be the word from which it was taken.

2. To begin the game, each Player invents an extract to set to the other, and says ‘ready’ when he has done so. When both are ready, the extracts are named.

3. When a Player thinks he has guessed the extract set him, or that it is hopeless, he ‘declares,’ by saying ‘guessed’ or ‘resigned.’

4. If he say ‘guessed,’ he names the word: if it be admissible, he scores one; if not, the other scores one, and he goes on guessing. If he say ‘resigned,’ the other names the word from which the extract came: if it be admissible, he scores two; if not, he who resigns it scores four.

5. If an extract be thus disposed of, the other Player must at once ‘declare’ or else supply a new extract. But no one is bound to ‘declare’ till a reasonable time (say a minute or two) has passed since he began to guess the extract he has in hand.

6. When neither has an extract in hand, the game proceeds as in Rule 2.

7. When either Player has scored 10, the other, if he has an extract in hand must ‘declare’ and proceed as in Rule 4. The game is over, and the highest score wins.

L. C.

10.18 Mischmasch (1882, Monthly Packet)

Source: The Monthly Packet, November 1882

A Word-Game for Two Players, or Two Sets of Players

The essence of this game consists in one player proposing a ‘nucleus’ (*i. e.* a set of 2 or more letters, such as ‘gp,’ ‘emo,’ ‘imse’), and in the other trying to find a ‘lawful word’ (*i. e.* a word known in ordinary society, and not a proper name) containing it. Thus, ‘magpie,’ ‘lemon,’ ‘himself,’ are lawful words containing the nuclei ‘gp,’ ‘emo,’ ‘imse.’ A nucleus may not contain a hyphen: *e. g.* ‘apple-tree’ is no a lawful word for the nucleus ‘letr.’ Substantives and adjectives, derived from proper names and beginning with capitals (*e. g.* ‘Jacobite,’ ‘French’), count as proper names.

Rules

1. Each thinks of a nucleus, and says ‘ready’ when he has done so. When both have spoken, the nuclei are named. A player may set a nucleus without knowing of any word containing it.
2. When a player has guessed a word containing the nucleus set to him (which need not be the word thought of by the player who set it), or has made up his mind that there is no such word, he says ‘ready,’ or ‘no word,’ as the case may be; when he has decided to give up trying, he says ‘I resign.’ The other must then, within a stated time (*e. g.* 2 minutes), say ‘ready,’ or ‘no word,’ or ‘I resign,’ or ‘not ready.’ If he says nothing, he is assumed to have said ‘not ready.’
3. When both have spoken, if the first speaker said ‘ready,’ he now names the word he has guessed; if he said ‘no word,’ he, who set the nucleus, names, if he can, a word containing it. The other player than proceeds in the same way.
4. The players then score as follows:—(N.B.—When a player is said to ‘lose’ marks, it means that the other scores them.)

Guessing a word,	rightly,	scores	1	
”	”	wrongly,	loses	1
Guessing ‘no word,’	rightly,	scores	2	
”	”	wrongly,	loses	2
Resigning		loses	1	

This ends the first move.

5. A ‘resigned’ nucleus cannot be set again during the same game. If, however, one or more letters be added or subtracted, it counts as a new one.
6. For every other move, the players proceed as for the first move, except that when a player is ‘not ready,’ or has guessed a word wrongly, he has not a new nucleus set to him, but goes on guessing the one already in hand, having first, if necessary, set a new nucleus for the other player.
7. The move in which either scores 10 is the final one; when it is completed, the game is over, and the highest score wins, or, if the scores be equal, the game is drawn.

I shall be grateful to any readers of the *Monthly Packet* who will try this game, and will kindly send me any criticisms, or suggestions for improving it, which occur to them. It seems to make a better game for *sets* of players than for individuals; the two sets ranging themselves on opposite sides of the room, and holding a whispered consultation on each side.

Lewis Carroll

10.19 Mischmasch (1882)

Source: printed 1882

A Word-Game for Two Players or Two Sets of Players

'Pars pro toto.'

The essence of this game consists in one Player proposing a 'nucleus' (*i. e.* a set of two or more letters, such as 'gp,' 'emo,' 'imse'), and in the other trying to find a 'lawful word' (*i. e.* a word known in ordinary society, and not a proper name), containing it. Thus, 'magpie,' 'lemon,' 'himself,' are lawful words containing the nuclei 'gp,' 'emo,' 'imse.'

A nucleus must not contain a hyphen (*e. g.* for the nucleus 'erga,' 'flower-garden' is not a lawful word).

Any word, that is always printed with a capital initial (*e. g.* 'English'), counts as a proper name.

Rules

1. Each thinks of a nucleus, and says 'ready' when he has done so. When both have spoken, the nuclei are named. A player may set a nucleus without knowing of any word containing it.

2. When a player has guessed a word containing the nucleus set to him (which need not be the word thought of by the player who set it), or has made up his mind that there is no such word, he says 'ready,' or 'no word,' as the case may be: when he has decided to give up trying, he says 'I resign.' The other must then, within a stated time (*e. g.* 2 minutes), say 'ready,' or 'no word,' or 'I resign,' or 'not ready.' If he says nothing, he is assumed to be 'not ready.'

3. When both have spoken, if the first speaker said 'ready,' he now names the word he has guessed: if he said 'no word,' he, who set the nucleus, names, if he can, a word containing it. The other Player then proceeds in the same way.

4. The Players then score as follows:—(N.B.—When a Player is said to 'lose' marks, it means that the other scores them.)

Guessing a word,	rightly,	scores	1.
„	„	wrongly,	loses 1.
Guessing 'no word,'	rightly,	scores	2.
„	„	wrongly,	loses 2.
Resigning		loses	1.

This ends the first move.

5. For every other move, the Players proceed as for the first move, except that when a Player is 'not ready,' or has guessed a word wrongly, he has not a new nucleus set to him, but goes on guessing the one already in hand, having first, if necessary, set a new nucleus for the other Player.

6. A 'resigned' nucleus cannot be set again during the same game. If, however, one or more letters be added or subtracted, it counts as a new one.

7. The move, in which either scores 10, is the final one; when it is completed, the game is over, and the highest score wins, or, if the scores be equal, the game is drawn.

November, 1882.

10.20 Mischmasch (1886)

Source: Court Circular, December 2, 1886

A Word-Game for Two Players or Two Sets of Players

By Lewis Carroll, Author of "Alice's Adventures in Wonderland," &c.

"Pars pro toto."

The essence of this game consists in one Player proposing a "nucleus" (i. e. a set of two or more letters, such as "gp," "emo," "imse"), and in the other trying to find a "lawful word" (i. e. a word known in ordinary society, and not a proper name), containing it. Thus, "magpie," "lemon," "himself," are lawful words containing the nuclei "gp," "emo," "imse".

A nucleus must not contain a hyphen (e. g. for the nucleus "erga," "flower-garden" is not a lawful word).

Any word, that is always printed with a capital initial (e. g. "English"), counts as a proper name.

Rules

1. Each thinks of a nucleus, and says "ready" when he has done so. When both have spoken, the nuclei are named. A Player may set a nucleus without knowing of any word containing it.

2. When a player has guessed a word containing the nucleus set to him (which need not be the word thought of by the Player who set it), or has made up his mind that there is no such word, or that there is one, but he cannot guess it, he says "ready." When he has decided to give up trying, he says "I resign". The other must then, within a stated time (e. g. 2 minutes), say "ready," "not ready". If he says nothing, he is assumed to be "not ready."

3. When both have spoken, if the first speaker has guessed a word, he names the word he has guessed: if he says "no word," he who set the nucleus, names, if he can, a word containing it. The other Player then proceeds in the same way.

4. The Players then score as follows:—(N.B.—When a player is said to "lose" marks, it means that the other scores them.)

Guessing a word,	rightly,	scores	2.	
"	"	wrongly,	loses	2.
Guessing "no word,"	rightly,	scores	3.	
"	"	wrongly,	loses	3.
Resigning		loses	1.	

This ends the first move.

5. For every other move, the Players proceed as for the first move, except that when a Player is "not ready," or has guessed a word wrongly, he has not a new nucleus set to him, but goes on guessing the one already in hand, having first, if necessary, set a new nucleus for the other Player.

6. A "resigned" nucleus cannot be set again during the same game.

7. The move, in which either scores 10, is the final one; when it is completed, the game is over, and the highest score wins, or, if the scores be equal, the game is drawn.

10.21 Lawn Tennis Tournaments (1882)

Source: The St. James's Gazette, August 12, 1882

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—Players of Lawn Tennis, and those interested in other kinds of sport in which Tournaments occur, have no doubt often realized the very unsatisfactory way in which the prizes are at present adjudged. I propose to deal with the subject mathematically, and to point out, first, the extraordinary injustice of the existing laws; and secondly, a method of adjudging the prizes which would, as I hope, really carry out the principle of *detur digniori*.

Suppose there are 32 competitors. These are arranged as 16 pairs for the contest of the first day: on the second day, the 16 winners are arranged as 8 pairs, the losers being excluded from further competition: similarly, on the third day, there are 4 pairs, and the 4 winners (supposing 4 prizes to be given) are now known to be the prize-winners. In order to settle their claims, 2 pairs contend on the fourth day, and the 2 winners have a final contest on the fifth day, to decide which is to take the first prize and which the second: the two losers have no further contest, since the third and fourth prize are of equal value.

The injustice of this system needs few words to prove it. Any one of your readers, who will write down 32 numbers, and bracket them in 16 couples, and then, after marking the supposed winner in each couple, will bracket these winners in 8 couples, and so on, will easily convince himself that the result is really as follows: if the original list be divided into 4 quarters, the best man in each quarter is a winner of the 4 prizes—the best in each half wins one of the first 2 prizes—and the best in the whole list (it would indeed be a strange system which failed to secure *this!*) wins the first prize. Now suppose the original list chanced to be arranged in the order of merit: in this case it will be found that the 17th best player gets the second prize, while the 9th and 25th best get the third and fourth!

This, of course, is an extreme case: but, in every case, the 2nd best player has only 16-31ths of a chance of getting the prize he deserves, and the chance, that the best 4 players shall get their prizes, is almost exactly 19-250ths: *i. e.* the odds are more than 12 to 1 against it!

Now, if any Lawn-Tennis-player is content that the element of pure chance should so largely enter into a contest of skill, I have nothing to say against it: every one to his taste: but to those who think, with me, that a Tournament would give more general satisfaction if the prizes were always given to those who played best, the following suggestions may prove interesting.

It is quite unimportant how the names are bracketed for the first set of contests: but, after that, the contests should be arranged thus:—the 16 winners (I am taking, as before, 32 competitors and 4 prizes) should be bracketed together, and the 16 losers should also be bracketed together. A list should be kept of the players, and against each man's name should be entered the names of those who have been proven superior to him, either by actually beating him or by beating those who have done so (*e. g.* if A beats B, and B beats C, both A and B are “superiors” of C). The contests should all be arranged on the principle of bracketing together, as far as possible, those who have the same number of

superiors but have no common superior (*e. g.* if A has been beaten by K and L, B by K and R, C by L and S, D by S and T, we should bracket A with D, and B with C). It would not be at all necessary to have only one set of contests each day: as soon as any court was finished with, the committee would assign it to any two disengaged players, who could be properly bracketed together.

The 4 prizes would be assigned thus:—so soon as any player had 4 superiors entered against his name, he would be struck out of the list: so soon as all, but one, had at least one superior, that one would be marked as “first prize:” of the remainder, so soon as all, but one, had at least 2 superiors, that one would be marked as “second prize:” and, of those then remaining, so soon as all, but two, had at least 4 superiors, those two would receive the remaining prizes.

This system would require many more contests than the present one does, so that there would be much more spectacle for the public to see: but, since the courts would usually be filled up as fast as vacated, I do not think that the whole Tournament would be likely to occupy more time than under the present most unsatisfactory system, which may often result in the 2nd, 3rd, and 4th best players all returning home empty-handed, while their prizes are carried off by players known to be far inferior the them.—I am, Sir, your obedient servant,

*Charles L. Dodgson,
Late Mathematical Lecturer of Ch. Ch. Oxford.
August 10.*

10.22 The Fallacies of Lawn Tennis Tournaments

Source: St. James's Gazette, August 1, 1883

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—In treating this subject I propose to myself four things:—

- (1.) To prove that the existing method of assigning prizes in lawn tennis tournaments is, except in the case of the first prize, entirely absurd;
- (2.) To prove that the existing method of scoring in matches leads, in many cases, to an unjust result;
- (3.) To suggest a method for conducting tournaments which, while requiring less time than the present, shall give more equitable results;
- (4.) To suggest a better method of scoring in matches.

(1.) To prove the absurdity of the present method of assigning prizes in lawn tennis tournaments will not need many words. Suppose there are 32 competitors and 4 prizes. On the 1st day, these contend in 16 pairs: on the 2nd day, the 16 winners contend in 8 pairs, the losers being excluded from further competition: on the 3rd day, the 8 winners contend in 4 pairs: on the 4th day, the 4 winners (who are now known to be the 4 prize-men) contend in 2 pairs: and on the 5th day, the 2 winners contend together, to decide which is to take the first prize and which the second—the 2 losers having no further contest, as the 3rd and 4th prize are of equal value.

Now, if we divide the original list of competitors into 4 sections, we may see that all, that this method really does, is to ascertain who is the best man in each section, then who is the best in each half of the list, and then who is the best of all. The best of all (and this is the only equitable result arrived at) wins the first prize: the best in the other half of the list wins the second: and the best men in the 2 sections not yet represented by a champion win the other two prizes. If the original list had chanced to be arranged in the order of merit, the 17th best player will necessarily carry off the 2nd prize, and the 9th and 25th best the 3rd and 4th! This of course is an extreme case: but anything within these limits is possible: *e. g.* any competitor, from the 3rd best to the 17th best, may, by the mere accidental arrangement of names, and by no means as a result of his own skill, carry off the 2nd prize. As a mathematical fact, the chance that the 2nd best player will get the prize he deserves is only 16-31ths: while the chance that the best 4 shall get their proper prizes is so small that the odds are 12 to 1 against its happening!

(2.) To prove that the existing method of scoring in matches leads, in many cases, to an unjust result, let us suppose a “set” to mean “the best of 5 games,” and a “match” “the best of 5 sets.”

Suppose A and B to play the following 23 games:—BAABB | AAA | BAABA* | B*ABAB | BAABA. Here A wins 13 games to 10, and also wins the match. But, by simply transposing A*, B*, we get BAABB | AAA | BAABB | AABA | BBAAB |, the last game of the original series not being played. Here A still wins 12 games to 10: yet he loses the match!

(3.) The method for conducting tournaments, which I have to propose, involves two departures from the present method. First, I propose to make a “match” last only half a day (the necessary reduction in the number of games

I will discuss in section 4): secondly, I propose to give only 3 prizes. The rules for a tournament of 32 players would be as follows:—

(a.) The tournament begins in the middle of the 1st day, so that there is only one contest that day—the 32 players being arranged in 16 pairs.

(b.) A list is kept, and against each name is entered, at the end of each contest, the name of any one who has been proved superior to him—whether by actually beating him, or by beating some one who has done so (thus, if A beats B, and B beats C, A and B are both “superiors” of C). So soon as any name has 3 “superiors” entered against it, it is struck out of the list.

(c.) For the 2nd day (morning) the 16 unbeaten men are paired together, and similarly the 16 with 1 superior (the losers in these last-named pairs will now have 3 superiors each, and will therefore be struck off the list). In all other contests they are paired in the same way: first pairing the unbeaten, then those with 1 superior, and so on, and avoiding, as far as possible, pairing two players who have a common superior.

(d.) By the middle of the 3rd day the unbeaten are reduced to two, one of them is certainly “first-prize-man.” These two do not contend in the afternoon contest that day, but have a whole-day match on the 4th day—the other players meanwhile continuing the usual half-day matches.

(e.) By the end of the 4th day, the “first-prize-man” is known (by the very same process of elimination used in the existing method): and the remaining players are paired by the same rules as before, for the 2 contests on the 5th day. In some cases the 2nd and 3rd prizes will both be decided by the middle of the 5th day. If, in section (a), the tournament were begun in the morning, the two men named in section (d) being still allowed a whole-day match, nothing would be gained in time, as the tournament would still take $4\frac{1}{2}$ days, while much would be lost in interest, as the first-prize would be settled in 3 days.

These rules will, I think, be sufficiently illustrated by going through a tournament of 16; and if the reader will draw up for himself these Tables, in blank, and fill them up, column by column, according to the following directions, he will easily understand the working of the system.

Let the players be arranged alphabetically, and call them A, B, C, etc., and let their relative skill be represented by the following numbers:—

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
6	10	13	5	15	9	7	12	1	14	3	2	8	16	11	4

These numbers will enable the reader to decide which will be the victor in any contest: but of course they are not supposed to be known to the Tournament Committee, who have nothing to guide them but the results of actual contests. In the following tables, “I. (e)” means “first day, evening,” and so on: also a player, who is *virtually* proved superior to another, is entered thus “(A).” The victor in each contest is marked *.

Table I. (Pairs)

I. (e)	II. (m)	(e)	III. (m)	(e)	IV. (m)	(e)
A }*	A }*	D }*	D }	D }	D }	D }
B }	D }	G }	J }	J }*	M }	L }*
C }	F }	J }	A }	M }	L }	
D }*	G }	R }	M }	R }	R }	
E }	J }	A }	G }	L		
F }*	M }	F }	R }			
G }	N }	H }	L }			
H }	R }	N }	N }			
J }	B }	M }				
K }	C }	Q }				
L }	E }	B }				
M }	H }	L }				
N }	K }					
P }	L }					
Q }	P }					
R }	Q }					

Table II. (Superiors.)

	I. (e)	II. (m)	(e)	III. (m)	(e)	IV. (m)	(e)
A	...	D	...	M (J) out			
B	A	(D)	L out				
C	D	B (A) out					
D	...	...	...	...	J	M	L out
E	F	H (G) out					
F	...	G	A (D) out				
G	...	...	D	R (J) out			
H	G	...	N (D) out				
J	...	...	...	...	First		
K	J	L (M) out					
L	M	(J)	...	...	...	...	Third
M	...	J	...	...	...	Second	
N	...	R	(J)	L out			
P	N	Q (R) out					
Q	R	...	M (J) out				
R	...	...	J	...	M	L out	

In contest I. (e), we see that A beats B, and so on: hence we enter A as a “superior” to B, D to C, and so on. For contest II. (m), we pair the winners A, D, and so on: and then the losers, B, C, and so on. After it, we enter the *actual* superiors, D, C, etc.: we then find that, A having a superior D, and B a superior A, B has a *virtual* superior D: and so on. Having done this, we see that C, E, K, P, have three superiors each, and must be struck out. For contest II. (e) we should avoid pairing F and H, because they have a common superior: and the same may be said of N, Q. After it, we strike out B, F, H, Q. On the 3rd day, as there are only 2 unbeaten left, they contend during the whole day, the others having half-day contests: L and N have to be paired, even though they have a common superior. After the morning contest, we strike out A, G, N. For the evening, D and J are still contending: so that M and R must be paired, though they have a common superior; and L is “odd man.” After the evening contest,

J is seen to be “first-prize-man.” After contest IV. (m), we strike out R; and we see that M is “second-prize-man.” After contest IV. (e), we strike out D, and give L the 3rd prize.

If this tournament were fought by the present method, the 4 prize-men would be D, G, J, R: D would get the 2nd prize, and G and R the 3rd and 4th: *i. e.* the 5th best man would get the 2nd prize, and the 7th and 4th best the other two.

(4.) To make “matches” more equitable, I propose to abolish “sets,” and make a “match” consist of “games.” Thus instead of “best of five games = set; best of 5 sets = match” (*i. e.* he who first wins 3 games wins a set; he who first wins 3 sets wins a match), where a player *may* win with as few as 9 games, and *must* win with 13, I would substitute “he who wins 13 games, or who gets 9 games ahead, wins the match.” This, however is a short match. The London Athletic Club say “he who wins 6 games wins a set; he who first wins 3 sets wins a match.” Here a player *may* win with 18 games, and *must* win with 28: so that it might need as many as 55 games to decide a match. This again seems needlessly large. I am inclined for a compromise, and propose as follows: “For a whole-day, he who first wins 24 games, or who gets 16 ahead, wins the match: for a half-day, he who first wins 12 games, or who gets 8 games ahead, wins the match.” The proposed form of tournament, though lasting a shorter time than the existing one has a great many more contests going on at once, and consequently furnishes the spectacle-loving public with a great deal more to look at.—I am, Sir, your obedient servant,

Charles L. Dodgson
Student and late Mathematical Lecturer of Christ Church, Oxford
July 30.

10.23 Lawn Tennis: Reply to “Cavendish”

Source: The St. James’s Gazette, August 4, 1883

To the EDITOR of the ST. JAMES’S GAZETTE

SIR,—I am honoured by the attention such an authority as “Cavendish” has given my letter on Lawn Tennis Tournaments, and hope you will afford me space for a brief reply.

He says “the primary object is to give the 1st prize to the best man,” but that it is “a matter of comparatively small concern” to give the 2nd to the 2nd best. Why so wide a distinction between them? Is it fair that the one should be certain of his prize, while the other has only an even chance of his?

Again, he says that, under my system, “the prize-winners could easily be predicted, and the interest of the whole meeting would suffer.” Is he not ignoring the “chances of the board,” where the element of luck enters largely, even under my system? The man reputed best is by no means certain of the 1st prize: many things may prevent his playing best. Also, does he find that the interest of a rifle-match suffers, because he who makes 2nd score is certain of getting 2nd prize?

Again, he thinks the present system “entices” 2nd-class players to enter more than mine would. Let us see what he and I, representing the two systems, would say to players before a tournament of 32 with three prizes. (We may assume that every one hopes to play at least up to his reputation.)

To the man reputed 2nd best, he would say, “If you play up to your reputation, your chances are—of the 2nd prize, one half; of the 3rd, 1-4th; of getting nothing, 1-4th;” whereas I should say, “If you do so, you will get the 2nd prize.” Here undoubtedly I make the best bid.

To the man reputed 5th best, he would say, “If you play up to your reputation, your chance of a prize is about 1-4th; and even if, by great luck and painstaking, you play 2nd or 3rd best, it never rises above a half;” whereas I should say, “I admit that, if you only play up to your reputation, you will get nothing; but, if you play 2nd or 3rd best, you are certain of the proper prize.” Thus he offers a chance of 1-4th, where I offer nothing; and of a half, where I offer certainty. I am inclined to think that here also I make the best bid.

I agree with him that “all popular games have, and must have, an element of luck.” This is true of all games—whether of pure chance, *e. g.* pitch-farthing; or of pure skill, *e. g.* chess; or mixed, *e. g.* whist. My proposal is to make Lawn-Tennis Tournaments a game of pure skill, instead of being mixed: but this would not destroy, what he thinks necessary, “some hope, even in the breast of a second-class player, of success through fortune, if not through skill.”

He says the logical conclusion of my proposal, to make a match consist of games, is to make it consist of strokes. I admit it, but think that would be going too far.

He thinks a match consisting of games would be uninteresting, so soon as one of two even players got a little ahead, while under the present system “a lucky game on one side is often balanced by a lucky game on the other side.” And why should not the being ahead on one side be balanced by a lucky game on the other side? *Suo sibi gladio hunc jugulo.*

Quoted from Terence

I believe that a system of handicapping, such as is usual in races, would be a much more satisfactory way of equalizing players, and thus giving all a reasonable hope of winning a prize, than the present lottery-system. But in any case I protest against the present absurdity of excluding a man, who has been beaten only once, from all further competition in a tournament with more than one prize.

May I add a few words in reply to "Corrigenda," whose letter, in MS., you have kindly sent me? He thinks I am estimating too highly the chance of its happening that the players should be paired "in order of merit," because I have not allowed for the rule "that the players draw for their oponents (*sic*) every time:" and he calculates that, with 16 players, the odds against this event are 21 to 1. Let me remind "Corrigenda" that I spoke of it as "an extreme case:" the odds against it, I do not mind admitting, are more than 21 to 1: how much more, I do not feel bound to say.

He also says that the absurdity I pointed out in scoring matches, where A wins twelve games to ten and yet loses the match, could never happen, because one must "always" win six games, not three, to win a "set." I think that for "always" we should read "always in Corrigenda's experience;" but I gladly accept a correction which strengthens my case so much. If he, who wins six games, wins a set; and he, who wins three sets, wins a match; than a player may actually win 27 games to 18, and yet lose the match!—I am, Sir, your obedient servant,

Charles L. Dodgson.

August 3.

10.24 Lawn Tennis

Source: The St. James's Gazette, August 21, 1883

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—I am glad to see, in the letters of “Phayllus” and “East Sheen L. T. C.,” which appeared in your columns on August 16 and 18, signs that opinion is changing as to the best form of tournament, and that two *desiderata*, which the present form fails to supply, are beginning to be recognized, namely (almost in the words of “Phayllus”), “that the best players shall take the prizes, and that all the players shall be occupied the greater part of the time, and not be forced to look on idly if they have lost their match in the first round.” The “American,” or “Weybridge,” form, which they advocate, though a great improvement on the existing one, yet labours under two defects. One is, the pairing together of players whose rival claims have been already *virtually* decided. When A has been beaten by B, and B by C, a match between A and C is surely a foregone conclusion, since we may fairly assume that their relative skill is the same to-day as it was yesterday. If not—if it be held that one night may make such a difference that A may now beat C—why not apply the same principle to A and B, and thus prolong the tournament *in sæcula sæculorum*? The other defect is the breaking up the whole set of players into several independent tournaments, and letting the winners in the respective divisions contend among themselves for the prizes—thus making it possible (as I showed in my letter of August 4) for the four prizes, in a tournament of thirty-two, to be won by the 1st, 17th, 9th, and 25th best players.

If these superfluous contests were omitted, there would then be plenty of time for all to play in one grand tournament; and the American system, minus these two defects, will be found to be identical with the system I advocated in your columns on the 4th of August, in a letter since published by Messrs. Macmillan as a pamphlet, enlarged and with a full account of a tournament of thirty-two players.

It will not be long, I hope, before the “American” system, with these necessary modifications, supplants the present one, under which, though a first prize may fairly be placed among those won by rowing or running, yet a second prize has very little more right to such a position than if it had been won in a raffle.—I am, Sir, your obedient servant,

Charles L. Dodgson.

August 19.

10.25 Lawn Tennis Tournaments (1883)

Source: published 1883

The True Method of Assigning Prizes with a Proof of the Fallacy of the Present Method

Palmam qui meruit ferat

§ 1. Introductory

At a Lawn Tennis Tournament, where I chanced, some while ago, to be a spectator, the present method of assigning prizes was brought to my notice by the lamentations of one of the Players, who had been beaten (and had thus lost all chance of a prize) early in the contest, and who had had the mortification of seeing the 2nd prize carried off by a Player whom he knew to be quite inferior to himself. The results of the investigations, which I was led to make, I propose to lay before the reader under the following four headings:—

(a) A proof that the present method of assigning prizes is, except in the case of the first prize, entirely unmeaning.

(b) A proof that the present method of scoring in matches is constantly liable to lead to unjust results.

(c) A system of rules for conducting Tournaments, which, while requiring even less time than the present system, shall secure equitable results.

(d) An equitable system for scoring in matches.

§ 2. A proof that the present method of assigning prizes is, except in the case of the first prize, entirely unmeaning

Let us take, as an example of the present method, a Tournament of 32 competitors with 4 prizes.

On the 1st day, these contend in 16 pairs: on the 2nd day, the 16 Winners contend in 8 pairs, the Losers being excluded from further competition: on the 3rd day, the 8 Winners contend in 4 pairs: on the 4th day, the 4 Winners (who are now known to be the 4 Prize-Men) contend in 2 pairs: and on the 5th day, the 2 Winners contend together, to decide which is to take the 1st prize and which the 2nd—the two Losers having no further contest, as the 3rd and 4th prize are of equal value.

Now, if we divide the list of competitors, arranged in the order in which they are paired, into 4 sections, we may see that all that this method really does is to ascertain who is best in each section, then who is best in each half of the list, and then who is best of all. The best of all (and this is the only equitable result arrived at) wins the 1st prize: the best in the other half of the list wins the 2nd: and the best men in the two sections not yet represented by a champion win the other two prizes. If the Players had chanced to be paired in the order of merit, the 17th best Player would necessarily carry off the 2nd prize, and the 9th and 25th best the 3rd and 4th! This of course is an extreme case: but anything within these limits is possible: *e. g.* any competitor, from the 3rd best to the 17th best, may, by the mere accidental arrangement of pairs, and by no means

as a result of his own skill, carry off the 2nd prize. As a mathematical fact, the chance that the 2nd best Player will get the prize he deserves is only 16-31sts; while the chance that the best 4 shall get their proper prizes is so small, that the odds are 12 to 1 against its happening!

If any one thinks that, after all, we are merely introducing another element of chance into the game, and that no one can fairly object to *that*, let him try the experiment in a rifle competition. Let him interpose when the man, who has made the 2nd best score, is going to receive his prize, and propose that he shall draw a counter from a bag containing 16 white and 15 black, and only have his prize in case he draw a white one: and let him observe the expression of that rifleman's face.

§ 3. A proof that the present method of scoring in matches is constantly liable to lead to unjust results

To prove this, let us suppose a "set" to mean "the best of 11 games," and a "match" "the best of 5 sets": i. e. "he, who first wins 6 games, wins a set; he, who first wins 3 sets, wins a match."

Suppose A and B to play the following 50 games ("A²" means A wins 2 games, and so on):—

$$B^2A^5B^4|A^6|B^3A^5B^2A^*|B^*A^2B^4A^3B|B^2A^5B^3A.$$

Here A wins 28 games to 22, and also wins the match.

But, by simply transposing A*, B*, we get

$$B^2A^5B^4|A^6|B^3A^5B^3|A^3B^4A^3|B^3A^5B^3,$$

the last game of the original series not being played. Here A still wins 27 games to 22: yet he loses the match!

§ 4. A system of rules for conducting Tournaments, which, while requiring even less time than the present system, shall secure equitable results

The method for conducting Tournaments, which I have to propose, involves two departures from the present method. First, I propose to make a "match" last only half a day (the necessary reduction in the number of games I will discuss in section 5): secondly, I propose to give only 3 prizes. The rules for a Tournament of 32 Players would be as follows:—

(a) The Tournament begins in the middle of the 1st day, so that there is only one contest that day—the 32 Players being arranged in 16 pairs.

(b) A list is kept, and against each name is entered, at the end of each contest, the name of any one who has been proved superior to him—whether by actually beating him, or by beating some one who has done so (thus, if A beats B, and B beats C, A and B are both "superiors" of C). So soon as any name has 3 "superiors" entered against it, it is struck out of the list.

(c) For the 2nd day (morning) the 16 unbeaten men are paired together, and similarly the 16 with 1 superior (the Losers in these last-named pairs will now have 3 superiors each, and will therefore be struck off the list). In all other contests they are paired in the same way; first pairing the unbeaten, then those

with 1 superior, and so on, and avoiding, as far as possible, pairing two Players who have a common superior.

(*d*) By the middle of the 3rd day the unbeaten are reduced to two, one of whom is certainly “First-prize-man.” These two do not contend in the afternoon contest that day, but have a whole-day match on the 4th day—the other Players meanwhile continuing the usual half-day matches.

(*e*) By the end of the 4th day, the “First-prize-man” is known (by the very same process of elimination used in the existing method): and the remaining Players are paired by the same rules as before, for the 2 contests on the 5th day. In some cases the 2nd and 3rd prizes will both be decided by the middle of the 5th day. If, in section (*a*), the Tournament was begun in the morning, the two men named in section (*d*) being still allowed a whole-day match, nothing would be gained in time, as the Tournament would take $4\frac{1}{2}$ days, while much would be lost in interest, as the first prize would be settled in 3 days.

To illustrate these rules, I will give the complete history of a Tournament of 32 competitors, with 3 prizes. If the reader will draw out the following Tables, in blank, and fill them up for himself, referring, if necessary, to the accompanying directions, he will easily understand the workings of the system.

Let the Players be arranged alphabetically, and let the relative skill, with which they play in this Tournament, be:—

A	B	C	D	E	F	G	H	J
19	22	14	32	16	25	15	28	3
K	L	M	N	P	Q	R	S	T
10	8	1	29	4	12	2	17	23
U	V	W	X	Y	Z	a	b	c
26	11	20	31	13	18	6	24	9
d	e	f	g	h				
21	30	5	7	27				

These numbers (“1” meaning “best”) will enable the reader to name the victor in any contest: but of course they are not supposed to be known to the Tournament-Committee, who have nothing to guide them but the results of actual contests. In the following Tables, “I (e)” means “first day, evening,” and so on: also a Player, who is virtually proved superior to another, is entered thus “(A).” The victor in each contest is marked *: and ⊙ means “struck out.”

Table I. (Pairs)

I. (e)	II. (m)	(e)	III. (m)	(e)	IV. (m)	(e)	V. (m)	(e)
A }*	A }	C }*	C }	C }	M }	M }*	R }*	J }*
B }*	C }*	G }	M }*	V }*	f }	f }	f }	f }
C }*	E }	M }*	V }	J }*	J }*	J }	J }	
D }*	G }*	R }	f }*	a }	V }	R }*		
E }*	J }	V }*	A }	L }	R }			
F }	M }*	Y }	J }*	g }*	g }			
G }*	P }	a }	G }	R }*				
H }	R }*	f }*	L }	c }				
J }*	S }	A }*	R }*					
K }	V }*	E }	S }					
L }	W }	J }*	Y }					
M }*	Y }	P }	a }*					
N }	a }*	L }*	g }*					
P }*	c }	Q }	T }					
Q }	f }	S }*	c }					
R }*	g }	W }						
S }	B }*	Z }						
T }	D }	c }*						
U }	F }	g }*						
V }*	H }	B }						
W }	K }	F }						
X }	L }*	T }*						
Y }	N }	d }*						
Z }	Q }*	h }						
a }*	T }*							
b }	U }							
c }*	X }							
d }	Z }*							
e }	b }							
f }*	d }							
g }	e }							
h }	h }							

Table II. (Superiors.)

	I. (e)	II. (m)	(e)	III. (m)	(e)	IV. (m)	(e)	V. (m)	(e)
A	...	C	...	J (M) ⊙					
B	A	(C)	g ⊙						
C	...	...	...	M	V (f) ⊙				
D	C	B (A) ⊙							
E	...	G	A (C) ⊙						
F	E	(G)	T ⊙						
G	...	...	C	L (M) ⊙					
H	G	F (E) ⊙							
J	...	M	...	...	...	...	R	...	Pr. III
K	J	L (M) ⊙							
L	M	...	...	...	g (f) ⊙				
M	...	...	...	...	...	...	Pr. I.		
N	P	Q (R) ⊙							
P	...	R	J (M) ⊙						
Q	R	...	L (M) ⊙						
R	...	...	M	...	...	...	...	Pr. II.	
S	...	V	...	R (f) ⊙					
T	S	(V)	...	g ⊙					
U	V	T (S) ⊙							
V	...	...	...	f	...	J (M) ⊙			
W	...	Y	S (V) ⊙						
X	W	Z (Y) ⊙							
Y	...	...	V	a (f) ⊙					
Z	Y	...	c (V) ⊙						
a	...	...	f	...	J (M) ⊙				
b	a	d (c) ⊙							
c	...	a	(f)	...	R ⊙				
d	c	(a)	(f) ⊙						
e	f	h (g) ⊙							
f	...	...	...	...	...	...	M	R	J ⊙
g	...	f	...	...	...	R (M) ⊙			
h	g	(f)	d ⊙						

Directions for filling in the Tables:—

Tab. I. Day I (e). The names are written out alphabetically, and paired as they stand. The victors are marked with asterisks.

Tab. II. Day I (e). As B has been beaten by A, A is entered as his “superior”; C as D’s superior; and so on.

Tab. I. Day II (m). We first pair together all the unbeaten, A, C, E, G, &c. Then those who have one superior, B, D, F, H, &c.

Tab. II (m). We first enter the *actual* superiors, C, G, &c. Then, since A has a superior C, and B has a superior A, we see that B has a *virtual* superior C; and so on. We then see that D has 3 superiors, and must be struck out; and so with H, &c.

Tab. I. Day II (e) We first pair together all the unbeaten, C, G, &c. Then all with one superior, A, E, &c.; but when we come to J, L, we find we have a common superior; so we pair J with P, and L with Q. This series ends with an odd one, g, who must therefore be paired with the first of those who have two superiors each, F, T, &c.

Tab. I. Day III (m). Here, in pairing those with one superior, we again end with an odd one, g, who must therefore be paired with the first of those with two superiors, viz. T. We end with an “odd man,” c.

Tab. II. Day III (m). The unbeaten are now reduced to one pair, M, f, who therefore will do nothing this afternoon, but will have a whole-day contest to-morrow.

Tab. I. Day III (e). Those who have one superior are C, J, L, R, all with a common superior M; and then V, a, g, all with a common superior f. We therefore pair C with V, and so on, leaving an odd one R, who must be paired with the only one who has two superiors, viz. c.

Tab. II. Day III (e). Enter as usual.

Tab. I. Day IV (m). We pair the 2 unbeaten, M, f, for their whole-day contest. Then those with one superior.

Tab. II. Day IV (m). M and f are still contending. V and g are struck out.

Tab. I. Day IV (e). J and R must be paired together, though they have a common superior.

Tab. I. Day IV (e). M is First-prize-man.

Tab. I. Day V (m). R and f must be paired together, though they have a common superior. J is “odd man.”

Tab. II. Day V (m). R is now the only man with one superior, and is therefore Second-prize-man.

Tab. I. Day V (e). J and f contend for the Third prize.

If this Tournament were fought by the present method, the 4 Prize men would be C, M, V, f: f would get the 2nd prize, and C and V the 3rd and 4th: i. e. the 5th best man would get the 2nd prize, and the 14th and 11th best the other two.

§ 5. An equitable system for scoring in matches

In order to make “matches” more equitable, I propose to abolish “sets,” and make a “match” consist of “games.” Thus, instead of “best of 11 games = set; best of 5 sets = match” (i. e. he who first wins 6 games wins a set; he who first wins 3 sets wins a match), where a player *may* win with as few as 18 games, and *must* win with 28, I would substitute “he who first wins 28 games, or who gets 18 games ahead, wins the match.” I therefore propose as follows: “For a whole-day, he who first wins 28 games, or who gets 18 ahead, wins the match: for a half-day, he who first wins 14 games, or who gets 9 ahead, wins the match.”

§ 6. Concluding remarks

Let it not be supposed that, in thus proposing to make these Tournaments a game of pure skill (like chess) instead of a game of mixed skill and chance (like whist), I am altogether eliminating the element of luck, and making it possible to predict the prize-winners, so that no one else would care to enter. The “chances of the board” would still exist in full force: it would not at all follow, because a Player was reputed best, that he was certain of the I St prize: a thousand accidents might occur to prevent his playing best: the 4th best, 5th best, or even a worst Player, need not despair of winning even the 1st prize.

Nor, again, let it be supposed that the present system, which allows an inferior player a chance of the 2nd prize, even though he fails to play above his

reputation, is more attractive than one which, in such a case, gives him no hope. Let us compare the two systems, as to the attractions they hold out to (say) the 5th best Player in a Tournament of 32, with 3 prizes. The present system says, "If you play up to your reputation, your chance of a prize is about $\frac{1}{4}$ th; and even if, by great luck and painstaking, you play 2nd or 3rd best, it never rises above a half." My system says, "It is admitted that, if you only play up to your reputation, you will get nothing: but, if you play 2nd or 3rd best, you are certain of the proper prize." Thus, the one system offers a chance of $\frac{1}{4}$ th, where the other offers nothing; and a chance of a half, where the other offers certainty. I am inclined to think the second the more attractive of the two.

If, however, it be thought that, under the proposed system, the very inferior Players would feel so hopeless of a prize that they would not enter a Tournament, this can easily be remedied by a process of handicapping, as is usual in races, &c. This would give every one a reasonable hope of a prize, and therefore a sufficient motive for entering.

The proposed form of Tournament, though lasting a shorter time than the present one, has a great many more contests going on at once, and consequently furnishes the spectacle-loving public with a great deal more to look at.

10.26 Circular Billiards (Variant A)

Source: printed 1890, two similar editions, here only one

For Two Players. Invented, in 1889, by Lewis Carroll.

The Table is circular, with a cushion all round it, no pockets, and three white spots arranged in an equilateral triangle.

Rules

1.

String for lead. Then the player, who is not to begin, places the 3 balls (red, white, and spot-white) on the spots provided for them. The first stroke must be played at the *red* ball.

2.

A 'miss' counts 1 to the adversary. A ball driven off the table, counts 2 to the adversary, and must be replaced on its original spot.

3.

If the ball in play strike one ball, and nothing else, it counts nothing.

4.

A cannon counts 2, and gives the right of playing again.

5.

Striking the cushion counts 1 for every ball struck afterwards. Thus, a cushion struck before striking one ball counts 1: a cushion struck during a canon counts 1: a cushion struck previous to a cannon counts 2. Two or more consecutive cushions are reckoned as one only.

6.

Game is 50 or 100.

[P. T. O.]

Remarks

The circular Table will be found to yield an interesting variety of Billiard-playing, as the rebounds from the cushion are totally different from those of the ordinary game.

The 5 possible modes of scoring are here appended. (N.B. '*B*' stands for 'Ball', '*c*' for 'cushion'.)

All scores below the line give the right of playing again.

<i>c B</i>	scores	1
<i>B B</i>	„	2
<i>B c B</i>	„	3
<i>c B B</i>	„	4
<i>c B c B</i>	„	5

10.27 Circular Billiards (Variant B)

Source: printed 1890

For Two Players. Invented, in 1889, by Lewis Carroll.

The Table is circular, whith a cushion all round it, and has neither pockets nor spots.

Rules

1.

One Player takes the 3 balls (red, white, and spot-white) in his hand, turns his back on the Table, and rolls them on. The other Player begins.

2.

A 'miss' counts 1 to the adversary.

3.

If the ball in play strike one ball, and nothing else, it counts nothing.

4.

A cannon counts 2, and gives the right of playing again.

5.

Striking the cushion counts 1 for every ball struck afterwards. Thus, a 'plain' cushion (struck before striking one ball) counts 1, and two such count 2: a 'sandwich' cushion (struck during a canon) counts 1, and two such count 2: a 'previous' cushion (struck previous to a connon) counts 2, and two such count 4. Three or or more consecutive cushions are reckoned as two only.

6.

Game is 50 or 100.

Remarks

The circular Table will be found to yield an interesting variety of Billiard-playing, as the rebounds from the cushion are totally different from those of the ordinary game.

To illustrate the great variety of play, in this game, the 12 possible modes of scoring are here appended. (N.B. '*B*' stands for 'Ball', '*c*' for 'cushion,' '*s*' for 'sandwich-cushion', and '*p*' for 'previous cushion'.)

All scores below the line give the right of playing again.

<i>c B</i>		scores	1
<i>cc B</i>		„	2
<i>B</i>	<i>B</i>	„	2
<i>B</i>	<i>s B</i>	„	3
<i>B</i>	<i>ss B</i>	„	4
<i>p B</i>	<i>B</i>	„	4
<i>p B</i>	<i>s B</i>	„	5
<i>p B</i>	<i>ss B</i>	„	6
<i>pp B</i>	<i>B</i>	„	6
<i>pp B</i>	<i>s B</i>	„	7
<i>pp B</i>	<i>ss B</i>	„	8

10.28 Arithmetical Croquet

Source: manuscript written April 22, 1889

for two Players

1. The first player names a number not greater than 8: the second does the same: the first then names a higher number, not advancing more than 8 beyond his last; and so on alternately—whoever names 100, which is ‘winning peg’, wins the game.

2. The numbers 10, 20, etc. are the ‘hoops’. To ‘take’ a hoop, it is necessary to go, from a number below it, to one the same distance above it: e. g. to go from 17 to 23 would ‘take’ the hoop 20: but to go to any other number above 20 would ‘miss it’, in which case the player would have, in his next turn, to go back to a number below 20, in order to ‘take’ it properly. To miss a hoop twice loses the game.

3. It is also lawful to ‘take’ a hoop by playing *into* it, in one turn, and out of it, to the same distance above it in the next turn: e. g. to play from 17 to 20, and then from 20 to 23 in the next turn, would ‘take’ the hoop 20. A player ‘in’ a hoop may not play out of it with any other than the number so ordered.

4. Whatever step one player takes, bars the other from taking an equal step, or the difference between it and 9: e. g. if one player advances 2, the other may not advance 2 or 7. But a player has no ‘barring’ power when playing *into* a hoop, or when playing from any number between 90 and 100, unless the other player is also at such a number.

5. The ‘winning-peg’, like the ‘hoops’, may be ‘missed’ once, but to miss it twice loses the game.

6. When one player is ‘in’ a hoop, the other can keep him in, by playing the number he needs for coming out, so as to bar him from using it. He can also do it by playing the difference between this and 9. And he may thus go on playing the 2 barring numbers alternately: but he may not play either twice running: e. g. if one player has gone from 17 to 20, the other can keep him in by playing 3, 6, 3, 6, etc.

10.29 Syzygies

Source: *The Lady*, July 23, 1891–June 2, 1892, weekly with two gaps (first three weeks in November 1891, and December 24, when *The Lady* was not published), 42 issues; some parts are omitted: repeated texts (which are only reproduced once, including the title), tables with scores (which are omitted completely), and texts not related to Syzygies (which are moved to other places); several printing errors have been corrected, sometimes without notice

A Word-Puzzle. By Lewis Carroll.

July 23, 1891

When two words have one or more letters standing together in the same order, common to both, this collection of letters may be called a “Syzygy” between the two words. Thus “a” is a Syzygy between cat and rat; “en” is a Syzygy between friend and enemy; and “din” is a Syzygy between pudding and dinner.

The puzzle consists in linking together two given words by a chain of words, called links, such that every two consecutive words may contain a Syzygy, and the longer the Syzygies are, the more marks do they obtain. Thus, supposing the two given words were door and window, the following would be a chain linking them together:—

DOOR
 (oor)
poorest
 (res)
resound
 (und)
undo
 (ndo)
WINDOW

The above will serve as a specimen of the way in which such chains should be written out, each Syzygy being placed in a parenthesis.

Rules

1. A Syzygy may stand at the beginning, or end, or in the middle of a word; but it may not begin both of the words to which it belongs, neither may it end both. Thus

handsome
 (some)
somewhere

would be a lawful Syzygy; but

handsome
 (some)
troublesome

would be an unlawful one. A chain containing an unlawful Syzygy would get no marks.

2. The words used as links must be ordinary words given in dictionaries, or inflexions of them. Proper names and words containing hyphens are not allowed.

3. The letters “y” and “i” are to be regarded as the same. Thus

busy
 (usi)
 using

would be a lawful Syzygy.

4. The marks to be given with each chain are calculated by adding together the number of letters in the longest Syzygy and seven times the number in the shortest, and deducting a mark for every link and for every “waste” letter (*i. e.*, every letter which does not enter into a Syzygy).

Specimen Chains

In the following chains the figure placed against each word indicates the number of “waste” letters in it.

CONVEY .....4			
(on)			
Once .....0	2+14	.....	16
(ce)	1+ 8	.....	9
PARCEL 4			<hr/> 7

CONVEY .....3			
(nve)			
Inverse .....1			
(rse)			
Sparsely 3	3+21	.....	24
(par)	2+10	.....	12
PARCEL 3			<hr/> 12

CONVEY .....1			
(conve)			
Unconverted 5			
(conver)			
Converse .....1			
(vers)			
Versifier .....1	6+28	.....	34
(fier)	4+11	.....	15
Fiercely .....1			<hr/> 19
(rcel)			
PARCEL 2			

We propose to give a prize of One Guinea to the competitor who gains the greatest number of marks from the date of this number to the 29th of September.

The first Competition will be to

Change a CONSERVATIVE into a LIBERAL.

Answers must be received by (or before) the first post on the 4th of August. The envelope to be marked “Syzygies” in the left-hand corner.

July 30, 1891

[...]¹

On reconsidering the matter, it seems to us that by fixing the period at which the prize will be given at such an early date as 29th of September we shall hardly be giving our readers sufficient time to become acquainted with the true nature of the Syzygy. So we have decided to give the first two competitions as experimental ones, and then to start the series for the prize, which will continue until 3rd December inclusive.

We propose to give a prize of One Guinea to the competitor who gains the greatest number of marks, commencing next week, to the 3rd of December. The first two competitions will be to

*Change a CONSERVATIVE into a LIBERAL, and
Get VERDICT from JURY.*

Marks will be given for these Competitions, but they will not count towards gaining the prize.

Answers must be received by (or before) the first post on the 11th of August. The envelope to be marked "Syzygies" in the left-hand corner.

August 6, 1891

[...]²

August 13, 1891

[...]³

The marks for the two trial Syzygies will be published next week.

We propose to give a prize of One Guinea to the competitor who gains the greatest number of marks, commencing next week, to the 3rd of December. The competitions this week will be to

*Turn DOOR into WINDOW
TRAVEL on CONTINENT*

Answers must be received by (or before) the first post on the 25th of August. The envelope to be marked "Syzygies" in the left-hand corner. The problems for the prize competition will be set as follows:—

¹Remark: Introduction with Rules and Specimen Chains reprinted from July 23

²Remark: Reprint of the column from July 30, except for Specimen Chains

³Remark: Introduction with Rules and Specimen Chains reprinted from July 23

Dates of Setting	Dates of sending in Answers
Aug. 13	Aug. 25
Aug. 20	Sep. 1
Aug. 27	Sep. 8
Sep. 3	Sep. 15
Sep. 10	Sep. 22
Sep. 17	Sep. 29
Sep. 24	Oct. 6
Oct. 1	Oct. 13
Oct. 8	Oct. 20
Oct. 15	Oct. 27
Oct. 22	Nov. 3

August 20, 1891

[...]⁴

The competitions this week will be to

Change CHAIR into TABLE
AVOID a STORM

Answers must be received by (or before) the first post on the 1st of September. The envelope to be marked “Syzygies” in the left-hand corner.

The following questions, received from competitors, have been submitted to Mr. Lewis Carroll, whose answers are here appended:—

Qu. 1. [*Turquoise*] Is the name “Syzygy” taken from the dictionary meaning, sun, moon, and earth being in “Chain”? Or do the Greek roots give the idea of “linking together”?—Ans. Both.

Qu. 2. [*A Snark*] May a competitor send more than one chain? If so, will they all count, or only the one that gets most marks?—Answer. He may. Only the one that gets most marks.

Qu. 3. [*Wrath*] May chains be sent on postcards?—Ans. Yes.

Qu. 4. [*Wrath*] Should competitors make a score of their own marks by the side of their answers?—Answer. It is not necessary.

Qu. 5. [*G. G., Persevere, Quercusonis*] Are plurals, or inflections, allowed to count as distinct terminations?—Answer. Yes. Thus the Chain

rats
(at)
cat
(at)
eats

would be lawful.

Qu. 6. [*Jay, Toofdiarb*] Is it lawful to use the same Syzygy twice consecutively?—Ans. Yes. Thus the Chain

bend
(end)
ends
(end)
mend

⁴Remark: Rewritten version of Rules very similar to original from July 23

would be lawful.

Qu. 7. [*Henry, Persevere*] May there be two words, with the same termination, with another Link between them?—Ans. Yes. See previous answer for example.

Qu. 8. [*Nenia*] May consecutive Links begin or end with the same set of letters, provided such beginnings or endings are not used as the Syzygy?—Ans. They may, provided *none* of the set are used as the Syzygy. Thus, the Chain

minion
(io)
ration

would be unlawful, because “io” is a portion of the common ending. But the Chain

minion
(on)
onion

would be lawful, even though “on” is a portion of the common ending. Perhaps “*Nenia*” can guess why?

Qu. 9. [*Toofdiarb*] May a Syzygy consist of the whole of one of the two Links, and the beginning or end of the other?—Ans. No. Thus in the Chain

bold
(old)
old
(old)
older

both Syzygies are unlawful, since the set of letters “o, l, d,” stands at the *beginning* of “old,” and also at the *end* of it.

Qu. 10. [*Gwynedd, Miriam*] Is there *no* limit to the length of a Chain?—Ans. None whatever: but since a mark is deducted for every Link, it is better not to use more than a thousand or so.

Marks for the Syzygy Set on July 23rd, 1891

“Change a CONSERVATIVE into a LIBERAL.”

The seven numbers appended to each name are “maximum Syzygy, minimum Syzygy, total; links, waste letters, total: score.” Where the score is given as 0*, it is *really* less than zero, but, by a special favour on the part of *The Lady*, it is raised to zero. The words quoted in the parantheses violate the Rules, so that no score can be allowed.

[...]⁵

Then Chains have attained the highest score—29. That sent in by “*Persevere*” (selected from the ten by drawing lots) is as follows:

CONSERVATIVE
(servati)
observation

⁵Remark: Scores here and everywhere following omitted

(ation)
deliberations
(libera)
LIBERAL

August 27, 1891

Notice to Competitors

Competitors are requested to remember that no marks can be given for a Chain, unless it be distinctly shown what are the common parts, of each pair of Links, which are claimed as Syzygies. Sometimes two consecutive links have two or more common parts, each of which might be taken as a Syzygy, and it is for the Competitor to declare which of them he wishes to be so taken. For example, if “conservative” and “reconsideration” were two consecutive Links, either (cons) or (er) or (ati) might be taken as a Syzygy; and it would clearly be unfair to credit a competitor with the longest, when perhaps he had not seen it, but had meant to use the shortest.

The proper way to write a Chain is to place each Syzygy, in a paranthesis, between the Links to which it belongs. *Atol* and *Signora* have contented themselves with merely underlining the portions they wish to use as Syzygies, and have done even that incompletely, *Atol* having only marked a few in No. 1, and *Signora* having marked only one in No. 1, and none at all in No. 2. The above will serve as answer to questions asked by *Esperance* and *Therise*.

Supplementary List of Marks for Problem 1,

“Change a CONSERVATIVE into a LIBERAL.”

The best Chain in this List is that of *Ave*, which scores 29, but need not be given here, as it scores no higher than the one published last week.

Marks for Problem 2.

“Get VERDICT for JURY.”

For Problem 2, seven Competitors attained the maximum score of 22. They are *F. M. P.*, *Jay*, *Kel*, *Lady Margaret*, *Peacock*, *Quercusonis*, *Rosemary*. That of *Peacock* (selected by drawing lots) is as follows:—

JURY
(jury)
injuring
(ring)
ringlet
(ingle)
dingle
(ding)
herding
(erdi)
VERDICT

The competitions this week will be to

PROSECUTE *a* TRESPASSER
and
Put COALS *on* FIRE

Answers must be received by (or before) the first post on the 8st of September. The envelope to be marked “Syzygies” in the left-hand corner.
[...]⁶

September 3, 1891

[...]⁷
The Competitions this week will be to

Turn DOG *into* CAT
and
BUILD *a* PALACE

Answers must be received by (or before) the first post on the 15st of September. The envelope to be marked “Syzygies” in the left-hand corner.

The marks for last week’s Competition will be published next week. The Chain, or “Conservative-Liberal,” by “*Persevere*,” was accidentally misstated in some copies of *The Lady*, by omitting the “s” in “deliberations,” and thereby causing the Syzygy “ation” to be an unlawful one.

September 10, 1891

As I, the inventor, am at present undertaking the scoring for this Competition, it will be simpler to write what I have to say in the “first person.” And, first, I am sorry to have to announce that the commencement of the Prize Competition must again be deferred, as experience has shown me that the present system of scoring fails to secure the absolutely essential condition that those who show the greatest skill shall make the highest scores. Consequently, I must ask the gracious forbearance of all lady-readers of *The Lady* (for, if they only prove kind, the gentleman-readers must needs follow suit) for my issue of a revised system of Rules, and for the announcement that the Prize Competition will commence with the two problems here given, viz.—

“*Change* BOY *to* MAN,”
“*Reconcile* GLADSTONE *to* SALISBURY”

and will conclude with the two to be set on October 29th, so that the Competition will consist of sixteen problems altogether. It seems to be necessary, also, that I should undertake (for there is not time to consult the Editor in each case) to decide which are, and which are not, “ordinary” words. It is an arduous task, for the “ordinary” shade off into the “extraordinary” by almost imperceptible gradations, and already I begin to feel the boiling torrents of wrath it must bring upon my head! Still, I warn all whom it may concern that I will have no mercy on words that are never used in ordinary conversation, and would

⁶Remark: Competition dates omitted

⁷Remark: Introduction with Rules reprinted from July 23, Notice shortened from August 27

not be understood if they were (here are a few that have been sent in:—serai, edelite, morling, vellon, entonic, eben, lere. What a cheerful tea party it would be where such words were bandied about!), and that, if any fair one feels a doubt about a word being “ordinary,” she had better send in an alternative Chain, not containing it, and thus escape the fatal “zero.”

But the question, whether a Chain has or has not, been sent in too late to be accepted, or whether revised versions of Chains are to be accepted after the date fixed for sending in, is one I leave entirely to the Editor to decide. If controversy should arise on this thorny topic, I prefer that he should do the arguing; and if, unfortunately, a duel should be the result, I prefer that he should do the fighting.

I will now give a revised version of the Rules of the Puzzle.

Definitions

1. When two words contain a common letter, or a common set of consecutive letters, this letter, or set of letters, is called a “Syzygy” between the two words.

2. A series of words, such that each two consecutive words contain a Syzygy, is called a “Chain.” And all the series, except the two extremities, are called the “Links” of the Chain.

3. This puzzle consists in forming a Chain, with two given words as its extremities. For example, if “door” and “window” were the given words, the following would be a Chain linking them together, the Syzygies being placed in parentheses:—

DOOR
 (oor)
poorest
 (res)
resound
 (und)
undo
 (ndo)
WINDOW

Rules

1. The Chain must be written out as above. If the Syzygies claimed be not all stated, the score will be “0.” Also if a Syzygy be claimed which does not exist in both the words between which it stands. And no more will be allowed for than what is claimed, even though a longer Syzygy might have been claimed. For example, a Chain containing “poorest (rest) resound” would score “0”; but, if it were written “poorest (re) resound,” this would only count as a two-letter Syzygy.

2. If two words have a common set of letters at the beginning of both, or at the end of both, none of these letters, standing in corresponding places in the two words, may be used as a Syzygy; but this does not apply to a common set at the beginning of one of the two words, and at the end of the other. Thus “handsome (om) somewhere” would be a lawful Syzygy; but “handsome (om) troublesome” would be an unlawful one. Yet “waverer (er) wanderer” would be a lawful Syzygy, since the common part contains “er” twice over, and the first “er” in one word may be taken along with the second in the other. A Chain containing an unlawful Syzygy would score “0.”

3. The letters “y” and “i” may be regarded as identical. Thus “busy (usi using)” would be a lawful Syzygy.

4. The words used as Links must be “ordinary” words—i. e., words one would have a reasonable chance of hearing in ordinary conversation, and such as would be generally understood in ordinary society. Proper names, when such as are usually printed with capital letters, are not admissible. Thus, “India” would be an unlawful Link; but “china” would be lawful. Words usually printed with hyphens (e. g. “tea-table”) are unlawful. And also foreign words, unless they have made their way into ordinary conversation (e. g., “ennui,” “alibi,” “nous”), and have thus been practically anglicised. And also abbreviated words (e. g., “silver’d”).

5. The score given to each Chain is calculated by adding together the number of letters in the first and in the last Syzygy, and seven times the number in the shortest Syzygy, and deducting two marks for every Link and one for every “waste” letter (i. e., every letter which does not enter into a Syzygy). If the first and the last Syzygy are of different lengths in a Chain containing three or more Syzygies, when the first and the last are of different lengths, no account is taken of the shorter of the two in estimating the “shortest” in the Chain.

These Rules will only come into force in marking for the Prize Competition. Till that begins, the Chains will be marked by the old Rules.

Before giving the lists of scores for Problems, I will make one or two remarks, and answer some questions that have reached me.

Remarks

Many competitors have sent no address. It would be better to furnish it in all cases, as it is just conceivable that one of these homeless ones might win the prize.

A wrongly-spelt word I do not notice, unless it affects a Syzygy, in which case I quote the word, and score a “0.”

The very careless mistake I made in writing out the Chain sent by “*Persevere*” for Problem 1, by omitting the “s” in “deliberations,” has naturally brought upon me a brisk shower of remonstrances. The moment I received a “proof” of the article I telegraphed to the Editor to correct it, but I am sorry to find that copies of *The Lady* containing the mistake had already been sold.

The following Chain, sent in by “*Aaron*,” is a good example of the method of scoring:—

DOOR
 (oor)
mooring
 (ring)
ringing
 (ing)
swing
 (win)
WINDOW

The score is—“4, 3, 25; 3, 9, 12: 13.” It looks very much as if it contained an unlawful Syzygy, doesn’t it?

A very funny thing has happened. Two competitors, being doubtful which of two given words I wished to stand at the top of the Chain, have worked it

both ways, but, oddly enough, instead of merely writing out the first Chain backwards, they have thought it necessary to make two *different* Chains! Much as if one should say, "To go from London to York you must take such-and-such a route; but to go from York to London you must take another route."

Many competitors seem to think a word must be "ordinary" if it is in a dictionary. Surely that would prove too much. All words are given in dictionaries. Many seem to think that such a Syzygy as "interposition (nterpos) interposed" would be lawful. I do not think this a fair interpretation of the Rule. What would be the use of forbidding eight letters to be used, and yet allowing seven of them?

Qu. 11. [*A Novice*] Is it lawful to make plurals of any words, whether they be nouns, participles, or otherwise?—Ans. Only when the plurals are "ordinary" words. Thus, "faintness" is an "ordinary" word; but "faintnesses" distinctly "extraordinary."

Qu. 12. [*Margaret, Tivoli*] May a Syzygy consist of the whole of a Link?—Ans. Yes. See Prob. 3.

Qu. 13. [*A Novice*] Is the use of a whole word as a Syzygy limited to the case where "y" and "i" are taken as equivalent?—Ans. No.

Qu. 14. [*Acanthus*] Is it better to have long Syzygies, or short?—Ans. Long.

Qu. 15. [*Acanthus*] Is it better to have long words or short?—Ans. It does not affect the score.

Qu. 16. Is it necessary to have a pseudonym?—Ans. No.

Qu. 17. [*A Novice*] When sending up for this competition, what address should be used?—Ans. Any address that is safe to reach you.

Anne writes to say that her Chain for Problem 2 contained "perdition (ditio) expeditious," and that this is quoted as "perditions (ditions) expeditious," thus producing an unlawful Syzygy. On referring to her previous paper, I find that she uses exactly the same symbol for "n" and "u," but all three words end with the same seven letters, the last being "s." The only effect of substituting "u" for "n" would be to turn "perditions," a word whose existence is doubtful, into "perditious," a word whose non-existence is certain. If Anne likes to send her address she can have her papers returned to her, to examine for herself.

Firefly complains that she was not credited with any score for Problem 1. Let her refer once more to the list published August 20th.

Miss F. Longton writes, under date August 24th, that she is sending solutions for Problems 3, 4; but none have reached me. *Peter* asks why his Chain, for Problem 1, was not noticed. I regret to say that it never reached me. *Phlox's* Chains for Problems 1, 2 arrived to late to be entered in the lists. Her scores are—"5, 2, 19; 5, 18, 23: 0," and "[storage (st) sterile] 0."

Plumbago, writing from Malta, asks for a week's "grace" in sending in answers on account of distance. On such a principle we must allow time for answers to come in from Australia. No; this Puzzle is meant for persons resident in England.

Polyphemus writes (letter undated) that he had sent (no date named) a chain for Problem 1. I regret that it did not reach me. The one he now sends would score "7, 5, 42; 3, 11, 14: 29"; which is the highest that was attained.

S. M. G. complains that her score for Problem 2 is printed "1" instead of "11." I fear there are many such misprints; I did not correct for press, but hope to be able to do so in future. *Stellaria* has sent in an amended version of her Chain for Problem 2, which contained a *lapsus pennae*. Her score now is "6, 3, 27; 5, 11, 16: 11."

Marks for Problem 3.

“Turn DOOR into WINDOW.”

When “x,” instead of a number, occurs in a score, it means that I do not count that number, as the number of links were alone enough to extinguish the score.

NOTE—Each of the pseudonyms “Aaron” and “Foggs” has been adopted by two competitors, and no one of the four has sent any name or address. One competitor, writing from Clarence Hill, Tunbridge Wells, gives no name. Another gives neither name nor address; the post-mark is Launceston. Of the 154 competitors no less than sixty have reached the maximum score, “28.” They all send in the same Chain, viz—DOOR (door) indoors (indo) WINDOW.

Marks for Problem 4.

“TRAVEL on CONTINENT.”

Two competitors, “*St. Helier*” and “*Wraith*,” have reached the maximum score, “31.” They send the same Chain, viz.:—

TRAVEL
(trave)
contravene
(contr)
uncontrite
(ncont)
incontinently
(continent)
CONTINENT

September 17, 1891

Whenever the Philosophy of Puzzles comes to be fully discussed (and, if only I could be secure that my life would endure for a thousand long years, I would try it myself), one chief merit of that form of recreation will be declared to be that it offers a bribe to the human intellect (just as we bribe with dainty dishes an invalid who has lost his appetite) to exert itself, on however trivial a matter, so as not to spend all its waking hours in simple stagnation. All healthy mental games have the same merit, some perhaps (e. g., *chess*) in excess, by requiring such intense thinking as to cease to be *recreations* at all.

But, to effect this, the Puzzle needs to be *mentally* soluble—to be such that one can work it out when lying awake at night or when taking a solitary walk. “Double Acrostics,” in its original form, had this merit, no doubt. In this age, when the most unheard-of words are admitted, words that can only be found in dictionaries, it has degenerated into a purely mechanical occupation, and no longer requires the slightest exercise of *thought*, specially since the appearance of what is perhaps the most ghastly invention of this century—the “Acrostic Dictionary.”

It is in the hope of saving my new Puzzle, “Syzygies,” from this fate that I sternly refuse to accept *any* words which have evidently been culled from dictionaries. I have worked out dozens of them myself, simply in the *head*; and

I want the competitors to do the same. And it is with the same object that I have altered the rules, so that it will no longer be possible to score marks by simply dragging in a couple of very long words, in order to have a large "maximum-Syzygy." If this were allowed, competitors would soon begin to keep such couples of words "cut and dried," to be regularly used in every Chain, and all skill and all healthy mental exercise would be eliminated.

In the new Rules, published September 10, readers are requested to erase the latter half of Rule 5.

B. B.'s Chains for Problems 3 and 4 came in late. Her scores are "3, 2, 17; 4, 11, 15: 2," and "4, 3, 25; 3, 10, 13: 12." *Foggs* was scored "9" by mistake for Problem 4. His true score was "[pontine] 0."

Lortay need not trouble herself to print the *whole* Chain in capitals. The two given words are all that need it.

Marks for Problem 5.

"Turn CHAIR into TABLE."

The † mark indicates that the Chain contains an "artificial" maximum-Syzygy. The highest score reached is that of *Quercusonis*, "29"; but, as it contains what I have called an "artificial" maximum, I cannot regard it as showing the highest *skill*, though it is strictly legitimate, according to the present Rules. Her Chain is as follows:—

CHAIR†
 (hair)
 hairless
 (less)
 lesser
 (sser)
 assertion
 (tion)
 constitutionally
 (constitutional)
 unconstitutional
 (const)
 constables
 (table)
 TABLE

The highest score reached without any such aid is that of *St. Helier*, "27." Her Chain is as follows:—

CHAIR
 (hair)
 hairiness
 (ness)
 finessing
 (essing)
 blessings
 (bles)
 stables

(table)
TABLE

Marks for Problem 6.

“AVOID a STORM.”

The mark † indicates that the Chain contains the word “voidance,” which I do not regard as an “ordinary” word, but have marked these Chains, under protest, in deference to the fact that 57 out of 144 competitors do so regard it. In a prize competition I should score them all “0.”

Ignoring these Chains, I find the highest score to be “25,” which has been reached by *Dolly Varden* and *E. M. R.* Their Chains are as follows:—

AVOID	AVOID
(void)	(avoid)
voids	unavoidable
(void)	(avoida)
avoidance	avoidance
(ance)	(ance)
ancestor	ancestor
(stor)	(stor)
STORM	STORM

I have mislaid *Signora's* Chain, and cannot be certain whether she used the word “voidance.” If not, and if she will send a fresh copy, it shall be published as best of all.

September 24, 1891

I wish to say a few words in defence of the rule I have laid down, to allow no marks to a Chain in which a Syzygy is claimed which does not exist in both the words between which it stands. Take, as an instance, *Caterina's* Chain for Problem 8, which scores 0, because she has claimed the Syzygy “(itable)” as existing in the word “uncharitably.” Some might think it rather hard that a mere oversight, in writing “(itable)” instead of “(itabl)” does not deserve so severe a penalty. But surly oversights a part of the game? Many a game of chess is lost by a single oversight; yet it would spoil the interest of that noble pastime entirely to begin allowing moves to be recalled. However, suppose for a moment that I *were* to adopt the rule of correcting an unlawful Syzygy by erasing the unlawful letters, and had altered this Syzygy to “(itabl)”; and suppose that the next Chain I had to mark were to contain “consternation (ternation) alteration”; and that the Chain next after that were written “COALS (coals) charcoal (charcoal) arcades (arcades) desires (desires) FIRE”; will those gentle-hearted readers, who think I ought to have scored *Caterina's* Chain, kindly say how they would have me to treat these other cases?

Let me also point out that it is not *every* participle that can have an “un-” prefixed, and still remain an ordinary word: and that it is not *every* active participle that can be treated as a substantive, and have an “s” tacked on to it. The test in every case must be “is the word ever used in books or heard in conversation?” If I do not make a firm stand here, I shall soon have to accept such monstrous coinages as “unfricasseeing, unfricasseed, fricasseeings,” and the whole interest of the Puzzle, as a test of *ingenuity*, will be destroyed.

Somebody has sent in Chains for Problems 7 and 8 with no name or address (none, at least, on the half note-sheet forwarded to *me*). The scores are “unprosecuted, 0,” and “uncoalescent, ascention, 0.”

Anne points out that, on August 27, I quoted her as using the word “peritions,” whereas she had written “perditions.” It was merely a mis-print. I quoted it correctly on September 10. Her other remarks shall be replied to.

A Novice’s Chains, for Problems 3 and 4, came in late. Her scores are “4, 3, 25; 2, 7, 9: 16,” and “compromit, recompelling, 0.”

Bittern asks “if *Aaron’s* Chain is right with ‘ringing (ing) swing,’ how can *Bittern’s* be *wrong* with ‘wishing (ing) swing’?” His apparent paradox was explained in Rule 2 on September 10.

Several competitors write about the vexed question of “ordinary words.” *Bosco* pleads that “*acontias*” is in Nuttall’s dictionary, and means a genus of serpents; and *Jay* suggests that “it would be a good plan to name a dictionary as a standard to which we could all refer.” If I could anyhow prevent *all* competitors alike from ever using a dictionary in this Puzzle, I would gladly do so. My object is to make the prize accessible to any one by ingenuity only, and not to allow any advantage at all to those who will not exert their wits, but only their hands and eyes. With this object, I accept such words only as might occur to any one without referring to dictionaries. If any competitor wants to test a word, let him mention it in a party of, say, ten people, and say “Is there any one here who does not understand it, or any one who never heard it in ordinary conversation, and never saw it in any ordinary book?” If there *is* any such person present, he had better not use the word. *Jay* also points out that I have given marks to a Chain containing the word “uncontrite.” Well, that is one of those puzzling “border-cases” that fringe every law, and harass every law-giver. Still, I can well imagine hearing it said, in my test party of ten people, “As the boy seemed perfectly callous and uncontrite, it seemed best to expel him from the school,” and I should feel quite sure that the whole party would understand what was meant.

By an unfortunate mistake, no Problems were set last week. The Prize Competition, however, shall still contain sixteen Problems, as promised. Those for this week are

3. “DO SO,”
4. “*Build a RAILWAY STATION,*”
5. “*Visit BEACHY HEAD.*”

Answers must be received by (or before) the first post on the 1st of October. The envelope (or card) to be marked “Syzygies” in the left-hand corner.

The remaining Problems for the Prize Competition will be set as follows:—

Problems	Dates of Setting	Dates of sending in Answers
6, 7, 8	Oct. 1.....	Oct. 8
9, 10	Oct. 8.....	Oct. 15
11, 12	Oct. 15.....	Oct. 22
13, 14	Oct. 22.....	Oct. 29
15, 16	Oct. 29.....	Nov. 5

Marks for Problem 7.

“PROSECUTE *a* TRESPASSER.”

French Polish has sent in a Chain for “Prosecute a Passenger,” a problem which has not yet been set.

The highest score reached is that of *Lady Margaret*, “22”; but, as it contains an “artificial” maximum, I cannot regard it as showing the highest skill, though it is strictly legitimate, according to the present Rules. Her Chain is as follows:—

PROSECUTE
(secute)
persecuted
(perse)
disperse
(dispe)
indispensably
(dispensabl)
dispensable
(sable)
sables
(sable)
surpassable
(surpass)
unsurpassed
(passe)
TRESPASSER

The highest score reached without any such aid is “20.” This has been attained by three competitors—*Adoxa*, *Curlitot*, and *Glen*—who send Chains which differ only in one or two final letters. *Adoxa*’s Chain is

PROSECUTE
(secute)
persecuted
(pers)
usurpers
_(surp)⁷⁸
surpassed
(passe)
TRESPASSER

Marks for Problem 8.

“Put COALS on FIRE.”

The highest score reached is that of *Mad*, “29”; but, as it contains an “artificial” maximum. Her Chain is—

COALS
(coal)
charcoal
(char)

⁸accidentally “usurp”

uncharacteristic
(characteristic)
characteristically
(alli)
falling
(fall)
pitfall
(pitf)
spitfires
(fire)
FIRE

The highest score reached without any such aid is that of *Curlitot*, 18. Her Chain is—

COALS
(coal)
charcoal
(char)
discharge
(charge)
chargeable
(able)
cables
(able)
despicable
(espi)
respite
(spit)
spitfires
(fire)
FIRE

October 1, 1891

As I should like to explain my motives for withdrawing the second half of Rule 5, and as a communication from *Nenia* expresses with admirable clearness all that I wish to say, I quote it almost *verbatim*. She points out that the Rule, as first given, made the Puzzle “easier, but certainly not so clever. Take the following, which gives the net score of 19 for a very poor arrangement: Gladstone (adstone) loadstones (ston) astonish (is) Salisbury. There would be no difficulty, and therefore no credit, in getting a miserable little Syzygy of 2 at the last, if that might be ignored in counting the shortest.”

Such a curious interpretation has been suggested for Rule 5, that I will quote what *Persevere* says about it, as I think my answer will interest others as well. After quoting the definition of a “waste” letter—viz., a letter “which does not enter into a Syzygy,” she says, “according to that, I make my ‘chair-table’ answer score 28, whereas I only receive 26 marks. I subjoin it, and show how I scored it: Chair (hair) hairless (less) blessed (bles) stables (table) table. For ‘blessed’ I take the Syzygy ‘bles,’ leaving only ‘d’ as a waste letter. For ‘stables,’ the

Syzygy ‘table,’ and the ‘s’ out of ‘less.’ Can the letters only be used once in the whole Chain? Or must they be in the two Syzygies above and below the Link? I am not writing to make any complaint, but want to understand the scoring system thoroughly.” This is a very good instance to show the enormous difficulty of so constructing a Rule that it shall be incapable of any other interpretation than the one desired. I certainly never intended the Syzygies to be broken up in this way, and their component letters scattered right and left, like pepper! In “blessed,” letters 2 to 5 constitute the preceding Syzygy, and letters 1 to 4 the following one; consequently letters 6 and 7 are “waste.” Similarly, in “stables,” letters 4 to 7 constitute the preceding Syzygy, and letters 2 to 6 the following one; consequently letter 1 is “waste.”

Let me earnestly advice every competitor to send in for every Problem *one* perfectly “safe” Chain (i. e., one as to which there can be no possible doubt that every Link is an “ordinary” word). Along with that send as many as you like containing doubtful words, provided that every such Chain scores higher than the safe one. By this method you are certain of scoring something. Hitherto, one score in every three has been “0”!

There is an unfortunate misprint in *Adoxa’s* Chain for “prosecute-trespasser” in the number for September 24th. The third Syzygy was “surp” in her MS., and also in my MS., which I happen to have preserved. The “u” was added by the printer, and overlooked by me in correcting the proof, so it is partly my fault. *Curlitot* cannot think why “uncontribute” should be allowed as an “ordinary” word, as it is neither a dictionary word, nor one used in ordinary conversation. I gave my reasons in the last number of *The Lady*. She adds: “At present we have no real rule to go by, and Syzygy-making is becoming rather a labour than a pleasure.” I am very sorry she finds it so, and would be very glad to consider any “real rule” she can suggest which would not deprive the Puzzle of what I cling to as its chief merit—that it is soluble in the head, without any aid from books.

Denley asks why her Chain, containing “chair (air) hair” was scored “0.” It is because of Rule 2. She also asks why her answer to Problem 6 was omitted. I am sorry that I overlooked it in writing out the list. It was duly entered on her scoring-paper as “avoid (oid) asteroid, 0.”

Heartes asks whether a word (she means “a set of letters”) which occurs in the middle of each of two consecutive words may be used as a Syzygy—e. g., “palisade (alis) Salisbury.” Certainly.

E. Heathfield, Esq., Edgbaston, is requested to choose another nom de plum.

Mavis is informed that the Chain she sent for Problem 1, containing “flamboyant,” was not passed over on that account, but because it also contained “unmantle.”

Mrs. R. asks what the six figures which precede each score in the lists of marks stand for. This was explained in *The Lady* for August 13th.

Persevere asks how many alternative Syzygies are allowed. I have not seen my way to limiting the number, as it seems only fair to allow a competitor who has constructed a Chain containing a word whose claim to be regarded as “ordinary” is doubtful, to offer an alternative Chain. But I hope competitors will be merciful, as the scoring costs me a good deal of time and trouble, and will count for themselves what each Chain would score, and never send in a doubtful one, if there is a safe one that scores as much. As an instance of this, one competitor sent in for Problem 1 the Chain “boy (oy), royal (al), almanac

(man), man,” whose Links were clearly “ordinary,” and which scored 11. But, not content with this, she sent in four other Chains, whose scores were 11, 19, 9, and 8!

Quetta has sent (from India) a Chain for Problem 1, which did not come to hand till September 19, more than six weeks after date fixed for receiving answers. I shall be most happy to *score* any Chains she likes to send, but I fear it is out of question to let her compete for the Prize. Her score is “un-liberated, 0.”

S. C. G.’s answers to Problems 7 and 8 came in more than a week late. Her scores are “3, 2, 17; 2, 7, 9: 8”: and “4, 3, 25; 1, 13, 14: 11.”

Skirmisher asks, “Do we score most for a *fewer* number of Links or for *long* Syzygies in a *greater* number of Links?” Sometimes one, sometimes the other. To raise the minimum Syzygy one letter higher gains seven marks; so you can afford in doing so to forfeit six marks (e. g., by two extra Links and two extra waste letters), and still be a gainer; but if in doing so you would forfeit seven or more marks it is not worth while.

Stellaria is informed that “stablish” does not answer to the definition of an ordinary word as given in Rule 2. Did she ever hear it used in ordinary conversation? Or has she herself even once used it in the whole course of her life?

Turquoise doubts whether “sensorial” would be accepted as an “ordinary” word; “though,” she adds, “to one who has lived among medical men and books it is at least as ordinary as burials.” Do the medical men, then, among whom *Turquoise* spends a precarious life, *so constantly* talk of “burials”? She had far better migrate to that happy town where it is said that so many of the poor “die *without* medical assistance”! *Turquoise* also protests against “the idea of doing Syzygies in bed.” That is a matter that cannot be disposed of in a few words. I hope to deal with it hereafter.

The Problems for this week are—

6. “GET AGE,”
7. “CHEAT *a* TORTOISE,”
8. “*Turn a* CAMEL *into a* DROMEDARY.”

Marks for Problem 8.

“*Turn* DOG *into* CAT.”

The highest score reached is 20. This has been attained by three competitors, *E. M. R.*, *H. H.*, and *Quercusonis*; but each chain contains an “artificial” maximum. That of *H. H.* (selected by drawing lots) is as follows:—

DOG
(dog)
endogen
(end)
blend
(ble)
undistinguishable
(distinguish)
distinguish

(ing)
scathing
(cat)
CAT

The highest score reached without any such aid is that of *Aaron*, 18. His Chain is:—

DOG
(dog)
endogen
(gen)
gentry
(ntri)
intricate
(cat)
CAT

Marks for Problem 9.

“BUILD *a* PALACE.”

The highest score reached is *Quercusonis*; 27; but it contains an “artificial” maximum. His Chain is:—

BUILD
(build)
rebuildest
(dest)
destitution
(stitution)
constitutional
(constitutional)
unconstitutionally
(tion)
laceration
(lace)
PALACE

The highest score reached without any such aid is that of *Toofdiarb*, 22. His Chain is:—

BUILD
(build)
rebuilding
(ding)
dingles
(ingle)
tingle
(ting)
lacerating
(lace)
PALACE

Answers must be received by (or before) the first post on the 8th of October.
[...]⁹

October 8, 1891

Would you like to know the best possible method for solving a Syzygy problem? It is this. Having ascertained from your doctor that you are in a state of health to bear, without risk, severe brainwork and keen intellectual excitement; from the most candid of your intimate friends that you are in a pleasant temper, and free from all morbid irritability; and from yourself that you are in the humour for the task—seat yourself in an easy-chair, taking care that you have writing materials within reach, and that there are no dictionaries in the room; close your eyes, and paint the two given words on your mental retina. First look out for two-letter Syzygies (one-letter Syzygies are of no use), taking care that your Links are *absolutely* “ordinary” words. You may sometimes find such a Syzygy in the two given words, using no Link at all (e. g., “prosecute-trespasser” might be made into the Chain “prosecute [se] trespasser,” which would score “3”; and in most cases where the given words are fairly long, you may do it with a single Link, e. g., “Gladstone-Salisbury” might be made into the Chain, “Gladstone [st] list [lis] Salisbury,” which would score “3”). Having thus got a perfectly safe Chain, which will score *something*, say to yourself, “this, at any rate, shall be sent, unless I can find a better, which is *also* absolutely safe.” And, now that you are secure of not being scored “0,” begin looking for longer Syzygies. If I were doing “Gladstone-Salisbury,” I should probably begin with five-letter Syzygies, and picture to myself, successively, “glads,” “ladst,” “adsto,” &c, trying, in each case, to *see* a word in which it occurred. If this led to nothing hopeful, I should try four-letter ones, “glad,” “lads,” &c. I should then do the same thing with “Salisbury.” Having got a hopeful Syzygy out of each word, I should then go back to “Gladstone,” put on one Link, and try what Syzygies I could get out of that Link, and perhaps tack on a second Link, experimentally. Then back to “Salisbury” again, and run the Chain on two or three Links from *that* end, always *aiming* at getting the two ragged ends linked together *somehow*. The entire process is, of course, beyond the reach of rules. Success depends a good deal on ingenuity, and a good deal on *luck*. When a fairly good Chain has at last been hit on, then calculate its score; and, if it scores no higher than your “safety” Chain, try again. If it does score higher, and contains no doubtful word, take it as a new “safety” Chain, and reject the other. If it scores higher, and contains a doubtful word, send in *both* Chains.

Annafield, whose Chain for “avoid-storm” was scored “0,” on account of the word “voider,” writes to say that ‘it is really a common word, and means a butler’s tray.’ For my part, I never met with the word, and I am over thirty-two; but I am glad it is not part of the Prize Competition. I doubt if *Annafield* could find ten friends (chosen at random in different parts of England) who know the word. *Annafield* also asks “Can two Syzygies be used in one Link, e. g. ‘burials [buri] [al] Salisbury’? And would it obtain higher marks in consequence?” Only one can be scored. If a Chain contained two together, I should take the longest.

Esperance sent in an alternative Chain for Problem 2, being doubtful whether “amnesty” would be accepted. “Amnesty” is all right; but that Chain also con-

⁹Remark: reprinted modified rules omitted

tained “burial [rial] Salisbury,” which is all wrong! She is right in addressing her answers to the Editor of *The Lady*, 39, Bedford Street, Strand, London.

Skirmisher would like to have an explanation as to how it is she cannot see the Problems “prosecute-trespasser” and “coals-fire” in the columns of *The Lady*, though she has looked through the old numbers. The misfortune would appear to be partly physical, partly mental; perhaps if *Skirmisher* were to consult (1) a good oculist, (2) *The Lady* for August 27, it might be alleviated in both these aspects.

The Problems for this week are

9. “*Buy* BANBURY CAKES.”
10. “*Spend* a MONTH at TRIESTE,”

Answers must be received by (or before) the first post on the 15th of October. In the following Lists, the seven numbers appended to each name are “sum of first and last Syzygy, minimum Syzygy, total; Links, waste letters, total: score.”

Marks for Prize-Problem 1.

“Change BOY to MAN.”

With some reluctance I have accepted, as a Link, the word “unboiled,” which seems to be a favourite with many competitors (I suppose they like eggs done that way); but I will accept no more of that family, or I shall be encouraging the novelists of the future to indulge in some such rhapsody as this: “How utterly precious to the undemoralised artistic eye, when strolling through the unfrosted meadows, to watch the unroasted sheep peacefully grazing, and the unfricasseed lambs sporting merrily around them!”

The highest score reached is that of *Lady Margaret*, 19. Her Chain is

BOY
 (boy)
tomboys
 (tom)
ottomans
 (man)
MAN

Marks for Prize-Problem 2.

“*Reconcile* GLADSTONE to SALISBURY.”

Will those fourteen competitors, who will be wishing me all manner of evil things on seeing their “loadstones” thrown overboard, kindly ask themselves whether they have ever seen, or heard, or used the word, and whether they would have me accept such ghastly inflexions as “platinums,” or “micas,” or “gneisses”? Because, if *not*—

The highest score reached is twenty. This has been attained by three competitors, *Adoxa*, *St. Helier*, and *Spero*, who send the same Chain, viz.—

GLADSTONE
 (tone)
atonement

(ement)
disbursements
(isbur)
SALISBURY

October 15, 1891

Chains have been sent for Problems 13, 14, 15 from “29, Sion Hill, Bath,” with no name or *nom de plume*.

Glen asks “Am I right in thinking the smallest Syzygy is irrespective of the first and last which are to be added together?” No; see Rule 5 in *The Lady* for October 1.

Jiguel writes “Coals-on-fire I have never seen set.” No doubt, *Jiguel* has always lived in a warm climate. See *The Lady* for August 27.

Louisa cannot understand why “ringoal” (a game lately introduced) is not accepted as “ordinary” word. Well, these new words are certainly a difficulty. My feeling was that it has not yet worked its way so far into the language as to be an “ordinary” word. The fact, that it does not occur in Nuttall’s Dictionary, seems to support this view.

Persevere writes “I suppose it is lawful to begin two Links in the same Syzygy” (she means “Chain”) “with the same letter, as in the Chain ‘prosecute [secute] persecuted.” Certainly; the “p” does not form part of the Syzygy.

Phlox remonstrates against my having scored her Chain, for “avoid-storm,” 0, on account of the word “salsify.” And *Quercusonis* thinks it was “a little severe to condemn” this word, as well as “castor,” “ancestress,” “sometime,” and “unconstrainedly.” As to the last three, I still think they are not “ordinary” words, but as to the other two I find I must eat a fairly large slice of umblepie (which is sometimes mis-spelt as “humble-pie.”) With shame I confess that, though I had often enough heard the word “salsify” as the name of a vegetable, and “castor” as the wheel placed under the leg of a sofa, I thought only of the meanings “to make salt” (on the analogy of falsify) and “a beaver”! It is a convincing proof that I am not infallible. I had long suspected this, and now I am sure of it.

I have hunted out the papers of the competitors who have used the words “salsify,” and “castor,” and re-marked them as follows:—

For “coals-fire”
Phlox 4, 2, 18; 2, 6, 10
For “avoid-storm”
Admirolph “voidable” 0
French Polish 4, 3, 25; 6, 11, 17: 8
M. A. R. “voided” 0

Quercusonis points out that “indoors,” which I had accepted as a single word, is printed with a hyphen in Nuttall’s Dictionary; and that he (or she) had rejected the word in consequence. That comes of consulting dictionaries. *Quercusonis* also asks if I will accept both “s” and “z” in spelling such words as “crystallize,” “patronise.” Yes.

The new Problems are—

11. "CROSS *the* OCEAN."
 12. "*Get* TRUTH *from* LABOUCHERE."

Answers must be received by (or before) the first post on the 22nd of October.

Marks for Problem 3.

"DO SO."

The highest score reached is 11. This has been attained by 33 competitors, who have sent in five different varieties of Chains. The variety (selected by throwing a die), which was adopted by *Adoxa*, *Curlitot*, *Dolly Varden*, *E. M. R.*, *Ethne*, *Foggs*, *Hose-in-hose*, *Nil Desperandum*, *Quercusonis*, and *Stellaria* is

DO
 (do)
 adore
 (re)
 reason
 (so)
 SO

Marks for Problem 4.

"*Build a* RAILWAY STATION."

The highest score reached is 26. This has been attained by two competitors *Glen* and *Nil Desperandum*, whose Chains are the same, viz:—

RAILWAY
 (rail)
 trail
 (traí)
 straightest
 (test)
 attestations
 (station)
 STATION

Marks for Problem 5.

"*Visit* BEACHY HEAD."

The highest score reached is 24. This has been attained by two competitors *Quercusonis* and *Stellaria*, who send the same Chain, viz.:—

BEACHY
 (eachy)
 teaching
 (achi)
 headachy
 (head)
 beheads
 (head)
 HEAD

Compton sent in a Chain, beginning with "Beachey (ache)." The correction, of erasing the "e," reduced her minimum Syzygy from 4 to 3.

October 22, 1891

Chains have been sent for Problems 6, 7, 8 with no name or address. The Chain for 7 contains the word "torturing." I have entered them as "Anon."

I have no time, this week, to answer all of the many questions received.

B. E. E. has sent a Chain for "Cheat a Porpoise," a Problem which has not yet been set.

Cosmopolitan's Chains for Problems 7, 8, 13, 14, 15 have only just reached me—long after the proper time, but that is the Editor's business, not mine. Her scores are:—(7) "respersion, 0"; (8) "unchary, 0"; (13) "unsen, 0"; (14) "drail, 0"; (15) "9, 4, 37; 3, 7, 13: 24."

Similarly, *Idatia's* Chains for Problems 13, 14, 15, are scored "4, 2, 18; 2, 4, 8: 10," "9, 4, 37; 3, 11, 17: 20," "8, 4, 36; 3, 8, 14: 22."

Cosmopolitan asks me to explain how it is that he has failed to see the setting of Problems 7, 8, though he has searched the back numbers. See my reply to *Skirmisher* on October 8.

Cosmopolitan also writes, "the change about ordinary and extraordinary words has been, in my humble opinion, an awkward one for both parties." But there has been no change. I have *explained*, but not *altered*, the rule given on July 23.

Cosmopolitan also asks why I regard "endogen" as ordinary, but not "endogamy." See Rule 2, September 10. He also points out that "endogen" cannot be found in the dictionaries, but only "endogens." Is not this hypercritical? If he wished to refer to *one* of the "endogens," what would he call it?

Emelyne asks whether the Syzygies "get (get) forget," and "set (set) settles" would be eligible. They would not. See Rule 2. She adds that she cannot make it out from the rules, though she knows that "seize (seiz) seizure" is not allowable. I do not see any distinction between her second and third example.

Glen suggests that I should ask my cook if she has any "stalish" bread, and thinks she would understand me. No doubt she would; but that is not enough to constitute an "ordinary" word: it must be in ordinary *use* in ordinary *society*. If I were to say to *Glen* "that looks a very railwaystationish kind of house," I have no doubt that she would quite *understand* the word.

Glen also remarks that this puzzle "becomes difficult when one word is refused because it is uncommon and in a dictionary, and the next because it is common and *not* in a dictionary." This is not quite correctly put. I never make the fact, that a word *is* in a dictionary, a ground for refusing it! But, if a word is *not* in a dictionary, it surely cannot be an "ordinary" word?

Glen also writes that she "cannot understand the scoring." Her difficulty is that, "if the shortest Syzygy is not independent of the first and last, there seems to be no use in having any Syzygy longer than two letters in such a puzzle as "do—so." It is true that any longer Syzygies would not score, *as such*; but, the longer the Syzygies, the fewer the waste letters.

Glen also writes, "surely loadstone does not admit a plural? Your remarks this week" (her card bears no date) "look as if you would allow it to be used with an 's.'" What? When I have scored fourteen Competitors "0" for using it!

M. A. E. did, as she supposes, put "readings" instead of "beadings" in her Chain for Problem 5; but it made no difference in the score.

Mother Mildew has sent a Chain for "Tease a Tortoise," a Problem which has not yet been set.

Nenia writes, “will you kindly say whether we may use the names of animals and birds; the well-known ones?” Certainly.

Nenia and *Whim* remonstrate against the rejection of the plural of “loadstone.” I cannot think of anything to add to what I have already said. *Nenia* has seen the phrase “the loadstone,” and asks “if *the* loadstone, why not *a* loadstone? And if *one*, why not *two* loadstones?” I also have seen the phrase “the gout.” If *the* gout, why not *a* gout? And if *one*, why not *two* gout?

Old Cat asks “if the name Syzygy is not a corruption of sausage, and suggested by links.” It comes from two Greek words, and means literally “a yoking together.”

Pliny writes that she has been acquainted with the word “voider” during “all the years of her life” (even in her *first* year?), and that if I were “one of the gentler sex” I should “know more about the requisites of a pantry.” Perhaps I should. But I wish this puzzle to be available for *all*, even for the *ungentler* sex, and for those who are ignorant of housekeeping.

S. C. C. asks “what is an artificial maximum?” I meant, by the phrase, a maximum Syzygy introduced by means of a pair of long links, which served no other purpose.

Spes laments having failed to notice the alteration of the Rule about maximum Syzygies, and adds “it is provoking after trying one’s best to find that Chains which should have scored 80 will only count 10.” I should be really grateful to *Spes* if she would send me a Chain which would have scored 80 under the rule she alludes to.

Vessent pleads that “ingrate,” “derrick,” and “rater” are ordinary words, and says the last is often heard “in connection with yachts.” I should be glad if she would make a sentence containing it, such as one might have a reasonable chance of hearing in ordinary society.

The new Problems are:—

13. “*Be* DEFINITE ENOUGH.”

14. “*Unite* ERIN to ALBION.”

Answers must be received by (or before) the first post on the 29th of October.

Marks for Problem 6.

“GET AGE.”

The highest score reached is 23. This has been attained by five competitors, *Adoxa*, *Avo*, *Kelpie*, *Punch*, and *St. Helier*, who send the same Chain, except that *St. Helier* has “wageth” instead of “rageth.”

GET
(get)
rageth
(age)
AGE

Marks for Problem 7.

“CHEAT *a* TORTOISE.”

The highest score reached is 25. This has been attained by three competitors, *Caterina*, *Compton*, and *Stellaria*, who all sent the same Chain

CHEAT
(heat)
heather
(ther)
thereto
(reto)
retort
(tort)
TORTOISE

[...]¹⁰

October 29, 1891

The problems for this week, being the last two of the Prize Competition, are—

15. “OBTAIN DISTINCTION”
by writing
16. “SYZYGIES *for* LADY.”

There will be no further Competition this year. Whether I can ever start another is a question I cannot settle at present. The difficulties in constructing a really satisfactory set of rules seem almost insuperable.

[...]¹¹

November 26, 1891

Edina's scores for Problems 6, 7, 8 seem to have been overlooked. They are 5, 2, 19; 5, 7, 17: 2; 6, 2, 20; 2, 11, 15: 5; and 6, 3, 27; 3, 13, 19: 8.

I have no time, this week, to attempt answers to the many questions, remonstrances, complaints, and oburgations that have reached me, but hope to deal with them after publishing all the scores, and before reconsidering the papers, in order to adjudge the prize.

Marks for Prize-Problem 9.

“*Buy* BANBURY CAKES.”

The highest score reached is that of *H. H.*, 20. Her Chain is

BANBURY
(buri)
buriest
(ries)
bakeries
(aker)
taker

¹⁰Remark: Marks for Problem 8 missing in source.

¹¹Remark: The following description of the Nyctograph is moved to its own section (→ 16.42, p. 1993).

(take)
stakest
(akes)
CAKES

Marks for Prize-Problem 10.

“*Spend a MONTH at TRIESTE.*”

The highest score reached is 27. This has been attained by four competitors, *E. M. R.*, *Jabberwock*, *Louisa*, and *Paddy*, who all send the same Chain, viz.:—

MONTH
(mont)
ultramontane
(ultr)
sultriest
(triest)
TRIESTE

Marks for Prize-Problem 11.

“CROSS *the* OCEAN.”

The highest score reached is 23. This has been attained by nine competitors, *Adoxa*, *Amalfi*, *Auntie*, *Chute*, *Curlitot*, *E. M. R.*, *H. H.*, *Louisa*, and *Stellaria*, who send the same Chain, except that *Auntie*, *Chute*, *Curlitot*, and *E. M. R.* have “acrostics” and “rustic.”

CROSS
(cros)
acrostic
(stic)
rustics
(rust)
crustaceans
(cean)
OCEAN

Marks for Prize-Problem 12.

“*Get TRUTH from LABOUCHERE.*”

The highest score reached is 21. This has been attained by seven competitors—viz., *Acacia*, *Adoxa*, *Avo*, *Florence*, *Leweston*, *M. A. B.*, and *Rosemary*—all of whom, except *Rosemary*, send the same Chain. The two Chains are:—

LABOUCHERE	LABOUCHERE
(abou)	(oucher)
abound	voucher
(bound)	(uche)
boundless	duchesses
(less)	(esses)
ruthlessly	blessest
(ruth)	(less)
TRUTH	ruthless
	(ruth)
	TRUTH

December 3, 1891

In answer to a number of letters (some referring in most gratifying terms to the pleasure this puzzle has given) begging that there may be another Competition, I have much pleasure in announcing that I hope to be able to begin one next year. A plan has occurred to me which will, I think, get over most of the difficulty about “ordinary” words. It is that I should, on receiving the answers to a problem, publish a list of the words I have rejected; and then allow time for any who choose to send in fresh answers, and then publish the list of marks. I admit that even this plan will not meet the case of a competitor who sends in as his “second edition” a Chain containing some unheard-of word; but this case I see no way of meeting. Such competitors had better emigrate.

Several competitors have called my attention to the “Railway-Station” Chain, published October 15th, which, as there printed, does not score the “26” assigned to it. They have overlooked the correction given in the next number.

Many competitors have written to explain (in answer to my statement on October 8th that the Problems “Prosecute-Trespasser” and “Coals-Fire” were duly set in *The Lady* for August 27th) that no such notice can be found in their copies. I have just discovered that it appeared in some copies, but not in others; and I humbly apologise to *Skirmisher* for my uncalled-for sarcasm on her eyesight! I cannot explain how this extraordinary phenomenon came to pass. I can but state the fact, which has surprised me quite as much as it has others.

Marks for Prize-Problem 13.

“Be DEFINITE ENOUGH.”

The highest score reached is 27. This has been attained by three competitors—*Quercusonis*, *St. Helier*, and *Stellaria*, who send the same Chain, except that *St. Helier* has “haughtiness” for “naughtiness.”

DEFINITE
 (definite)
 indefinitely
 (defin)
 defines
 (fines)
 finesse
 (iness)

naughtiness
(ughty)
doughy
(ought)
nought
(nough)
ENOUGH

Marks for Prize-Problem 14.

“Unite ERIN to ALBION.”

The highest score reached is 20. This has been attained by 24 competitors—*Acacia, Auntie, Avo, B. E. E., Caterina, Chute, Dolly Varden, E. M. R., Florence, Miss F. Fox, H. H., Jabberwock, Jiguel, Kelpie, Louisa, Margaret, Nil Desperandum, Quercusonis, Rosemary, St. Helier, Stellaria, Thermometer,* and *Triple Alliance*, who all send the same Chain, viz.:—

ALBION
(ion)
pioneering
(erin)
ERIN

Marks for Prize-Problem 15.

“OBTAIN DISTINCTION.”

The highest score reached is 29. This has been attained by three competitors, *Nenia, Quercusonis,* and *St. Helier*, who all send the same Chain, except that *Quercusonis* has “enabled” instead of “enables.”

OBTAIN
(obtain)
unobtainable
(nable)
enables
(nable)
actionable
(ction)
DISTINCTION

Marks for Prize-Problem 16th and Last.

“SYZYGIES for LADY.”

Curlitot is mistaken in thinking that I stated, on October 15th, that I would accept either “s” or “z” in spelling such words as “crystallize” and “patronise.” I would accept such a spelling as “sisygies.”

The highest score reached is 25. This has been attained by sixteen competitors, *Adoxa, Auntie, Avo, Chute, E. L. W., E. M. R., Esperance, Glen, H. H., Jiguel, Kelpie, Leta, Persevere, Rosemary, Stellaria,* and *Thermometer*, who all send the same Chain, viz.:—

SYZYGIES

(gies)
dingiest
(ding)
unlading
(ladi)
LADY

December 10, 1891

Next year (perhaps in February or March) I hope to start a new Competition. Meanwhile it will be desirable, after publishing the new Rules, to set a few experimental Problems, the answers to which shall be duly scored, and the marks published, in order that competitors may “get their hands in” before the regular “tug of war” begins.

I will now deal with the rest of the unanswered letters from competitors. Many of them reopen questions about (so called) “ordinary” words, as to which I have already said all I have to say. It is not possible to carry on any discussion for ever. Doubtless many readers have frequented cricket-matches, and have often heard the umpire say “You may argue till you are black in the face” (the well-known physiological effect of an attack of Sub-acute Syzygitis), “but, when the umpire says ‘No ball!’ why it *is* no ball!” And so say I. Argue as you will, it must come at last to *somebody* deciding whether the word is “ordinary” or not; and if that somebody is not to be *me*, *who is it to be?* (Answers to this conundrum to be sent in by the 20th of December at latest.)

Auntie sends a copy of her “do—so” Chain, which she sais ought to have been scored 10 instead of 9. “Do (do) idol (ol) resole (so) so.” The Chain sent to me had “resolve” instead of “resole.” Had this new version been sent in, I should have scored it “resole, 0.”

B. E. E. sends a fresh Chain for “cheat a tortoise,” and pleads that ‘it was quite by mistake’ that she tried to cheat a ‘porpoise.’ But is it not of the essence of a competition of wits that players who make mistakes must pay the penalty? In playing chess, does *B. E. E.* expect to be allowed to recall every move in which he has made a mistake?

Dolly Varden protests against my rejection of “waist-band,” and pleads that Nuttall prints it *without* a hyphen. But he prints “wrist-band” *with* a hyphen! I consider that these two compounds stand on the same footing; and that neither of them has yet worked its way up to the status of being regarded as a single word.

Ellerslie’s and *Leta’s* Chains for Problems 3, 4, 5 never reached me. They seem to have been sent off at the proper time, so the Post Office must bear the blame.

Esperance’s Chains for Problems 6, 7, 8 duly reached me, but without name or address, as she will find recorded at the beginning of the article on October 22nd. I entered the scores under the heading “Anon,” but have now transferred them to the proper scoring-paper.

Esperance also writes “I fear I must have made a mistake when copying my ‘Gladstone-Salisbury’ Chain, as I find the original is quite correct.” She sends the original rough copy, which contains “burial (bury) Salisbury.” The copy sent

to me contained "burial (rial) Salisbury." I fear that, like *B. E. E.*, she must take the usual consequences of making mistakes.

Esperance's score for Problem 2 is "7, 3, 28; 2, 14, 18: 10." I overlooked this Chain on her paper, but have found it on going through all the papers again.

Glen writes to protest against my rejection of "stalish." I do not consider it correct English, but merely colloquial. It was mainly to exclude such words that I laid down the rule that the words must be such as we find in dictionaries. This word is not in Nuttall. Is it in any dictionary?

Hose-in-hose pleads that "tocherless" is an ordinary Scottish word. That may be, but it is not an ordinary English word. She also wonders at my accepting "taker," which she thinks no one ever heard used, unless when compounded with others. I am not a betting man, but I am certainly familiar with the phrase "the betting was 5 to 1, no takers."

Idalia writes that she posted her answers to Problems 3, 4, 5 in time to reach the office on the 6th of October. But the 1st of October was the proper day for receiving. Still, the paper seems to have reached me, and all papers, sent to me by the Editor, are duly scored. Her three scores are:—

- (3) 4, 2, 18; 2, 4, 8: 10
- (4) 9, 4, 37; 3, 11, 17: 20
- (5) 8, 4, 36; 3, 8, 14: 22

Marie's Chains for Problems 1, 2, never reached me. She sends a fresh copy of the one for Problem 1, which would have been scored "oil-man, 0," if it had arrived in time.

Nenia puts forward, under date of 1st of October, a plea for accepting her Chains though she sent in late. She writes "It is only in today's *Lady* that I have observed the alteration, though I now see that the dates are plainly given in last week's paper. I had simply not noticed it, and gone on the old rules. Under the circumstances, I hope you can accept my Syzygies now enclosed." Surely, if *Nenia* were Editor, she would not accept such an excuse as this? Whose fault was it that she did not see the notice? And what more could the Editor have done to acquaint her with the change? To send a crier round with a bell to every house, would be tedious and costly, besides annoying the neighbouring residents.

Nil Desperandum and others defend "heritages" as an "ordinary" word, on the ground of its being in the Bible. I do not think this proves it at all. There are many Bible words that have quite disappeared from ordinary use.

Nix has sent in such an ingenious extra-Chain for "Unite Erin to Albion," that I think the readers of *The Lady* ought to have the benefit of it.

ERIN
(in)
Kingstown
(st)
steamer
(ea)
Holyhead
(ho)
ashore
(or)

North Wales
(al)
ALBION

Punch has most properly taken me to task for accepting and rejecting the word “voids” in the same list of marks! No doubt I first rejected it, and then changed my mind and accepted it, and forgot to make the necessary correction. He also most properly protests against my rejecting “meditations” and “always.” These, however, were misprints for “mediations” and “alway.”

S. C. G. brings a serious charge against me. She writes:—“When alternate” (she means “alternative”) “solutions are sent up, and there is a mistake in one and not in the other, why is the one that has the mistake taken, and the one without a mistake ignored? This is the case with both mine.” (See score 3 published October 1.) “You take Build (build) builder, &c., and put no score. As the alternative one, I sent ‘Build (ild) gilder (er) lacquer (ac) Palace,’ but no notice is taken of this; and the same with Dog (dog) dogger (er) cater (cat) Cat; but, again, this not taken, but the other one.” I have referred to *S. C. G.*’s paper, and find that the Chain “Build (ild) &c.,” was crossed out by herself, otherwise I should have quoted from it the unlawful Syzygy “gilder (er) lacquer.” The Chain “Dog (dog), &c.,” I accidentally omitted to quote from, but I had duly scored it “0” since every Syzygy in it is unlawful.

S. C. G.’s score for Problem 12 is 6, 3, 27; 4, 11, 19: 8, for a Chain not containing “ancestress,” which was overlooked.

S. C. G., writing in defence of the rejected word “ancestress,” asks whether, in pointing to a family-picture, she ought to say “she was a female ancestor of mine.” With the omission of the word “female,” I think it would be the ordinary way of expressing the fact. The words “ancestor,” “governour,” and “overseer” seem to be ordinarily used of both sexes. The word “female” seems as superfluous as it would be in the Prayer-Book phrase, “our Queen and Governour.”

Signora’s score for Problem 8 is 8, 4, 36; 4, 14, 20: 14, as I have decided to accept “illiterately.”

Spes “cannot understand why ‘prevarications’ is rejected, and ‘beheads’ accepted.” It seems to her that the former is a noun which could be made plural, but that ‘behead’ can only be a verb. I grant that ‘prevarication’ is an ordinary word, and that it can be made plural, but I do not think the plural is in ordinary use. I do not see the drift of her remark about ‘behead.’ Of course, it can only be a verb. What then?

Spes also thinks that “nationalism,” which was rejected, “would stand the test of ten fairly educated people understanding it.” Perhaps it would, but I do not think it would stand the test of being “reasonably likely to be heard in ordinary conversation.”

Spes has been marked wrong for Problems 15, 16, her two scores having been accidentally interchanged.

St. Helier’s score for Problem 5 is 8, 4, 36; 3, 6, 12: 24; as I have decided, after much deliberation, to accept “beheadings,” and have referred to the MS. of every Chain sent in for it, in order to make the necessary corrections. However, the only other Competitor who has used the word is *Nil Desperandum*: and her chain has already be accepted and scored! Homer does sometimes nod: there is no doubt of it!

Swallow pleads that “odor” is “surely an ordinary word spelt in the modern

way?" I am aware that the Americans are trying to change our spelling, and to rob us of "favour," "honour," and "valour," and all that makes life dear to a Briton; but my answer to them is "Sor-visaged honds, shot not so lodly! We croch to no prod foeman! This is British grond!"

Thekla writes "in what ordinary conversation would one hear such words as 'endogen' and 'wageth'?" I have looked for them unsuccessfully in three dictionaries. The latter I can guess the meaning of, the former I cannot." I think that the elementary terms of a Science so universally studied as Botany are quite reasonably likely to be heard in ordinary conversation. I have just looked out "endogen" in three well-known dictionaries. Worcester and Skeat give "endogen": Nuttall gives "endogens."

"To wage war" is surely an ordinary phrase, and I do not see how I can accept a verb without also accepting its grammatical inflexions; but if *Thekla* expects to find all *inflexions* in her three dictionaries, she has, I fear, much disappointment in store for her!

Thekla also asks for the meaning of "maximum" and "minimum" Syzygies. They are those which contain the greatest and the least number of letters.

Triple Alliance writes "We were told, in *The Lady* of September 17th, to erase the latter half of Rule 5; and we were obliged to send in the Chains for Problems 1, 2, on September 16th. Not being gifted with second sight, we scored these Chains in the old way, as, of course, every one else must have done." *Triple Alliance* has got the dates wrong. The Chains in question were not due till September 22nd; most of them came in on the 21st and 22nd.

There still remain a number of remonstrances about "ordinary" words, which I fear I have neither time nor space to answer individually. Some of them seem to be based on the assumption that if a word is known to have been used, or even if the thing denoted by it is known to exist, it must be an "ordinary" word. Thus, *M. A. B.* writes that "in a class of thirty-two, the other day," a lady mentioned the "stonings" of St. Paul. And *Punch* writes: "Is it possible that you never heard the 'trachea' mentioned during the sad illness of the late Emperor of Germany?" and "can you be unaware that, but for the 'sailings' of the colliers, you might have to go without a fire, and that the said colliers are loaded by means of 'derricks'?"

I will conclude with a little anecdote, suggested by another remark of the writer last quoted. In reference to my rejection of the word "ancestress," he indignantly exclaims "You never had an ancestress!" My anecdote is a genuine one, and not invented for the occasion. The friend who told it me was walking in the road, when a little girl fell down and hurt herself. "Why don't you run in to your grandmother?" another little girl inquired. "I haven't got a grandmother!" the sobbing child replied. "What a dummy you must be, not to have a grandmother!"

That sobbing child and I seem to have something in common: the same bitter sarcasm has fallen on us both! As I wearily push aside the mass of letters, now at last disposed of, a ghostly voice seems to whisper in my ear "What! You deny that 'ancestress' is an ordinary word? Then you never had one! What a dummy you must be, not to have an ancestress!"

December 17, 1891

Caterena's score for Problem 16 was wrongly stated; it ought to have been 8, 4, 36; 2, 7, 11: 25, so that she was one of those who reached the highest score for that Problem. I ask her pardon for my careless mistake. *Miss Fox's* Chains for Problems 15, 16, never reached me, I regret to say. If they reached the Editor by or before the first post on November 5th they would almost certainly have been forwarded to me. In that case the Post Office must bear the blame.

Jabberwock writes, in defence of the rejected word "distain": "It is one of the most common words in the English dictionary, and I have also repeatedly heard it used in theatres, in plays, by Irving, Toole, &c. Its real meaning is 'to take away the colour of.'" *Jabberwock* then quotes, from Spenser and Dryden, passages in which the word occurs. All this is, no doubt, "dreadful true" (as Hannibal Chollop would say), but it does not prove that there would be any reasonable chance of hearing it in ordinary conversation. Has *Jabberwock* ever so used it, or ever heard it so used?

Quoted from *Life and Adventures of Martin Chuzzlewit* by Charles Dickens

Leweston's Chains for Problems 15, 16 (written on p. 4 of a note-sheet, whose very pleasant contents terminated on p. 3, with no hint that there was anything over-leave), were accidentally overlooked. They are now duly scored:—

(15) 10, 3, 31; 2, 20, 24: 7

(16) 6, 3, 27; 3, 15, 21: 6

S. C. G.'s score for Problem 13 has been duly entered as "9, 2, 23; 3, 8, 14: 9." The mistake about "hightly" arose from her having used the same symbol to express "n" and "h." In Problem 14 the word should be, as she rightly supposes, "pioneering." Misprints do occasionally happen.

[...]¹²

Total Scores for Prize Competition

Problems set September 10th to October 29th, 1891

The highest Score is that of *St. Helier*, 330, who is, therefore, the winner of the Prize. But as the next on the list, *E. M. R.*, is only one mark short of this, the Managers of *The Lady* have decided on presenting two equal prizes of one guinea each. It may fairly be regarded, I think, as a 'dead heat' between this two Competitors, whose real names and addresses I have much pleasure in announcing, with sincere congratulations on their success.

St. Helier. "Miss Jermyn, Ormonde Lodge, Clarendon Road, St. Helier's, Jersey."

E. M. R. "Miss Ryves, 10, Pembroke Vale, Clifton, Bristol."

In the following list, wherever only one number is appended to a name, it is to be understood that the Competitor sent in Chains for all the 16 Problems. When a parenthesis is added, the first number in it indicates how many Problems the Competitor attempted; the second the Score that would have been obtained if only the Competitor had tried them all and had exhibited the same amount of skill throughout; while the third number indicates the place on the list that would have been thus obtained. I hope these additional facts may be a consolation to some who find themselves very low down on the list, and may encourage them to attempt all the Problems in the next Competition.

¹²Remark: The following Postal Problem is moved to its own section (→ 15.8, p. 1921).

[...]¹³

December 31, 1891

S. C. G. has a claim on me for an apology for my paragraph of Dec. 17th, which I hereby humbly tender. I did not charge here with using the same symbol for “n” and “h.” What I wrote was “N,” but the capital shrank to a small letter in the printing. If *S. C. G.* has ever had to get *her* MS. through the press she will know how true, in a new sense, is the old exegetical rule, “Wherever you find a type, there you find an antitype.” And may we not add, Yea, and an errantype to boot, not to say a peccantype!

Skirmisher sends a communication which thrills me with a wild and dreary hope! I had said, on Dec. 10th, “It must come at last to *somebody* deciding whether the word is ‘ordinary’ or not; and if that somebody is not to be *me*, *who is it to be?*” In reply to this, *Skirmisher* writes, “I should decide in favour of an appeal to a dictionary. Allow me to say I do not consider your decisions by any means infallible; in fact, I should say they are very arbitrary.” Now, granting (as I willingly do) that my decisions are by no means infallible, and that they are very arbitrary; and also granting (as I reluctantly do, and merely *argumenti gratia*) that a dictionary is infallible in all it professes to tell us, I am still wholly ignorant of the existence of any dictionary which professes to draw this distinction. Is it possible that there is one now “in the press” and just about to be published? “An English Dictionary, wherein words that are ordinarily used in Society are distinguished from those that are not so. Compiled by ‘Skirmisher.’ Thick 4to, 2560 pp., price 30s.” Let *Skirmisher* gloure herself that I shall order an early copy! I fear, however, that this is but a dream: and that *Skirmisher* is really playing at “Cross Questions and Crooked Answers,” and is pretending that my question was, “If the test for admitting a word is *not* to be its being ‘ordinary,’ what test shall we substitute?” But *this* question I have no intention of putting. The Competitors are, of course, perfectly free to start a new Syzygy Competition for themselves, and admit all words that occur in some named dictionary; but *I* must respectfully decline to act as a Scorer! It would, in my opinion, completely spoil this Puzzle, which, instead of being (as I believe it now is) a contest of minds, solvable by *thinking*, and accessible to *all*, would become a contest of *thumbs*, solvable only by turning over pages, and accessible only to possessors of the dictionary in question.

Let me now explain a feature of this Puzzle, which adds much, as I venture to think, to its interest and its sociability. It makes (I say it confidently, for I have tested it) a very workable game for two players. This, I think, deserves a heading to itself:—

Syzygies as a Game for Two Players

This game is best played in a railway carriage, since it involves no reading (so tiring to the eyes of travelers) nor talking (so tiring to their voices and ears). The only appliances needed (and these not indispensable) are writing materials (say a couple of small memorandum books). Each player thinks of a good long word, the longer the better. When *she* has thought of *hers* (I assume the two travelers to be a “he” and a “she,” and that “she” is the quickest thinker) she says,

Other version:
→ 19.28, p. 2520

¹³Remark: list omitted

“Ready;” and when *he* has thought of *his*, both words are announced, watches are consulted, and the game begins, each player trying to make a “chain” of the two words. At the end of ten minutes (or whatever time they like to fix) the chains are interchanged, examined to see if they are lawful, and the scores recorded. Then they think of another couple of words, and so on. Whoever first scores 100 wins; or, if both reach the 100 at the same time, the highest score wins. It will be desirable, in playing this game, to use some of the new Rules, which I will now quote:—

“A Chain must contain at least two Links.”

“It is forbidden to have two consecutive Syzygies, one containing the other.”

“If either of the given words has more than nine letters, the extra ones are not counted as waste letters.”

“To score a chain, add together twice the number of letters in the first and last Syzygy, and seven times the number in the shortest; and deduct twice the number of Links and the number of waste letters.”

January 7, 1892

New Code of Rules

Definitions

1—When two words contain the same set of one or more consecutive letters, a copy of it, placed in a parenthesis between the two words, is called a ‘Syzygy,’ and is said to ‘yoke’ one set to the other, and also to ‘yoke’ each letter of one set to the corresponding letter of the other set.

Examples

(1)	(2)	(3)	(4)
walrus	walrus	walrus	mine
(a)	(l)	(wa)	(m)
swallow	swallow	swallow	mimic

N.B.—In Ex. (2), the Syzygy may be regarded as yoking the ‘l’ in ‘walrus’ to whichever ‘l’ in ‘swallow’ the writer may prefer. And in Ex. (4) the Syzygy may be regarded as yoking the ‘mi’ in ‘mine’ to whichever ‘mi’ in ‘mimic’ the writer may prefer.

2—A set of four or more words, with a Syzygy between every two, is called a ‘Chain’, of which all but the end-words are called ‘Links’.

3—In a ‘Syzygy-Problem’ two words are given, which are to form the end-words of a Chain.

Example

If the given words are ‘walrus’ and ‘carpenter’ (the Problem might be stated in the form ‘*Introduce* WALRUS to CARPENTER’), the following Chain would be a solution of the Problem:—

WALRUS
 (rus)
 rusticate
 (ica)
 vicar
 (car)
 CARPENTER

4—Every letter in a Chain, which is not yoked to some other, is called “waste”; but, if either of the end-words contains more than seven letters, the extra ones are not counted as waste.

Thus, in the above Chain, the “wal” in “walrus,” the two “t’s” and the “e” in “rusticate,” the “v” in “vicar,” and the “pent” in “carpenter” are “waste”: so that this Chain has eleven waste letters.

5—When a letter in one word, alphabetically identical with a letter in another word, is forbidden to be yoked to it, these letters are said to be “barred” with regard to each other.

Rules for Making Chains

1—A Chain should be written as in the Example to Def. 3. It does not matter which given word is placed at the top. Any number of alternative Chains may be sent in.

2—Any word, used as a Link, must satisfy all the following tests:—

(a) It may not be foreign, unless it is in such common use that it may fairly be regarded as naturalised. (The words ‘ennui,’ ‘minimum,’ ‘nous,’ may be taken as specimens of words thus naturalised.)

(b) It must be in common use in conversation, letters, and books, in ordinary society. (Thus, slang words used only in particular localities, and words used only by specialists, are unlawful.)

(c) It may not be a proper name, when usually spelt with a capital letter. (Thus ‘Chinese’ is unlawful; but ‘china’, used as the name of a substance, is lawful.)

(d) It may not be an abbreviated or a compound word, when usually written with an apostrophe, or hyphen. (Thus, ‘silver’d,’ ‘don’t,’ ‘man’s,’ ‘coach-house’, are unlawful.)

3—When one of two words contains a set of one or more consecutive letters, alphabetically identical with a set in the other word; and when either these two sets commence both words, or else the preceding portions are prefixes such that, by some one of the three following processes,

(a) removing whatever preceding portion exist,

(b) transposing them

(c) removing one and transposing the other,

real words might be formed, without any word or portion of a word losing its identity; each letter in the one set is “barred” with regard to the corresponding letter in the other set.

Examples

Certain prefixes are here marked off by perpendicular lines, and the “barred” letters are placed in square brackets. The letters placed over the examples indicate which process is to be employed:—

(1)	(2)	(3) a
[do]g	[car]riage	un|[do]ne
[do]or	[car]case	[do]or

(4) a	(5) b	(6) c
un|[do]ne	con|[ve]rt	con|[str]ain
in|[do]rs	in|[ve]nt	in|[str]uct

N.B.—The letters are only ‘barred’ as here marked. They may often be yoked in other ways: e. g., in Ex. (2), the ‘c’ above may be yoked to the second

'c' below.

Examples of Letters which are Apparently, but not Really, "Barred"

Certain prefixes are here marked off by perpendicular lines, and the letters, which are apparently but not really "barred," are indicated by writing them as Syzygies, which are therefore all lawful. The letters placed over them indicate which process is (apparently) applicable.

(1)	(2) a	(3) a
carriage	con|done	con|done
(ca)	(don)	(do)
carcase	donkey	in|doors
(4) b	(5) a, c	
con|servative	de|fined	
(se)	(fi)	
pre|sented	re|fix	

N.B.—In Ex. (2), (3), process (a) fails, because "done" loses its identity when the prefix is removed: it ceases to be the root of "condone," and becomes the participle of "do." In Ex. (4), process (b) fails, because "sented," as part of "presented," is etymologically different from "sented," as part of "consented." In Ex. (5), process (a) fails, because "find," by itself, is etymologically different from "fined" as part of "defined"; and process (c) fails, because "fined" as a part of "defined" is etymologically different from "fined" as a part of "refined."

4—When one of two words contains a set of one or more consecutive letters, alphabetically identical with a set in the other word; and when either these two sets conclude the words, or else the succeeding portions are suffixes such that, by some one of the three following processes,

- (a) removing whatever succeeding portion exist,
- (b) transposing them
- (c) removing one and transposing the other,

real words might be formed, without any word or portion of a word losing its identity; each letter in the one set is "barred" with regard to the corresponding letter in the other set.

Examples

Certain suffixes are here marked off by perpendicular lines, and the "barred" letters are placed in square brackets. The letters placed over the examples indicate which process is to be employed:—

(1)	(2)	(3) a	(4) a
me[at]	oni[on]	me[an]|ing	s[ink]|ing
c[at]	mo[on]	m[an]	l[ink]
(5) a	(6) a	(7) b	
me[an]|ing	s[ink]|ing	inf[lat]|ed	
m[an]|hood	l[ink]|s	re[lat]|ion	
(8) b	(9) c	(10) c	
infl[at]|ed	conv[ent]|ion	plu[ng]|es	
sati[at]|ing	att[ent]|ive	wro[ng]|ing	

Examples of Letters which are Apparently, but not Really, "Barred"

Certain suffixes are here marked off by perpendicular lines, and the letters,

which are apparently but not really “barred,” are indicated by writing them as Syzygies, which are therefore all lawful. The letters placed over them indicate which process is (apparently) applicable:—

(1)	(2)	(3) a, b
onion	sink|ing	din|ed
(on)	(in)	(in)
moon	link|s	pin|s
(4) b	(5) c	(6) a, c
inflat|ed	plung|es	plan|ing
(at)	(ng)	(lan)
satiat|ing	wrong|ing	ortolan|s

N.B.—In Ex. (3), processes (a) and (b) fail, because “din,” as a part of “dined,” is etymologically different from “din” by itself, or as part of “dins”; and also because “pin,” as a part of “pins,” is etymologically different from “pin,” as part of “pined.” In Ex. (6), processes (a) and (c) fail, because “plan,” as part of “planing,” is etymologically different from “plan” by itself, or as a part of “plans.”

5—Nouns and verbs are not to be regarded as prefixes or suffixes.

Examples

“landlord,” “handmade,” “breakwater.”

The following Syzygies are lawful:—

demand
(and)
handmade
(mad)
madly

6—The letters ‘i’ and ‘y’ may be treated as if identical.

Example

The following Syzygy is lawful:—

busy
(usi)
using

Rules for Scoring

7—If the writer of a Chain has omitted a Syzygy, the Scorer inserts a one-letter Syzygy, if he can find a lawful one.

8—If the writer has omitted a Link, the Scorer erases the two adjacent Syzygies, and proceeds as in Rule 7¹⁴.

9—If a Link be mis-spelt, the Scorer corrects it.

10—If a Syzygy contains unlawful letters, the Scorer erases them, and deducts twice that number of marks from the Score.

11—If one of two consecutive Syzygies contains the other, the Scorer erases the intermediate Link, and one Syzygy containing the other.

¹⁴accidentally “Rule 1”

Examples

(1)	(2)
meeting	meeting
(ting)	(ting)
tinge	tinge
(ing)	(ting)
loving	parting

N.B.—In Ex. (1) the Scorer erases ‘tinge’ and the first Syzygy: in Ex. (2), he erases ‘tinge’ and either Syzygy. The results are:—

(1)	(2)
meeting	meeting
(ing)	(ting)
loving	parting

both of which are, by Rule 4, unlawful Syzygies.

12—The penalty, awarded by the preceding Rule, cannot be evaded by writing shorter Syzygies than might be claimed, so as to avoid the result of one containing the other. In such a case, the Scorer would treat them as if written in full.

Examples

meeting
(tin)
tinge
(ng)
parting

This would be treated as if it had been written, in full.

13—If the Chain now contains less than two Links, or an unlawful Link or Syzygy, the Scorer rejects it. Otherwise he calculates its score by writing down 7 numbers, as follows:—

(1) The number of letters in the longer of the two end-Syzygies, *plus* twice the number in the shorter.

(2) The number of letters in the minimum-Syzygy.

(3) The sum of (1) and the product of the two numbers next above (2).

(4) The number of Links.

(5) The number of waste letters.

(6) The sum of twice (4) and (5).

(7) The remainder left after deducting (6) from (3). If (6) be greater than (3), the remainder is written as “0*.”

No. 7 is entered as the Score of the Chain.

Example

The figures on the right indicate the number of waste letters.

WALRUS	3
(rus)	
rusticate	3
(ica)	
vicar	1
(car)	
CARPENTER	4

As the end-Syzygies are equal, we might say that there are 3 letters in the longer and 3 letters in the shorter: Hence No. (3) is the sum of “9” and “4 times

5"; i. e., it is 29. Also, there are two Links and 11 waste letters. Hence, No. (4) is "2," No. (5) is "11," and No. (6) is the sum of "twice 2" and "11"; i. e., it is "15." Hence, No. (7) is the remainder, after deducting "15" from "29"; i. e., it is "14." And this is the score for the Chain.

All this may conveniently be set down thus:—

9, 3, 29; 2, 11, 15: 14.

Algebraically, let

a = Number of letters in the longer of the end-Syzygies;
 b = Number in the shorter;
 m = Number in minimum-Syzygy;
 l = Number of Links;
 w = Number of waste letters:

then the score is¹⁵

$$(a + 2b) + (m + 1) \cdot (m + 2) - (2l + w).$$

14—In reckoning shortest of all Syzygies, the Scorer takes no notice of any Syzygies inserted by himself, unless there are no others.

15—If a writer sends in alternative Chains, the Scorer takes the best of them.

16—If all be rejected, the Scorer puts '0' against the writer's name, assigning a reason for rejecting each Chain.

Example If "*Ignoramus*" sends in 3 alternative Chains, one containing less than two Links, a second containing the word "zumbooruk," and the third containing "constrain (str) destruction," the Scorer should enter them in the list thus:—

Ignoramus. (1) short linkage (2) "zumbooruk," (3) "con|strain (str) de|struction."
 [N.B. "strain" and "construcion" are real] 0.

As 26 Syzygy Problems have already appeared in *The Lady*, the new ones shall be numbered consecutively. The following three shall be scored, but not competitive:—

- (27) a HAPPY NEW
- (28) YEAR to ALL,
- (29) this FESTIVE SEASON

Answers must be received by, or before, the first post on Thursday, January 14th. I will then issue a list of the rejected words: then the competitors can send in fresh Chains if they like; and I will then publish the scores. My ambition is to publish 3 lists of marks without a single zero!

January 14, 1892

The problems for this week, which shall be duly scored (but are not competitive) are:—

- (30) Make BULLETS of LEAD
- (31) to SHOOT an APTERYX.

Answers must be received by (or before) the first post on the 21st of January.

¹⁵The "." was accidentally printed as "—"

January 21, 1892

In order to reassure any of my readers who may have been so much alarmed at the enormous length of the "New Code of Rules" as to despair of ever understanding them, let me point out that most of the space is devoted to *Examples*.

The problem (non-competitive) for this week is

(32) INDULGE *an* IDIOSYNCRASY.

Answers must be received by (or before) the first post on January 28th.

N.B.—I am reprinting the rules, in pamphlet form, placing the Rules first and the Examples afterwards. It is part of a larger book, but I shall be happy to supply the Syzygy part, by itself, to any subscribers to *The Lady* who will send their names and addresses. It will cost about 2d.

January 28, 1892

In the new Code of Rules, two rather important corrections are necessary. At the end of Rule 8, for "Rule 1" read "Rule 7." And, in the algebraical formula at the end of Rule 13, for " $(m + 1) - (m + 2)$ " read " $(m + 1) \cdot (m + 2)$."

Toofdiarb writes "In the examples to Rule 4 'ng' is given as a barred syzygy between 'plu[ng]les' and 'wro[ng]ing'; and, in the next example, it is allowed." This is because the "ng" in "plunges," though it may not be yoked with the first "ng" in "wronging," may lawfully be yoked with the *second*.

Toofdiarb also writes:—"Is 'ing' an unlawful suffix, when, if taken away, it leaves an incomplete word—e.g. 'racing'?" All would depend on whether the other word could supply a suffix to make it a complete word. Thus "racing (ac) lac" would be a lawful Syzygy; but "racing (ac) laces" would be unlawful, because, by transposing suffixes two real words are formed—viz., "races" and "lacing."

Let me try to make Rules 3, 4 in the New Code a little more intelligible. No one, who has not tried to invent a new game, can have any idea of the difficulty of making the rules at once brief and intelligible. My object in composing those two Rules, was to exclude a form of Syzygy, the making of which involved no skill, and which was becoming so common, in the last Competition, as to threaten to reduce my Puzzle, from being (as I hope) a fair test of mental skill, to the level of an utterly brainless pastime, which could easily be learned, in the course of a few billion years (as an Evolutionist would carelessly remark), by oysters and sea-anemones.

The 59 specimens in Rule 3 will show the sort of thing I mean. It would have been easy to make the Rule shorter and simpler (e.g., "A Syzygy, which has only a prefix before it, may be treated by the Scorer as if it stood at the beginning of the word."), but I should have been at once overwhelmed with a host of "border-cases," where one hardly knew if a syllable was, or was not, a prefix. How many, who read this, know that "com" in "common" is as much a prefix as "com" in "composition"? Besides, to forbid *all* prefixes, would exclude a great many Syzygies, which *do* exhibit skill—e.g., "common (mon) money." There is a great deal more skill needed in that Syzygy than in "reasons (eason) season"!

So it occurred to me (in order not to exclude *all*, and in order to avoid “border-cases”) to supply the Scorer with a test as to what prefixes he might regard as removable.

The Scorer’s position, it must be remembered, is that of *hostility* to the Competitor. He is bound to give the *lowest* mark he lawfully can, and, where a doubt of guilt exists, to give the prisoner the malefit thereof. So I have limited his power in this matter. If he can, by one or other of the three operations, marked (a), (b), (c), form a pair of real words, he may remove the prefixes, and so bring the Syzygy to the beginning of both words, thus making it unlawful. If he cannot, he must accept the Syzygy. “Border-cases” are thus, I hope, avoided. A word must either be real or unreal. It cannot lie on the boundary-line!

Words rejected, as having violated Rule 2:

domal, nesting, pea-soup, perone, pine-wood, springal, treasonous.

February 4, 1892

Problems 30, 31: first set of Chains

In publishing these rejected words, &c., to enable Competitors to revise their chains, I do not think it necessary to do more than give a list of the “non-ordinary” words rejected, and of cases which come under rules that appear *for the first time* in the new Code. For instance, I do not think it necessary to warn any Competitor, who sends in a Syzygy such as “dog (do) door,” or “meat (at) cat,” which were unlawful under the *old* Rules. The only exception I have made is the case of *Anglim*, who appears to be a new Competitor, and perhaps never saw the old Rules, and whose Chains at present contain many *Syzygies* of the above forbidden type.

Words rejected in accordance with Rule 2:

eschalo, gullable, hooper, rooter

February 11, 1892

Will those readers of *The Lady* who wish to possess the new rules in pamphlet form, kindly desist from sending postage stamps along with their names and addresses? I am keeping an account of those received, which shall be duly credited to the senders, but it is to the managers of *The Lady*, and not to me, that payment must be made; and it is impossible to say, at present, what the price will be. For my part, I regard the whole “Syzygy” business as “a labour of love,” and do not wish to make any profit by it; so my intention is, as soon as we are ready to work off copies, in pamphlet form, of the “Syzygy” portion of my some-day-to-be-published book of “Games and Puzzles,” to calculate what it will cost to produce (say) 250 copies, which I should be prepared to supply to the managers at cost-price. They will then put on it whatever they think a fair price, and will invite their readers, who wish to have copies, to send their names and addresses (and the price in postage stamps) by a certain named date. The number of names sent in will guide me as to the number of copies to work off.

Whether I shall be able this year to conduct (personally) another Competition, is a point I have not yet decided. I should like to do it very much, for I

believe the Competitors like it, and that it supplies them with innocent amusement and real mental exercise; but it costs me some time and trouble, and I have but little to spare of either commodity! However, we shall see. Let us, at any rate, have a few more non-competitive Problems. Here are the two for this week:—

- (33) Set KNIFE by FORK
(34) to WELCOME a FRIEND.

The “First Chains” for these must be received by (or before) the first post on Tuesday, February 16th. (Observe, I have named Tuesday, not Thursday, which abridgment of time will enable me to publish the list of rejected words, &c., on February 25th—i. e., a week sooner than I otherwise could do.) The “second Chains” will be due on March 1st. And the scores will be published on March 10th.

H. H. asks an interesting question (the answer to which will, I hope, be useful to others also), viz.: Are the following Syzygies lawful or unlawful? (1) “lateral (tera) literary”; (2) “regulator (ulat) undulate”; (3) “undulation (ulati) regulating”; (4) “posing (sing) singer”; (5) “shingle (ingl) tingling” My answer is as follows:—In (1), all the three processes, called “(a), (b), (c),” in Rule 4, fail to make real words, since neither “latera” nor “laterary” is real. Hence the scorer must *accept* this Syzygy as *lawful*. In (2) although “regulate” is real, yet neither “undulat” nor “undulator” is real; so the Syzygy is *lawful*. In (3), process (b) succeeds, since “undulating” and “regulation” are both real. Hence the Syzygy is *unlawful*. In (4) “posing” and “sing” are both real; so the Syzygy is *unlawful*. In (5), neither “shingl” nor “shingling” is real; so the Syzygy is *lawful*.

[. . .]¹⁶

Words rejected in accordance with Rule 2:

cerement, eremite, fulgent, Hindustani, incrassate, incrust.

February 18, 1892

Will Competitors be so kind as to desist from sending, on the same piece of paper, answers to Problems which were set at different times, as it adds much to my trouble in classifying the papers.

The Problem for this week is

- (35) CULTIVATE PELARGONIUMS.

The “First Chains” for this must be received by (or before) the first post on Tuesday, February 23rd. The list of rejected words will be published on March 3rd: The “second Chains” will be due on Tuesday, March 8th. And the scores will be published on March 17th.

Chute is to be congratulated on having outwitted the scorer! With what savage delight I at first gloated on that Syzygy of his, “unreasoning (eason) season”! Eagerly I seized my pen, to mark off what seemed so easily removable a suffix, the “ing” in “unreasoning.” “But no!” I said to myself, while a chill horror froze me. “There is no such verb as ‘to unreason.’ There ought to be, for the sake of the ladies: but there isn’t. It is a lawful Syzygy!” How *Chute* would have chuckled to see my face of blank despair! And I was again taken in, when I came

¹⁶Remark: Some contents omitted in source

to count up the waste letters. “Humph” I said, when I came to “unreasoning.” “What did he want the ‘un’ for? Two unnecessary waste letters!” But I was wrong again. Without the “un,” the “ing” would have been a removable suffix! Then at last I understood the deep cunning of this competitor. Ah, how keenly I shall watch for his next mistake!

Inwick will, I hope, accept my humble apologies for my carelessness in not warning him, on January 28th, that all his “First Chains” were illegal; two of them for reasons then stated, and all the rest as having only one Link each, thus violating Def. 4. It is entirely my fault that he had no opportunity allowed him for “amending the record.”

Lady Margaret’s Chains for Problems 27, 29, contained the words “chapping” and “overseas,” both of which, had I examined those Chains in a lucid interval, I should have rejected on January 28th; as I doubt if the first of these words has ever been used, and am quite sure that the second ought to be written with a hyphen. Having omitted to warn her at the time, I am bound to accept them now; but she had better not use them again!

To *Leta* also I offer my humble apologies for not having warned her, on January 28th, that her Chain for Problem 29 contained the unlawful Syzygy “unseasonable (season) season.” Though not warned, she chanced to send a “Second Chain” for it: but this, unfortunately, contained the unlawful Syzygy “singlest (sing) routing.” Had this been a Prize Competition, I would have delayed publishing these Scores, in order to give *Inwick* and *Leta* another chance.

S. C. G. will observe that I have complied with her request, by indicating which, of the alternative Chains, was the one scored. For Problem 28 she only sent one Chain.

Stellaria (whose good wishes I beg to reciprocate) inquires about the following Syzygies, which I had rejected as unlawful:—(1) “infesting (est) reasonest”; (2) “sinews (new) new.” My answer ist that, in both, I used process (a) in Rule 4. In (1), I found that, by removing the suffix “ing,” I obtained two real words, “infest” and “reasonest,” both ending with “e, s, t,” which letters are therefore “barred.” Similarly, in (2), by removing the suffix “s” from “sinews,” I obtain two real words, “sinew” and “new,” both ending with “n, e, w,” which letters are therefore “barred.”

Stellaria also asks why I rejected the Syzygy “partially (all) all.” My answer is that I did *not* reject it. Her Chain, containing it, is the one I have scored.

Stellaria also inquires whether the following Syzygies would be lawful:—“indulge (ndul) unduly” and “incredulous (incr) idiosyncrasy.” My answer is that they would.

Toofdiarb is “not quite clear as to whether a plural would be allowable or not.” Well, that depends: *some* would, and some *wouldn’t*. Here, for instance, is a lawful Syzygy, “trucks (uck) buckle”; for, though “buck” is a real word, it cannot be identified with the “buck” in “buckle.” And here is an unlawful one, “trucks (uck) ducking”; for “truck” and “duck” are both real words, and retain their identify after losing their suffixes.

Scores for Problem 27.

“a HAPPY NEW.”

The highest score reached is 14. This has been attained by two Competitors, *Chute* and *Lady Margaret*, who send the same Chain, viz.

HAPPY
(happi)
chapping
(pin)
pine
(ne)
NEW

Scores for Problem 28.

“YEAR to ALL.”

The highest score reached is 22. This has been attained by five Competitors, *Auntie*, *Flora Fox*, *Foggs*, *H. H.* and *Quercusonis*, who send the same Chain, except that *Auntie* has “tallies,” and *Quercusonis* “rallies.”

YEAR
(ear)
earliest
(lies)
sallies
(all)
ALL

Scores for Problem 29.

“This FESTIVE SEASON.”

The highest score is that of *Chute*, viz. 24. His Chain is

FESTIVE
(esti)
destine
(stin)
breasting
(reas)
unreasoning
(eason)
SEASON

February 25, 1892

The Problems for this week are

- (36) OH, DO
- (37) *Change* DOUBT to CERTAINTY.

The “First-Chains” for these must be received by (or before) the first post on Tuesday, March 1st. The rejected words, &c., will be published on March 10th. The “Second-Chains” will be due on Tuesday, March 15th. And the scores will be published on March 24th.

I should be grateful if Competitors would kindly desist from sending *whole* note-sheets when they only write on the first half. They should bear in mind

the good old nursery rhyme—"For wilful waste makes woeful want, and you may live to say, 'How much I wish I had the blank half note-sheet that then I threw away!'"

Parody on *The Crust of Bread* by James Currie

Lewiston was, through my carelessness, defrauded of the chance of sending in a "Second Chain" for Pr. 30. I ought to have warned her, on January 28, that her "First Chain" was too short, having only one link; and I offer my humble apologies. Not that it can be held, as certain, that she *would* have tried again, if warned; for I observe that a warning was given her, as to Pr. 31, but given in vain: no "Second Chain" appeared. The Lion, when in quest of prey, is said to differ from the Tiger, in that, while the Tiger, having missed his prey, will spring again and again, the Lion makes *one* spring only, and, if that fails, utters one loud roar of disappointment, and returns to his den. Possibly *Lewiston* may have taken the Lion, rather than the Tiger, for her model in life. It is a grander style of hunting, no doubt: but it has its drawbacks; to the Lion it sometimes means "no dinner," to the Syzygy-hunter, "zero."

To *S. C. G.* I offer, as I have done to *Lewiston*, my humble apologies; and I beg her to take to herself all I have said to her predecessor.

Stellaria asks where it is forbidden to send in a Chain containing only one link. My answer is that a series of 3 words is *not* a "Chain," (see Def. 2), and so could not be scored.

Scores for Pr. 30.

"*Make* BULLETS *of* LEAD."

The highest score reached is that of *Toofdiarb*, 18: her Chain is

BULLETS
(let)
replete
(ple)
plea
(lea)
LEAD

Scores for Pr. 31.

"SHOOT *an* APTERYX."

The highest score reached is that of *Osrice*, 19: his Chain is

SHOOT
(hoo)
hoopst
(pest)
pestering
(teri)
APTERYX

Rejected Words, &c., for Pr. 33. coniferous, fifer, sifter

Rejected Words, &c., for Pr. 34. comestible, medicate

March 3, 1892

The Problem for this week is

(38) "DEMAND a CORMORANT."

The "First-Chains" for this must be received by (or before) the first post on Tuesday, March 8th. The rejected words, &c., will be published on March 17th. The "Second-Chains" will be due on Tuesday, March 22nd, and the scores will be published on March 31st. Anyone can send in Chains on (or before) March 22nd, whether they have, or have not, sent in any "First-Chains."

My present intention is to set two more non-competitive Problems and then (after completing the pamphlet, and allowing full time for any Competitors, who wish, to procure copies of it) to hold the Second Prize-Competition, for which *The Lady* will give two Prizes, of 20s. and 10s., and I will present to each of the next four Competitors a "Wonderland Postage-Stamp Case" and a copy of "Eight or Nine Wise Words about Letter-writing."

Novice may like to know that I have had to erase part of her Chain for Pr. 35. It contains "miniature (ature) mature (atur) natural." Here, by Rule 11, I erase "(ature) mature." The resulting Syzygy is lawful; but the Chain (the only one sent in by her) cannot be scored, owing to other defects, named in Rule 2; 1, 3, 4, 5.

N. S. L. may like to know that I have had to erase part of her Chain for Pr. 35. It contains "arrival (ar) jargon (argon) pelargoniums." Here, by Rule 11, I erase "jargon (argon)." The resulting Syzygy is lawful, however, and the Chain can be scored.

S. C. G. may like to know that I have had to erase part of her Chain for Pr. 35. It contains "arrival (arg) enlarge (larg) pelargoniums." Here, by Rule 11, I erase "enlarge (larg)." The resulting Syzygy is lawful, however, and the Chain can be scored.

S. C. G. asks how it is that *Chute's* Chain for Pr. 29 was not rejected, as containing two consecutive Links, "breasting" and "unreasoning," both of which end with "i, n, g." The effect of their doing so is, by Rule 5, that these 3 letters are "barred" from being used in the intermediate Syzygy; and they are *not* so used. The Syzygy "reas" is lawful.

To *Tortoise* I offer my humblest apologies for having omitted to warn her, on February 11th, that neither of her Chains for Pr. 32 could score anything. One was "indulge (ind) bind (in) syncope (sinc) idiosyncrasy," where the Syzygy "in" is part of each of the adjoining Syzygies. This obliges me to erase, in accordance with Rule 11, not only "(ind) bind," but also "syncope (sinc)," thus making the Chain too short to satisfy Def. 2. The other Chain contained the word "hindings," which I believe to have no existence.

Scores for Pr. 32.

"INDULGE an IDIOSYNCRASY."

The highest score reached is 23. This has been attained by two Competitors, *Auntie* and *St. Helier*, who send the same Chain, viz.:—

INDULGE
(ndul)
unduly

(duli)
incredulity
(incr)
IDIOSYNCRASY

Words rejected in accordance with Rule 2:
aricular, captivation, enconium [non-existent], pellerene, pellerine, shindy

March 10, 1892

The Problem for this week is

(39) “*Go from LONDON to PARIS.*”

The “First-Chains” will be due on Tuesday, March 15th. The rejected words, &c., will be published on March 24th. The “Second-Chains” will be due on March 29th. And the Scores will be published on April 7th.

Now that every Syzygy-competitor has the opportunity of testing whether any word will or will not be rejected, by sending it in a “First-Chain,” I shall feel no scruple in rejecting a word contained in a “First-Chain” which lies on the boundary-line between “ordinary” and “extraordinary,” or even a word which is clearly “ordinary,” if I see good reason for so doing. Nobody will be wronged by such a course, as every one will have the opportunity of sending in a “Second-Chain” *not* containing the forbidden word. One reason which would cause me to forbid an “ordinary” word might be that it made the puzzle too easy. There might be some very obvious word, leading to a Chain scoring high and yet needing no mental effort to discover, which is exactly the kind of Chain which I wish to render impossible. For instance, suppose I were to set the Problem “Prevaricate in Mesopotamia,” and that forty identical “First Chains” were sent in, all containing “mutton” as a Link, and all scoring very high. I should say to myself “Dear me! I never intended it to be so easy as *this!* I must forbid ‘mutton’ as a Link.” And the set of Second-Chains would then be a much better test of mental skill than the “First Chains” had been. Of course, if I had foreseen how easy it would be to make the “mutton” Chain, I would have forbidden it when setting the Problem; but it might happen that I did not notice it till the “First-Chains” had come in. In rejecting a word that occurs for the first time in a “Second-Chain,” I shall, of course, limit myself to the “ordinary” test.

N. S. L. sends me an interesting letter, for which I am grateful—specially for his sympathy with me in my “hard task,” as he truly calls it. He charges me with being “rather arbitrary,” in rejecting words. I have dealt *generally* with this matter in the first paragraph of this article; but the *particular* words which he mentions were all rejected on the score of violating Rule 2: which position I now proceed to defend.

(1) “*Debouch.*”—He says he has come across the word “in reading”; and that a friend tells him he uses it and that “there is no other word to express the meaning.” All this may be true, without affecting the fact that it is a word only used by specialists [see Rule 2 (b)]—viz, either Fellows of the Royal Geographical Society or military men. I have not mixed much with either class, and, to the best of my belief, have never heard it used in “conversation” [see Rule 2 (b)] in the whole course of my long and disreputable life.

(2) "Hindustani."—He thinks I rejected it as mis-spelt; and offers other spellings. Now, first, I do *not* reject a word, merely for being mis-spelt; but only reject the Chain, containing it in case the correction of the mis-spelling spoils a Syzygy. *All* his spellings of "Hindustani" are correct, so far as I know, but *no* spelling of it can make it cease to be "a proper name, usually spelt with a capital letter" [see Rule 2 (c)].

(3) "Incrust."—He says, most truly, that "'incrusted' is a very common word in common conversations;" and grants that "incrust" is not *so* common. In my opinion, it is not *at all* common. I never heard it used. I hold that "crusted" and "incrusted" (or "encrusted") are really derived from the substantive "crust," just as "talented" is from the substantive "talent."

(4) "Hoopest."—He takes me to task for having *accepted* this word, while rejecting the word "fifer." He asks me what *I* would "say, when speaking of the drummers and fifers of a regiment." I reply that I have never yet had to speak of "fifers"; but I admit that "fifer" lies very near the boundary-line. As to "hoopest," I have already laid down the principle that, if a verb be an "ordinary" word, I cannot forbid Competitors to *conjugate* it; and I cannot exclude *Quakers* from this Competition! I hold that "to hoop a barrel" is an "ordinary" phrase. I would *not* (as *N. S. L.* suggests) say to my child "Thou hoopest, I hear"; though I *would* (if I were a Quaker, and if I had a child, and if that child suffered from "pertussis"), mildly remark to him "Thou whoopest, I hear".

Bittern's "First Chain" for Pr. 37 cannot be scored. It contains "doubt (doub) re|double."

E. L. W. and *S. C. G.* take me to task for having accepted "hoopest" as an "ordinary" word. I can but refer them to what I have already said to *N. S. L.*, which I hope will satisfy them, but there seems to be, in some minds, a deep prejudice against allowing *Quakers* to join in this Competition! Really they are a most kindly and estimable set of people, and do not deserve to be so summarily ostracised.

Mimosa had better study Rule 1 in the Code published on January 14. Her Chains for Pr. 36, 37, are not "Chains" at all. They contain no Syzygies!

N. S. L.'s Chains for Pr. 30, 31, now reach me for the first time. Here are his scores—(30) 9, 3, 29; 2, 9, 13: 16. (31) shoot (sho) a|shore, 0.

Persevere's "Second-Chain" for Pr. 32 came too late to be entered on the List of Scores. Here is her Score:—10, 2, 22; 2, 11, 15: 7.

Toofdiarb points out that her proper Score for Pr. 30 was "17," and not "18" as I made it. I find she is right; and I beg pardon, humbly, but hopelessly; for to say that a young lady is 18, when she is only 17, is surely an unpardonable libel!

Words rejected for Pr. 36, 37.

"OH, DO *change* DOUBT to CERTAINTY!"

blent, oubliette, stead.

Scores for Pr. 33

"Set KNIFE by FORK."

Auntie's "First-Chain" was too short; and I accidentally omitted to warn her of this on February 25th, for which I humbly beg her pardon.

[N.B.—The symbol “0*” means “less than zero.” The symbol “[r. b.]” means “Refer back to *The Lady* for February 25th, where the reasons for rejecting this competitor’s Chains were stated.”]

The highest score reached is that of *Toofdiarb*, 21. Her Chain is as follows:—

KNIFE
 (nife)
manifest
 (man)
workman
 (ork)
FORK

Scores for Pr. 34

“WELCOME a FRIEND.”

N. S. L. ought to have been warned on February 25th (I humbly beg pardon for the omission) that his only “First-Chain” could not score, as it contained “horse (ors) dorsal (dors) endorse,” in which I erase, by Rule 4, “dorsal (dors),” leaving “horse (ors) endorse,” which, by Rule 4, is an unlawful Syzygy.

Rosemary was warned, on February 25th, that one of her “First-Chains” contained an unlawful Syzygy; but I omitted to notice that the other did so also. I humbly beg her pardon.

The highest score reached is 25. This has been attained by two Competitors, *Auntie* and *H. H.*, who send the same Chain, viz:—

WELCOME
 (come)
comely
 (meli)
ameliorate
 (orat)
oratories
 (orie)
orient
 (rien)
FRIEND

March 17, 1892

The Problem for this week is

(40) “Buy ‘*The Lady*’ every
WEDNESDAY AFTERNOON.”

The “First-Chains” will be due on Tuesday, Mar. 22nd. The rejected words, &c., will be published on Mar. 31st. The “Second-Chains” will be due on Tuesday, Ap. 5th. And the scores will be published on Ap. 14th. Any one can send in Chains up to Ap. 5th, whether she has sent in “First-Chains” or not.

In Rule 6, I wish to make the following addition, which will, I think, give a little more variety and interest to this puzzle:—“The letters “u” and “v” may be treated as if identical. Hence the following Syzygy is lawful:—

question
(ves)
vessel

Rejected Words etc. for Pr. 38

“DEMAND a CORMORANT.”

In what follows, the symbol [0] after a name, means “has sent in no Chain which can be scored”; the symbol [1] means “has sent in at least one.”

Ettelra [0] has sent, for Pr. 38, a series of words, no doubt meant for the Links of a Chain: but, as there are no Syzygies, it is not a “Chain” at all. She may as well be told, however, that, in the 2 words “remain, remorse,” which she has put consecutively, the letters “r, e, m,” are, by Rule 3 “barred” from being used in a Syzygy.

H. H. is entreated to accept my humble apologies (N.B.—I seem to be *always* apologising just now! When my Biography is published, it ought to be called “An Apology for the Life of Lewis Carroll”) for my mistake in publishing the scores for Pr. 30. The highest Score reached was “17,” not “18”; consequently *H. H.* was one who attained it; and his Chain ought to have been published. Here it is:—

BULLETS
(ets)
jetsam
(sam)
sample
(ple)
plea
(lea)
LEAD

I must also apologise to *H. H.* for not having warned him that one of his Chains for Pr. 35 (which would otherwise have scored 25) contained “multiplies (lies) loneliest,” in which the letters “l, i” are barred, thus reducing the Syzygy to “es.”

Skirmisher [0] has sent in one Chain only, in which she has put 2 Links consecutively, with no Syzygy between them. They are “natural, morals (or moralise).” Here, by Rule 7, I must put in a one-letter Syzygy, if I can find one. There is one: the first “a” in “natural” can be linked with the second in “moral.” This is the only possible Syzygy, as the letters “r, a, l” are barred by Rule 4. But, having thus supplied the missing Syzygy, I then have to deal with “emanate (nat) natural (a) morals (mora) cormorant.” Here, by Rule 11, I must erase “(nat) natural” and also “morals (mora).” The Chain is now reduced to “demand (eman) emanate (a) cormorant,” in which I must, by Rule 11, erase “(eman) emanate.” This reduces the Chain to “demand (a) cormorant,” thus making the Problem do duty as answer to itself! But it is too short to be regarded as a “Chain” at all.

Stellaria [1] has sent in a chain containing “cormorant (rmor) armorer (ore) foreman.” I cannot accept “armorer,” as spelt, as an “ordinary” word. After

correcting it to “armourer,” I must then, by Rule 10, reduce the first Syzygy to “rmo,” and the second to “re.”

Rejected Words:
“mandatory,” “orangery”

Scores for Pr. 35

“CULTIVATE PELARGONIUMS.”

The highest score reached is that of *Rosemary*, 25. Her Chain is

CULTIVATE
(cul) difficulty
(icul)
gesticulate
(gest)
largest
(larg)
PELARGONIUMS

March 24, 1892

[...] ¹⁷

(3) *For all Wrestlers with Syzygies.*—In all Lists of Rejected Words, &c., the symbol “[0]” appended to a Competitor’s name, means “she has sent in *no* Chain which can be scored”; any other figure, so appended, means that she has sent in that number of scorable Chains. In the List of Scores, the symbol “[r. b.]” means “refer back to the No. of *The Lady* which contained the Rejected Words, &c., for this Problem, where reasons were given for rejecting all her First-Chains: she has sent no Second-Chain.” Such a symbol as “(serva) (se) 6 f,” means “she claimed the Syzygy “serva”; I had to reduce it to “se,” so, by Rule 10, she forfeits 6 marks for the three unlawful letters; these will be deducted from her Score.” And the symbol “0*” at the end of a Score, means “the Score really comes out less than nothing: this Competitor may think herself very lucky in getting as much as zero!” Any one may send in Chains for a Problem up to the date fixed for receiving “Second-Chains,” whether she has, or has not, sent in any “First-Chains”.

The Problem for this week is

(41) “WRITE *a* NOVEL.”

The “First-Chains” will be due on Tuesday, Mar. 29th. The rejected words &c. will be published on Ap. 7th. The “Second-Chains” will be due on Tuesday, Ap. 12th. And the Scores will be published on Ap. 21st. In reference to this Problem, I may as well mention that the “e” in “write,” though it is a suffix, and one that the Scorer could lawfully exchange for another (e. g. “ing”), yet it is one he could not lawfully erase, leaving only the word “writ”: for, though “writ” is a real word, it is not the basis of “write.” Hence “write (it) bit” would be a lawful Syzygy; but “write (it) biting” would be unlawful.

¹⁷Remark: Under the headline “Three Things to Think About” appear as first two (with numbers) “For All Lovers of Children” (→ 19.10, p. 2470) and “For All Writers of Letters” (→ 19.11, p. 2471).

I have a most humiliating confession to make about the Score-list, published February 18th, for Pr. 28, "YEAR to ALL"—it is that I marked *seven* of the Competitors wrongly! For this I can only plead that the Rules are as new to *me* as they are to you, and that, in the hurry of finishing the List to catch the post, I overlooked flaws which take off a great deal from the Scores of the (shall I say "lucky" or "unlucky"?) seven. *Auntie's* Chain contained "earli|est (lies) talli|es," in which "l, i" are barred by Rule 4, so that I must reduce the Syzygy to "es," and deduct "4," as forfeit, from the Score. Hence the Chain, published as worth "22," ought to have been scored "19, 2, 21; 2, 6, 10: 7." Similarly *Flora Fox, Foggs, H. H.*, and *Quercusonis* ought all of them to have been scored "7" instead of "22." *Persevere's* Chain contained "earli|er (lie) ralli|es." Here "l, i" are barred letters; so the Syzygy must be reduced to "e," and "4" deducted as forfeit. Thus her Score is 9, 1, 15; 2, 7, 11: 0. *Stellaria's* Chain (the one I scored as her best) contained "hartily (arti) partially." Here "a, r, t" are barred letters: so the Syzygy must be reduced to "i," and the Score of *that* Chain comes out less than zero. She has, however, sent in other Chains, the best of which scores "9, 2, 21; 2, 4, 8: 13." The net result of all this is to make *Weetoo's* Score the highest, viz. "20." Her Chain is

YEAR
 (ear)
 earth
 (art)
 partially
 (all)
 ALL

H. H.'s "Second-Chain" for Pr. 33 *was* rejected on account of "conifer," which seems to me to come under the same category as "coniferous," both being words used only by *specialists*.

H. H. asks whether the following is a lawful Syzygy:—"honesty (esti) resting." The letters "e, s, t" are barred by Rule 4; but the letter "i" may lawfully be used as a Syzygy.

N. S. L. again objects to my acceptance of "hoopest," as being not ordinarily heard except among Quakers. My rule is (I say it for the third time, and "what I tell you three times is true," as Milton or some other poet has said) to apply the "ordinary" test to the *infinitive* only of a verb, and, if *that* be admitted, to admit *all* the grammatical inflexions. Thus, having admitted "to snuff a candle" as an "ordinary" verb, I accept "snuffs, snuffed, snuffing, snuffest, snuffeth, snuffedst," though I never heard any human being any of the last three! But we are nothing if not grammatical.

N. S. L. further asks if I would admit "pertussis," "snark," and "hooper" as "ordinary" words. Most certainly not! The first is only used by specialists; the second, though used by one extravagant writer, has not yet been admitted into the English language. The third I will accept, as soon as *N. S. L.* has found ten persons, *outside Hanwell*, who habitually use it.

N. S. L. finally asks, "do you say there is no such verb as to incrust?" No. But I think the order of formation was, first the participle "incrusted," formed from the substantive, and fairly common; then the verb "to incrust," formed from the participle, and very uncommon. In the same way we have, from the

Quoted from *The Hunting of the Snark*
 by Lewis Carroll

substantive “suicide,” the fairly common participle “suicide”; but the verb “to suicide” is so far from being common that it *doesn't yet exist!*

Queenie's Chains for Pr. 33, 34 were sent without any name, and with “The Lydiate,” in inverted commas, at the top: so I supposed them to have come from some new Competitor, whose “nom-de-plume” was *The Lydiate*, and scored them as such.

Quercusonis thinks that I ought, in accordance with Rules 3, 4, to have rejected the Syzygies “wel|come (come) come|ly” and “work|man (ork) fork,” in the same way that I rejected “retail (ail) ail|ment.” By Rule 5 I may not regard “wel” as a prefix; and though “ly” is a suffix, yet its removal would cause the syllable “come” to change from an adjective to a verb, and thus to lose its identity. Also, by Rule 5, I may not regard “man” as a suffix. But, in the word “ailment,” “ment” is neither a noun nor a verb, but a mere suffix. Away with it!

Rejected Words &c. for Pr. 39.

“Go from LONDON to PARIS.”

riparian, sparsest

Scores for Pr. 36

“OH, DO.”

The highest score reached is 11. This has been attained by 4 Competitors, *Auntie, E. L. W., H. H.,* and *Toofdiarb*, all of whom send the same Chain.

OH
(oh)
cohere
(ere)
reredos
(do)
DO

Scores for Pr. 37

“Change DOUBT to CERTAINTY.”

The highest score reached is that of *H. H.*, 30. His Chain is

DOUBT
(doubt)
redoubtable
(tabl)
stabling
(ling)
linger
(inge)
tinge
(ting)
tainting
(tainti)
CERTAINTY

March 31, 1892

[...] ¹⁸

The Problem for this week is

(42) “*get FISH out of WATER.*”

The “First Chains” will be due on Tuesday, April 5th; the Rejected Words, &c., will be published on April 14th; the “Second-Chains” will be due on Tuesday, April 19th; and the Scores will be published on April 28th.

The above problem is the first of Seven Prize Problems, which will form one continuous, convivial sentence. The Rules are not yet in a sufficiently perfect state, nor sufficiently understood, to give Prizes in *money*; so the winner of the first prize shall have the choice of “A Tangled Tale,” “The *Hunting of the Snark*,” “Alice’s Adventures Under Ground,” and the best edition of the “Nursery Alice”; the second on the list shall have the choice of “The Game of Logic” and the People’s Edition of the “Nursery Alice”; and the third and fourth shall have “Wonderland Postage-Stamp Cases,” with the accompanying “Wise Words.”

New Definition

6—If a prefix to a word can be removed, or if it can be replaced by another prefix, the word, so formed, being real and etymologically the same as before, it is called a “removable” prefix. And the same is true of a suffix.

New Edition of Rules 3, 4

3—When two adjacent words, in a Chain, begin with the same set of letters, or end with the same set, every such letter is barred with regard to the corresponding letter of the other word.

Thus, the Syzygy “dog (do) door” is unlawful, but “don (on) onion” is lawful, even though both words end with “on”; since the “on” at the *end* of “don” may lawfully be linked with the “on” at the *beginning* of “onion.”

Thus the “un” and the “est” in “unhappiest” are removeable: so also are the “con” and “ing” in “convoking,” since they may be replaced by “re” and “es.” But the “re” in “restoration” and the “s” in “victuals” are *not* removable.

4—When two adjacent words in a Chain are such that, by removing certain “removable” prefixes, or suffixes, they can be made to begin with the same set of letters, or to end with the same set, every such letter is “barred” with regard to the corresponding letter in the other word.

Thus the Syzygies “unhappiest (hap) happen” and “unhappiest (pi) copy” are unlawful. So also is the Syzygy “choral (or) scoring,” since the “al” and “ing” may be replaced by “us” and “e.” But the Syzygies “restoration (sto) stoker” and “animal (al) victuals” are lawful.

It would greatly diminish the misery of existence for me if competitors would kindly forbear from sending, on *one* piece of paper, Chains for Problems set at *different* times.

Stellaria has sent in fresh Chains for Pr. 37, “Change DOUBT to CERTAINTY” too late to appear in the Score list. The best one scores “13, 4, 43; 4, 13, 21: 22.” She also says she did not offer the Chain “demand (and) abandon (ban) banter (ant) cormorant,” because “ban” and “band” are both real words.

¹⁸Remark: Under the headline “Things to Think About” appear (with numbers) “For All Lovers of Children” and “For All Wrestlers with Syzygies” (reprinted from March 24).

So they are, but they are not portions of “abandon” or “banter,” nor can the “on” and the “ter” be regarded as suffixes. It would have been a lawful Chain.

Rejected Words, etc., for Pr. 40.

“WEDNESDAY AFTERNOON.”

Collectedness, intern, landrate, lusterless, raftered, stern-sheets, undisdained.

Scores for Pr. 38

“DEMAN *a* CORMORANT.”

The highest score reached is 29. This has been attained by two Competitors, *E. L. W.*, and *Rosemary*, whose Chains are—

DEMAND	DEMAND
(eman)	(eman)
gentleman	emanating
(gent)	(ting)
tangent	tingest
(ange)	(nges)
orange	oranges
(oran)	(oran)
CORMORANT	CORMORANT

April 7, 1892

[...] ¹⁹

The Problems for this week are

(43) “COOK *it* for DINNER.”

(44) “INVITE *a* GUEST.”

The “First-Chains” will be due on Tuesday, April 12th. The Rejected Words, &c., will be published on April 21st. The “Second-Chains” will be due on Tuesday, April 26th. And the Scores will be published on May 5th. In this Prize-Competition, if I have to score any one “0” for a mistake, in a “First-Chain,” of which I had given no warning, that Problem shall not count in the final Score, but another shall be set instead.

In the “New Edition of Rules 3, 4,” published March 31st, the third paragraph, beginning “thus the ‘un,’” should be erased, having been printed by mistake: an amended version of it stands as the fifth paragraph.

A Chain has been sent in, for Pr. 39, without name or address: its links are “sardonic” and “leopard”: I have scored it as “*N. S. L.*,” as it looks like her hand, and is on the same coloured paper as she has used.

Bittern asks why, in the Syzygy “endearing (eari) bearish,” the letters “e, a, r” are unlawful. It is because, by omitting the suffixes “ing” and “ish,” I produce two real words, “endear” and “bear,” both ending with “e, a, r.”

Queenie asks if I received her “Second-Chain” for Pr. 36 and her “First-Chain” for Pr. 39. Neither, I am sorry to say.

S. C. G. is entreated not to use the same symbol for “h” and “N”: it is bewildering.

¹⁹Remark: Under the headline “Things to Think About” appear (with numbers) “For All Writers of Letters” and “For All Wrestlers with Syzygies” (reprinted from March 24).

Toofdiarb is thanked for her suggested rule for the Prize Competition, which, as she will see, I have adopted.

Scores for Pr. 39

“Go from LONDON to PARIS.”

The highest score reached is that of *Auntie*, 29. Her Chain is

LONDON
 (ondon)
condonation
 (atio)
ratio
 (rati)
aristocratic
 (aris)
PARIS

Rejected words: dovelike, iterate, tangerines

April 14, 1892

[...]²⁰

The Problems for this week are

- (45) “PROVIDE CHAMPAGNE,”
- (46) “SPREAD *the* BANQUET.”

The “First-Chains” will be due on Tuesday, April 19th. The Rejections will be published on April 28th. The “Second-Chains” will be due on Tuesday, May 3rd. And the Scores will be published on May 12th.

Permit me to begin with one serious remark. I would entreat my correspondents to remember that texts of the Bible should never be lightly or playfully alluded to, but should be quoted seriously, if quoted at all.

Bittern is entreated to accept my apologies for not having warned her that in “in|credible (ncre) un|created,” the letters “cre” are barred. She would no doubt, but for my negligence, have sent in a better Chain.

Euterpe gives various reasons for thinking that I did not act fairly in rejecting the word “hooper” and in accepting the word “hoopest.” As any reply I could make would simply be a repetition of what I have already said, I will ask her to be kind enough to refer to *The Lady* for March 10th, first paragraph, and for March 24th, first answer to *N. S. L.*

Euterpe also asks “to whom should I be expected to send if my water-butt required repairing”? I think a *cooper* be the proper person to send for. She is also “inclined to believe that the word ‘hoopest’ has not been used by any one in the United Kingdom for the last fortnight.” I entirely coincide in her belief.

Quercusonis supposes that, as “tingest (nges) oranges” was allowed, so also “confiscates (ates) latest” will be allowed. The former was allowed, in accordance

²⁰Remark: Under the headline “Things to Think About” appear (with numbers) “For All Lovers of Children” and “For All Wrestlers with Syzygies” (reprinted from March 24).

with the rules published January 7th: the latter comes under the operation of the revised rule published March 31st. I hold that, in “confiscate|s,” the “es” is a removable suffix, which has taken the place of “e” in “confiscate”; and similarly for the “est” in “lat|est.” By removing these suffixes I make the words “confiscate,” “late,” which end with the same 3 letters. Hence the letters “a, t” are barred. Hence the Syzygy must be reduced to “es.” Had the given words been “confiscate” and “late,” of course the letters “a, t, e” would have been barred. But, in the present case, the “e” is part of the suffix, not of the word itself, and therefore is not barred.

S. C. G. is also entreated to accept my apologies. I ought to have warned her that in “terminate (ter) rafter (after) afternoon,” I must erase “rafter (after),” thus leaving “terminate (ter) afternoon,” which, however, is a lawful Syzygy.

Scores for Pr. 40

“WEDNESDAY AFTERNOON.”

The highest score reached is 28. This has been attained by 2 Competitors, *Auntie* and *Weetoo*, whose Chains are:—

WEDNESDAY

_(ednes)⁷²¹

blessedness

(esse)

finesse

(iness)

craftiness

(raft)

rafter

(after)

AFTERNOON

WEDNESDAY

_(ednes)⁷²²

blessedness

(bles)

mandibles

(andi)

handicraft

(raft)

rafter

(after)

AFTERNOON

Rejected words:

dishful, emanate, ingate, ingrate, penates, plenished, shapen.

April 21, 1892

[...]²³

²¹ accidentally “edness”

²² accidentally “edness”

²³ Remark: Under the headline “Things to Think About” appear (with numbers) “For All Writers of Letters” and “For All Wrestlers with Syzygies” (reprinted from March 24).

The Problems for this week are

(47) "CONVERSE CHEERFULLY":

(48) "FEAST *till* MIDNIGHT."

These conclude the Second Prize-Competition. The "First-Chains" will be due on Tuesday, April 26th. The Rejections will be published on May 5th. The "Second-Chains" will be due on Tuesday, May 10th. And the Scores will be published on May 26th.

Kelpie has sent in, for Pr. 41, a Chain containing no Syzygies at all! It is "write, rite, item, stem, stove, novel." For its 1st Syzygy, "r, i, t, e" are barred; for its 3rd, "t, e, m;" for its 4th, "s, t." So only three Syzygies are possible, viz. "rite (ite) item" and "stem (e) stove (ove) novel." *Kelpie* should refer to *The Lady* for Jan. 7th and March 31st, and study the Rules. She will then succeed better.

Leta's pardon is humbly begged, for not having named her on April 7th, as sending the same unlawful Syzygy as *Rosemary* did.

Lion and Tiger send 2 Chains for Pr. 43. One contains "cook (ook) look|ing (king) king|dom (ing) call|ing" and "nation|al (ation) generation": the other contains "king|dom (ing) right|ing (right) alright." Every Syzygy, here quoted, is unlawful.

Rosemary sends (in proper time, but accidentally not forwarded to me) a "Second-Chain" for Pr. 40 ("Wednesday Afternoon"). It contains "bless|edness (less) restless," which is an unlawful Syzygy.

Skins wants the Pamphlet on Syzygies, if ready, but does not know how to get it, nor what it will cost. It will be announced when ready: to be had at *The Lady* Office: price not yet fixed, but will certainly be *less* than five guineas.

Toofdiarb sends for Pr. 39 ("London—Paris"), a Chain which scores "12, 3, 32; 3, 9, 15: 17." It is a duplicate of one sent previously, but accidentally overlooked. I am very sorry to have been so careless. *Mentally*, I prostrate myself at her feet, and cast ashes on my head; but I trust she will excuse me from doing it *practically*, as they are so difficult to brush out afterwards.

Toofdiarb thinks "condonation (ation) ration|al" is a lawful Syzygy, "because, if you cut off the 'al' from 'rational,' you leave 'ration,' which is a different word." But it is *not* a "different" word; "ration" is the very word from which "rational" is formed by adding the suffix "al."

Toofdiarb also asks why I accepted the Syzygy "tingest (nges) oranges" (see Mar. 31), and yet rejected "condonation (ondon) apparitions" (see Ap. 7). If she will refer to Rule 4, published Jan. 7, and try the 3 processes, there named, upon the first of these instances, she will find that no one of them yields a pair of real words. Process (a) gives "ting, orang"; process (b) gives "tinges, orangest"; and process (c) gives either "tinges, orang," or else "ting, orangest." As to the second instance, it is enough to say that "ondon" is *not* a part of "apparitions." No doubt she *meant* to put "tion"; but even *this* would not have been a lawful Syzygy, since "condonation" and "apparition" are both *real* words.

Toofdiarb also asks, "Why do you allow one conjugation" (she means "inflection") "of a verb and not another? You would allow 'stonest,' but not 'stoned' or 'stones.'" My answer is that I would accept all three. She seems to have been misled by my rejection, on Oct. 8th, of "stoner, stonings" (both being non-ordinary substantives), and of "head-stones" (rejected because it contained a hyphen).

Rejections for Pr. 43: bouncer, look-out, scooper, tinnest

Rejections for Pr. 44: book-shelf, editress, tantrum, untested, Vestal

Scores for Pr. 41

“WRITE a NOVEL.”

The highest score reached is that of *Osrice*, 27. His Chain is:

WRITE
 (rite)
meritest
 (test)
testy
 (esti)
destines
 (ines)
loveliness
 (ovel)
NOVEL

April 28, 1892

[...]²⁴

I think it best to set no more Problems until the pamphlet is completed, when I hope, after setting a few experimental Problems, to begin the Third Prize-Competition.

Q. E. D. enquires why, on April 14th, I gave the first Syzygy, in each of the published Chains for Pr. 40, “WEDNESDAY-AFTERNOON,” as “edness,” seeing that there is only one “s” in “Wednesday.” Let me recommend the following as a healthy mental attitude for all readers of the “Syzygy” Article. Here is “edness” given as a Syzygy to follow “Wednesday.” What an ignorant scorer we have got! But stay. It may be a misprint. Such a thing might happen, even under the eye of that dazzling genius, that greatest of all great men, that &c., &c. (*ad libidum*). This can be very simply tested. If he wrote “edness” as the Syzygy, the first number of the Score would be “16”: if “ednes,” it would be “15.” It *is* 15. Therefore he wrote “ednes.” Therefore “edness” is a misprint, *Q. E. D.*

Stellaria sent in for Pr. 42, the Chain “fish (fis) kingfisher (king) risking (risk) asterisk (teri) material (ater) water.” This only scores 12: but, if she had put “fish,” instead of “fis,” as her first Syzygy, it would have scored 26!

Rejected Words for Pr. 45.

“PROVIDE CHAMPAGNE”:

cadency, improves, magnetizer.

Rejected Words for Pr. 46.

“SPREAD *the* BANQUET”:

²⁴Remark: Under the headline “Things to Think About” appear (with numbers) “For All Lovers of Children” and “For All Wrestlers with Syzygies” (reprinted from March 24).

preadmonition, preambulate²⁵, readmit, saddler, wolverines.

Scores for Pr. 42

“*Get FISH out of WATER.*”

The highest score reached is that of *H. H.*, 25. His Chain is

FISH
(fish)
kingfisher
(king)
striking
(stri)
ancestry
(ance)
utterance
(tera)
lateral
(ater)
WATER

May 5, 1892

[...] ²⁶

It would save me some trouble if Competitors would kindly refrain from sending, on the *same* paper or card, Chains in answer to *different* Problems.

Lion and Tiger have sent in 3 “Second-Chains” for Pr. 44. Two of them contain “iterate,” which I cannot accept as an “ordinary” word. The other contains “manifest (est) guest,” which is an unlawful Syzygy. I have scored their only “First-Chain,” which could be scored at all. “I give thee all, I can no more, Though poor the offering be. A round duck’s egg is all the score That I can offer thee!” (May 5, 1892)

Parody on *My Heart and Lute* by Thomas Moore

Ne Cede Malis has sent in one Chain only for Pr. 43. It contains “meter (er) nerve (ner) dinner,” in which I must erase “nerve (ner),” thus leaving “meter (er) dinner,” which is an unlawful Syzygy.

Q. E. D. has sent in 2 Chains for Pr. 43. One contains “poker (poke) bespoke.” Here, by removing from “poker” the suffix “er,” and replacing the “e” which is supplanted, I get “poke (poke) bespoke,” which is an unlawful Syzygy. The other Chain contains “bother (ther) withers (ithe) neither.” Here I must first complete the Syzygy “ithe,” by adding the “r” which *Q. E. D.* has omitted, and must then erase “withers (ither),” thus leaving “bother (ther) neither,” which is an unlawful Syzygy.

Scarborough is the postmark on a post-card, containing Chains for Pr. 43, 44, with no name or address. They are called “Second-chains,” but I cannot find any “First-Chains” in the same hand, and so have entered them under the above name.

Skins, if a good cricketer, may perhaps someday play in a match where her side wins the game in one “inning.”

²⁵accidentally “perambulate”

²⁶Remark: Under the headline “Things to Think About” appear (with numbers) “For All Writers of Letters” and “For All Wrestlers with Syzygies” (reprinted from March 24).

Stellaria “concludes” that I rejected the Syzygy “manner (nner) dinner” because the verb “to manner” is non-existent. It was not so much because “manner” does *not* exist as a *verb*, as because it *does* exist as a *noun*. She also asks whether “look-out” is not generally written as one word. It is so, in dictionaries; but I cannot accept it, as my rejection may have prevented some one from using it.

Rejected words: turn-overs.

Scores for Pr. 43:

“COOK it for DINNER”

The highest score reached is 20. This has been attained by seven competitors, *Auntie*, *Carrot*, *E. M. R.*, *H. H.*, *Lancashire Witch*, *Quercusonis*, and *Toby*, all of whom sent in the same chain:

COOK
 (coo)
scooping
 (pin)
pinned
 (inne)
DINNER

Scores for Pr. 44:

“INVITE a GUEST”

The highest score reached is that of *Quercusonis*, 31. Her chain is:—

INVITE
 (vite)
suiteth
 (teth)
tethering
 (ering)
meringues
 (gues)
GUEST

May 12, 1892

[...] ²⁷

Among the rejected words, for Pr. 46, published April 28, appears “perambulate.” This was a misprint for “preambulate.”

Carrot’s “First-Chain,” for Pr.45, was “provide (rovi) roving (ing) gingham (ham) hamper (hamp) champagne.” Here I ought to have erased, in accordance with Rule 11, “hamper (hamp),” and to have mentioned this in my List of Rejections. But I overlooked it. I therefore feel bound, now, to accept it as it

²⁷Remark: Under the headline “Things to Think About” appear (with numbers) “For All Lovers of Children” and “For All Wrestlers with Syzygies” (reprinted from March 24).

stands, or to correct it, whichever gives here the highest score. I have corrected it, and this scored her 18 instead of 17.

Lion and Tiger "had no idea that names of birds and animals were allowed." All words are allowed, unless forbidden by the Rules or rejected by the Scorer. They also demur my rejection of "ancestress," pleading that it is in common use. I said my say, on that point on Dec. 21, 1891; and, as the Rules have been changed since then, it seems hardly worth while to reopen any question relating to the old rules.

Q. E. D. did not understand that, when I said "get fish out of water," I meant "get water out of fish." I admit that I ought to have printed the Chain the other way up; but it would not have affected the score: also I laid it down, in Rule 1, that "it does not matter which given word is placed at the top."

Q. E. D. also cannot understand why, in the Chain "vinegar (nega) negation (ne) champagne," I erased "(nega) negation." It was in obedience to Rule 11, as published on Jan. 7.

Q. E. D. is also puzzled at my rejecting, as not "ordinary," words which are in the dictionary. Surely, if *this* were evidence of words being "ordinary," every word in the language would have to be accepted as ordinary! Would *Q. E. D.* accept "zumbooruk" as an "ordinary" word?

Scores for Pr. 45,

"PROVIDE CHAMPAGNE"

PROVIDE
(provi)
improvising
(sing)
singe
(inge)
ginger
(ging)
rampaging
(ampag)
CHAMPAGNE

Scores for Pr. 46,

"SPREAD the BANQUET"

SPREAD
(read)
readiness
(ines)
shines
(shin)
vanquishing
(anqu)
BANQUET

May 19, 1892

[...]²⁸

The scores for Pr. 47, 48, and the Total Scores for the Second Prize-Competition, now concluded, will be published on May 26.

N. S. L. asks why, in the Score-list for Pr. 43, published May 5, I rejected the Syzygy “cook (ook) rookery.” I did it in accordance with Rule 4, published March 31. By removing the suffix “ery” from “rookery,” I get, as two adjacent word, “cook” and “rook,” in which the letters “o, o, k” are “barred.”

N. S. L. also asks why, in the Score-list for Pr. 44, I put “[r. b.] 0” against her name. It meant “refer back to list of Rejections, for the Problem, published April 21.” By referring to it, she will see that her Syzygy “vestry (vest) guest” was rejected, as violating Rule 4, that “[0]” was appended to her name, indicating that she had sent in *no* Chain which could be scored.

N. S. L. also demurs my rejection, on May 5, of “turnovers” thinking apparently, that I rejected it as not “ordinary.” My reason was that it is a word which, in my judgement, ought to be spelt with a hyphen (see rule 2 (d), published Jan. 7).

Q. E. D. also demurs my erasure, on May 5th, of “withers (ither)” in her Chain “bother (ther) withers (ither) neither,” again assuming that it must have been because I thought “withers” to be a “non-ordinary” word. My reason was that the Syzygy “(ither)” contains the Syzygy “(ther),” and my erasure was in accordance with Rule 11, published January 7th, and in spite of the fact that she has written the second Syzygy as “(ithe)” instead of “(ither)”; for it is laid down, in Rule 12, that the penalty, awarded by the preceding Rule, cannot be evaded by writing shorter Syzygies than might be claimed, so as to avoid the result of one containing the other. She pleads that “withers” is a well-known word: which is perfectly true, of course, but is not relevant to the question.

Q. E. D. thirdly demurs my erasure, on May 5th, of “(aught) naughty,” in her Chain “distraight (aught) naughty (ght) midnight.” My reason was the same as the preceding case—viz., that one of these Syzygies contains the other, and must therefore, by Rule 11, be erased, as well as the intermediate link.

Q. E. D. fourthly demurs my rejection, on May 5th, of the Syzygy “shameful (ful) cheerfully,” adding “I wrote it, on purpose, as a test, to see if you would dissect your own word, and thus make it ‘cheerful,’ which is not the word we were to write to; and I hold this to be an unfair judgement.” I am sorry to be thought unfair; but I do not see how it can be so: I acted in strict accordance with Rule 4, published March 31st. The word “cheerfully” consists of “cheerful” and the suffix “ly.” Hence these two adjacent words, “shameful” and “cheerfully,” can be made, by removing this suffix, to end with the same set of letters—viz., “f, u, l.” Hence these letters are “barred.”

Q. E. D. fifthly complains that she cannot understand the Score assigned to her for Pr. 44, viz., “7, 2, 19; 4, 12, 20: 0*.” If she will turn to Rule 13, published Jan. 7, the following statement will, I hope, be intelligible. Her longest end-Syzygy contained 3 letters, and her shortest 2. Adding together ‘3’ and twice ‘2’, I get ‘7’ as the *first* number to record. Her shortest Syzygy contained 2 letters. Hence ‘2’ is the *second* number to record. The two numbers, next above ‘2’, are ‘3, 4’; and their product is ‘12’. Adding together ‘7’ and this product,

²⁸Remark: Under the headline “Things to Think About” appear (with numbers) “For All Writers of Letters” and “For All Lovers of Children” (reprinted from March 24).

I get '19' as the *third* number to record. Her Chain contained 4 Links and 12 waste letters. Hence '4' and '12' are the *fourth* and *fifth* numbers to record. Adding together twice '4' and '12', I get '20' as the *sixth* number to record. Now the score is "the remainder after deducting No. (6) from No. (3)." Hence, in this case the Score must be got by deducting '20' from '19'. But this is actually *less* than nothing! Which result I record (as explained in the paragraph, addressed to "all Wrestlers with Syzygies," which appears every week) by entering it as "0*."

Swerdna is puzzled by my acceptance, on May 5, of a Chain for Pr. 43, which contains "cook (coo) scooping." She says "I would have thought that the 'ing' could have been removed from 'scooping' and then added to 'cook,' thus leaving 'scoop,' a proper word." The "ing" is no doubt a removable suffix, but the words, left after its removal, viz., "cook, scoop," do not end with the same number of letters, so that there are no "barred" letters. The same explanation will apply to her second puzzles, viz., my acceptance, for Pr. 44, of a Chain containing "suiteth (teth) tethering," where she points out that "teth" and "ing" are suffixes. So they are, but the words, left after their removal, viz., "suit" and "tether," do not end with the same set of letters, so that here again there are no "barred" letters.

Swerdna also thinks I was very severe on *Stellaria* on taking her Syzygy as she wrote it (see May 5), "fis" instead of "fish," which would have scored much higher. "It was also evident," she adds, "that she had forgotten to put the 'h' on." Now, firstly, I think it quite fair that a player in a game should bear the result of his or her oversights. What would be thought of a player in a Chess Tournament who should say, "Oh, let me have that move back. I quite forgot it would place my Queen in check!" Secondly, if I once began putting in what writers had forgotten, where could I stop? *A* has *evidently* forgotten that she might have claimed another letter in this Syzygy: *B* has *probably* forgotten a similar thing; *C* has *perhaps* forgotten it: *D* has *possibly* forgotten it: and so on. I don't see where one could draw a line among these delicately shaded differences.

Toofdiarb also thinks that I was rather hard on *Stellaria*, in not supplying the "h" she had omitted to claim. She asks two questions about it, which I will reply to separately:—

(1) "Are you not obliged by the rules to use every letter in your Syzygy that could be used?" There is no such rule.

(2) "Did you not say you would rectify mistakes?" Not *all* kinds of mistakes, but only such as are specified in the rules.

May 26, 1892

[...]²⁹

H. H. writes "Surely 'risk|ing (risk) asterisk,' quoted by you from *Stellaria's* Chain for Pr. 42" (see Ap. 28) "would not have been a lawful Syzygy?" *H. H.* is quite right. I had overlooked this Syzygy, which, of course, spoils the Chain.

Lethe is thanked for the suggestion that I should, while the Syzygy pamphlet is preparing, set Mathematical Problems. It would be a very pleasant task, but would require more time than I can conveniently spare.

²⁹Remark: Under the headline "Things to Think About" appear (with numbers) "For All Lovers of Children" and "For All Writers of Letters" (reprinted from March 24).

Q. E. D.'s Second-Chain for Pr. 48 contains "sinecure (ecur) recur (ur) lurid." Here I have, in obedience to Rule 11, erased "(ecur) recur." However, *Q. E. D.* need not lament this too despondingly: had I scored the Chain as sent, there would have been 21 marks to be deducted, instead of 20!

Stellaria sends 2 Chains (too late for "First-Chains") for Pr. 48. One contains "feast (east) breast|ing," which is clearly an unlawful Syzygy. The other contains "plating (plat) breastplate," where, by removing the 'ing' of 'plating,' and replacing the 'e,' which had been supplanted by the suffix, I get the two adjacent words "plate, breastplate." Hence the letters "p, l, a, t" are barred.

Scores for Pr. 47

"CONVERSE CHEERFULLY."

The highest Score reached is 25. This has been attained by 2 Competitors, *E. M. R.* and *H. H.*, whose Chains are as follows:—

CONVERSE
 (erse)
 persevering
 (erin)
 merino
 (meri)
 perfumery
 (erfu)
 CHEERFULLY

CONVERSE
 (nver)
 inverting
 (ting)
 tinge
 (inge)
 linger
 (ling)
 pulling
 (ulli)
 CHEERFULLY

Scores for Pr. 48

"FEAST *till* MIDNIGHT."

The highest Score reached is that of *H. H.*, 24, whose Chain is

FEAST
 (east)
 oleaster
 (ster)
 sterling
 (ling)
 linger

(inge)
tinge
(ting)
nightingale
(night)
MIDNIGHT

Second Syzygy-Tournament Total Scores. Pr. 42–48

“*Get FISH out of WATER:*
COOK it for DINNER:
INVITE a GUEST:
PROVIDE CHAMPAGNE:
SPREAD the BANQUET:
CONVERSE CHEERFULLY:
FEAST till MIDNIGHT.”

The first seven on the following list are requested to sent their real names and addresses to the Editor, that they may receive the prizes offered on Mar. 31st; stating whether they would, or would not, like the names and addresses to be published. And the first two are requested to say which of the offered books they prefer.

I have included *Stellaria* among the prize-winners, as she is so close to No. 6 that their Scores are practically equal.

In the following List, wherever only *one* number is appended to a name, it is to be understood that the Competitor sent in Chains for all the 7 Problems. When a parenthesis is added, the first number in it indicates how many Problems the Competitor attempted; the second the Score that *would* have been obtained, had the Competitor tried them all and exhibited the same amount of skill throughout; while the third number indicates the place on the List that would have been thus obtained.

1. *H. H.* 177
 2. *Quercusonis* 165
 3. *E. M. R.* 160
 4. *Auntie* 150
 5. *Swerdna* 139
 6. *Toofdiarb* 136
 7. *Stellaria* 134
 8. *E. L. W.* 122
 9. *Persevere* 112
 10. *Rosemary* 95
- [...]³⁰

June 2, 1892

From *Lion and Tiger* comes an uneasy roar. They are distressed at finding that the best Chain for Pr. 45, “PROVIDE CHAMPAGNE,” was scored on May 12th as 29 instead of (as they make it) 27. The Chain end with “(ampag)

³⁰Remark: rest of list omitted

champagne,” and they reckon 4 waste letters for the last word, instead of (as I make it) 2. *Lion and Tiger* should keep, at the back of their den, among the old bones they love so well to gnaw, a copy of *The Lady* for Jan. 7, where they may read, in Def. 4, words which are not nearly as hard as bones, though (I fear) quite as dry! These words are “if either of the end-words contains more than seven letters, the extra ones are not counted as waste.”

10.30 Syzygies. A Word-Puzzle

Source: Syzygies and Lanrick, published 1893

“Phæbus, what a name!”

Quoted from *English Bards and Scotch Reviewers* by Lord Byron

§ 1. Definitions

Def. 1

When two words contain the same set of one or more consecutive letters, a copy of it, placed in a parenthesis between the two words, is called a “Syzygy,” and is said to “yoke” one set to the other, and also to “yoke” each letter of one set to the corresponding letter of the other set.

Examples to Def. 1

(1)	(2)	(3)	(4)
walrus	walrus	walrus	mine
(a)	(l)	(wal)	(mi)
swallow	swallow	swallow	mimic

[N.B. In Ex. (2), the Syzygy may be regarded as yoking the ‘l’ in ‘walrus’ to whichever ‘l’ in ‘swallow’ the writer may prefer. And in Ex. (4) the Syzygy may be regarded as yoking the ‘mi’ in ‘mine’ to whichever ‘mi’ in ‘mimic’ the writer may prefer.]

Def. 2

A set of four or more words, with a Syzygy between every two, is called a “Chain,” of which all but the end-words are called “Links.”

Def. 3

In a “Syzygy-Problem,” two words are given, which are to form the end-words of a Chain.

Example to Def. 3

If the given words are ‘walrus’ and ‘carpenter’ (the Problem might be stated in the form “*Introduce* WALRUS *to* CARPENTER”), the following Chain would be a solution of the Problem:—

WALRUS
(rus)
peruse
(per)
harper
(arpe)
CARPENTER

Def. 4

Every letter in a Chain, which is not yoked to some other, is called “waste”; but, if either of the end-words contains more than 7 letters, the extra ones are not counted as waste.

[Thus, in the above Chain, the ‘wal’ in ‘walrus,’ the ‘e’ in ‘peruse,’ the ‘h’ in ‘harper,’ and the ‘c’ and the ‘nter’ in ‘carpenter’ are ‘waste’: so that this Chain has 10 waste letters; but since 2 of the 5 waste letters in ‘carpenter’ are not counted as waste, the Chain is reckoned as having only 8 waste letters.]

Def. 5

When two words contain the same letter, but these two letters are forbidden to be yoked together, these two letters are said to be “barred” with regard to each other.

§ 2. Rules for Making Chains

Rule 1

A Chain should be written as in the Example to Def. 3. It does not matter which given word is placed at the top. Any number of alternative Chains may be sent in.

Rule 2

Any word, used as a Link, must satisfy all the following tests:—

(a) It may not be foreign, unless it is in such common use that it may fairly be regarded as naturalised. (The words ‘ennui’, ‘minimum’, ‘nous’, may be taken as specimens of words thus naturalised.)

(b) It must be in common use in conversation, letters, and books, in ordinary society. (Thus, slang words used only in particular localities, and words used only by specialists, are unlawful.)

(c) It may not be a proper name, when usually spelt with a capital letter. (Thus ‘Chinese’ is unlawful; but ‘china’, used as the name of a substance, is lawful.)

(d) It may not be an abbreviated or a compound word, when usually written with an apostrophe, or hyphen. (Thus, ‘silver’d’, ‘don’t’, ‘man’s’, ‘coach-house’, are unlawful.)

[N.B. If the Scorer accepts the infinitive of a verb as ‘ordinary’, he is bound to accept all its grammatical inflexions.

Thus, if he accepts ‘to strop (a razor)’ as an ordinary word, he is bound to accept ‘stroppest’, ‘stroppeth’, ‘stropping’, and ‘stropped’, even though the first two have probably never been used by any human being.

But, if he accepts the singular of a noun as ‘ordinary’, he is not thereby bound to accept its plural; and *vice versâ*.

Thus, he may accept ‘remorse’ and ‘tidings’ as ‘ordinary’, and yet reject ‘remorses’ and ‘tiding’ as ‘non-ordinary’.

Rule 3

When two words begin with the same set of one or more consecutive letters, or would do so if certain prefixes were removed, each letter in the one set is 'barred' with regard to the corresponding letter in the other set.

Examples to Rule 3

Certain prefixes are here marked off by perpendicular lines, and the 'barred' letters are printed in italics.

(1)	(2)	(3)	(4)
<i>dog</i>	<i>carriage</i>	un|<i>done</i>	un|<i>done</i>
<i>door</i>	<i>carcase</i>	<i>door</i>	in|<i>doors</i>

[N.B. The letters are only 'barred' as here marked. They may often be yoked in other ways: *e. g.*, in Ex. (2), the 'ca' above may be yoked to the second 'ca' below.]

Rule 4

When two words end with the same set of one or more consecutive letters, or would do so if certain suffixes were removed, each letter in the one set is 'barred' with regard to the corresponding letter in the other set.

Examples to Rule 4

Certain suffixes are here marked off by perpendicular lines, and the 'barred' letters are printed in italics.

(1)	(2)	(3)	(4)
<i>meat</i>	<i>onion</i>	<i>sink</i>|ing	<i>sink</i>|ing
<i>cat</i>	<i>moon</i>	<i>link</i>	<i>link</i>|s
(5)	(6)		
inflat|ed	plung|es		
satiat|ing	chang|ing		

[N.B. The letters are only 'barred' as here marked. They may often be yoked in other ways: *e. g.*, in Ex. (2), the first 'on' above may be yoked to the 'on' below; in Ex. (3), (4), the second 'in' above may be yoked to the 'in' below; in Ex. (5), the 'at' above may be yoked to the first 'at' below; and, in Ex. (6), the 'ng' above may be yoked to the second 'ng' below.

Observe that, in Ex. (5), the reason why 'at' is barred, is that the words become, when the suffixes are removed, 'inflate' and 'satisfy', which end with the same 3 letters. Similarly, in Ex. (6), 'plunge' and 'change' end with the same 3 letters. But in the words 'plunges' and 'singer', the 'ng' is *not* barred, since the words 'plunge' and 'sing' do not end with the same letters.]

Rule 5

Nouns and verbs are not to be regarded as prefixes or suffixes.

Thus 'landlord (and) handmade' would be a lawful Syzygy.

Rule 6

The letters ‘i’ and ‘y’ may be treated as if identical.

Thus ‘busy (usy) using’ would be a lawful Syzygy.

Rule 7

The Score for a Chain may be calculated by writing down 7 numbers, as follows:—

- (1) The greater No. of letters in an end-Syzygy, *plus* twice the least.
 - (2) The least No. of letters in a Syzygy.
 - (3) The sum of (1) *plus* the product of the two numbers next above (2).
 - (4) The No. of Links.
 - (5) The No. of waste letters.
 - (6) The sum of twice (4) *plus* (5).
 - (7) The remainder left after deducting (6) from (3). If (6) be greater than (3), the remainder is written as “0*”.
- No. (7) is entered as the Score of the Chain.

Example to Rule 7

[The figures on the right indicate the Nos. of waste letters.]

WALRUS 3
 (rus)
 peruse 1
 (per)
 harper 1
 (arpe)
 CARPENTER 3

As the greatest No. of letters in an end-Syzygy is ‘4’, and the least is ‘3’, No. (1) is ‘10’. Also (No. 2) is ‘3’. Hence No. (3) is the sum of ‘10’ *plus* ‘4 times 5’; *i. e.* it is ‘30’. Also there are 2 Links and 8 waste letters. Hence No. (4) is ‘2’, No. (5) is ‘8’, and No. (6) is the sum of ‘twice 2’ *plus* ‘8’; *i. e.* it is ‘12’. Hence No. (7) is the remainder after deducting ‘12’ from ‘30’; *i. e.* it is ‘18’; which is the Score for the Chain.

The result may be conveniently recorded thus:—

10, 3, 30; 2, 8, 12; 18.

[The formula for the Score may, for the benefit of Algebraists, be stated thus:—

- Let *a* = greatest No. of letters in an end-Syzygy.
- b* = least do.;
- m* = least No. in a Syzygy;
- l* = No. of Links;
- w* = No. of waste letters:

then the Score =

$$(a + 2b) + (m + 1). (m + 2) - (2l + w).]$$

§ 3. Rules for Scoring Chains

Rule 1

If the writer of a Chain has omitted a Syzygy, the Scorer inserts a one-letter Syzygy, if he can find a lawful one.

Rule 2

If the writer has omitted a Link, the Scorer erases the two adjacent Syzygies, and proceeds as in Rule 1.

Rule 3

If a Link be mis-spelt, the Scorer corrects it.

Rule 4

If a Syzygy contains unlawful letters, the Scorer erases them, and deducts twice that number of marks from the Score.

Rule 5

If one of two consecutive Syzygies contains the other, the Scorer erases the intermediate Link, and one Syzygy containing the other.

Examples to Rule 5

(1)	(2)
meeting	meeting
(ting)	(ting)
tinge	tinge
(ing)	(ting)
loving	parting

[N.B. In Ex. (1) the Scorer erases 'tinge' and the first Syzygy: in Ex. (2), he erases 'tinge' and either Syzygy. The results are

(1)	(2)
meeting	meeting
(ing)	(ting)
loving	parting

both of which are, by Rule 4, unlawful Syzygies.]

Rule 6

The penalty, awarded by the preceding Rule, cannot be evaded by writing shorter Syzygies than might be claimed, so as to avoid the result of one containing the other. In such a case, the Scorer would treat them as if written in full.

Examples to Rule 6

meeting

(tin)

tinge

(ng)

parting

This would be treated as if it had been written, in full,

meeting

(ting)

tinge

(ting)

parting

Rule 7

If the Chain now contains less than two Links, or an unlawful Link or Syzygy, the Scorer rejects it. Otherwise he calculates its Score.

Rule 8

In reckoning ‘the least number of letters in a Syzygy,’ the Scorer takes no notice of any Syzygies inserted by himself, unless there are no others.

Rule 9

If a writer sends in alternative Chains, the Scorer takes the best of them.

Rule 10

If all be rejected, the Scorer puts ‘0’ against the writer’s name, assigning a reason for rejecting each Chain.

Rule 11

In announcing a Problem, the Scorer may bar any word, that he likes to name, from being used as a Link. After receiving the “First-Chains”, he must publish a list of the Links which he regards as violating Rule 2, and of the Syzygies which he regards as violating, owing to the occurrence of prefixes or suffixes, Rule 3 or Rule 4 and he must then allow time for sending in “Second-Chains”. He may not, when scoring, reject any “First-Chain” for a defect which ought to have been, but was not, published in the above-named list.

§ 4. Hints on Making Chains

I have tried to embody some useful hints on this subject in the form of a soliloquy, supposed to be indulged in by the possessor of what Tennyson would call “a second-rate sensitive mind”, while solving the problem “*Turn CAMEL into DROMEDARY*”.

“No use trying the whole CAMEL. Let’s try 4 letters. ‘Came.’ That must be something ending in ‘cament,’ I fancy. That gives ‘predicament’, and ‘medicament’: I ca’n’t think of any others: and either of these would lead to ‘mental’ or

Quoted from
Supposed Confessions
of a Second-rate
Sensitive Mind by
Alfred Tennyson

‘mention’. Then ‘amel’. That gives ‘tamely’ and ‘lamely’. ‘Samely’ is hardly an ‘ordinary’ word: and I’m afraid ‘gamely’ is slang! Well, we’ve got *four* Links, at any rate. Let’s put them down:—

CAMEL	{	(came)	{	predicament (ment)	{	mental	
				medicament		mention	
	(amel)	{			tamely		
					lamely		

“Now for DROMEDARY. No 5-letter Syzygy, that *I* can see. Let’s try the 4’s. ‘Drom’. There’s ‘loxodrome’: but that’s quite a *specialist’s* word. And there’s ‘palindrome’—no, *that* wo’n’t do: ‘palin’ is a prefix. ‘Rome’. That gives ‘chrome’, which is *not* very hopeful to go on with. ‘Omed’. That’ll give us all the participles ending in ‘—omed’: ‘domed’, ‘doomed’, ‘groomed’; not very suggestive: however, there’s ‘comedy’: *that* sounds hopeful. ‘Meda’. Well, there’s ‘medal’, and ‘medalist’, and—and—that’s all, I think: but ‘medalist’ leads to ‘listen’, or ‘listless’. ‘Edar’. That leads to ‘cedar’, and words beginning with ‘re’, such as ‘redarn this stocking’—no, I’m afraid that would have a hyphen! However, ‘cedar’ leads to ‘dared’, or any participle ending in ‘—ced’. ‘Dary’. There’s ‘daring’: that might lead to something, such as ‘fringe’, or ‘syringe’. Well, let’s tabulate again:—

DROMEDARY	{	(omed)	{	domed, &c.		
				comedy		
		(meda)	{	medal	{	listen
				medalist (list)			listless
(edar) cedar	{	(dar) dared				
		(ced) . . . ced				
		(dary) daring (ring)	{	fringe		
				syringe		

“Now, can we link any of these ragged ends together? ‘Predicament’. That’ll link on to ‘dared’, though it’s only a 3-letter Syzygy. That gives the Chain ‘Camel (came) predicament (red) dared (dar) cedar (edar) dromedary.’ But there’s something wrong there! ‘Edar’ contains ‘dar’. We must write it ‘Camel (came) predicament (red) dared (dar) dromedary’. That’ll score 17. Let’s try another Chain. ‘Predicament’ and ‘cedar’ can be linked by putting in ‘enticed’. How will *that* work? ‘Camel (came) predicament (ent) enticed (ced) cedar (edar) dromedary’. *That* scores only 16! Try again. ‘Medicament’. Why that links straight on to ‘comedy’, with a 4-letter Syzygy! That’s the best chance we’ve had yet. ‘Camel (came) medicament (medi) comedy (omed) dromedary’. And what does *that* score, I wonder? Why it actually scores 31! Bravo!”

If any of my readers should fail, in attempting a similar soliloquy, let her say to herself “It is not that my mind is not *sensitive*: it is that it is not *second-rate*!” *Then* she will feel consoled!

§ 5. Some Syzygy-Problems

The gentle reader (N.B. *All* readers are ‘gentle’: an *ungentle* reader is a *lusus naturæ* never yet met with) may like to amuse herself by attempting (without referring to § 6) some of the following Problems, solutions of which have been published in the ‘Lady’. The appended scores are the highest hitherto attained.

(1)	OH DO!	11
(2)	INDULGE <i>an</i> IDIOSYNCRASY	15
(3)	<i>Make</i> BULLETS of LEAD ...	17
(4)	<i>Reconcile</i> DOG to CAT	19
(5)	COOK <i>the</i> DINNER	20
(6)	<i>Lay</i> KNIFE by FORK	21
(7)	CONVERSE CHEERFULLY ...	25
(8)	SPREAD <i>the</i> BANQUET	27
(9)	WEDNESDAY AFTERNOON .	28
(10)	DEMAND <i>a</i> CORMORANT ..	29

§ 6. Solutions of the Problems

The appended dates refer to the Nos. of 'The Lady' in which these solutions appeared.

	(1) [<i>Mar.</i> 24, 1892.]	
OH ...		0
(oh)		
cohere		1
(ere)		
reredos		2
(do)		
Do ...		0
	Score:—6, 2, 18; 2, 3, 7: 11.	
	(2) [<i>Mar.</i> 3, 1892.]	
INDULGE		4
(ndu)		
unduly		1
(duly)		
incredulity		3
(incr)		
IDIOSYNCRASY		3
	Score:—10, 3, 30; 2, 11, 15: 15.	
	(3) [<i>Mar.</i> 17, 1892.]	
LEAD ...		1
(lea)		
plea		0
(ple)		
sample ..		0
(sam)		
jetsam ..		1
(ets)		
BULLETS		4
	Score:—9, 3, 29; 3, 6, 12: 17.	

	(4) [<i>Oct.</i> 1, 1891.]	
DOG ...		0
(dog)		
endogen		2
(gen)		
gentry .		0
(ntry)		
intricate		2
(cat)		
CAT ...		0
	Score:—9, 3, 29; 3, 4, 10: 19.	
	(5) [<i>May</i> 5, 1892.]	
COOK ..		1
(coo)		
scooping		2
(pin)		
pinned .		1
(inne)		
DINNER		2
	Score:—10, 3, 30; 2, 6, 10: 20.	
	(6) [<i>Mar.</i> 10, 1892.]	
KNIFE ..		1
(nife)		
manifest		2
(man)		
workman		1
(ork)		
FORK ...		1
	Score:—10, 3, 30; 2, 5, 9: 21.	
	(7) [<i>May</i> 26, 1892.]	
CONVERSE ..		3
(erse)		
persevering ..		3
(erin)		
merino		1
(meri)		
perfumery ...		1
(erfu)		
CHEERFULLY		3
	Score:—12, 4, 42; 3, 11, 17: 25.	

	(8) [<i>May</i> 12, 1892.]	
SPREAD ...		1
(read)		
readiness ..		1
(ines)		
shines		0
(shin)		
vanquishing		3
(anqu)		
BANQUET .		3
	Score:—12, 4, 42; 3, 9, 15: 27.	
	(9) [<i>Ap.</i> 14, 1892.]	
WEDNESDAY		2
(ednes)		
blessedness .		3
(esse)		
finesse		1
(iness)		
craftiness ...		1
(raft)		
rafter		0
(after)		
AFTERNOON		2
	Score:—15, 4, 45; 4, 9, 17: 28.	
	(10) [<i>Mar.</i> 31, 1892.]	
DEMAND		2
(eman)		
gentleman ...		1
(gent)		
tangent		1
(ange)		
orange		0
(oran)		
CORMORANT		3
	Score:—12, 4, 42; 3, 7, 13: 29.	

Part 11

Texts on Religion and Morality

See also the poem *After Three Days* (→ 18.77, p. 2153), and the prefaces to *Alice's Adventures under Ground* (→ 19.7, p. 2463), *Sylvie and Bruno* (→ 19.12, p. 2472), *Sylvie and Bruno Concluded* (→ 19.14, p. 2479), and *The Lost Plum Cake* (→ 19.29, p. 2521).

11.1 To All Child-Readers of “Alice’s Adventures in Wonderland”

Source: printed 1871

Dear Children,

At Christmas time a few grave words are not quite out of place, I hope, even at the end of a book of nonsense—and I want to take this opportunity of thanking the thousands of children who have read “Alice’s Adventures in Wonderland,” for the kindly interest they have taken in my little dream-child.

The thought of the many English firesides where happy faces have smiled her a welcome, and of the many English children to whom she has brought an hour of (I trust) innocent amusement, is one of the brightest and pleasantest thoughts of my life. I have a host of young friends already, whose names and faces I know—but I cannot help feeling as if, through “Alice’s Adventures,” I had made friends with many many other dear children, whose faces I shall never see.

To all my little friends, known and unknown, I wish with all my heart, “A Merry Christmas and a Happy New Year.” May God bless you, dear children, and make each Christmas-tide, as it comes round to you, more bright and beautiful than the last—bright with the presence of that unseen Friend, Who once on earth blessed little children—and beautiful with memories of a loving life, which has sought and found that truest kind of happiness, the only kind that is really worth the having, the happiness of making others happy too!

Your affectionate Friend,

Lewis, Carroll.
Christmas. 1871.

11.2 An Easter Greeting

Source: printed since 1876 (with several minor variations); later added to various “Alice” editions, here from *Nursery “Alice”*, *Alice’s Adventures under Ground* differs slightly in punctuation

To Every Child Who Loves “Alice.”

Dear Child,

Please to fancy, if you can, that you are reading a real letter, from a real friend whom you have seen, and whose voice you can seem to yourself to hear, wishing you, as I do now with all my heart, a happy Easter.

Do you know that delicious dreamy feeling when one first wakes on a summer morning, with the twitter of birds in the air, and the fresh breeze coming in at the open window—when, lying lazily with eyes half shut, one sees as in a dream green boughs waving, or waters rippling in a golden light? It is a pleasure very near to sadness, bringing tears to one’s eyes like a beautiful picture or poem. And is not that a Mother’s gentle hand that undraws your curtains, and a Mother’s sweet voice that summons you to rise? To rise and forget, in the bright sunlight, the ugly dreams that frightened you so when all was dark—to rise and enjoy another happy day, first kneeling to thank that unseen Friend, who sends you the beautiful sun?

Are these strange words from a writer of such tales as “Alice”? And is this a strange letter to find in a book of nonsense? It may be so. Some perhaps may blame me for thus mixing together things grave and gay; others may smile and think it odd that any one should speak of solemn things at all, except in church and on a Sunday: but I think—nay, I am sure—that some children will read this gently and lovingly, and in the spirit in which I have written it.

For I do not believe God means us thus to divide life into two halves—to wear a grave face on Sunday, and to think it out-of-place to even so much as mention Him on a week-day. Do you think He cares to see only kneeling figures and to hear only tones of prayer—and that He does not also love to see the lambs leaping in the sunlight, and to hear the merry voices of the children, as they roll among the hay? Surely their innocent laughter is as sweet in His ears as the grandest anthem that ever rolled up from the “dim religious light” of some solemn cathedral?

And if I have written anything to add to those stores of innocent and healthy amusement that are laid up in books for the children I love so well, it is surely something I may hope to look back upon without shame and sorrow (as how much of life must then be recalled!) when *my* turn comes to walk through the valley of shadows.

This Easter sun will rise on you, dear child, “feeling your life in every limb,” and eager to rush out into the fresh morning air—and many an Easter-day will come and go, before it finds you feeble and gray-headed, creeping wearily out to bask once more in the sunlight—but it is good, even now, to think sometimes of that great morning when “the Sun of righteousness” shall “arise with healing in his wings.”

Surely your gladness need not be the less for the thought that you will one day see a brighter dawn than this—when lovelier sights will meet your eyes

Quoted from *Il Penseroso* by John Milton

Quoted from *We Are Seven* by William Wordsworth

Quoted from Malachi 4:2

than any waving trees or rippling waters—when angel-hands shall undraw your curtains, and sweeter tones than ever loving Mother breathed shall wake you to a new and glorious day—and when all the sadness, and the sin, that darkened life on this little earth, shall be forgotten like the dreams of a night that is past!

Your affectionate friend,

Lewis Carroll.
*Easter, 1876.*¹

¹missing in *Nursery "Alice"*

11.3 “The Priest in Absolution”

Source: Pall Mall Gazette, July 14, 1877

To the EDITOR of the PALL MALL GAZETTE

SIR,—I should not venture to hope that you will find room for this letter, on so uninviting a topic, did I not believe that it contains something which may prove, as I trust, a useful contribution to the discussion—an answer, namely, to an argument constantly and triumphantly advanced in defence of this book and the system to which it belongs. The argument is this: that “just as the physician is obliged, in treating certain diseases of the body, to ask questions which under other circumstances could not be asked; so the priest is obliged, in treating certain diseases of the soul, to do the same thing.” Many who are met with this argument are apt to go on the principle “*omne ignotum pro magnifico*”—to profess an entire ignorance of medical matters, and to yield the battle, without another blow, to the Ritualistic “father confessor.” But it should always be borne in mind that there is no more fertile source of error in controversy than a “false analogy,” and that every argument which rests on analogy ought to be very carefully and critically tested. The present case is a very good instance of this fallacy, as the analogy breaks down in two essential points; and my object in writing this letter is to make these two points clear to all who are interested in opposing the Roman theory of confession. The first point concerns the necessity of human intervention: this is universal on the physiological side of the analogy—most exceptional on the psychological; and even where confession to a human being is desirable, it by no means follows that a priest is the best person to go to; in the case of young persons a parent is often a much more suitable “confessor.” The second point concerns the effect of the questioning process in aggravating the disease; on the physiological side (in cases where such questions are asked) no such effect is to be feared—on the psychological side the danger is real and imminent. If they want a really parallel case in medicine, let them take the handling of an inflamed joint. “To an inflamed part,” a great physician has said, “every touch is a bruise,” and, with a strict parallelism, we may say that to a morbid imagination every question is an injury. And if they demand that the parallel case shall also involve the asking of questions, let them take a case where the question would involve a similar danger, *e. g.*, a case of melancholia with suicidal tendencies. What course does a wise physician take? Does he try to turn the thoughts into other channels, by suggesting subjects of healthy interest? That would be parallel to the practice of our Church. Or does he, by a series of minute questions as to the form of suicide which the patient has attempted, &c., convert a shadowy and transient delusion into a definite, haunting, and irresistible frenzy? That would be parallel to the theory of Rome, and of the Ritualists. Let there be no mistake about this. I would appeal to any experienced physician, who has ever had to deal with morbid impulses of any kind—nay, I would appeal to any man, however profligate, even to one who has abandoned all hope of a return to purity, and has accepted his miserable lot

to limp and crawl,
Blind and forgot, from fall to fall,

Quoted from *Agricola*
by Tacitus

Quoted from *The
Scorched Fly* by
Coventry Patmore

but who yet remembers (as who does not?) the days of innocence and the perfect peace that springs from purity of thought—whether it is not a fast principle (a principle that seems to be ignored in this wretched book) to keep the foe at arm's length, to banish him to the realm of shadows and dreams, never to admit him to parley or let him take a definite shape.

It is pitiable to think how many of these young priests there are, full of zeal and self-devotion, honestly believing that they are forwarding the cause of religion, who nevertheless, in their utter ignorance of the elementary laws of body and mind, are doing they know not what, and endangering not only their own souls (every man must choose for himself what risks he will run), but also many a young and innocent soul who has no choice in the matter. Surely it is high time that this delicate and important matter were taken out of the hands of these pseudo “fathers,” and that the real “fathers” of England took it up with a fixed resolution to preserve our pure English Church from priestly despotism, and pure English children from the poison of an enforced confessional.—Your obedient servant,

Lewis Carroll.

July 12.

11.4 Marriage Service

Source: manuscript written 1877

“Till death us do part.”

Those who say that the oath “to have & to hold, to love & to cherish & (in the case of the woman) to obey . . . till death us do part,” makes re-marriage after divorce sinful, have the “a priori” argument in their favour, no doubt. I shall here set down two points, which seem to me to favour the view that the universal law has exceptions.

Quoted from from
the wedding vow from
the *Book of Common
Prayer*

The case where the marriage is pronounced null & void is hardly an exception, because (most would agree that) an oath taken under circumstances where its fulfilment is impossible even at the time of taking it (e. g. in the case of bigamy) is, in God’s sight, no oath, & can entail no obligation. Some might go to the extreme of saying that the oath is binding even then: such people would maintain that if a usurper deceives me into thinking him the true heir to the throne, & and so gets me to swear allegiance to him, I cannot escape that allegiance: but such assertions are hardly worth discussion.

The first of the two points is that where an oath is of *mutual* obligation, & where its purpose can only be effected when *both* parties observe it, the failure of one of the parties releases the other. A fair illustration of this would be the case of two travellers who are passing through a hostile country, & swear to help each other, & to supply each other with food, weapons, &c. If one turns traitor to the other, & plots against his life, he must be an extreme casuist who would say that the other is still bound to supply him with food & weapons. Applying this to the case of marriage, it certainly seems a very strong argument to say that the oath to have & hold, love & cherish, presupposes that *both* have taken the oath; that the thing becomes unmeaning when one side has ceased to observe it; & that so, by the act of the one (which of course *is* a breach of the oath & *is* sinful), the other is released from further obligations.

The other point is perhaps only another way of putting this point: it is that when the fulfilment of an oath becomes impossible, the oath is no longer binding—in other words, that it is no sin God’s sight not to do a thing which we cannot do. Now if one of the two parties in a marriage contract has broken it, & has ceased to have, hold, love, & cherish, it seems impossible that the other can continue to do these things: at any rate, to have, to hold, & to cherish, have become impossible, and to love (in the sense intended in the oath) is also impossible.

But the other side may urge that at least the other party *can* forbear marrying again, & that to this extent the fulfilment of the oath is still binding. It seems to me a fair question to ask how far the *purpose*, for which the oath was taken, is thus carried out: the answer must surely be that it can have no effect of the kind. Granting this, the only thing to be settled seems to me to be this: in which way is the will of God most fulfilled? A and B have entered into these mutual obligations. A has (sinfully, no doubt), broken & abrogated them: B’s further fulfilment of them has thereby become impossible: B has two course to choose between—either to remain unmarried for life, or at least till the death of A, even though the remaining so has no effect whatever on A—or to consider

the oath as at an end, & that a second marriage is allowable. The latter course seems to me one that I should not dare to assert to be displeasing to God.

Those who object to *all* re-marriage, even after the *death* of a husband or wife, take a view that seems to me at variance with Scripture as well as with common sense.

July 22, 1877.

11.5 Traitors in the Camp

Source: The St. James's Gazette, December 30, 1881

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—Would the British public—that genial and simple-minded abstraction that stands for ever on the broad grin, with its hands in its pockets, always ready for a game of “Open your mouth and shut your eyes!”—would that amiable and ecstatic infant be deeply surprised to learn what are the “wheels within wheels”¹ that move that great moral enigma, the Church Association? Would it shudder, or simply chuckle, to be told that among the most influential supporters of that Society—not its most prominent members, observe; not those whose names are flaunted like a banner in the eyes of an admiring world; but those far more powerful background figures, the wire-pullers—are to be found: first, certain advanced Ritualists, bold spirits whose further advance is only checked by the thought that the next step would be to Rome; secondly, certain actual members of the greatest, the most secret, and the most unscrupulous of all fraternities, the Jesuits?

The battle is set in array, and the Church Association advances to the fight. In the foreground caper the band of skirmishers, yelling with Protestant enthusiasm, haunted by no shadow of a doubt but that the cry “To gaol with them!” so stealthily suggested by an invisible prompter, is the war-cry that must shortly change into the pæon victory. But glance a little further back into that dark tent where certain figures in masks and cloaks are gathered in secret consultation. Why do these warriors hide their faces? Dare they not face the light of day? And what mean these constant relays of messengers that leave them ever and anon, and, creeping through the brushwood and carefully skirting the edges of the fight, go off at full speed to the headquarters of the foe? Is there treachery in the camp? The thing is possible.

If it be not so, then *who* is it—in the name of outraged common sense I ask the question—who has invented this worse than suicidal policy, the imprisonment of Ritualists? Does any sane man suppose that any persecuted Ritualist does not thankfully seize the opportunity of posing as a martyr? Does any sane man doubt, when the English Church Union hold their monster indignation meetings, and loudly protest against the imprisonment of their champions, that each of the furious orators is really thrilled with a secret delight? “Oh, let us be joyful!” would be the opening chorus of all such meetings if only they dared show the “hand” they hold in this deep and dangerous game. Let all who love the Reformed Church of England pause and ponder.

And do not be taken in, oh too-easily-gullible British public, by all these piteous outcries. “Why, oh, why do you imprison us?” cries the orator. “We are the lambs and you the wolves! We do but stand up for Truth, for the Right, for the Church! Why will you not let us alone? We never persecute you! We never drive you into prison!” And the wail rises into a shriek; but as it dies away, if you put your ear close and hold your breath, you may chance to hear him mutter, in quite another tone, “We are such fools!” And if you watch him narrowly you may even be lucky to catch the crafty smile that flits like a dream across those

¹Remark: “wheels within wheels”

quivering lips, and to detect a quiet twinkle in the eyes so lately brimming over with crocodilian tears.

Such was the tone of a recent manifesto, issued by the president of the English Church Union, where he spoke of those who have suffered legal penalties for disobeying their Bishops, in language that would not have been out of place if he had been describing martyrs who have chosen death rather than abjure their faith.

Moreover, in a speech of his, reported in the papers of December 16, the improvement of Mr. Green is the one dominant idea to which he again and again recurs—the one haunting melody which he cannot get out of his head. Wander as he may among the verdant meads of theological polemics, sparkling with the flowers of rhetoric and tuneful with the notes of controversy, this is his first love, to whom he ever faithfully returns; and still the burden of his song shall be “And Mr. Green is in prison!”

“And in prison,” so chorus the delighted English Church Union, “because he conscientiously refuses obedience to a secular court!” It is mere waste of breath to point out to these impassioned orators that he also refuses obedience to his ecclesiastical superior, the Bishop whom he has solemnly sworn to obey: the argument has no more hold upon them than a syllogism has upon a lady, or a drop of rain upon a duck. They have even discovered a new and most astonishing axiom in morals—that whatever you are ordered to do by any one to whom you owe no allegiance you may rightly refuse to do, even if it be also ordered by a lawful authority. This is very much as if some sturdy Briton should vindicate his freedom from French control by obstinately refusing obedience to English laws wherever the two national codes happened to agree.

The only consolation, which the Protestant portion of the English Church (under which title I include all, whether High, Low, or Broad, who hold to the principles of the Reformation) are likely to find in the present miserable state of things, is the thought that now at last we have a crucial test as to whether Ritualism is or is not suited to the genius of the English nation. “You have had every chance,” they can now say to the Ritualists: “your choral services have charmed our ears, your rich vestments our eyes, and even your incense our noses! And now you have the darling wish of your heart: you are persecuted: you can appeal to the ineradicable instinct which ever impels John Bull to side with the persecuted, be he right or wrong. Fortune can do no more for you: you must stand or fall by your present chance: if persecution will not popularize Ritualism, nothing will!”

Let me quote in conclusion the following sentence from an unpublished work—a Revised Version of the English Prayer Book. I entirely decline to say how I obtained it, and will merely remark that important documents sometimes see the light sooner than their authors intended:—

Q. Will you reverently obey your Ordinary, and other chief Ministers, unto whom is committed the charge and government over you: following with a glad mind and will their godly admonitions, and submitting yourself to their godly judgments?

A. I will reverently obey them (when they order that which I desire to do); I will gladly follow their godly admonitions (when they admonish those who oppose me); and I will submit myself to their godly judgments (whensoever and wheresoever they will submit their godly judgments to me).

Quoted from
concluding question of
the Ordination Service
of the Anglican
Church

If these few words should cause even only one of the supporters of the Church Association to “take stock,” and to cast a wary look around him before he again lends his voice to the insane cry of “Imprison them!” this little trumpet-blast will not have been blown in vain.—I am, Sir, your obedient servant, *Lewis Carroll.*

December 24.

11.6 “Whoso Shall Offend One of These Little Ones—”

Source: St. James’s Gazette, July 22, 1885

I know that any writer who ventures to protest against what happens to be a popular cry has little chance even of respectful attention. The rapid intercommunication of our age has brought us one evil from which our forefathers were free: the mass is moved too suddenly and too violently: each tide of popular feeling runs headlong in one direction, sweeping all before it, and back again with an equally dangerous reflux, leaving ravage and ruin behind it. Only a few years ago, if any impure scandal arose, its investigation and punishment were left to those whose painful duty it was to know the sickening details: women and boys were turned out of court: no particulars were given in any respectable journal—nothing but the words “the evidence was unfit for publication.” But a horrible fashion seems to be setting in, of making all things public, and of forcing the most contaminating subjects on the attention even of those who can get nothing from them but the deadliest injury. Against this I desire to raise a warning voice.

The question at issue is *not* whether great evils exist—nor again whether the rousing of public opinion is *a* remedy for those evils—on these two points we are agreed. The real question is, whether this mode of rousing public opinion is, or is not, doing more harm than good.

And the worst of the danger is that all this is being done in the sacred name of Religion. If we had no other evidence for the existence of a devil, we might find it, I think, in the Argument from Design—in the terrible superhuman ingenuity with which temptation is adapted to the taste of the age. Not so many years ago, Vice was fashionable, and the literature of the day was *openly* profligate: no pretext of piety was offered to readers who would only have despised it. But in our day, to be popular, one must profess the very highest and purest motives. Straightway Satan is transformed into an angel of light, and with an air “devout and pure, sober, steadfast, and demure,” offers us his old wares, furbished up in new colours.

Quoted from *Il Penseroso* by John Milton

May I not plead with those, who have not yet lost their heads in the whirl and din of this popular Maelstrom, to consider whither the stream is really carrying us?

I plead for our young men and boys, whose imaginations are being excited by highly-coloured pictures of vice, and whose natural thirst for knowledge is being used for unholy purposes by the seducing whisper “read this, and your eyes shall be opened, and ye shall be as gods, knowing good *and evil!*” I plead for our womankind, who are being enticed to attend meetings where the speakers, inverting the sober language of the apostle, “it is a shame even to speak of those things which are done of them in secret,” proclaim that it is a shame *not* to speak of them: who are being taught to believe that they are still within the bounds of true womanliness and modesty, while openly discussing the vilest of topics: and who all too soon prove, by the eagerness with which they turn to what so lately was loathsome to them, that there is but one step from prudishness to pruriency. Above all, I plead for our pure maidens, whose souls are being saddened, if not defiled, by the nauseous literature that is thus thrust upon

Quoted from Genesis 3:5

Quoted from Ephesians 5:12

them—I plead for them in the name of Him who said “Whoso shall offend one of these little ones which believe in me, it were better for him that a millstone were hanged about his neck, and that he were drowned in the depth of the sea.” For all these I plead, with whosoever has the power to interfere, to stay, before it is too late, the flood of abomination with which we are threatened.

Quoted from
Matthew 18:6

Let me add some words, bearing on this matter, better and more eloquent than any that I could devise. I quote from “Sermons by the Rev. E. Monro,” published in 1850, p. 136.

By all means, and on all occasions, avoid dwelling on the object of impure sensation; we are told, by holy men of old, that on this point alone we may be cowards; we must fly from it. The mere dwelling on its forbidden pollutions, even to combat them, forms evil habits, and withers holiness. We are often led to bring the object of sinful desire before us, and that with the best intentions, when we pray against it, when we would examine ourselves on it, when we are regretting the past, when we unfold our grief to another, when we compare ourselves with ourselves. But on all these occasions as far as possible shun the image; do not let the coloured lights fall into a shape or outline, nor suffer, if you can help it, your vision to centre them in a focus; if they are dimmed, leave them so, and do not restore the view; repress even the slightest image, lest it should strengthen and invigorate evil desire; you are too weak to bear it. If you have to pray against it, to examine yourselves on it, let the object be an imperfect memory, a recollection of something past, rather than of the object itself; mean it without expressing it, intend without defining it. Let no excuse avail to dwell on it.

The contrast between these wise words and the conduct of those who are doing their best to “centre in a focus” the soul-destroying picture, and to add yet more “coloured lights” than the devil has already supplied, needs no words of mine to emphasize it.

A beautiful fiend is abroad in the midst of us: let the wise know her and shun her while yet there is time. On her fair brow she bears the title of “Religion”: “pacing with downward eyelids pure,” she passes, unsuspected, among our youths and maidens, and whispers to them the dark secrets of Hell. Like Arthur’s profligate queen,

Quoted from *The
Two Voices* by Alfred
Lord Tennyson

being by our cowardice allow’d
Her station, taken everywhere for pure,
She like a new disease, unknown to men,
Creeps, no precaution used, among the crowd,
Makes wicked lightnings of her eyes, and saps
The fealty of our friends, and stirs the pulse
With devil’s leaps, and poisons half the youth.

Quoted from *Idylls of
the King* by Alfred
Lord Tennyson

Lewis Carroll

11.7 “An Oxford Scandal”

Source: St. James’s Gazette, December 6, 1890

To the EDITOR of the ST. JAMES’S GAZETTE

SIR,—Will you permit me, as a tolerably senior member of this university, to make a few remarks on the miserable story of undergraduate profanity which appeared in your columns last Thursday? I wish to point out that whatever disgrace this outrage may be thought to entail on the junior portion of our residents must in justice be shared by the senior portion, who are setting them, more and more from year to year, the evil example of jesting about sacred things. This, our latest development of irreverence, startling though it be as a great and sudden stride on the downward path, is but the logical outcome of a fashion that has taken firm hold on Oxford society, and is slowly eating away, like a canker, the very heart of our religious life.

I have resided in this university for nearly forty years, and during that time have spent some seven or eight thousand evenings in college “common rooms,” and have heard, at a moderate computation, some twenty thousand anecdotes (many of them, of course, told for the twentieth time). My impression is that there has been a gradual, but very real and steady, change in the tone of the anecdotes that have thus obtained currency and won applause among the senior men. This change has been in one respect for the better, in that it is very seldom indeed now that any such anecdote depends for its point on some objectionable *double entendre*; but it has been in another respect distinctly for the worse, in that anecdotes whose point consists in a comic allusion to some Bible text, or the existence of evil spirits, or the reality of future punishment, or even the name of God, are more freely bandied about and more openly enjoyed, not only by laymen, to whom such things may possibly be mere myths not worthy of any respect, but even by ordained clergymen, to whom, if to any living men, these things are solemn realities.

I can easily imagine one of the very undergraduates who perpetrated this outrage sitting at breakfast with some reverend “don” and hearing from his lips, told with unmistakeable gusto, some utterly profane comic story, and afterwards saying to himself, “Well, if he, a sworn defender of Christianity, can thus make game of things he professes to believe, how much more may I, who neither believe nor profess to do so!”

But it is not in Oxford alone that these “signs of the times” are patent; they are to be found in our light literature, in parliamentary debates, in newspaper articles—nay, in our very pulpits. “He that runs may read” the change that is coming over English society generally. More and more are we beginning to treat as mere toys the words and symbols which represent the most sacred elements of the religion which, as a nation, we still profess; more and more is the acknowledgment of any real purpose in this life, or any practical belief in a life to come, made matter for gay banter or for cold sarcasm. We shudder to hear yelled along our streets the vile blasphemics which the “Salvation Army” has now made so common: but are they worse than others? Is not their noisy irreverence but the logical outcome of the whole drift of modern thought?

I copy the following sentence from an article, entitled “My First ‘Season,’” in the *St. James’s Gazette* of December 4:—“When Dixon the next morning

Quoted from
Matthew 16:3

Quoted from
Tirocinium by
William Cowper

dropped hints that as churchwarden he had heavy calls upon him, and that I had not told him whether I would take those two sittings which had hitherto gone with the house, I told him point-black that, when I wanted to hear what the Reverend Bellerby Lowder had to say, I would run my chance of finding an empty seat.”

This passage is worth noting, as a plain expression of the popular notion that the only possible motive, for attendance at public worship, is the wish to hear what the preacher “has to say.”

I also copy the following passage from the report of the meeting of the Irish Parliamentary Party, in the *Standard* of the same date:—

Mr. Parnell: It is my answer, and upon that answer I will stand or fall.

Mr. Healy: Then you will fall. (Cheers.) And now that both sides have made up their minds, what is the use of further debate? (Cheers and interruptions.)

Mr. Leamy: Away with him! Away with him!

Mr. John O'Connor: Crucify him! (Cries of “Oh!”)

Mr. Condon: I think that is an expression that should not be made use of. (Hear, hear.)

Mr. Sexton: Mr. Parnell, I think you will agree with me that the interests of good order cannot be advanced by observations which, under the circumstances, are nothing but blasphemous. (Cheers.)

I prefer to leave this shameful record without remark.

This Oxford scandal may yet, I hope, work some good, if only it serves to open the eyes of unsuspecting persons to the goal that lies before us, in case the coming years should carry on, as surly as hitherto, the work of the past. No real belief in Christianity can possibly long co-exist with a general practice of making all holy things ludicrous. A section of us may still cling to the ancient Faith: but it will be a dwindling section, holding its way, as best it can, through taunts, perhaps through persecutions, in the midst of a nation of infidels.—I am, Sir, your obedient servant,

*Charles L. Dodgson,
Student of Ch. Ch., Oxford.
December 5.*

11.8 Eternal Punishment

Source: unpublished proof written 1895/1897

The most common form of the difficulty, felt in regard to this doctrine, may be thus expressed:—

“I believe that God is perfectly good. Yet I seem compelled to believe that He will inflict Eternal Punishment on certain human beings, in circumstances which would make it, according to the voice of my conscience, unjust, and therefore wrong.”

This difficulty, when stated in logical form, will be found to arise from the existence of *three* incompatible Propositions, each of which has, apparently, a strong claim for our assent. They are as follows:—

I. *God is perfectly good.*

II. *To inflict Eternal Punishment on certain human beings, and in certain circumstances, would be wrong.*

III. *God is capable of acting thus.*

One mode of escape from this difficulty is, no doubt, to let the whole subject alone. But to many such a position is a cause of distress; they feel that one of these three Propositions *must* be false; and yet to regard any one of them as false plunges them into difficulties and bewilderment.

The first thing to be done is to settle, as clearly as possible, what we *mean* by each of these Propositions, and then to settle, if possible, *which* two of the three rest, in our minds, on the deepest and firmest foundations, and thus to discover *which* one, of the three, must perforce be abandoned.

First, then, let us settle, as clearly as possible, what we *mean* by each of these Propositions.

I. **God is perfectly good** As to the meaning of this word “good,” I assume that the Reader accepts, as an Axiom antecedent to any of these three Propositions, the Proposition that the ideas of Right and Wrong rest on eternal and self-existent principles, and not on the arbitrary will of any being whatever. I assume that he accepts the Proposition that God wills a thing because it is *right*, and *not* that a thing is right because God wills it. Any Reader, of whom these assumptions are not true, can feel no difficulty in abandoning Proposition II., and saying, “If God inflicts it, it will be *right*.” He, therefore, is *not* one of those for whom I am now writing.

I assume, then, that this Proposition means that God always acts in accordance with the eternal principle of Right, and that He is, therefore, perfectly good.

II. **To inflict “Eternal Punishment,” on certain human beings and in certain circumstances, would be wrong.** The word “Punishment” I assume to mean, here, “suffering inflicted on a human being who has sinned, and *because* he has sinned.” I use the word “suffering,” rather than “pain,” because the latter word is so often understood as implying *physical* pain only, whereas *mental* pain might *also* serve as punishment.

Hence we may at once simplify this inquiry by excluding from our consideration, the case of suffering inflicted where the sin of the creature is *not* a necessary cause. Taking “sin” to mean (as already defined) a “conscious and *voluntary*” act, so that, if the act be *involuntary*, it ceases to be sin, we may

set aside the Calvinistic theory, which contemplates the infliction of suffering on creatures unable to abstain from sin, and whose sins are therefore *involuntary*. This theory will be considered elsewhere.

The word "Eternal" I assume to mean "without end."

As to the human beings who are here contemplated as the subjects of Eternal Punishment, there are three conceivable cases, viz.:—

(A) The case of one who has ceased to possess Free-Will, and who therefore has no further power either to sin or to repent. In such a case, Eternal Punishment would be suffering inflicted through infinite time, and therefore itself infinite in amount as punishment for sins committed during a finite time.

(B) The case of one who retains Free-Will, and who has ceased to sin, has repented of all past sins, and is choosing good *as good*. In this case also Eternal Punishment would be infinite suffering, inflicted as punishment for sins committed during a finite time.

(C) The case of one who does not come under either of these descriptions, that is, one who retains Free-Will and continues for ever to choose *evil*. In such a case Eternal Punishment would be infinite suffering, inflicted as punishment for infinite sin.

I assume that the reader would *not* feel any difficulty in recognising the justice of inflicting continuous suffering as punishment for continuous sin.

Hence we may set aside case (C) altogether.

Also we may combine cases (A) and (B) into one, and interpret Proposition II. as asserting that it would be wrong to inflict infinite suffering, on human beings who have ceased to sin, as punishment for sins committed during a finite time.

Proposition III. does not seem to need any explanation.

It will be well before going further to re-state the three incompatible Propositions, in order to give to Proposition II. the form it has now assumed.

I. *God is perfectly good.*

II. *To inflict infinite suffering on human beings who have ceased to sin, as punishment for sins committed during a finite time, would be wrong.*

III. *God is capable of acting thus.*

We know with *absolute* certainty that *one* at least of these three Propositions is *untrue*. Hence, however overwhelming may be the weight of evidence with which each seems to claim our assent, we know that *one* at least may reasonably be abandoned.

Let us now take them, one by one, and consider, for each in turn, what are the grounds on which it claims our assent, and what would be the logical consequences of abandoning it. It may be that the Reader will then be able to see for himself *which* two of the three have the *strongest* claims on his assent, and *which* he must, therefore, abandon.

First, then, let us consider the Proposition.

I. "God is perfectly good."

The grounds on which this claims our assent, seem to be, first, certain *intuitions* (for which, of course, no *proofs* can be offered), such as "I believe that I have Free-Will, and am capable of choosing right or wrong; that I am responsible for my conduct; that I am not the outcome of blind material forces, but the creature of a being who has given me Free-Will and the sense of right and wrong, and to whom I am responsible, and who is therefore perfectly good. And this being I call 'God.'"

And these *intuitions* are confirmed for us in a thousand ways by all the facts of revelation, by the facts of our own spiritual history, by the answers we have had to our prayers, by their resistible conviction that this being whom we call "God" *loves* us, with a love so wonderful, so beautiful, so immeasurable, so wholly undeserved, so unaccountable on any ground save His own perfect goodness, that we can but abase ourselves to the dust before Him, and dimly hope that we may be able someday to love Him with a love more like His great love for us.

The abandonment of this Proposition would mean practically, for most of us, the abandonment of the belief in a God, and the acceptance of Atheism.

Secondly, let us consider the Proposition.

II. *To inflict infinite suffering, on human beings who have ceased to sin, as punishment for sins committed during a finite time, would be wrong.*

Here it will greatly simplify our inquiry to begin by considering what are the various *purposes* for which punishment may be supposed to be, first, *enacted*, and secondly, *inflicted*; and what are the *principles* which, in view of those purposes, would make us regard its enactment and infliction as right or wrong.

Punishment, when enacted or inflicted, by human beings upon each other is necessarily limited in its purposes. We cannot read the *minds* of others, and therefore can never know whether any human being is or is not really *guilty* in anything he does. Consequently, human punishment can never reach beyond the outward *act*: we dare not attempt to punish *thoughts*, however sinful, that have not resulted in *action*. And, even here, our principal purpose must necessarily be to save *Society* from the injury that such acts would cause to it. Hence there is little in the principles affecting punishment, when inflicted by *Man*, that we can safely appeal to in considering punishment as inflicted by *God*. There is, however, *one* principle which clearly applies equally to both: we recognise that some *proportion* should be observed, between the amount of crime and the amount of punishment inflicted: for instance, we should have no hesitation in condemning as unjust the conduct of a judge who, in sentencing two criminals, had awarded the *greater* punishment to the one whose crime was clearly the *lesser* of the two.

But, in the sight of *God*, our guilt consists in the sinful *choice*, and we rightly hold that two men, who had resolved, in similar circumstances, on committing the same crime, would be equally guilty in His sight, even though only *one* had actually committed the crime, while the *other* had been accidentally prevented from carrying out his intention.

Hence we may assume that God's purpose, in the enactment of punishment, is the prevention of the sinful *choice*, with all the evils consequent upon it. When once the punishment has been *enacted*, it must necessarily, unless some change takes place in the circumstances contemplated in the enactment, be *inflicted*. We may easily imagine a *man*, who has enacted some punishment, finding good reasons for not inflicting it; for instance, he might find that he had made a mistake in enacting it, or that he had failed to take account of some unforeseen circumstance. We might even imagine a *man* to have threatened a punishment without any intention of ever inflicting it. But none of these suppositions can be made as to punishment enacted by *God*. We cannot believe *Him* to be ignorant of any of the circumstances, or capable of announcing that He will do what He does not really intend to do.

We must trust His perfect knowledge of the thoughts of men, for judging who is guilty and who is not, and the only principle of right and wrong that seems reasonably applicable, is the sense that some *proportion* should be observed between the amount of sin and the amount of the punishment awarded to it.

And here comes in the one consideration which, as I believe, causes all the difficulty and distress felt on this subject. We feel intuitively that sins committed by a human being during a finite period must necessarily be *finite* in amount; while punishment continued during an infinite period must necessarily be *infinite* in amount. And we feel that such a proportion is unjust.

Once suppose the punishment to be *finite* for finite sin, so that if at any period of time the sinful *choice* ceased to exist, the punishment would *not* be infinite, and I believe this difficulty would no longer be felt, and that we should be ready to recognise punishment as *deserved*, and therefore as justly inflicted; and also to recognise the many good purposes, such as the reformation of the sinner, or the warning given to others, which the punishment might serve.

There is another intuition, felt, I believe, by most of us, of which no account has yet been taken. It is that there is some eternal *necessity*, wholly beyond our comprehension, that *sin* must result in suffering. This principle is, I believe, enshrouded in, and may to some extent make more credible to us, the unfathomable mystery of the Atonement. And this principle must be allowed for, I think, in considering the present subject.

There is also a difficulty, that will probably occur to some readers, which ought to be noticed here. It is the doubt whether the man who checks and puts out of his mind a sinful wish merely from fear of *punishment*, can really be less *guilty* in the sight of God. "Granted," it may be urged, "that Divine punishment is incurred by the evil wish, whether or no it result in evil *act*, so that its enactment may serve to prevent that wish, yet surely what God requires is that we should love good *as good*, and hate evil *as evil*. If a man checks the evil wish merely from fear of punishment, and not because it *is* an evil wish, does he thereby cease to sin?" Here it must be admitted, I think, that the enactment of punishment for evil wishes does not, of *itself*, produce the love of good *as good*, and the hatred of evil *as evil*. Yet surely it may help in that direction? God uses, I believe, such motives as best suit the present need; at one time, perhaps, *fear* may be the only one that will influence the sinner; later on, when, through fear, some *habit* of self-restraint has been formed, the evil wish may be checked by the consideration that indulgence of it might lead to acts which the man is beginning dimly to recognise as evil; later still, when this recognition has grown clearer, a higher motive (such as human love) may be appealed to; and later still, the love of good *as good*, and the love of God as the Being whose essence is *goodness*.

When all this has been considered, its outcome seems to me to be the irresistible intuition that infinite punishment for finite sin would be unjust, and therefore wrong. We feel that even weak and erring Man would shrink from such an act. And we cannot conceive of God as acting on a lower standard of right and wrong. In the words of Dean Church, "Can *we* be so compassionate and so just, and cannot we trust *Him* to be so?"

To set aside this intuition, and to accept, as a just and righteous act, the infliction on human beings of infinite punishment for finite sin, is virtually the abandonment of *Conscience* as a guide in questions of Right and Wrong, and the embarking, without compass or rudder, on a boundless ocean of perplexity.

In taking this position, we have to face such questions as these: "Why do I accept whatever God does as being right, though my conscience declares it to be wrong? Is it that He is my *Maker*? What ground have I for holding that the power of *creating* is a guarantee for *goodness*? Or is it that He loves me? But I know already that wicked beings can love. No. The only reasonable ground for accepting what He does as being right seems to be the assurance that He is perfectly *good*. And how can I be assured of this, if I put aside as useless the *only* guide that I profess for distinguishing between right and wrong, the voice of *Conscience*?"

Such are the difficulties that meet us, if we propose to take the *second* possible course, and to reject Proposition II.

The *third* possible course is to accept Propositions I. and II., and to reject III. We should thus take the following position. "I believe that God will *not* act thus. Yet I also believe that, whatever He has declared He will do, He *will* do. Hence I believe that He has *not* declared that He will act thus."

The difficulties, entailed by choosing this *third* course, may be well exhibited in another set of incompatible Propositions, as follows:—

1. *God has not declared that He will act thus.*
2. *All that the Bible tells us, as to the relations between God and man, are true.*
3. *The Bible tells us that God has declared that He will act thus.*

As these three Propositions cannot possibly be *all* of them true, the acceptance of (1) necessarily entails the rejection of either (2) or (3).

If we reject (2), we are at once involved in all the perplexities that surround the question of Biblical Inspiration. The theory of *Plenary* Inspiration—which asserts that *every* statement in the Bible is absolute and infallibly true—has been largely modified in these days, and most Christians are now, I think, content to admit the existence of a *human* element in the Bible, and the possibility of *human* error in such of its statements as do not involve the relations between God and Man. But, as to *those* statements, there appears to be a general belief that the Bible has been providentially protected from error: in fact, on any other theory, it would be hard to say what value there would be in the Bible or for what purpose it could have been written.

The more likely course would seem to be to reject (3). Let us consider what difficulties *this* would entail.

We are now supposed to have taken up the following position: "I do not believe that the Bible tells us that God has declared He will inflict Eternal Punishment on human beings, who are either incapable of sinning, or who, being capable of sinning, have ceased to sin."

It is well to remind the Reader that, in taking up this position, he entirely escapes from the original difficulty on account of which we entered on this discussion. And how widely different this is from what we considered as the *first* of the courses possible to us! *That* would have involved us in the abandonment of Christianity itself; this entails many difficulties, no doubt: but they all belong to the infinitely less important field of Biblical Criticism.

The Reader who is unable, whether from want of time or from want of the necessary learning, to investigate this question for himself, must perforce accept the judgment of others: and all he needs here to be told is that the interpretation of the passages, which are believed to teach the doctrine of "Eternal Punishment," depends largely, if not entirely, on the meaning given to one single

word (αἰών). This is rendered, in our English Bibles, by the word “eternal” or “everlasting”: but there are many critics who believe that it does not necessarily mean “endless.” If this be so, then the punishment, which we are considering, is finite punishment for finite sin, and the original difficulty no longer exists.

In conclusion, I will put together in one view the various modes of escape, from the original difficulty, which may be adopted without violating the inexorable laws of logical reasoning. They are as follows:—

(1) “I believe that the infliction, on human beings, of endless punishment, for sins committed during a finite time, would be unjust, and therefore wrong. Yet I cannot resist the evidence that God has declared His intention of acting thus. Consequently I hold Him to be capable of sinning.”

This would practically mean the abandonment of Christianity.

(2) “I believe that God is perfectly good, and therefore that such infliction of punishment would be right, though my conscience declares it to be wrong.”

This would practically mean the abandonment of conscience as a guide to distinguish right from wrong, and would leave the phrase “I believe that God is perfectly *good*” without any intelligible meaning.

(3) “I believe that God is perfectly good. Also I believe that such infliction of punishment would be wrong. Consequently I believe that God is not capable of acting thus. I find that the Bible tells us that He *is* capable of acting thus. Consequently I believe that what the Bible tells us of the relations between God and Man cannot be relied on as true.”

This would practically mean the abandonment of the Bible as a trustworthy book.

(4) “I believe that God is perfectly good. Also I believe that such infliction of punishment would be wrong. Consequently I believe that God is not capable of acting thus. I find that the Bible, in the English Version, seems to tell us that He *is* capable of acting thus. Yet I believe that it is a book inspired by God, and protected by Him from error in what it tells us of the relations between God and Man, and therefore that what it says, according to the real meaning of the words, may be relied on as true. Consequently I hold that the word, rendered in English as ‘eternal’ or ‘everlasting,’ has been mistranslated, and that the Bible does not really assert more than that God will inflict suffering, of unknown duration but *not* necessarily eternal, punishment for sin.”

Any one of these four views may be held, without violating the laws of logical reasoning.

Here ends my present task; since my object has been, throughout, *not* to indicate one course rather than another, but to help the Reader to see clearly *what* the possible courses are, and *what* he is virtually accepting, or denying, in choosing any *one* of them.

11.9 Address by the Rev. C. L. Dodgson

Source: St. Mary Magdalen Church Magazine, November, 1897

*(Louis Carroll) at S. Mary Magdalen Church (3 p. m. The Children's Service)
on Harvest Thanksgiving Day.*

A little girl named Margaret went to a Harvest Festival Service one Sunday. The Church was beautiful with flowers and fruit and sweet music of thanksgiving. And the preacher spoke of God's great love and goodness in giving us everything that we possess, and that we must try to show our thankfulness to Him by offering of our best to Him in return. Some of us—and especially the children—perhaps thought they had nothing to give, or worthy to offer, to God, but the preacher said that God would accept even a little deed of love, or a simple act of kindness to one of His creatures, and that children, especially, could do these if they would try.

When the service was over and the people had gone away, little Margaret lingered in the churchyard thinking about what the preacher had said, and a lark started up from her feet and sang soaring into the blue sky with such gladness that Margaret said to herself, "Ah, he is trying to thank God as well as he can—how much I wish there were something that such a little girl as I could do too!"

She sat down on the grass in the sunshine to think, and presently she noticed a rose-bush growing near, and that the roses were hanging their heads, quite withered in the sun for want of water. So she ran to the brook, and making a cup of her hands dipped them into the water and ran and threw the water on the roses. She did so again and again, and the roses revived.

Little Margaret then walked on till she passed a cottage where a baby was sitting on the doorstep and crying sadly because his toy was broken. It was a paper windmill, and the sails had become all crumpled up and would not go round any more. Margaret took the toy from the baby and straightened out the sails, and a wind came by and turned them round merrily, so that the baby stretched out his hands and laughed for joy.

Then little Margaret thought she must go home, but as she passed the brook again she saw a little brown bird struggling in the water. He had fallen in and was being drowned, and growing weaker in his struggles. So Margaret caught hold of a bough, and stretching as far as she could, with her other hand she lifted the little bird out of the water and laid him safely on the bank.

And now she began to feel very tired, and at last reached her home. She climbed up to her room, and lay down on her little bed, very white and still, and closed her eyes. And then she said to herself, "I think this must be dying—yes, I am dying—and soon I shall be dead." And her friends came in and said, "Ah, she is dying, poor little Margaret!"

But a rose that was growing outside by the garden path heard it, and began to grow, and climbed and grew till it reached the window, and crept in through the window into the room, and crept all round the walls and little bed till there were wreaths of lovely roses filling the room with their sweetness. And the roses bent over Margaret's little pale face till her cheeks began to take a faint colour too. And just then a soft wind came blowing in at the window and fanned her

face, and a little brown bird outside began to sing so prettily, that Margaret smiled, and opened her eyes and . . . well, she was still sitting on the grass outside the Church, in the soft sunshine—for it was a dream!

I read this story in a book, and put it by to tell you, dear children, this afternoon; but now I will tell you three stories of love and kindness. For—

“He prayeth well, who loveth well
Both man and bird and beast.”

Quoted from *The Rime of the Ancient Mariner* by Samuel Taylor Coleridge

Some forty years ago there was a great singer, named Jenny Lind, and her voice and her singing were so beautiful that people who heard her felt as if they were listening to an angel. And they would go in crowds, and pay any money, to hear her sing.

On one occasion when she was singing at Manchester, she was caught by the rain during her morning walk and she took shelter in a poor little cottage, where a poor old woman lived alone. Jenny Lind talked kindly to her at once, and the poor old woman (of course not knowing who she was) told her about the wonderful Singer, who, “she was told was going to sing that afternoon,” and how everybody was “mad” to hear her, and how very very much she wished that she could hear her too. But that of course was impossible “for a poor old body like me!” Then Jenny Lind told the old woman that she was the Singer, and said she, “and I will sing to you.” So then and there, in that poor little cottage, the great Singer sang three or four of her sweetest songs, and gave the poor old woman the desire of her heart.

Again—a man walking along a country lane heard such a fluttering and chirping in the hedge that he stopped to look what it could be; and he saw that a young bird had fallen out of its nest, and its wings having caught on a thorn, it was hanging helpless. The mother bird was close to it fluttering and crying with all her might, but powerless to release her little one. She did not move as the man gently lifted the young bird and replaced it in the nest, but then instantly hopped on to the nest herself, and spread her wings over her little ones without a trace of fear, but in perfect confidence in the person who had come to her aid.

And now one more true tale, and this of a child’s kindness to one of God’s creatures. You will, I think, all have heard of Florence Nightingale. Hers is a name to make all English hearts beat warm as long as they exist;—one of England’s noblest women, for she was the first who thought of going to nurse our poor wounded soldiers on the battle-field.

From her childhood Florence Nightingale was always wanting to help and heal those in pain, and her first patient was a dog! She was but a child when one day she met a shepherd whom she knew, and he was in great distress because his faithful old dog, that had served him for so many years, was near his end. Some cruel boys—or I would rather say, thoughtless boys—had stoned the poor old dog, and he was so much hurt that he had only just been able to drag himself home to die! He was well-nigh worn out, but, “Now he’s done for, and I must do away with him,” said the shepherd, as he led the child to the cottage to show her the dog, and then he went sadly away to get the means of putting him out of his misery.

Florence Nightingale sat down beside the poor suffering creature, her kind heart full of pity. Presently she saw some one pass the door who she knew

understood all about animals, and calling him in, she showed him the dog. After examining him, her friend said, "Well, he's very bad, but there are no bones broken; all you can do is to wring out some cloths in hot water and lay them on the wounds, and keep on doing that for a long time." And the child set to work at once, lighted a fire, boiled the water, and persevered in her work for many hours, and to her joy the old dog began to get better and better. When the shepherd came home, Florence Nightingale said to him, "Call him, oh! do call him;" and so he called the old dog, who got up and greeted his master.

"He prayeth best, who loveth best
All things both great and small;
For the dear God who loveth us,
He made and loveth all."

Quoted from *The Rime of the Ancient Mariner* by Samuel Taylor Coleridge

And now, dear children, I want you to promise me that you will each one try, every day, to do some loving act of kindness for others. Perhaps you have never really tried before; will you begin to-day—the beginning of a new week? Last week is gone for ever; this week will be quite different. As you rub out the sums on your slate that have not come right, and begin all over again, so leave behind the disobedience, or selfishness, or ill-temper of last week, and begin quite fresh to try your very best, every day, to do what you can towards fulfilling God's law of love.

Part 12

Texts concerning Oxford

This chapter contains all texts about Christ Church, Oxford, etc. Some of these texts are written in a humourous tone (which may make it hard to understand what they are really about), some seriously. Note that there are also some poems that would have fitted here for its topic, but are together with the other poems. These are: *Examination Statute* (→ 18.2, p. 2012), *The Elections to the Hebdomadal Council* (→ 18.56, p. 2118), and *The Deserted Parks* (→ 18.110, p. 2220)

12.1 “Endowment of the Greek Professorship”

Source: printed 1861

In the ALTERNATIVE AMENDMENTS recently proposed in a paper issued under the above heading, the attention of Members of Convocation is respectfully invited to the following passage.

After proposing the institution of an independent Professorship of Greek, the following words occur: “That the Corpus element be omitted, and the Professor of Latin be substituted for the Regius Professor of Greek.”

Here are two propositions, startling in their novelty, and demanding serious and separate consideration.

The first, “That the Corpus element be omitted,” is a condition never before annexed to a Professorship, and which indicates but too clearly the wide influence which the so-called “spiritualist” views have attained both in America and in this country.

It may no doubt be desirable that a Professor should be free from the petty cares and distracting influences which are inseparable from our corporeal condition; still, as none but a member of All Souls can possibly fulfil the stringent requisition here proposed, Members of Convocation are respectfully reminded that to confine this piece of preferment within such narrow limits would be illiberal, if not unjust to other Colleges.

The second portion of the clause above quoted is as novel as the first, but so desirable an innovation, that it cannot be too widely known, or too heartily supported by Members of Convocation. There is no doubt that the substitution of Mr. Conington for Mr. Jowett would remove one of the most powerful elements

of discord in this "*vexata quæstio*," and would probably tend to its speedy and peaceful settlement. The question whether Mr. Conington himself would consent to the change is one which has no doubt suggested itself to, and been fully considered by, the proposer of these amendments. *Nov. 22, 1861.*

12.2 The New Examination Statute

Source: printed 1864; The Morning Post, March 4, 1864 (without paragraph breaks, and other minor changes)

Dear Mr. Vice-Chancellor,

I much regret the necessity, under which I feel that the new Examination Statute has placed me, of resigning my present office of Public Examiner in Mathematics. In taking this step, I think it right to lay before you, and before the University, a statement of the reasons that have led me to it.

It is not for me to dwell on the general objection which may be raised against the new Statute, as affecting the study of Classics in this place: the objection, I mean, that, in permitting the Student wholly to abandon that study during the latter half (it may be) of his necessary residence, it involves a partial surrender, and so is a step towards a total surrender, of the principle, hitherto inviolate, that the Classics are an *essential* part of an Oxford education. This objection must be felt, and may be urged, far more forcibly by Classical Tutors: I content myself with mentioning it, and pass on to considerations more nearly affecting my special line of study.

In the first place, then, I cannot bring myself to take any part in the degradation of Mathematical Honours which, as I conceive, this Statute must produce. I have always believed it to be the very essence of *Honours* that they should be given simply and solely "*honoris causa*," for work done over and above that which was necessary for any other purpose whatever. When that work comes to be utilised, and made to subserve the lower purpose of obtaining an ordinary B.A. Degree, it would seem to be a mockery to continue to apply the name of "Honours" to the Class List as a whole.

Secondly, it appears to me that, in the case of every candidate who just fails to obtain his Third Class, and whose time of standing is such as to allow of his trying again, it would be an act of common justice to pluck him, and so give him the opportunity of again offering himself in that School, rather than to put him into the Fourth Class, and so compel him to return to studies he may have long abandoned. I feel that to inflict a Fourth Class in such a case would be to visit a mere error of judgement with a penalty hitherto reserved for culpable idleness: and yet I cannot but fear that this course would virtually annul the Fourth Class, and so would much diminish the value both of the Third and of the Second.

Thirdly, I believe that it will be found necessary greatly to modify the present Final Mathematical Examination, and to draw up, and publish, a definite statement of the minimum amount of work sufficient to obtain a Third Class in Mathematics, if ever that Class is to be made a worthy test of the mental training hitherto implied in the Oxford B.A. Degree. Plausible as it may sound in theory, to say that this is not a case for a minimum standard at all—that those who begin to read for a Third Class will be led on to aim higher, and to do more than what is merely necessary for their purpose—I am quite sure that, in actual practice, it will be found necessary to provide such a minimum standard to meet the case of those who either do not aim higher, or who do so unsuccessfully; and that the Third Class will then be neither more nor less than a new Pass, only distinguished from the old by greater difficulty, and by the transparent disguise of a different name. These modifications and this standard must be settled by

the Examiners of the time being, and I feel that I, as one who entirely disapproves of the essential principle of the change to be introduced, cannot possibly be a fit person to discuss such a question.

Sincerely hoping that the further changes, which I feel sure must follow this, may not have the effect of yet further dissociating the names of Oxford and of Classical education,

I remain, dear Mr. Vice-Chancellor,

*Faithfully yours,
Charles L. Dodgson.
Christ Church,
March 2, 1864.*

12.3 American Telegrams (Summary)

Source: printed 1865

The interview which has just taken place, between President L—— and the Confederate Commissioners, has resulted in a proposal from the President that three representatives from each of the contending parties shall meet to arrange conditions of peace. The following is said to be the Confederate “platform”:—

(1.) That the almost dictatorial power, held by General Grant, shall be largely curtailed, if not altogether abolished. It is understood that the President himself is so entirely under his influence as to be a free agent in name only: a state of things which, it is urged, cannot but be highly prejudicial to the Union.

(2.) That the enormities perpetrated by General Butler shall meet with their due reward. The document from which we quote urges that “he has cost his country more in battels (*sic*) than any other known in our time,” and that “the interests of the few magnates, whose wealth he has augmented, cannot be suffered to outweigh those of the Commons he has so wantonly sacrificed.”

(3.) That the Treasury shall be placed under the control of Confederates and Federals alike: the Confederates urge that their party is “inadequately represented under the present administration,” and that the Secretary in particular “would be a blot in any conceivable system of government.”

(4.) That the forces at present in occupation of Confederate territory be withdrawn. “We can discuss no terms of peace,” say the Confederates, “with an armed foe. It is unworthy the dignity of a nation to be thus dictated to by the roar of canons (*sic*).”

Other minor propositions may, it is understood, be presented to the Federals for consideration. One is, “that the services which General Early has rendered to his country be rewarded by advancement in the course of the ensuing summer.” This proposal, however, is said to be distasteful to the Federals, and the President himself is so opposed to the very idea of Early rising, that there is little hope of its being agreed on. Various charges are brought against this unpopular general, of which his abandonment of “Pillow,” (the Federals’ strongest fort) is one of the gravest.

Gold 200, at which price it occasionally excites a brisk competition.

The difficulties of transit from place to place are enhanced by the insufficiency of public conveyances, and most of the travelling is done by means of private coaches. So much of the country, however, is still under martial law, that passes are not easy to obtain: in some instances they have been refused altogether.

The officers continue to send in long lists of sick and missing: much of this illness is supposed to be feigned for the sake of avoiding active service.

With a view to improving the condition of the lower classes, it is understood that collections will shortly be set on foot, under the authority of the President: this will probably have the effect of drawing attention to their number and wretchedness, but, beyond this, it is not anticipated that any great results will be derived from this measure.

Feb. 17, 1865
C. L. Dodgson
Ch. Ch.

12.4 The New Method of Evaluation as Applied to π

Source: The New Method of Evaluation as Applied to π (with minor differences as noted); The Dynamics of a Parti-cle; Notes by an Oxford Chiel

*“Littly Jack Horner
Sat in a corner
Eating a Christmas pie”*

Quoted from nursery rhyme

The problem of evaluating π , which has engaged the attention of mathematicians from the earliest ages, had, down to our own time, been considered as purely arithmetical. It was reserved for this generation to make the discovery that it is in reality¹ a dynamical problem: and the true value of π , which appeared an ‘ignis fatuus’ to our forefathers, has been at last obtained under pressure.

The following are the main data of the problem:

Let U = the University, G = Greek, and P = Professor. Then GP = Greek Professor; let this be reduced to its lowest terms, and call the result J.

Also let W = the work done, T = the Times, p = the given payment, π = the payment according to T, and S = the sum required; so that $\pi = S$.

The problem is, to obtain a value for π which shall be commensurable² with W.

In the early treatises on this subject, the mean value³ assigned to π will be found to be 40.000000. Later writers suspected that the decimal point had been accidentally shifted, and that the proper value was 400.00000: but, as the details of the process for obtaining it had been lost, no further progress was made in the subject till our own time, though several most ingenious methods were tried for solving the problem.

Of these methods we proceed to give some brief account. Those chiefly worthy of note appear to be Rationalisation, the Method of Indifferences, Penrhyn’s Method, and the Method of Elimination.

We shall conclude with an account of the great discovery of our own day, the Method of Evaluation under Pressure.⁴

I. Rationalisation.

The peculiarity of this process consists in its affecting all quantities alike with a negative sign.

To apply it, let H = High Church, and L = Low Church, then the geometric mean = \sqrt{HL} : call this ‘B’ (Broad Church).

$$\therefore HL = B^2.$$

Also let x and y represent unknown quantities.

¹really

²commensurate

³the value

⁴missing in original publication

The process now requires the breaking up of U into its partial factions, and the introduction⁵ of certain combinations. Of the two principal factions thus formed, that corresponding with P presented no further difficulty, but it appeared hopeless to rationalise the other.

A ‘*reductio ad absurdum*’ was therefore attempted, and it was asked ‘why should π not be evaluated?’ The great difficulty now was, to discover y .

Several ingenious substitutions and transformations were then resorted to, with a view to simplifying the equation⁶, and it was at one time asserted, though never actually proved, that ‘the y ’s were all on one side⁷. However, as repeated trials produced the same irrational result, the process was finally abandoned.

II. The Method of Indifferences.

This was a modification of ‘*the method of finite Differences,*’ and may be thus briefly described:—

Let E = Essays, and R = Reviews: then the locus of (E + R), referred to multilinear co-ordinates, will be found to be a superficies (i. e. a locus possessing length and breadth, but no depth). Let ν = novelty, and assume (E + R) as a function of ν .

Taking this superficies as the plane of reference, we get—

$$E = R = B$$

$$\therefore EB = B^2 = HL \text{ (by the last⁸ article.)}$$

Multiplying by P, $EBP = HPL$.

It was now necessary to investigate the locus of EBP: this was found to be a species of Catenary, called the Patristic Catenary, which is usually defined as ‘passing through origin, and containing many multiple points.’ The locus of HPL will be found almost entirely to coincide with this.

Great results were expected from the assumption of (E + R) as a function of ν : but the opponents of this theorem having actually succeeded in demonstrating that the ν -element did not even enter into the function, it appeared hopeless to obtain any real value of π by this method.

III. Penrhyn’s Method.

This was an exhaustive process for extracting the value of π , in a series of terms, by repeated divisions. The series so obtained appeared to be convergent, but the residual quantity was always negative, which of course made the process of extraction impossible.

This theorem was originally derived from a radical series in Arithmetical Progression: let us denote the series itself by A.P., and its sum by (A.P.)S. It was found that the function (A.P.)S entered into the above process, in various forms.

The experiment was therefore tried of transforming (A.P.)S into a new scale of notation: it had hitherto been, through a long series of terms, entirely in the

⁵introducing

⁶missing in original publication

⁷all the y ’s were on one side of the equation

senary, in which scale it had furnished many beautiful expressions: it was now transferred into the denary.

Under this modification, the process of division was repeated, but with the old negative result: the attempt was therefore abandoned, though not without a hope that future mathematicians, by introducing a number of hitherto undetermined constants, raised to the second degree, might succeed in obtaining a positive result.

IV. Elimination of J.

It had long been perceived that the chief obstacle to the evaluation of π was the presence of J, and in an earlier age of mathematics J would probably have been referred to rectangular axes, and divided into two unequal parts—a process of arbitrary elimination which is now considered not strictly legitimate.

It was proposed, therefore, to eliminate J by an appeal to the principle known as ‘*the permanence of equivalent formularies*:’ this, however, failed on application, as J became indeterminate. Some advocates of the process would have preferred that J should be eliminated ‘*in toto*.’ The classical scholar need hardly be reminded that ‘*toto*’ is the ablative of ‘*tumtum*,’ and that this beautiful and expressive phrase embodied the wish that J should be eliminated by a compulsory religious examination.

It was next proposed to eliminate J by means of a ‘*canonisant*.’ The chief objection to this process was, that it would raise J to an inconveniently high power, and would after all only give an irrational value for π .

Other processes, which we need not here describe, have been suggested for the evaluation of π . One was, that it should be treated as a *given* quantity: this theory was supported by many eminent men, at Cambridge and elsewhere; but, on application, J was found to exhibit a negative sign, which of course made the evaluation impossible.

We now proceed to describe the modern method, which has been crowned with brilliant and unexpected success, and which may be defined as

V. Evaluation Under Pressure.

Mathematicians had already investigated the locus of HPL, and had introduced this function into the calculation, but without effecting the desired evaluation, even when HPL was transferred to the opposite side of the equation, with a change of sign. The process we are about to describe consists chiefly in the substitution of G for P, and the application of pressure.

Let the function $\phi(HGL)$ be developed into a series, and let the sum of this be assumed as a perfectly rigid body, moving in a fixed line: let ‘ μ ’ be the coefficient of moral obligation, and ‘ e ’ the expediency. Also let ‘F’ be a Force acting equally in all directions, and varying inversely as T: let A = Able, and E = Enlightened.⁹

We have now to develop $\phi(HGL)$ by Maclaurin’s Theorem.

⁹missing in original publication

⌊The function itself vanishes when the variable vanishes:⌋¹⁰

$$\begin{aligned}
 \text{i. e. } \phi(0) &= O \\
 \phi'(0) &= C \text{ (a prime constant)} \\
 \phi''(0) &= 2. J \\
 \phi'''(0) &= 2. 3. H \\
 \phi''''(0) &= 2. 3. 4. S \\
 \phi'''''(0) &= 2. 3. 4. 5. P \\
 \phi''''''(0) &= 2. 3. 4. 5. 6. J
 \end{aligned}$$

after which the quantities recur in the same order.

The above proof is taken from the learned treatise '*Augusti de fallibilitate historicorum,*' and occupies an entire Chapter: the evaluation of π is given in the next Chapter. The author takes occasion to point out several remarkable properties, possessed by the above series, the existence of which had hardly been suspected before.

This series is a function both of μ and of e : but, when it is considered as a body, it will be found that $\mu = 0$, and that e only remains.

We now have the equation

$$\phi(HGL) = O + C + J + H + S + P + J.$$

The summation of this gave a minimum value for π : this, however, was considered only as a first approximation, and the process was repeated under pressure ⌊EAF¹¹⌋, which gave to π a partial maximum value: by continually increasing ⌊EAF¹²⌋, the result was at last obtained, $\pi = S = 500.00000$.

This result differs considerably from the anticipated value, namely 400.00000: still there can be no doubt that the process has been correctly performed, and that the learned world may be congratulated on the final settlement of this most difficult ⌊problem.⌋¹³

¹⁰In the original publication all but the first line of the following equation are prefixed by some explanation:

differentiating under pressure,
 let P = J, and we get
 differentiating for H,
 let L = S, and we get
 let G = P, and we get
 let P = J, and we get

¹¹F

¹²F

¹³In the original publication followed by "March, 1865."

12.5 The Dynamics of a Parti-cle

Source: The Dynamics of a Parti-cle (with minor differences as noted); Notes by an Oxford Chiel

*“Tis strange the mind, that very fiery particle,
Should let itself be snuff’d out by an article.”*

Quoted from *Don Juan* by Lord Byron

Introduction.

‘It was a lovely Autumn evening, and the glorious effects of chromatic aberration were beginning to show themselves in the atmosphere as the earth revolved away from the great western luminary, when two lines might have been observed wending their weary way across a plane superficies. The elder of the two had by long practice acquired the art, so painful to young and impulsive loci, of lying evenly between his extreme points; but the younger, in her girlish impetuosity, was ever longing to diverge and become an hyperbola or some such romantic and boundless curve. They had lived and loved: fate and the intervening superficies had hitherto kept them asunder, but this was no longer to be: *a line had intersected them, making the two interior angles together less than two right angles.* It was a moment never to be forgotten, and, as they journeyed on, a whisper thrilled along the superficies in isochronous waves of sound, “Yes! We shall at length meet if continually produced!” (Jacobi’s Course of Mathematics, Chap. 1.)

We have commenced with the above quotation as a striking illustration of the advantage of introducing the human element into the hitherto barren region of Mathematics. Who shall say what germs of romance, hitherto unobserved, may not underlie the subject? Who can tell whether the parallelogram, which in our ignorance we have defined and drawn, and the whole of whose properties we profess to know, may not be all the while panting for exterior angles, sympathetic with the interior, or sullenly repining at the fact that it cannot be inscribed in a circle? What mathematician has ever pondered over an hyperbola, mangling the unfortunate curve with lines of intersection here and there, in his efforts to prove some property that perhaps after all is a mere calumny, who has not fancied at last that the ill-used locus was spreading out its asymptotes as a silent rebuke, or winking one focus at him in contemptuous pity?

In some such spirit as this we have compiled the following pages. Crude and hasty as they are, they yet exhibit some of the phenomena of light, or ‘enlightenment,’ considered as a force, more fully than has hitherto been attempted by other writers.⁷¹

June, 1865.

⁷¹In the original publication followed by: Its *dynamical* effect, in producing divergence in a line hitherto perfectly straight, is well exemplified in Prop. VI: while its *statical* effect, as set forth in the concluding “Excursus in the evaluation of π ,” is perhaps, with all its attendant phenomena, the most extraordinary and momentous discovery of which Modern Mathematics can boast.

Chapter I. General Considerations.

Definitions

I PLAIN SUPERFICIALITY is the character of a speech, in which any two points being taken, the speaker is found to lie wholly with regard to those two points.

II PLAIN ANGER is the inclination of two voters to one another, who meet together, but whose views are not in the same direction.

III When a Proctor, meeting another Proctor, makes the votes on one side equal to those on the other, the feeling entertained by each side is called RIGHT ANGER.

IV When two parties, coming together, feel a Right Anger, each is *said* to be COMPLEMENTARY to the other, (though, strictly speaking, this is very seldom the case).

V OBTUSE ANGER is that which is greater than Right Anger.

Postulates

I Let it be granted, that a speaker may digress from any one point to any other point.

II That a finite argument, (i. e. one finished and disposed of,) may be produced to any extent in subsequent debates.

III That a controversy may be raised about any question, and at any distance from that question.

Axioms

I Men who go halves in the same (quart) are (generally) equal to another.

II Men who take a double in the same (term) are equal to anything.

On Voting

The different methods of voting are as follows:

I ALTERNANDO, as in the case of Mr. . . . who voted for and against Mr. Gladstone, alternate elections.

II INVERTENDO, as was done by Mr. . . . who came all the way from Edinburgh to vote, handed in a blank voting-paper, and so went home rejoicing.

III COMPONENTO, as was done by Mr. . . . whose name appeared on both committees at once, whereby he got great praise from all men, by the space of one day.

IV DIVIDENDO, as in Mr. ...'s case, who being sorely perplexed in his choice of candidates, voted for neither.

V CONVERTENDO, as was wonderfully exemplified by Messrs. ... and ... who held a long and fierce argument on the election, in which, at the end of two hours, each had vanquished and converted the other.

VI EX ÆQUALI IN PROPORZIONE PERTURBATĀ SEU INORDINATĀ, as in the election, when the result was for a long time equalised, and as it were held in the balance, by reason of those who had first voted on the one side seeking to pair off with those who had last arrived on the other side, and those who were last to vote on the one side being kept out by those who had first arrived on the other side, whereby, the entry to the Convocation House being blocked up, men could pass neither in nor out.

On Representation

Magnitudes are algebraically represented by letters, men by men of letters, and so on. The following are the principal systems of representation.

1. CARTESIAN: i. e. by means of 'cartes.' This system represents *lines* well, sometimes too well; but fails in representing *points*, particularly good points.

2. POLAR: i. e. by means of the 2 poles, 'North and South.' This is a very uncertain system of representation, and one that cannot safely be depended upon.

3. TRILINEAR: i. e. by means of a line which takes 3 different courses. Such a line is usually expressed by three letters, as W.E.G.

That the principle of Representation was known to the ancients is abundantly exemplified by Thucydides, who tells us that the favourite cry of encouragement during a trireme race was that touching allusion to Polar Co-ordinates which is still heard during the races of our own time, ' ρ_5 , ρ_6 , $\cos \phi$, they're gaining!'

Chapter II. Dynamics of a Particle.

Particles are logically divided according to GENIUS and SPEECHES.

GENIUS is the higher classification, and this, combined with DIFFERENTIA, (i. e. difference of opinion,) produces SPEECHES. These again naturally divide themselves into three heads.

Particles belonging to the great order of GENIUS are called 'able' or 'enlightened.'

Definitions

I A SURD is a radical whose meaning cannot be exactly ascertained. This class comprises a very large number of particles.

II INDEX indicates the degree, or power, to which a particle is raised. It consists of two letters, placed to the right of the symbol representing the particle. Thus, 'A.A.' signifies the 0th degree; 'B.A.' the 1st degree; and so on, till we reach 'M.A.' the 2nd degree (the intermediate letters indicating fractions of a degree); the last two usually employed being 'R.A.' (the reader need hardly be

reminded of that beautiful line in *The Princess* ‘Go dress yourself, Dinah, like a gorgeous R.A.’) and ‘S.A.’ This last indicates the 360th degree, and denotes that the particle in question, (which is $\frac{1}{7}$ th part of the function $\overline{E + R}$ ‘Essays and Reviews,’) has effected a complete revolution, and that the result = 0.

III MOMENT is the product of the mass into the velocity. To discuss this subject fully, would lead us too far into the subject *Vis Viva*, and we must content ourselves with mentioning the fact that *no moment is ever really lost, by fully enlightened Particles*. It is scarcely necessary to quote the well-known passage:—‘Every moment, that can be snatched from academical duties, is devoted to furthering the cause of the popular Chancellor of the Exchequer.’—(Clarendon, History of the Great Rebellion.)

IV A COUPLE consists of a moving particle, raised to the degree M.A., and combined with what is technically called a ‘better half.’ The following are the principal characteristics of a Couple: (1) It may be easily transferred from point to point. (2) Whatever *force of translation* was possessed by the uncombined particle, (and this is often considerable,) is wholly lost when the Couple is formed. (3) The two forces constituting the Couple habitually *act in opposite directions*.

On Differentiation

The effect of Differentiation on a Particle is very remarkable, the first Differential being frequently of a greater value than the original Particle, and the second of less enlightenment.

For example, let L = ‘Leader,’ S = ‘Saturday,’ and then L.S. = ‘Leader in the Saturday,’ (a particle of no assignable value). Differentiating once, we get L.S.D., a function of great value. Similarly it will be found that, by taking the second Differential of an enlightened Particle, (i. e. raising it to the Degree D.D.,) the enlightenment becomes rapidly less. The effect is much increased by the addition of a C: in this case the enlightenment often vanishes altogether, and the Particle becomes conservative.

It should be observed that, whenever the symbol L is used to denote ‘Leader,’ it must be affected with the sign \pm : this serves to indicate that its action is sometimes positive and sometimes negative—some particles of this class having the property of drawing others after them, (as ‘a Leader of an army,’) and others of repelling them, (as ‘a Leader of the Times.’)

Propositions

Prop. I. Pr. To find the value of a given Examiner *Example.* A takes in 10 books in the Final Examination, and gets a 3d Class: B takes in the Examiners, and gets a 2nd. Find the value of the Examiners in terms of books. Find also their value in terms in which no Examination is held.

Prop. II. Pr. To estimate Profit and Loss *Example.* Given a Derby Prophet, who has sent 3 different winners to 3 different betting-men, and given that none of the three horses are placed. Find the total Loss incurred by the

three men (α) in money, (β) in temper. Find also the Prophet. Is this latter generally possible?

Prop. III. Pr. To estimate the direction of a line. *Example.* Prove that the definition of a line, according to Walton, coincides with that of Salmon, only that they begin at opposite ends. If such a line be divided by Frost's method, find its value according to Price.

Prop. IV. Th. The end, (i. e. 'the product of the extremes,') justifies (i. e. 'is equal to' see Latin 'æquus,') the means.

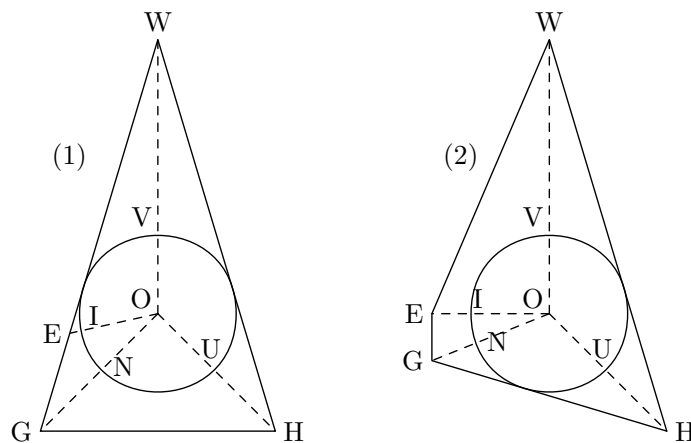
No example is appended to this Proposition, for obvious reasons.

Prop. V. Pr. To continue a given series *Example.* A and B, who are respectively addicted to Fours and Fives, occupy the same set of rooms, which is always at Sixes and Sevens. Find the probable amount of reading done by A and B while the Eights are on.

We proceed to illustrate this hasty sketch of the Dynamics of a Particle, by demonstrating the great Proposition on which the whole theory of Representation depends, namely:—"To remove a given Tangent from a given Circle, and to bring another given Line into contact with it."

To work the following problem algebraically, it is best to let the circle be represented as referred to its two tangents, i. e. first to WEG, WH, and afterwards to WH, GH. When this is effected, it will be found most convenient to project WEG to infinity. The process is not given here in full, since it requires the introduction of many complicated determinants.

Prop. VI. Pr. To remove a given Tangent from a given Circle, and to bring another given Line into contact with it.



Let UNIV be a Large Circle, whose centre is O, (V being, of course, placed at the top,) and let WGH be a triangle, two of whose sides, WEG and WH, are in contact with the circle, while GH (called 'the base' by liberal mathematicians,)

is not in contact with it. (See Fig. 1.) It is required to destroy the contact of WEG, and to bring GH into contact instead.

Let I be the point of maximum illumination of the circle, and therefore E the point of maximum enlightenment of the triangle. (E of course varying perversely as the square of the distance from O.)

Let WH be fixed absolutely, and remain always in contact with the circle, and let the direction of OI be also fixed.

Now, so long as WEG preserves a perfectly straight course, GH cannot possibly come into contact with the circle, but if the force of illumination, acting along OI, cause it to bend (as in Fig. 2), a partial revolution on the part of WEG and GH is effected, WEG ceases to touch the circle, and GH is immediately brought into contact with it. Q.E.F.

The theory involved in the foregoing Proposition is at present much controverted, and its supporters are called upon to show what is the fixed *point*, or '*locus standi*,' on which they propose to effect the necessary revolution. To make this clear, we must go to the original Greek, and remind our readers that the true point or '*locus standi*,' is in this case ἄρδις, (or ἄρδις according to modern usage,) and therefore must not be assigned to WEG. In reply to this it is urged that, in a matter like the present, a single word cannot be considered a satisfactory explanation, such as ἀρδέωζ.

It should also be observed that the revolution here discussed is entirely the effect of enlightenment, since particles, when illuminated to such an extent as actually to become φώζ, are always found to diverge more or less widely from each other; though undoubtedly the *radical* force of the word is 'union' or 'friendly feeling.' The reader will find in 'Liddell and Scott' a remarkable illustration of this, from which it appears to be an essential condition that the feeling should be entertained φροῦδεν, and that the particle entertaining it should belong to the genus σκότος, and should therefore be, nominally at least, unenlightened.

12.6 The Offer of the Clarendon Trustees

Source: The Offer of the Clarendon Trustees (without introduction, footnote, and with minor differences as noted); Notes by an Oxford Chiel

Letter from Mr. Gladstone to the Vice-Chancellor.

Dear Mr. Vice-Chancellor,

The Clarendon Trustees . . . are ready, in concert with the University, to consider of the best mode of applying the funds belonging to them for “adding to the New Museum Physical Laboratories and other accommodation requisite for the department of Experimental Philosophy.”

I have the honour to remain,

Dear Mr. Vice-Chancellor,

Very faithfully yours,

May 3, 1867.

W. E. GLADSTONE.

The following passages are quoted from a paper which appeared on the subject.

“As Members of Convocation are called upon to consider the offer of the Clarendon Trustees, to employ the funds at their disposal in the erection of additional buildings to facilitate the study of Physics, they may perhaps find it useful to have a short statement of the circumstances which render additional buildings necessary, and of the nature of the accommodation required.”

“Again, it is often impossible to carry on accurate Physical experiments in close contiguity to one another, owing to their mutual interference; and consequently different processes need different rooms, in which these delicate instruments, which are always required in a particular branch of science, have to be carefully and permanently fixed.”

“It may be sufficient, in order to give an idea of the number of rooms required, to enumerate the chief branches of Physics which require special accommodation, owing to their mutual interference.

- (1) Weighing and measuring.
- (2) Heat.
- (3) Radiant Heat.
- (4) Dispersion of Light. Spectrum Analysis, &c.
- (5) General optics.
- (6) Statical electricity.
- (7) Dynamical electricity.
- (8) Magnetism.
- (9) Acoustics.

Of these, (5) requires one large room or three smaller rooms, and these, together with those devoted to (3) and (4), should have a south aspect. Besides the fixed instruments, there is a large quantity of moveable apparatus, which is either used with them or employed in illustrating lectures; and this must be carefully preserved from causes of deterioration when not in use; for this purpose a large room fitted with glass cases is required. A store-room for chemicals and other materials used is also necessary.”

“As Photography is now very much employed in multiplying results of observation, in constructing diagrams for lectures, &c., and as it is in fact a branch of Physics, a small Photographic room is necessary, both for general use and for studying the subject itself.”

‘Accommodated: that is, when a man is, as they say, accommodated; or when a man is—being—whereby—he may be thought to be accommodated; which is an excellent thing.’

Quoted from *King Henry IV Part II* by William Shakespeare

DEAR SENIOR CENSOR,¹

In a desultory conversation on a point connected with the dinner at our high table, you incidentally remarked to me that lobster-sauce, ‘though a necessary adjunct to turbot, was not entirely wholesome.’

It is entirely unwholesome. I never ask for it without reluctance: I never take a second spoonful without a feeling of apprehension on the subject of possible night-mare². This naturally brings me to the subject of Mathematics, and of the accommodation provided by the University for carrying on the calculations necessary in that important branch of Science.

As Members of Convocation are called upon (whether personally, or, as is less exasperating, by letter) to consider the offer of the Clarendon Trustees, as well as every other subject of human, or inhuman, interest, capable of consideration, it has occurred to me to suggest for your consideration how desirable roofed buildings are for carrying on mathematical calculations: in fact, the variable character of the weather in Oxford renders it highly inexpedient to attempt much occupation, of a sedentary nature, in the open air.

Again, it is often impossible for students to carry on accurate mathematical calculations in close contiguity to one another, owing to their mutual interference, and a tendency to general conversation: consequently these processes require different rooms in which irrepressible conversationists, who are found to occur in every branch of Society, might be carefully and permanently fixed.

It may be sufficient for the present to enumerate the following requisites: others might be added as funds permitted.

A. A very large room for calculating Greatest Common Measure. To this a small one might be attached for Least Common Multiple: this, however, might be dispensed with.

B. A piece of open ground for keeping Roots and practising their extraction: it would be advisable to keep Square Roots by themselves, as their corners are apt to damage others.

C. A room for reducing Fractions to their Lowest Terms. This should be provided with a cellar for keeping the Lowest Terms when found, which might also be available to the general body of Undergraduates, for the purpose of ‘keeping Terms.’

D. A large room, which might be darkened, and fitted up with a magic lantern, for the purpose of exhibiting Circulating Decimals in the act of circulation. This might also contain cupboards, fitted with glass-doors, for keeping the various Scales of Notation.

E. A narrow strip of ground, railed off and carefully levelled, for investigating the properties of Asymptotes, and testing practically whether Parallel Lines

¹The original publication starts from here, with “My dear Sandford”

²See page 2119, Notes 3, 4.

meet or not: for this purpose it should reach, to use the expressive language of Euclid, 'ever so far.'

This last process, of 'continually producing the Lines,' may require centuries or more: but such a period, though long in the life of an individual, is as nothing in the life of the University.

As Photography is now very much employed in recording human expressions, and might possibly be adapted to Algebraical Expressions, a small photographic room would be desirable, both for general use and for representing the various phenomena of Gravity, Disturbance of Equilibrium, Resolution, &c., which affect the features during severe mathematical operations.

May I trust that you will give your immediate attention to this most important subject?

Believe me,

Sincerely yours,

└MATHEMATICUS.³

└Feb. 6, 1868.⁴

³CHARLES L. DODGSON

⁴Ch. Ch. Feb. 6, 1868.

12.7 Reform at Christ Church

Source: The Oxford Undergraduate's Journal, probably February 4, 1869; authorship not entirely certain

To the Editor of the Oxford Undergraduate's Journal

SIR,—The authorities of this place have altered the hour's service at 9 o'clock on Sunday Morning to a service of an hour and three quarters on Sunday at 10. The reasons for this change have naturally not been vouchsafed to the Undergraduates of the house; and as they do not lie on the surface I have set myself to discover them. They are these:—

1. To prevent Undergraduates from attending the University Sermon. (N.B. The University Sermon of last Sunday week was preached by the Dean of Ch. Ch. I infer, therefore, that he is the *Socrates* of the present day.)

2. The abolition of the immoral and profligate Sunday Breakfast, where half a dozen Undergraduates used to assemble in the most riotous manner, and which led to every kind of intemperance, tumult, and Sabbath breaking.

3. The substitution and encouragement of the Sunday Lunch; where every liquor is consumed except the poisonous draughts of tea and coffee which used to undermine the Undergraduate constitution at 10.30 a. m.

4. The substitution of a service of 105 minutes, instead of the former one of 55, which was too long for the attention of an audience of young men. The change, it is hoped, may effect a more desirable result.

I consider, in giving these reasons, that I have penetrated the inscrutable mystery which surrounded the origin of this service. All I have to ask in return is that the authorities should warm the Church to a certain extent, so that I may not in future, numb-fingered, as now, have to sign myself *Ροδοδάκτυλος*.

12.8 Suggestions for Committee

Source: printed 1871

Appointed to Consider the Expediency of Reconstituting Senior Studentships at Christ Church, March, 1871

I. That the titles of “Student” and “Scholar” be substituted for those of “Senior Student” and “Junior Student.”

II. That there be Praeectorships in subjects of Academical Study other than Natural Science, and that the mode of election and conditions of tenure for the Praeectors be the same as those which are statutory for the Lee’s Readers in Natural Science.

III. That Studentships of two classes be given, viz.: either for educational purposes, or to promote the interests of learning; but that none be given as sinecures.

IV. That those of the former class be given, after examination and full inquiry into merits and character, to persons who shall profess themselves ready to serve as Tutors, Praeectors, or Lecturers; and that no others be given excepting when the wants of the House, with respect to education and discipline, are, for the time being, fully satisfied.

V. That those of the latter class be given, after examination and full inquiry into merits and character, to persons who shall profess their intention of devoting themselves to study, whether preparatory to professional life, or such as will promote the interests of learning.

VI. That with regard to Students of the former class,

1. They be required to undertake such duties as may be assigned them, whether as Tutors, Praeectors, or Lecturers.

2. Those who are acting as Tutors shall be required to reside within the walls, and shall be responsible for their Pupils and for the maintenance of discipline generally, two at least of their body being elected annually as Censors.

3. Praeectors may also serve as Tutors, provided that they reside inside the walls.

4. Their appointment to Tutorships or Lectureships take effect for periods of six years only, but be renewable at the expiration of any such period.

5. On retirement after twelve years service as Tutors or Lecturers, they be entitled to retain their Studentships, but without any emoluments (or, with the emoluments to the amount of £100 a year); and that after eighteen years service, they may be entitled to the emoluments to the amount of £200 a year.

6. Those who shall have retired after at least eighteen years of service, as above mentioned, be allowed to marry without forfeiting the emoluments to which they would otherwise be entitled; but that, if they be instituted to an Ecclesiastical Benefice, or become possessed of property exceeding £500 a year (as defined in the existing Ordinance) they forfeit all further claim to emoluments.

7. Those who, not having so served for eighteen years, shall marry, or be instituted to such Benefice, or become possessed of such property (as aforesaid) shall forfeit their Studentships.

VII. That, with regard to Students of the latter class, who are preparing for professional life,

1. They be required to reside in Oxford for at least two years, and to engage in studies preparatory to such profession, and to proceed to Degrees in their respective Faculties (B.D., B.C.L., B.M., &c.)

2. Their election take effect for a period of three years only, but be renewable at its expiration for one other such period, if it shall appear to the Governing Body that they have pursued their studies in a satisfactory manner.

3. If they be instituted to an Ecclesiastical Benefice, or become possessed of property exceeding £500 a year, they shall forfeit their Studentships.

VIII. That, with regard to Students of the latter class, who are not preparing for professional life,

1. Their election take effect for periods of six years only, but be renewable at the expiration of any such period, if it shall appear to the Governing Body that they have pursued their studies in such a manner as to promote the interests of learning.

2. If re-elected after eighteen years of tenure, their election shall be either for life or for a term of years at the discretion of the Governing Body.

IX. That all Students continue to be members of the Governing Body so long as they are members of the Congregation of the University.

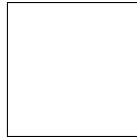
C. L. D.

12.9 The New Belfry of Christ Church, Oxford

Source: The New Belfry of Christ Church, Oxford; Notes by an Oxford Chiel

“A Thing of Beauty is a Joy for Ever.”

Quoted from
Endymion by John
Keats



East view of the new Belfry, Ch. Ch., as seen from the Meadow.

§ 1. On the etymological significance of the new Belfry, Ch. Ch.

The word ‘Belfry’ is derived from the French *bel*, ‘beautiful, becoming, meet,’ and from the German *frei*, ‘free, unfettered, secure, safe.’ Thus the word is strictly equivalent to ‘meat-safe,’ to which the new Belfry bears a resemblance so perfect as almost to amount to coincidence.

§ 2. On the style of the new Belfry, Ch. Ch.

The style is that which is usually known as ‘Early Debased’: very early, and remarkably debased.

§ 3. On the origin of the new Belfry, Ch. Ch.

Outsiders have enquired, with a persistence verging on personality, and with a recklessness scarcely distinguishable from insanity, to *whom* we are to attribute the first grand conception of the work. Was it the Treasurer, say they, who thus strove to force it on an unwilling House? Was it a Professor who designed this box, which, whether with a lid on or not, equally offends the eye? Or was it a Censor whose weird spells evoked the horrid thing, the bane of this and of succeeding generations? Until some reply is given to these and similar questions, they must and will remain—for ever—unanswered!

On this point Rumour has been unusually busy. Some say that the Governing Body evolved the idea in solemn conclave—the original motion being to adopt the Tower of St. Mark’s at Venice as a model: and that by a series of amendments it was reduced at last to a simple cube. Others say that the Reader in Chemistry suggested it as a form of crystal. There are others who affirm that the Mathematical Lecturer found it in the Eleventh Book of Euclid. In fact, there is no end to the various myths afloat on the subject. Most fortunately, we are in possession of the real story.

The true origin of the design is as follows: we have it on the very best authority.

The head of the House, and the architect, feeling a natural wish that their names should be embodied, in some conspicuous way, among the alterations then in progress, conceived the beautiful and unique idea of representing, by means of the new Belfry, a gigantic copy of a Greek Lexicon.¹ But, before the idea had been reduced to a working form, business took them both to London for a few days, and during their absence, somehow (*this* part of the business has never been satisfactorily explained) the whole thing was put into the hands of a wandering architect, who gave the name of Jeeby. As the poor man is now incarcerated at Hanwell, we will not be too hard upon his memory, but will only say that he professed to have originated the idea in a moment of inspiration, when idly contemplating one of those highly coloured, and mysteriously decorated chests which, filled with dried leaves from gooseberry bushes and quickset hedges, profess to supply the market with tea of genuine Chinese growth. Was there not something prophetic in the choice? What traveller is there, to whose lips, when first he enters that great educational establishment and gazes on this its newest decoration, the words do not rise unbidden—‘Thou tea-chest’?

It is plain then that Scott, the great architect to whom the work of restoration has been entrusted, is not responsible for this. He is *said* to have pronounced it a ‘casus belli’, which (with all deference to the Classical Tutors of the House, who insist that he meant merely ‘a case for a bell’) we believe to have been intended as a term of reproach.

The following lines are attributed to Scott:—

‘If thou wouldst view the Belfry aright,
Go visit it at the mirk midnight—
For the least hint of open day
Scares the beholder quite away.
When wall and window are black as pitch.
And there’s no deciding which is which;
When the dark Hall’s uncertain roof
In horror seems to stand aloof;
When corner and corner, alternately
Is wrought to an odious symmetry;
When distant Thames is heard to sigh
And shudder as he hurries by;
Then go, if it be worth the while.
Then view the Belfry’s monstrous pile.
And, home returning, soothly swear
“‘Tis more than Job himself could bear!’”

Parody on *The Lay of the Last Minstrel*
by Walter Scott

§ 4. On the chief architectural merit of the new Belfry, Ch. Ch.

Its chief merit is its Simplicity—a Simplicity so pure, so profound, in a word, so *simple*, that no other word will fitly describe it. The meagre outline, and baldness of detail, of the present Chapter, are adopted in humble imitation of this great feature.

¹The Editor confesses to a difficulty here. No sufficient reason has been adduced why a model of a Greek Lexicon should in any way ‘embody’ the names of the above illustrious individuals.

§ 5. On the other architectural merits of the new Belfry, Ch. Ch.

The Belfry has no other architectural merits.

§ 6. On the means of obtaining the best views of the new Belfry, Ch. Ch.

The visitor may place himself, in the first instance, at the opposite corner of the Great Quadrangle, and so combine, in one grand spectacle, the beauties of the North and West sides of the edifice. He will find that the converging lines forcibly suggest a vanishing point, and if that vanishing point should in its turn suggest the thought, ‘would that *it* were on the point of vanishing!’ he may perchance, like the Soldier in the Ballad, ‘lean upon his sword’ (if he has one: they are not commonly worn by modern tourists), ‘and wipe away a tear.’

He may then make the circuit of the Quadrangle, drinking in new visions of beauty at every step—

‘Ever charming, ever new,
When will the Belfry tire the view?’

Parody on *Grongar Hill* by John Dyer

as Dyer sings in his well-known poem, ‘Grongar Hill’—and, as he walks along from the Deanery towards the Hall staircase, and breathes more and more freely as the Belfry lessens on the view, the delicious sensation of relief, which he will experience when it has finally disappeared, will amply repay him for all he will have endured.

The *best* view of the Belfry is that selected by our Artist for the admirable frontispiece which he has furnished for the first Volume of the present work.² This view may be seen, in all its beauty, from the far end of Merton Meadow. From that point the imposing position (or, more briefly, the imposition) of the whole structure is thrillingly apparent. There the thoughtful passer-by, with four right angles on one side of him, and four anglers, who have no right to be there, on the other, may ponder on the mutability of human things, or recall the names of Euclid and Isaak Walton, or smoke, or ride a bicycle, or do anything that the local authorities will permit.

§ 7. On the impetus given to Art in England by the new Belfry, Ch. Ch.

The idea has spread far and wide, and is rapidly pervading all branches of manufacture. Already an enterprising maker of bonnet-boxes is advertising ‘the Belfry pattern’: two builders of bathing-machines at Ramsgate have followed his example: one of the great London houses is supplying ‘bar-soap’ cut in the same striking and symmetrical form: and we are credibly informed that Borwick’s Baking Powder and Thorley’s Food for Cattle are now sold in no other shape.

²On further consideration, it was deemed inexpedient to extend this work beyond the compass of one Volume.

§ 8. On the feelings with which old Ch. Ch. men regard the new Belfry.

Bitterly bitterly do all old Ch. Ch. men lament this latest lowest development of native taste. 'We see the Governing Body,' say they: 'where is the Governing *Mind?*' And Echo (exercising a judicious 'natural selection' for which even Darwin would give her credit) answers—'where?'

At the approaching 'Gaudy,' when a number of old Ch. Ch. men will be gathered together, it is proposed, at the conclusion of the banquet, to present to each guest a portable model of the new Belfry, tastefully executed in cheese.

§ 9. On the feelings with which resident Ch. Ch. men regard the new Belfry.

Who that has seen a Ch. Ch. man conducting his troop of 'lionesses' (so called from the savage and pitiless greed with which they devour the various sights of Oxford) through its ancient precincts, that has noticed the convulsive start and ghastly stare that always affect new-comers when first they come into view of the new Belfry, that has heard the eager questions with which they assail their guide as to the how, the why, the what for, and the how long, of this astounding phenomenon, can have failed to mark the manly glow which immediately suffuses the cheek of the hapless cicerone?

'Is it the glow of conscious pride—
Of pure ambition gratified—
That seeks to read in other eye
Something of its own ecstasy?
Or wrath, that worldlings should make fun
Of anything 'the House' has done?
Or puzzlement, that seeks in vain
The rigid mystery to explain?
Or is it shame that, knowing not
How to defend or cloak the blot—
The foulest blot on fairest face
That ever marred a noble place—
Burns with the pangs it will not own,
Pangs felt by loyal sons alone?'

§ 10. On the logical treatment of the new Belfry, Ch. Ch.

The subject has been reduced to three Syllogisms.

The first is in '*Barbara.*' It is attributed to the enemies of the Belfry.

Wooden buildings in the midst of stone-work are barbarous;
Plain rectangular forms in the midst of arches and decorations are
barbarous;
Ergo, The whole thing is ridiculous and revolting.

The second is in '*Celarent,*' and has been most carefully composed by the friends of the Belfry.

The Governing Body would conceal this appalling structure, if they could;
 The Governing Body would conceal the feelings of chagrin with which they now regard it, if they could;
Ergo, . . . (MS. unfinished.)

The third Syllogism is in ‘*Festino*,’ and is the joint composition of the friends and the enemies of the Belfry.

To restore the character of Ch. Ch., a tower must be built;
 To build a tower, ten thousand pounds must be raised;
Ergo, No time must be lost.

These three Syllogisms have been submitted to the criticism of the Professor of Logic, who writes that ‘he fancies he can detect some slight want of logical sequence in the Conclusion of the third.’ He adds that, according to *his* experience of life, when people thus commit a fatal blunder in child-like confidence that money will be forthcoming to enable them to set it right, in ten cases out of nine the money is *not* forthcoming. This is a large percentage.

§ 11. On the dramatic treatment of the new Belfry, Ch. Ch.

Curtain rises, discovering the Dean, Canons, and Students, seated round a table, on which the mad Architect, fantastically dressed, and wearing a Fool’s cap and bells, is placing a square block of deal.

Dean (as Hamlet). Methinks I see a Bell-tower!

Canons (looking wildly in all directions). Where, my good Sir?

Dean. In my mind’s eye—(*Knocking heard*) Who’s there?

Fool. A spirit, a spirit; he says his name’s poor Tom.

Enter THE GREAT BELL, disguised as a mushroom.

Great Bell. Who gives anything to poor Tom? whom the foul fiend hath led through bricks and through mortar, through rope and windlass, through plank and scaffold; that hath torn down his balustrades, and torn up his terraces; that hath made him go as a common pedlar, with a wooden box upon his back. Do poor Tom some charity. Tom’s a-cold.

Rafters, and planks, and such small deer,
 Shall be Tom’s food for many a year.

Censor. I feared it would come to this.

Dean (as King Lear). The little dons and all, Tutor, Reader, Lecturer—see, they bark at me!

Censor. His wits begin to unsettle.

Dean (as Hamlet). Do you see yonder box, that’s almost in shape of a tea-caddy?

Censor. By its mass, it is like a tea-caddy, indeed.

Dean. Methinks it is like a clothes-horse.

Censor. It is backed like a clothes-horse.

Dean. Or like a tub.

Censor. Very like a tub.

Dean. They fool me to the top of my bent.

Parody on *Hamlet* by William Shakespeare

Parody on *King Lear* by William Shakespeare

Enter from opposite sides THE BELFRY *as* Box, *and* THE BODLEY LIBRARIAN *as* Cox.

Librarian. Who are you, Sir?

Belfry. If it comes to that. Sir, who are you?

They exchange cards.

Librarian. I should feel obliged to you if you could accommodate me with a more protuberant Bell-tower, Mr. B. The one you have now seems to me to consist of corners only, with nothing whatever in the middle.

Belfry. Anything to accommodate you, Mr. Cox. (*Places jauntily on his head a small model of the skeleton of an timbrella, upside down.*)

Librarian. Ah, tell me—in mercy tell me—have you such a thing as a redeeming feature, or the least mark of artistic design, about you?

Belfry. No!

Librarian. Then you are my long-lost doorscraper!

They rush into each other's arms.

Enter TREASURER *as* Ariel. *Solemn music.*

SONG AND CHORUS.

Five fathom square the Belfry frowns;
All its sides of timber made;
Painted all in greys and browns;
Nothing of it that will fade.
Christ Church may admire the change—
Oxford thinks it sad and strange.
Beauty's dead! Let's ring her knell.
Hark! now I hear them—ding-dong, bell.

Parody on *Box and Cox* by John Maddison Morton,
Cox and Box by F. C. Burnand

Parody on *The Tempest* by William Shakespeare

§ 12. On the Future of the new Belfry, Ch. Ch.

The Belfry has a great Future before it—at least, if it has not, it has very little to do with Time at all, its Past being (fortunately for our ancestors) a nonentity, and its Present a blank. The advantage of having been born in the reign of Queen Anne, and of having died in that or the subsequent reign, has never been so painfully apparent as it is now.

Credible witnesses assert that, when the bells are rung, the Belfry must come down. In that case considerable damage (the process technically described as 'pulverisation') must ensue to the beautiful pillar and roof which adorn the Hall staircase. But the architect is prepared even for this emergency. 'On the first symptom of deflection' (he writes from Hanwell), 'let the pillar be carefully removed and placed, with its superstruent superstructure' (we cannot forbear calling attention to this beautiful phrase), 'in the centre of "Mercury." There it will constitute a novel and most unique feature of the venerable House.'

'Yea, and the Belfry shall serve to generations yet unborn as an aërial Ticket-office,' so he cries with his eye in a fine frenzy rolling, 'where the Oxford and London Balloon shall call ere it launch forth on its celestial voyage—and where expectant passengers shall while away the time with the latest edition of "Bell's Life"!'

§ 13. On the Moral of the new Belfry, Ch. Ch.

The moral position of Christ Church is undoubtedly improved by it. 'We have been attacked, and perhaps not without reason, on the Bread-and-Butter question,' she remarks to an inattentive World (which heeds her not, but prates on of Indirect Claims and of anything but indirect Claimants), 'we have been charged—and, it must be confessed, in a free and manly tone—with shortcomings in the payment of the Greek Professor, but who shall say that we are not all "on the square" *now*?'

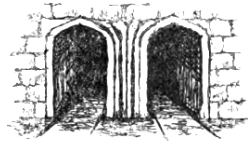
This, however, is not *the* Moral of the matter. Everything has a moral, if you choose to look for it. In Wordsworth, a good half of every poem is devoted to the Moral: in Byron, a smaller proportion: in Tupper, the whole. Perhaps the most graceful tribute we can pay to the genius of the last-named writer, is to entrust to him, as an old member of Christ Church, the conclusion of this Monograph.

'Look on the Quadrangle of Christ Church, squarely, for is it not a Square?
And a Square recalleth a Cube; and a Cube recalleth the Belfry;
And the Belfry recalleth a Die, shaken by the hand of the gambler;
Yet, once thrown, it may not be recalled, being, so to speak, irrevocable.
There it shall endure for ages, treading hard on the heels of the Sublime—
For it is but a step, saith the wise man, from the Sublime unto the Ridiculous:
And the Simple dwelleth midway between, and shareth the qualities of either.'

12.10 The Vision of the Three T's. A Threnody

Source: The Vision of the Three T's. A Threnody; Notes by an Oxford Chiel
Parody on *The Compleate Angler* by Izaak Walton

"Call you this, baching of your friends?"



West view of the new Tunnel.

Chapter I

A Conference (held on the Twentieth of March, 1873)¹ betwixt an Angler, a Hunter, and a Professor; concerning anglings and the beautifying of Thomas his Quadrangle, The Ballad of 'The Wandering Burgess.'

PISCATOR, VENATOR.

PISCATOR. My honest Scholar, we are now arrived at the place whereof I spake, and trust me, we shall have good sport. How say you? Is not this a noble Quadrangle we see around us? And be not these lawns trimly kept, and this lake marvellous clear?

VENATOR. So marvellous clear; good Master, and withal so brief in compass, that methinks, if any fish of a reasonable bigness were therein, we must perforce espy it. I fear me there is none.

PISC. The less the fish, dear Scholar, the greater the skill in catching of it. Come, let's sit down, and, while we unpack the fishing-gear, I'll deliver a few remarks, both as to the fish to be met with hereabouts, and the properest method of fishing.

But you are to note first (for, as you are pleased to be my Scholar, it is but fitting you should imitate my habits of close observation) that the margin of this lake is so deftly fashioned that each portion thereof is at one and the same distance from that tumulus which rises in the centre.

VEN. O' my word 'tis so! You have indeed a quick eye, dear Master, and a wondrous readiness of observing.

PISC. Both may be yours in time, my Scholar, if with humility and patience you follow me as your model.

VEN. I thank you for that hope, great Master! But ere you begin your discourse, let me enquire of you one thing touching this noble Quadrangle,—Is all we see of a like antiquity? To be brief, think you that those two tall archways, that excavation in the parapet, and that quaint wooden box, belong to the ancient design of the building, or have men of our day thus sadly disfigured the place?

¹paranthesis only in table of contents

PISC. I doubt not they are new, dear Scholar. For indeed I was here but a few years since, and saw naught of these things. But what book is that I see lying by the water's edge?

VEN. A book of ancient ballads, and truly I am glad to see it, as we may herewith beguile the tediousness of the day, if our sport be poor, or if we grow weary.

PISC. This is well thought of. But now to business. And first I'll tell you somewhat of the fish proper to these waters. The Commoner kinds we may let pass: for though some of them be easily Plucked forth from the water, yet are they so slow, and withal have so little in them, that they are good for nothing, unless they be crammed up to the very eyes with such stuffing as comes readiest to hand. Of these the Stickle-back, a mighty slow fish, is chiefest, and along with him you may reckon the Fluke, and divers others: all these belong to the 'Mullet' genus, and be good to play, though scarcely worth examination.

I will now say somewhat of the Nobler kinds, and chiefly of the Gold-fish, which is a species highly thought of, and much sought after in these parts, not only by men, but by divers birds, as for example the King-fishers: and note that wheresoever you shall see those birds assemble, and but few insects about, there shall you ever find the Gold-fish most lively and richest in flavour; but wheresoever you perceive swarms of a certain gray fly, called the Dun-fly, there the Gold-fish are ever poorer in quality, and the King-fishers seldom seen.

A good Perch may sometimes be found hereabouts: but for a good fat Plaice (which is indeed but a magnified Perch) you may search these waters in vain. They that love such dainties must needs betake them to some distant Sea.

But for the manner of fishing, I would have you note first that your line be not thicker than an ordinary bell-rope: for look you, to flog the water, as though you laid on with a flail, is most preposterous, and will surely scare the fish. And note further, that your rod must by no means exceed ten, or at the most twenty, pounds in weight, for—

VEN. Pardon me, my Master, that I thus break in on so excellent a discourse, but there now approaches us a Collegian, as I guess him to be, from whom we may haply learn the cause of these novelties we see around us. Is not that a bone which, ever as he goes, he so cautiously waves before him?

Enter PROFESSOR.

PISC. By his reverend aspect and white hair, I guess him to be some learned Professor. I give you good day, reverend Sir! If it be not ill manners to ask it, what bone is that you bear about with you? It is, methinks, a humorous whimsy to chuse so strange a companion.

PROF. Your observation, Sir, is both anthropolitically and ambidexterously opportune: for this is indeed a *Humerus* I carry with me. You are, I doubt not, strangers in these parts, for else you would surely know that a Professor doth ever carry that which most aptly sets forth his Profession. Thus, the Professor of Uniform Rotation carries with him a wheelbarrow—the Professor of Graduated Scansion a ladder—and so of the rest.

VEN. It is an inconvenient and, methinks, an ill-advised custom.

PROF. Trust me, Sir, you are absolutely and amorphologically mistaken: yet time would fail me to show you wherein lies your error, for indeed I must now leave you, being bound for this great performance of music, which even at this distance salutes your ears.

PISC. Yet, I pray you, do us one courtesy before you go: and that shall be to resolve a question, whereby my friend and I are sorely exercised.

PROF. Say on. Sir, and I will e'en answer you to the best of my poor ability.

PISC. Briefly, then, we would ask the cause for piercing the very heart of this fair building with that uncomely tunnel, which is at once so ill-shaped, so ill-sized, and so ill-lighted.

PROF. Sir, do you know German?

PISC. It is my grief, Sir, that I know no other tongue than mine own.

PROF. Then, Sir, my answer is this, *Warum nicht?*

PISC. Alas, Sir, I understand you not.

PROF. The more the pity. For now-a-days all that is good comes from the German. Ask our men of science: they will tell you that any German book must needs surpass an English one. Aye, and even an English book, worth naught in this its native dress, shall become, when rendered into German, a valuable contribution to Science.

VEN. Sir, you much amaze me.

PROF. Nay, Sir, I'll amaze you yet more. No learned man doth now talk, or even so much as cough, save only in German. The time has been, I doubt not, when an honest English 'Hem!' was held enough, both to clear the voice and rouse the attention of the company, but now-a-days no man of Science, that setteth any store by his good name, will cough otherwise than thus, *Ah! Cuck! Muoh!*

VEN. 'Tis wondrous. But, not to stay you further, wherefore do we see that ghastly gash above us, hacked, as though by some wanton school-boy, in the parapet adjoining the Hall?

PROF. Sir, do *you* know German?

VEN. Believe me, No.

PROF. Then, Sir, I need but ask you this, *Wie befinden Sie Sich?*

VEN. I doubt not. Sir, but you are in the right on't.

PISC. But, Sir, I will by your favour ask you one other thing, as to that unseemly box that blots the fair heavens above. Wherefore, in this grand old City, and in so conspicuous a place, do men set so hideous a thing?

PROF. Be you mad, Sir? Why this is the very climacteric and coronal of all our architectural aspirations! In all Oxford there is naught like it!

PISC. It joys me much to hear you say so.

PROF. And, trust me, to an earnest mind, the categorical evolution of the Abstract, ideologically considered, must infallibly develop itself in the parallelpipedisation of the Concrete! And so farewell. *[Exit*

PROFESSOR.

PISC. He is a learned man, and methinks there is much that is sound in his reasoning.

VEN. It is *all* sound, as it seems to me. But how say you? Shall I read you one of these ballads? Here is one called 'The Wandering Burgess,' which (being forsooth a dumpish ditty) may well suit the ears of us whose eyes are oppressed with so dire a spectacle.

PISC. Read on, good Scholar, and I will bait our hooks the while.

[VENATOR readeth

The Wandering Burgeff.

Our Willie had been sae lang awa'
Frae bonnie Oxford toon,
The townsfolk they were greeting a'
As they went up and doon.
He hadna been gane a year, a year,
A year but barely ten,
When word cam unto Oxford toon.
Our Willie wad come agen.
Willie he stude at Thomas his Gate,
And made a lustie din;
And who so blithe as the gate-porter
To rise and let him in?
'Now enter Willie, now enter Willie,
And look around the place.
And see the pain that we have ta'en
Thomas his Quad to grace.'
The first look that our Willie cast,
He leuch loud laughters three,
The neist look that our Willie cast,
The tear blindit his e'e.
Sae square and stark the Tea-chest frowned
Athwart the upper air,
But when the Trench our Willie saw,
He thocht the Tea-chest fair.
Sae murderous-deep the Trench did gape
The parapet aboon.
But when the Tunnel Willie saw,
He loved the Trench eftsoon.
'Twas mirk beneath the tane archway,
'Twas mirk beneath the tither;
Ye wadna ken a man therein.
Though it were your ain dear brither.
He turned him round and round about.
And looked upon the Three;
And dismal grew his countenance.
And drumlie grew his e'e.
'What cheer, what cheer, my gallant knight?'
The gate-porter 'gan say.
'Saw ever ye sae fair a sight
As ye have seen this day?'
'Now haud your tongue of your prating, man:
Of your prating now let me be.
For, as I'm true knight, a fouler sight
I'll never live to see.
'Before I'd be the ruffian dark

Who planned this ghastly show,
I'd serve as secretary's clerk
To Ayrton or to Lowe.
'Before I'd own the loathly thing
That Christ Church Quad reveals,
I'd serve as shoeblick's underling
To Odger and to Beales!'

Chapter II

A Conference with one distraught: who discourseth strangely of many things.

PISCATOR, VENATOR.

PISCATOR. 'Tis a marvellous pleasant ballad. But look you, another Collegian draws near. I wot not of what station he is, for indeed his apparel is new to me.

VENATOR. It is compounded, as I take it, of the diverse dresses of a jockey, a judge, and a North American Indian.

Enter LUNATIC.

PISC. Sir, may I make bold to ask your name?

LUN. With all my heart. Sir. It is Jeeby, at your service.

PISC. And wherefore (if I may further trouble you, being as you see a stranger) do you wear so gaudy, but withal so ill-assorted, a garb?

LUN. Why, Sir, I'll tell you. Do you read the *Morning Post*?

PISC. Alas, Sir, I do not.

LUN. 'Tis pity of your life you do not. For, look you, not to read the *Post*, and not to know the newest and most commended fashions, are but one and the same thing. And yet this raiment, that I wear, is *not* the newest fashion. No, nor has it ever been, nor will it ever be, the fashion.

VEN. I can well believe it.

LUN. And therefore 'tis. Sir, that I wear it. 'Tis but a badge of greatness. My deeds you see around you. *Si monumentum quaeris, circumspice!* You know Latin?

VEN. Not I, Sir! It shames me to say it.

LUN. You are then (let me roundly tell you) *monstrum horrendum, informe, ingens, cui lumen ademptum!*

VEN. Sir, you may tell it me roundly—or, if you list, squarely—or again, triangularly. But if, as you affirm, I see your deeds around me, I would fain know which they be.

LUN. Aloft, Sir, stands the first and chiefest! That soaring minaret! That gorgeous cupola! That dreamlike effulgence of—

VEN. That wooden box?

LUN. The same. Sir! 'Tis mine!

VEN. (*after a pause*). Sir, it is worthy of you.

LUN. Lower now your eyes by a hairsbreadth, and straight you light upon my *second* deed. Oh Sir, what toil of brain, what cudgelling of forehead, what rending of locks, went to the fashioning of it!

VEN. Mean you that newly-made gap?

LUN. I do, Sir. 'Tis mine!

VEN. (*after a long pause*). What else, Sir? I would fain know the worst.

Quoted from the epitaph on the tomb of Christopher Wren in St Paul's Cathedral

Quoted from *Aeneid* by Virgil

LUN. (*wildly*). It comes, it comes! My *third* great deed! Lend, lend your ears—your nose—any feature you can least conveniently spare! See you those twin doorways? Tall and narrow they loom upon you—severely simple their outline—massive the masonry between—black as midnight the darkness within! Sir, of what do they mind you?

VEN. Of vaults, Sir, and of charnel-houses.

LUN. This is a goodly fancy, and yet they are not vaults. No, Sir, you see before you a Railway Tunnel!

VEN. 'Tis very strange!

LUN. But no less true than strange. Mark me. 'Tis love, 'tis love, that makes the world go round! Society goes round of itself. In circles. Military society in military circles. Circles must needs have centres. Military circles military centres.

VEN. Sir, I fail to see—

LUN. Lo you, said our Rulers, Oxford shall be a military centre! Then the chiefest of them (glad in countenance, yet stony, I wot, in heart) so ordered it by his underling (I remember me not his name, yet is he one that can play a card well, and so serveth meetly the behests of that mighty one, who played of late in Ireland a game of cribbage such as no man, who saw it, may lightly forget); and then. Sir, this great College, ever loyal and generous, gave this Quadrangle as a Railway Terminus, whereby the troops might come and go. By that Tunnel, Sir, the line will enter.

PISC. But, Sir, I see no rails.

LUN. Patience, good Sir! For railing we look to the Public. The College doth but furnish sleepers.

PISC. And the design of that Tunnel is—

LUN. Is mine, Sir! Oh, the fancy! Oh, the wit! Oh, the rich vein of humour! When came the idea? 'T' the mirk midnight. Whence came the idea? From a cheese-scoop! How came the idea? In a wild dream. Hearken, and I will tell. Form square, and prepare to receive a canonry! All the evening long I had seen lobsters marching around the table in unbroken order. Something sputtered in the candle—something hopped among the teathings—something pulsated, with an ineffable yearning, beneath the enraptured hearthrug! My heart told me something was coming—and something came! A voice cried 'Cheese-scoop!' and the Great Thought of my life flashed upon me! Placing an ancient Stilton cheese, to represent this venerable Quadrangle, on the chimney-piece, I retired to the further end of the room, armed only with a cheese-scoop, and with a dauntless courage awaited the word of command. Charge, Cheesetaster, charge! On, Stilton, on! With a yell and a bound I crossed the room, and plunged my scoop into the very heart of the foe! Once more! Another yell—another bound—another cavity scooped out! The deed was done!

VEN. And yet, Sir, if a cheese-scoop were your guide, these cavities must needs be circular.

LUN. They were so at the first—but, like the fickle Moon, my guardian satellite, I change as I go on. Oh, the rapture, Sir, of that wild moment! And did I reveal the Mighty Secret! Never, never! Day by day, week by week, behind a wooden screen, I wrought out that vision of beauty. The world came and went, and knew not of it. Oh, the ecstasy, when yesterday the Screen was swept away, and the Vision was a Reality! I stood by Tom-Gate, in that triumphal hour, and watched the passers by. They stopped! They stared!! They started!!! A

thrill of envy paled their cheeks! Hoarse inarticulate words of delirious rapture rose to their lips! What withheld me—what, I ask you candidly, withheld me from leaping upon them, holding them in a frantic clutch, and yelling in their ears ‘’Tis mine, ’tis mine!’

PISC. Perchance, the thought that—

LUN. You are right, Sir. The thought that there is a lunatic asylum in the neighbourhood, and that two medical certificates—but I will be calm. The deed is done. Let us change the subject. Even now a great musical performance is going on within. Wilt hear it? The Chapter give it—ha, ha! They give it!

PISC. Sir, I will very gladly be their guest.

LUN. Then, guest, you have not guessed all! You shall be bled, Sir, ere you go! ’Tis love, ’tis love, that makes the hat go round! Stand and deliver! Vivat Regina! No money returned!

PISC. How mean you, Sir?

LUN. I said, Sir, ‘No money returned!’

PISC. And *I* said, Sir, ‘How mean—’

LUN. Sir, I am with you. You have heard of Bishops’ Charges? Sir, what are Bishops to Chapters? Oh, it goes to my heart to see these quaint devices! First, sixpence for use of a doorscraper. Then, fivepence for right of choosing by which archway to approach the door. Then, a poor threepence for turning of the handle. Then, a shilling a head for admission, and half-a-crown for every two-headed man. Now this, Sir, is manifestly unjust: for you are to note that the double of a shilling—

PISC. I do surmise, Sir, that the case is rare.

LUN. And then, Sir, five shillings each for care of your umbrella! Hence comes it that each visitor of ready wit hides his umbrella, ere he enter, either by swallowing it (which is perilous to the health of the inner man), or by running it down within his coat, even from the nape of the neck, which indeed is the cause of that which you may have observed in me, namely, a certain stiffness in mine outward demeanour. Farewell, gentlemen, I go to hear the music. [*Exit* LUNATIC.

Quoted from typical ending of playbills

Chapter III

A Conference of the Hunter with a Tutor, whilom the Angler his eyes be closed in sleep. The Angler awaking relateth his Vision, The Hunter chaunteth ‘A Bachanalian Ode’

PISCATOR, VENATOR, TUTOR.

VENATOR. He hath left us, but methinks we are not to lack company, for look you, another is even now at hand, gravely apparelled, and bearing upon his head Hoffmann’s Lexicon in four volumes folio.

PISCATOR. Trust me, this doth symbolise his craft. Good morrow. Sir. If I rightly interpret these that you bear with you, you are a teacher in this learned place?

TUTOR. I am, Sir, a Tutor, and profess the teaching of divers unknown tongues.

PISC. Sir, we are happy to have your company, and, if it trouble you not too much, we would gladly ask (as indeed we did ask another of your learned body, but understood not his reply) the cause of these new things we see around

us, which indeed are as strange as they are new, and as unsightly as they are strange.

TUTOR. Sir, I will tell you with all my heart. You must know then (for herein lies the pith of the matter) that the motto of the Governing Body is this:—

'Diruit, ædificat, mutat quadrata rotundis;' which I thus briefly expound.

Diruit. *'It teareth down.'* Witness that fair opening which, like a glade in an ancient forest, we have made in the parapet at the sinistral extremity of the Hall. Even as a tree is the more admirable when the hewer's axe hath all but severed its trunk—or as a row of pearly teeth, enshrined in ruby lips, are yet the more lovely for the loss of one—so, believe me, this our fair Quadrangle is but enhanced by that which foolish men in mockery call 'the Trench.'

Ædificat. *'It buildeth up.'* Witness that beauteous Belfry which, in its ethereal grace, seems ready to soar away even as we gaze upon it! Even as a railway-porter moves with an unwonted majesty when bearing a portmanteau on his head—or as I myself (to speak modestly) gain a new beauty from these massive tomes—or as ocean charms us most when the rectangular bathing-machine breaks the monotony of its curving marge—so are we blessed by the presence of that which an envious world hath dubbed 'the Tea-chest.'

Mutat quadrata rotundis. *'It exchangeth square things for round.'* Witness that series of square-headed doors and windows, so beautifully broken in upon by that double archway! For indeed, though simple (*'simplex munditiis,'* as the poet saith) it is matchless in its beauty. Had those twin archways been greater, they would but have matched those at the corners of the Quadrangle—had they been less, they would but have copied, with an abject servility, the doorways around them. In such things, it is only a vulgar mind that thinks of a *match*. The subject is low. *We* seek the Unique, the Eccentric! *We* glory in this two-fold excavation, which scoffers speak of as 'the Tunnel'

VEN. Come, Sir, let me ask you a pleasant question. Why doth the Governing Body chuse for motto so trite a saying? It is, if I remember me aright, an example of a rule in the Latin Grammar.

TUTOR. Sir, if we are not grammatical, we are nothing!

VEN. But for the Belfry, Sir. Sure none can look on it without an inward shudder?

TUTOR. I will not gainsay it. But you are to note that it is not permanent. This shall serve its time, and a fairer edifice shall succeed it.

VEN. In good sooth I hope it. Yet for the time being it doth not, in that it is not permanent, the less disgrace the place. Drunkenness, Sir, is not permanent, and yet is held in no good esteem.

TUTOR. 'Tis an apt simile.

VEN. And for these matchless arches (as you do most truly call them) would it not savour of more wholesome Art, had they matched the doorways, or the gateways?

TUTOR. Sir, do you study the Mathematics?

VEN. I trust, Sir, I can do the Rule of Three as well as another: and for Long Division—

TUTOR. You must know, then, that there be three Means treated of in Mathematics. For there is the Arithmetic Mean, the Geometric, and the Harmonic. And note further, that a Mean is that which falleth between two magnitudes. Thus it is, that the entrance you here behold falleth between the magnitudes of

Quoted from *Epistle 1, Book 1* by Horace

the doorways and the gateways, and is in truth the Non-harmonic Mean, the Mean Absolute. But that the Mean, or Middle, is ever the safer course, we have a notable ensample in Egyptian history, in which land (as travellers tell us) the Ibis standeth ever in the midst of the river Nile, so best to avoid the onslaught of the ravenous alligators, which infest the banks on either side: from which habit of that wise bird is derived the ancient maxim '*Medio tutissimus Ibis.*'

VEN. But wherefore be they *two*? Surely *one* arch were at once more comely and more convenient?

TUTOR. Sir, so long as public approval be won, what matter for the arch? But that they are two, take this as sufficient explication—that they are too tall for doorways, too narrow for gateways; too light without, too dark within; too plain to be ornamental, and withal too fantastic to be useful. And if this be not enough, you are to note further that, were it all one arch, it must needs cut short one of those shafts which grace the Quadrangle on all sides—and that were a monstrous and unheard-of thing, in good sooth, look you.

VEN. In good sooth. Sir, if I look, I cannot miss seeing that there be three such shafts already cut short by doorways: so that it hath fair ensample to follow.

TUTOR. Then will I take other ground, Sir, and affirm (for I trust I have not learned Logic in vain) that to cut short the shaft were a common and vulgar thing to do. But indeed a single arch, where folk might smoothly enter in, were wholly adverse to Nature, who formeth never a mouth without setting a tongue as an obstacle in the midst thereof.

VEN. Sir, do you tell me that the block of masonry, between the gateways, was left there of set purpose, to hinder those that would enter in?

TUTOR. Trust me, it was even so; for firstly, we may thereby more easily controul the entering crowds ('*divide et impera*' say the Ancients), and secondly, in this matter a wise man will ever follow Nature. Thus, in the centre of a hall-door we usually place an umbrella-stand—in the midst of a wicket-gate, a milestone—what place so suited for a watchbox as the centre of a narrow bridge?—Yea, and in the most crowded thoroughfare, where the living tide flows thickest, there, in the midst of all, the true *ideal* architect doth ever plant an obelisk! You may have observed this?

VEN. (*much bewildered*). I *may* have done so, worthy Sir: and yet, methinks—

TUTOR. I must now bid you farewell; for the music, which I would fain hear, is even now beginning.

VEN. Trust me, Sir, your discourse hath interested me hugely.

TUTOR. Yet it hath, I fear me, somewhat wearied your friend, who is, as I perceive, in a deep slumber.

VEN. I had partly guessed it, by his loud and continuous snoring.

TUTOR. You had best let him sleep on. He hath, I take it, a dull fancy, that cannot grasp the Great and the Sublime. And so farewell: I am bound for the music.

[*Exit* TUTOR.]

VEN. I give you good day, good Sir. Awake, my Master! For the day weareth on, and we have caught no fish.

PISC. Think not of fish, dear Scholar, but hearken! Trust me, I have seen such things in my dreams, as words may hardly compass! Come, Sir, sit down, and I'll unfold to you, in such poor language as may best suit both my capacity and the briefness of our time.

The Vision of the Three T's.

Methought that, in some byegone Age, I stood beside the waters of Mercury, and saw, reflected on its placid face, the grand old buildings of the Great Quadrangle: near me stood one of portly form and courtly mien, with scarlet gown, and broad-brimmed hat whose strings, wide-fluttering in the breezeless air, at once defied the laws of gravity and marked the reverend Cardinal! 'Twas Wolseys self! I would have spoken, but he raised his hand and pointed to the cloudless sky, from whence deep-muttering thunders now began to roll. I listened in wild terror.

Darkness gathered overhead, and through the gloom sobbingly down-floated a gigantic Box! With a fearful crash it settled upon the ancient College, which groaned beneath it, while a mocking voice cried 'Ha! Hal' I looked for Wolsey: he was gone. Down in those glassy depths lay the stalwart form, with scarlet mantle grandly wrapped around it: the broad-brimmed hat floated, boatlike, on the lake, while the strings with their complex tassels, still defying the laws of gravity, quivered in the air, and seemed to point a hundred fingers at the horrid Belfry! Around, on every side, spirits howled in the howling blast, blatant, stridulous!

A darker vision yet! A black gash appeared in the shuddering parapet! Spirits flitted hither and thither with averted face, and warning finger pressed to quivering lips!

Then a wild shriek rang through the air, as, with volcanic roar, two murky chasms burst upon the view, and the ancient College reeled giddily around me!

Spirits in patent-leather boots stole by on tiptoe, with hushed breath and eyes of ghastly terror! Spirits with cheap umbrellas, and unnecessary goloshes, hovered over me, sublimely pendant! Spirits with carpet-bags, dressed in complete suits of dittos, sped by me, shrieking 'Away! Away! To the arrowy Rhine! To the rushing Guadalquiver! To Bath! To Jericho! To anywhere!'

Stand here with me and gaze. From this thrice-favoured spot, in one rapturous glance gather in, and brand for ever on the tablets of memory, the Vision of the Three T's! To your left frowns the abysmal blackness of the tenebrous Tunnel. To your right yawns the terrible Trench. While far above, away from the sordid aims of Earth and the petty criticisms of Art, soars, tetragonal and tremendous, the tintinabulatory Tea-chest! Scholar, the Vision is complete!

VEN. I am glad on't: for in good sooth I am a-hungred. How say you, my Master? Shall we not leave fishing, and fall to eating presently? And look you, here is a song, which I have chanced on in this book of ballads, and which methinks suits well the present time and this most ancient place.

PISC. Nay then, let's sit down. We shall I warrant you, make a good honest wholesome hungry nuncheon with a piece of powdered beef and a radish or two that I have in my fish-bag. And you shall sing us this same song as we eat.

VEN. Well then, I will sing: and I trust it may content you as well as your excellent discourse hath oft profited me.

[VENATOR *chaunteth*

A Bacchanalian Ode.

Here's to the Freshman of bashful eighteen!
Here's to the Senior of twenty!
Here's to the youth whose moustache can't be seen!
And here's to the man who has plenty!

Parody on *Here's to the Maiden of Bashful fifteen* by Richard Brinsley Sheridan

Let the men Pass!
 Out of the mass
 I'll warrant we'll find you some fit for a Class!
 Here's to the Censors, who symbolise Sense,
 Just as Mitres incorporate Might, Sir!
 To the Bursar, who never expands the expense!
 And the Readers, who always do right, Sir!
 Tutor and Don,
 Let them jog on!
 I warrant they'll rival the centuries gone!
 Here's to the Chapter, melodious crew!
 Whose harmony surely *intends* well:
 For, though it commences with 'harm,' it is true,
 Yet its motto is 'All's well that ends well'!
 'Tis love, I'll be bound.
 That makes it go round!
 For 'In for a penny is in for a pound'!
 Here's to the Governing Body, whose Art
 (For they're Masters of Arts to a man. Sir!)
 Seeks to beautify Christ Church in every part,
 Though the method seems hardly to answer!
 With three T's it is graced—
 Which letters are placed
 To stand for the names of Tact, Talent, and Taste!

PISC. I thank you, good Scholar, for this piece of merriment, and this Song, which was well humoured by the maker, and well rendered by you.

VEN. Oh me! Look you. Master! A fish, a fish!

PISC. Then let us hook it.

[*They hook it.*]

12.11 Objections, Submitted to the Governing Body of Christ Church, Oxford

Source: printed 1873

Against Certain Proposed Alterations in the Great Quadrangle

Having little confidence in the practical effect of a spoken argument, and still less in my own power of delivering one, I have adopted this method of laying before the Governing Body of Christ Church certain objections, which appear to me well-founded and worthy of consideration, against the proposed alterations in the terrace of the Great Quadrangle.

The alterations, to which I refer, are three. (1) The lowering of the terrace. (2) The narrowing of it. (3) The substitution of a grass slope for the existing stone wall.

(1) The lowering of the terrace is advocated on one ground only, so far as I know—that the lower portions of the shafts are at present concealed by the gravel. This reason would, to my mind, be quite enough to justify the change, provided no good reason could be urged against it; but this is not the case.

The objection, which I have to urge against it, can hardly be fairly appreciated except by looking at the thing itself. Let any one, who wishes to form an opinion for himself about the matter, stand near Tom Gate and carry his eye round the boundary, to the lawn, formed by the terrace-wall: he will see that, in proportion to its great extent, it is a *very* low wall already—only just enough to make a definite boundary to the grass. Imagine it reduced, and it ceases to be definite wall at all—it will look more like an accidental difference of level, between two parts of the Quadrangle, which had originally been one and the same plane surface. This evil would be intensified by substituting grass slope for wall: but this point I shall discuss further on, where it will be necessary, on account of the inevitable ‘cross-division’ of subject, to repeat part of what I have said here.

I think it not improbable that those who originally laid out the Quadrangle intended, at first, that the lower parts of the shafts should be visible, but that, finding the terrace to be too low for effect, and being prevented from lowering the central lawn by the necessity of keeping to the level of the street outside, they decided on sacrificing part of the shafts to preserve the general symmetry of the Quadrangle.

(2) The narrowing of the terrace is recommended on two grounds only, so far as I have heard: one, that it will make the central lawn larger, and therefore more handsome; the other, that it is in accordance with the original design of the Quadrangle.

As to the first reason, it would be little to say (though even *this* would be worth attention), that, in proportion as it makes the lawn *more* handsome, it makes the terrace *less* handsome. In point of fact, the two things are not at all in proportion—the loss enormously exceeds the gain: it would require a very large change in the area of the lawn to be perceptible to the eye, while a very little taken off the terrace would be missed at once. No one, I think, who has seen the terrace full of people (as at the time of the boat-races, &c.), will seriously

maintain that it looks *too* broad, or that it has on these occasions any room to spare.

As to the second, I confess to seeing very little force in the general assertion that our ancestors were necessarily better judges of such matters than living men, or that what was thought right in a former age is necessarily (however the circumstances may have changed) right now.

I will not dwell much on *positive* arguments in favour of keeping to the present width, for I hold that the *onus probandi* lies altogether on those who are advocates for reducing it.

(3) The substitution of grass slope for wall.

There are three Quadrangles in Oxford which have raised terraces: Christ Church, Worcester (in which the terrace runs round two sides only), and Keble. Of these, the last two have grass slopes leading up to the terrace; ours is at present unique in having a wall instead. To my mind, the variety is in itself an advantage to Oxford, which would lose much of its present beauty if all the Colleges were built and ornamented on the same principle, however good that principle might be in itself.

But even if this argument be set aside, and if it be urged that the improvement in appearance overrides the objection in making the three terraced Quadrangles uniform, is it so certain that a grass slope *would* improve our Quadrangle? In Keble, the difference of level, between the terraces and the central lawn, is considerably greater than in Christ Church: in Worcester, it is fully double. In both these instances, it is high enough to form a well marked boundary to the central lawn, and in Worcester the great extent of bank derives much of its effect from the shrubs and creepers which cover the buildings above it. All this would be lost in our large Quadrangle: shrubs and creepers, which suit well the quiet terraces of Worcester, would be out of place in a Quadrangle which is a thoroughfare in all directions, and the very small difference of level (especially if it be yet further reduced, as is now proposed) would make the slope a very shadowy boundary for the eye to rest on, and would look more like the slight bank which usually fringes a croquet-lawn, than a definite terrace.

It may be thought that I am giving too much importance to a small matter. But I cannot feel this to be a small matter. The good, or bad, taste shown in the alterations in Christ Church, is a matter of interest to all Oxford, and to a great many out of Oxford—I might add, out of England, for I suppose there is no University in the world more celebrated for the beauty of its Colleges.

It may be thought, again, an impertinence in me, with no technical knowledge of the subject, to put my views before the Governing Body, instead of leaving the thing to be settled by professional authorities. But this is a matter which seems to me to be personally interesting to each member of the Governing Body, and also one which may fairly be (and most certainly *will* be) discussed by those who have no technical knowledge. An architect's vocation would be indeed a limited one, if none but architects could appreciate his work.

It is much to be desired that in this matter each should form his own independent opinion. Already we have made two changes which (even if they are not, as I think them to be, serious mistakes) are certainly open to much hostile criticism. In the new double entrance to the Cathedral we have violated (without any adequate reason that I can see) two of the most undeniable of the canons of Church architecture (see Appendix): while in the temporary (as I earnestly trust) wooden Belfry we have done a wrong to the artistic sense

of all admirers of Oxford, which will not soon be forgotten. It will, I fear be long remembered against us that, when it was necessary to provide a temporary covering (to last two years at the least, possibly more) for the bells, and when it was obviously in our power to do so by a structure which, if not gratifying, should at least be not offensive to the eye, we have chosen to inflict on the City (and the neighbourhood, for it is painfully visible from the railway) a wholly unnecessary eye-sore. I say ‘wholly unnecessary,’ for the justification, which I have more than once heard pleaded in its behalf, can never surely be seriously maintained—that if the building had been at all endurable to the eye, we should have rested contented with it, and never gone to any further expense to replace it by a real Bell-Tower. For this is the very argument employed by street musicians, who employ bagpipes, and other offensive musical instruments, as a means of eliciting money from reluctant contributors, and who, in the words placed under Seymour’s clever sketch, ‘never move on under a shilling.’

One more point let me urge in conclusion. No one will deny that the Quadrangle, at present, both looks well and serves its purpose well. It is, to say the very least, *very doubtful* whether, after the proposed alterations, it will do either.

Let us at least consider this matter fully before we do what may be so difficult to undo, and, whatever change we make, at least make it with our eyes open to all the consequences it may involve.

ἐν δὲ φάει καὶ ὀλέσσω.

Charles L. Dodgson.

Ch. Ch. May 16, 1873

Quoted from *The Sketches of Seymour*
by Robert Seymour

Quoted from *Iliad* by
Homer

Appendix

“If entrance is required for multitudes at the same time, the size of the aperture either must be increased, or other apertures must be introduced. It may, in some buildings, be optional with the architect whether he shall give many small doors, or few large ones; and in some, as theatres, amphitheatres, and other places where the crowd are apt to be impatient, many doors are by far the best arrangement of the two. Often, however, the purpose of the building, as when it is to be entered by processions, or where the crowd must usually enter in one direction, require the large single entrance; and (for here again the aesthetic and structural laws cannot be separated) the expression and harmony of the building require, in nearly every case, an entrance of largeness proportioned to the multitude which is to meet within. Nothing is more unseemly than that a great multitude should find its way out and in, as ants and wasps do, through holes; and nothing more undignified than the paltry doors of many of our English Cathedrals, which look as if they were made, not for the open egress, but for the surreptitious drainage of a stagnant congregation.¹ Besides, the expression of the church door should lead us, as far as possible, to desire at least the western entrance to be single, partly because no man of right feeling would willingly lose

¹I fear that the new Western entrance will look even more “paltry” and “undignified,” than it now does, if we alter the central lawn as has been proposed, so as to have a gravel-walk leading towards it and a set of steps facing it: for this will necessarily direct attention to what, at present, a stranger would never suppose to be the entrance to the Cathedral at all, but rather a pair of somewhat exaggerated doors to Canons’ houses. This is my only objection to the proposed arrangement of the central walks—an arrangement which seems to be in all other respects good and picturesque.

the idea of unity and fellowship in going up to worship, which is suggested by the vast single entrance; partly because it is at the entrance that the most serious words of the building are always addressed, by its sculptures or inscriptions, to the worshipper; and it is well that these words should be spoken to all at once, as by one great voice, not broken up into weak repetitions over minor doors. * * * * However, whether the entrances be single, triple, or manifold, it is a constant law that one shall be principal, and all shall be of size in some degree proportioned to that of the building.”

Stones of Venice. Vol. I, p. 171.

12.12 The Blank Cheque, a Fable

Source: The Blank Cheque, a Fable; Notes by an Oxford Chiel

“Vell, perhaps,” said Sam, “you bought houses, vich is delicate English for goin’ mad; or took to buildin’, vich is a medical term for bein’ incurable.”

Quoted from *The Posthumous Papers of the Pickwick Club* by Charles Dickens

‘Five o’clock tea’ is a phrase that our ‘rude forefathers,’ even of the last generation, would scarcely have understood, so completely is it a thing of to-day: and yet, so rapid is the March of Mind, it has already risen into a national institution, and rivals, in its universal application to all ranks and ages, and as a specific for ‘all the ills that flesh is heir to,’ the glorious Magna Charta.

Thus it came to pass that, one chilly day in March, which only made the shelter indoors seem by contrast the more delicious, I found myself in the cosy little parlour of my old friend, kind hospitable Mrs. Nivers. Her broad good-humoured face wreathed itself into a sunny smile as I entered, and we were soon embarked on that wayward smooth-flowing current of chat about nothing in particular, which is perhaps the most enjoyable of all forms of conversation. John (I beg his pardon, ‘Mr. Nivers’ I should say: but he was so constantly talked *of*, and *at*, by his better half, as ‘John,’ that his friends were apt to forget he had a surname at all) sat in a distant corner with his feet tucked well under his chair, in an attitude rather too upright for comfort, and rather too suggestive of general collapse for anything like dignity, and sipped his tea in silence. From some distant region came a sound like the roar of the sea, rising and falling, suggesting the presence of many boys; and indeed I knew that the house was full to overflowing of noisy urchins, overflowing with high spirits and mischief, but on the whole a very creditable set of little folk.

‘And where are you going for your sea-side trip this summer, Mrs. Nivers?’

My old friend pursed up her lips with a mysterious smile, and nodded. ‘Can’t understand you,’ I said.

‘You understand me, Mr. De Ciel, just as well as I understand myself, and *that’s* not saying much. *I* don’t know where we’re going: *John* doesn’t know where we’re going—but we’re certainly going *somewhere*; and we shan’t even know the name of the place, till we find ourselves there! *Now* are you satisfied?’

I was more hopelessly bewildered than ever. ‘One of us is dreaming, no doubt,’ I faltered: ‘or—or perhaps I’m going mad, or—’ The good lady laughed merrily at my discomfiture.

‘Well, well! It’s a shame to puzzle you so,’ she said. ‘I’ll tell you all about it. You see, last year we *couldnt* settle it, do what we would. *John* said “Herne Bay”; and *I* said “Brighton”; and the *boys* said “somewhere where there’s a circus”; not that we gave much weight to *that*, you know: well, and Angela (she’s a growing girl, and we’ve got to find a new school for her, this year) *she* said “Portsmouth, because of the soldiers”; and Susan (she’s my maid, you know) *she* said “Ramsgate.” Well, with all those contrary opinions, somehow it ended in our going *nowhere*: and John and I put our heads together last week, and we settled that it should *never* happen again. And now, how do you think we’ve managed it?’

‘Quite impossible to guess,’ I said dreamily, as I handed back my empty cup.

‘In the first place,’ said the good lady, ‘we need change sadly. Housekeeping worries me more every year, particularly with boarders—and John *will* have a

couple of gentleman-boarders always on hand: he says it looks respectable, and that they talk so well they make the House quite lively. As if *I* couldn't talk enough for him!

'It isn't that!' muttered John. 'It's—'

'They're well enough sometimes,' the lady went on (she never seemed to hear her husband's remarks), 'but I'm sure, when Mr. Prior Burgess was here, it was enough to turn one's hair grey! He was an open-handed gentleman enough—as liberal as could be—but *far* too particular about his meals. Why, if you'll believe me, he wouldn't sit down to dinner without there were three courses! We couldn't go on in *that* style, you know. I had to tell the next boarder he must be more hardy in his notions, or I could warrant him we shouldn't suit each other.'

'Quite right,' I said. 'Might I trouble you for another half cup?'

'Sea-side air we *must* have, you see,' Mrs. Nivers went on, mechanically taking up the tea-pot, but too much engrossed in the subject to do more, 'and as we can't agree *where* to go, and yet we must go *somewhere*—did you say half a cup?'

'Thanks,' said I. 'You were going to tell me what it was you settled.'

'We settled,' said the good lady, pouring out the tea without a moment's pause in her flow of talk, 'that the only course was—(cream I think you take, but no sugar? Just so)—was to put the whole matter—but stop, John shall read it all out to you. We've drawn up the agreement in writing—quite ship-shape, isn't it, John? Here's the document: John shall read it you—and mind your stops, there's a dear!'

John put on his spectacles, and in a tone of gloomy satisfaction (it was evidently his own composition) read the following.

'Be it hereby enacted and decreed,

'That Susan be appointed for the business of choosing a watering-place for this season, and finding a New School for Angela,

'That Susan be empowered not only to procure plans, but to select a plan, to submit the estimate for the execution of such plan to the House-keeper; and, if the House-keeper sanction the proposed expenditure, to proceed with the execution of such plan, and to fill up the Blank Cheque for the whole expense incurred.'

Before I could say another word the door burst open, and a whole army of boys tumbled into the room, headed by little Harry, the pet of the family, who hugged in his arms the much-enduring parlour-cat, which, as he eagerly explained in his broken English, he had been trying to teach to stand on one leg. 'Harry-Parry Ridy-Pidy Coachy-Poachy!' said the fond mother, as she lifted the little fellow to her knee and treated him to a jog-trot. 'Harry's very fond of Pussy, he is, but he mustn't tease it, he mustn't! Now go and play on the stairs, there's dear children! Mr. De Ciel and I want to have a quiet talk.' And the boys tumbled out of the room again, as eagerly as they had tumbled in, shouting 'Let's have a Chase in the Hall!'

'A good set of Heads, are they not, Mr. De Ciel?' my friend continued, with a wave of her fat hand towards the retreating army. 'Phrenologists admire them much. Look at little Sam, there. He's one of the latest arrivals, you know, but he grows—mercy on us, how that boy does grow! You've no idea what a Weight he is! Then there's Freddy, that tall boy in the corner: he's rather too big for

the others, that's a fact—and he's something of a Bully at times, but the boy has a tender heart, too: give him a bit of poetry, now, and he's as maudlin as a girl! Then there's Benjy, again: a nice boy, but I daren't tell you what he costs us in pocket-money! Oh, the work we had with that boy, till we raised his allowance! Hadn't we, John?' ('John' grunted in acquiescence.) 'It was Arthur took up his cause so much, and worried poor John and me nearly into our graves! Arthur was a very nice boy, Mr. De Ciel, and as great a favourite with the other boys as Harry is now, before he went to Westminster. He used to tell them stories, and draw them the prettiest pictures you ever saw! Houses that were all windows and chimnies—what they call "High Art," I believe. We tried a conservatory once on the High-Art principle, and (would you believe it?) the man stuck the roof up on a lot of rods like so many knitting-needles! Of course it soon came down about our ears, and we had to do it all over again. As I said to John at the time, "If this is High Art, give me a little more of the Art next time, and a, little less of the High!" He's doing very well at Westminster, I hear, but his tutor writes that he's very asthmatic, poor fellow—'

'Æsthetic, my dear, æsthetic!' remonstrated John.

'Ah, well, my love,' said the good lady, 'all those long medical words are one and the same thing to *me*. And they come to the same thing in the Christmas bills, too: they both mean "Draught as before"! Well, well! They're a set of dear good boys on the whole: they've only one real Vice among them—but I shall tire you, talking about the boys so much. What do you think of that agreement of ours?'

I had been turning the paper over and over in my hands, quite at a loss to know what to say to so strange a scheme. 'Surely I've misunderstood you?' I said. 'You don't mean to say that you've left the whole thing to your maid to settle for you?'

'But that's exactly what I do mean, Mr. De Ciel,' the lady replied, a little testily. 'She's a very sensible young person, I can assure you. So now, wherever Susan chooses to take us, *there* we go!' ('There we go! There we go!' echoed her husband in a dismal sort of chant, rocking himself backwards and forwards in his chair.) 'You've no idea what a comfort it is to feel that the whole thing's in Susan's hands!'

'Go where Susan takes thee,' I remarked, with a vague idea that I was quoting an old song. 'Well, no doubt Susan has very correct taste, and all that—but still, if I might advise, I wouldn't leave *all* to her. She may need a little check—'

'That's the very word, dear Mr. De Ciel!' cried my old friend, clapping her hands. 'And that's the very thing we've done, isn't it, John?' ('The very thing we've done,' echoed John.) 'I made him do it only this morning. He has signed her a Blank Cheque, so that she can go to any cost she likes. It's such a comfort to get things settled and off one's hands, you know! John's been grumbling about it ever since, but now that I can tell him it's *your* advice—'

'But, my dear Madam,' I exclaimed, 'I don't mean cheque with a "Q"!'

'—*your* advice,' repeated Mrs. N., not heeding my interruption, 'why, of course he'll see the reasonableness of it, like a sensible creature as he is!' Here she looked approvingly at her husband, who tried to smile a 'slow wise smile,' like Tennyson's 'wealthy miller,' but I fear the result was more remarkable for slowness than for wisdom.

I saw that it would be waste of words to argue the matter further, so took my leave, and did not see my old friends again before their departure for the

sea-side. I quote the following from a letter which I received yesterday from Mrs. Nivers.

‘MARGATE. April 1.

‘Dear Friend,

‘You know the old story of the dinnerparty, where there was nothing hot but the ices, and nothing cold but the soup? Of this place I may fairly say that there is nothing high but the prices, the staircases, and the eggs; nothing low but the sea and the company: nothing strong but the butter; and nothing weak but the tea!’

From the general tenour of her letter I gather that they are not enjoying it.

Moral

Is it really seriously proposed—in the University of Oxford, and towards the close of the Nineteenth Century (never yet reckoned by historians as part of the Dark Ages)—to sign a Blank Cheque for the expenses of building New Schools, before any estimate has been made of those expenses—before any plan has been laid before the University, from which such an estimate could be made—before any architect has been found to design such a plan—before any Committee has been elected to find such an architect?

12.13 Architecture in Oxford

November 3, 1874

Source: Pall Mall Gazette, November 3, 1874

To the EDITOR of the PALL MALL GAZETTE

SIR,—Visitors to Oxford who may chance to enter the great Quadrangle of Chirst Church cannot fail to be struck by the changes now taking place. The central lawn is fringed by a series of long low walls which, projecting at right angles from the terrace, intersect the turf at short intervals. At a first glance one might suppose them to be buttresses of the terrace wall: it is only when one begins to realize their number, their unnecessary length, and the entire want of reasonableness in their presence, that passive acquiescence gives place to a feeling of vague astonishment. But the strangeness of their appearance is as nothing compared with the strangeness of the arguments advanced in their defence. They are a necessary evil; they are an unquestionable good; they would cost more to remove than to keep; they would cost only a trifle more to keep than to remove; they are not retained with a view to erecting cloisters, but they have an artistic value in themselves; they are unsightly in themselves, but will serve hereafter as foundations for the buttresses of cloisters; they have an archæological interest; they are a pleasing novelty; we should wrong the memory of Wolsey if we did not preserve this record of what he wished to do; we should wrong our successors if we did not provide for everything they may possibly wish to do.

It is not difficult to see the true meaning of all these various pleas; no one can doubt that what is really intended is to urge upon us, the Governing Body, at no distant date, the erection of cloisters all round the Quadrangle. I do not for a moment deny that such cloisters may be highly ornamental to the place; but neither can it be denied, on the other hand, that the place does not in the least require them, and that they will cost an enormous sum of money. I do not say this without some experience of the way in which an outlay that seemed trifling at the time has afterwards involved us in expenses to which we should probably have demurred had we foreseen them. During the restoration of the cathedral, when the bells had been removed from the tower, which had become too weak to support them, it was proposed to hang them outside the cathedral in a wooden belfry, which we were assured would be quite inoffensive, as it would hardly be visible from any point of the compass. In an evil hour we consented, and the resulting erection, which cost about a thousand pounds, speedily made us famous for having inflicted upon Oxford the ugliest and most conspicuous monstrosity that probably she has ever seen. This, and the great expense already incurred, forced on us the conviction that we must now erect a stone bell-tower, which will probably cost us five or six thousand pounds more. So again, when lowering and narrowing the terrace of the great Quadrangle (an unnecessary change, but thought by many to be a great improvement), we came upon these foundations for buttresses belonging to the long-abandoned design of cloisters, and we are now about to spend another three hundred pounds upon casing them in stone, which is either the indulgence of a shadowy archæological

sentiment, or the first step in a piece of wanton extravagance. Already we stand committed, by changes each one of which might have been dispensed with, to an outlay of nearly ten thousand pounds, and we are now threatened with a further and equally needless outlay of many thousands more.

Chirst Church is understood to have an income of £12,000 (the recent report on college revenues credits us with £49,000, but this the treasurer has shown to be a mistake), and though it will probably be larger in years to come, it must be remembered that we have a debt of more than £90,000 to pay off, and that such funds as we have are not our own to spend as we will, but held, as it were, on trust for educational purposes.

The facts here stated will, I hope, be considered to justify me in thus protesting, before it be too late, against the enormous expenditure with which we are threatened, by the erection of costly and wholly unnecessary cloisters, of which the architectural eccentricities, described at the beginning of this letter, are, if they have any meaning at all, the heralds.—I am, Sir, your obedient servant,

Charles L. Dodgson.

Senior Student of Chirst Church, Oxford.

October 31.

November 5, 1874

Source: Pall Mall Gazette, November 5, 1874

To the EDITOR of the PALL MALL GAZETTE

SIR,—Will you kindly allow me to add a word of explanation to my letter on the subject of cloisters in Chirst Church, as I find that it has been misunderstood, and has been taken as a protest against the decision of the Governing Body to preserve the foundations lately discovered? This decision I accept as final, though I hold that any one may fairly criticise the effect produced. My protest was directed solely against the proposal with which we are threatened, to erect cloisters round the Quadrangle, as to which no decision has yet been come to. I hold so strongly the principle that it is the duty of a minority loyally to accept the decision of the majority, and to make no attempt to reverse it, that I should be very sorry to be believed to have acted otherwise.—I am, Sir, your obedient servant,

Charles L. Dodgson.

Senior Student of Chirst Church, Oxford.

November 4.

12.14 The Professorship of Comparative Philology

Source: three papers printed 1876

February 4, 1876

Decree—February 15

Whereas it is expedient to allow Professor M. Müller to devote himself without interruption to the studies on the Ancient Literature of India which he has hitherto prosecuted with so much success and with so much honour to the University;

In a CONVOCATION to be holden on Tuesday, February 15, at Two o'clock, the following form of Decree will be submitted to the House:—

That the provisions of *Statt.* Tit. IV, Sect. I, § 37, cl. 3 be suspended, and that the Electors proceed to the nomination of a Deputy to be approved by the Vice-Chancellor, and the Deputy shall receive one half of the salary of the present Professor.

*J. E. Sewell,
Vice-Chancellor.
Delegates' Room,
Jan. 31, 1876.*

There are one or two points, in connection with this Decree, to which I think the attention of the University should be directed, though I cannot doubt that they have occurred to others.

In the first place, I assume from the phrase “to allow Professor M. Müller to devote himself *without interruption, &c.*,” that he will not be expected hereafter to do *any* of the work of the Professorship, so that he will virtually resign the Chair; the so-called “Deputy” will virtually be a new Professor; and the so-called “half of the salary,” which the present Professor will continue to receive, will virtually be a pension. If these assumptions be incorrect, the following remarks are irrelevant: but in this case I think many will agree with me that the phrase was ill-chosen and liable to be misunderstood.

If, however, these assumptions are correct, I wish to point out, in the second place, that the two questions, what pension should be assigned to the outgoing Professor, and what salary to the new one, are entirely distinct, and ought properly to be voted on separately. We shall doubtless hear of good reasons why the proposed pension should be granted, but these will not affect the other question: it will need quite other reasons to justify the University in offering, to the next holder of the Chair, only half the usual salary: indeed, I can conceive of only one that would have any real weight—namely, that the University is too poor to be able to pension a retiring Professor, unless by mulcting his successor. Such a reason as that can hardly be pleaded.

In conclusion, I would say that, though what I have written is mainly in the interests of the unknown future holder of the Chair, it is also in the interests of its present holder: for surely the very proposal to invite the new Professor to do the work for half the present salary, is to say, by implication, that the work has

been hitherto overpaid—against which supposition I, for one, desire to record my protest.

I cannot but hope that the University, whatever pension it may think fit to assign to the learned Professor who now holds the Chair, will not practise the needless economy of offering only half a salary to his successor.

*Charles L. Dodgson.
Ch. Ch., Feb. 4, 1876.*

February 12, 1876

There seems to be good reason for believing that there is among Members of Convocation a wide-spread feeling of dissatisfaction with the proposed Decree as it stands; that, while ready to welcome any proposal for gratefully recognising the services which Professor M. Müller has for so many years rendered to the University, and for securing to Oxford the continued presence of so valuable a man, they object to the proposal that the Deputy-Professor, who will have to do the full work of the Chair for an indefinite number of years, should be offered only half the salary hitherto given for that work.

Nevertheless, partly from the fear that rejection of this Decree might lose us a man whom we can so ill afford to spare from among us, and partly from the fear of being left in a small, and therefore conspicuous, minority, it seems likely that many of the dissatisfied will abstain from voting, and that a clause, not only undesirable in itself, but also dangerous as a precedent, may thus be passed “multis dissentibus sed nemine contradicente.”

The first of these feelings is surely groundless. We may reasonably hope that, if this Decree be rejected, another will be proposed, not containing the objectionable clause. The second I hope may be obviated by the following proposal, which I make with the less scruple, as my name has already appeared in connection with the subject, and as an unbroken friendship of years with the Professor makes me feel safe from the imputation of any personal motives of hostility.

I propose then, if thirty names at least are sent me, by 4 p. m. on Monday, of Members of Convocation prepared to vote against this Decree, to print the names I receive (excepting any who may express a wish to the contrary) in alphabetical order, and to circulate the paper on Monday evening or Tuesday morning. Such a paper would be an assurance to all wishing to vote against the Decree that they will not be singular in so doing: and even if the Decree were carried, yet the fact that a considerable minority had voted against it would be a safeguard against its being hereafter used as a precedent. If I do not receive so many as thirty, I shall issue no paper, and will not communicate to any one the names so received.

I gladly take this opportunity of entreating the learned Professor, from whom I have never experienced anything but kindness, and whom I am proud to number among my friends, to accept my assurance that nothing would have induced me to come forward in this matter but the conviction that when a Decree like this is proposed, involving important general principles, and liable to be used as a precedent on future occasions, no private and personal considerations should be allowed to weigh against the interests of the University.

*Charles L. Dodgson.
Ch. Ch., Feb. 12, 1876.*

February 14, 1876

“Be just before you are generous”

Since the issue of my first paper several arguments in favour of the proposed Decree have been urged upon me; and these will doubtless be repeated on Tuesday. As I am no orator, and do not intend to trouble the House with my viva voce efforts, I prefer to state them here, adding what it appears to me may be said in reply. The arguments are:—

- (1) That it is a case of necessity, the University having no other resources out of which the proposed pension could be provided.
- (2) That the stipend was originally on £400, and has been raised to £600 during the tenure of the present Professor.
- (3) That it is not fair to resolve on voting against the Decree beforehand, but that we ought to wait till Tuesday afternoon to hear what can be said in its favour.
- (4) That, if this practice became common, our “debates” would be of no use.

To these arguments it seems to me the following replies might be made:—

- (1) That, if there *be* no other means of providing a pension, it would be better not to offer it at all. But that it appears incredible, while the University is able to provide so lavishly for the claims of Natural Science, for architectural improvements, &c., that so small a matter as this should be beyond its power.
- (2) That the principle of going back, when a chair is vacated, to its value when the present holder took it, would be an awkward precedent. How if it were proposed to offer to the next Greek Professor £40 a year?
- (3) That what answers to promulgation in Congregation, the debate on that day, and the interval before the day of voting, is, in such a case as this, simply the interval which has elapsed since the Decree was printed in the Gazette. And that this interval (a fortnight) has been ample for hearing and considering all that can be said for or against it.
- (4) That a debate, on a day previous to the voting-day, is eminently useful, but that on the day of voting people have generally made up their minds, so that further debating is of little or no use.

I have headed this paper with the old proverb about generosity, but really I doubt whether the proposed arrangement deserves the epithet “generous” in any sense. This transferring of income from one man to another, leaving the funds of the University intact, is at all events one of the cheapest forms of generosity ever yet invented, and reminds one of the celebrated charity-sermon, where one of the congregation was so overcome by the preacher’s eloquence that he hastily transferred to the subscription-plate all the loose cash he could find in his neighbour’s pocket.

Let me tell you one more story, and I have done. A certain parsimonious country-Rector had two Curates, enjoying the respective stipends of £100 and £90. One day the junior Curate resigned: whereupon the Rector went for the senior, and told him that in consideration of his long and faithful services, etc., he was about to raise his stipend to £110. The Curate could scarcely believe his ears: after a few breathless words of gratitude, he wandered home, saying to himself “Is it all a dream?” Next day brought an applicant for the junior

Curacy: he had met the senior Curate outside, and had been assured by him that, whatever rumour might say to the contrary, the Rector was a man of true generosity of soul. "Understanding," the stranger began, "that the stipend you offer to a junior Curate is £90 a year—" "By no means!" interposed the worthy Rector, mildly, but with an unmistakeable firmness. "*That* curacy I have just reduced to £80 a year!"

*Charles L. Dodgson.
Ch. Ch., Feb. 14, 1876.*

12.15 Responsions, Hilary Term, 1877

Source: printed 1877

Dear Mr. Vice-Chancellor

I beg to submit to your consideration the following statistics of the Responsions of the last two years, as it seems to me that the result of the examination of last Term was so anomalous that it ought to be brought before the notice of the University, and some means adopted to prevent its recurrence.

	1875			1876			1877
	<i>Hil.</i>	<i>Act</i>	<i>Mich.</i>	<i>Hil.</i>	<i>Act</i>	<i>Mich.</i>	<i>Hil.</i>
Number of Candidates	281	187	400	262	166	346	237
Percentage passed:—							
1st section	64	61	59	69	59	58	46
2nd do.	60	56	66	60	54	61	69
Difference between the two percentages	4	5	7	9	5	3	23

It is not, of course, to be expected that the same standard be accurately maintained in different examinations, or even in the two sections into which the candidates in each examination are divided; and it will be seen that the percentage passed varied, during the years 1875 and 1876, from a *minimum* value of 54 to a *maximum* value of 69, the average being 61. But in the recent examination, while the percentage passed in one section reached the *maximum* value 69, that in the other suddenly sank to 46, far below the *minimum* value. The anomaly is even more startling if we take the difference between the percentages passed in the two sections in any one examination, which averaged $5\frac{1}{2}$ during the previous two years, but suddenly rose to 23 last Term.

No accidental circumstances can possibly account for so large a discrepancy: and the conclusion seems inevitable that the candidates in the first section were judged by far too high a standard, and that many failed in consequence who would have passed if they had happened to be in the other section.

It is, no doubt, easier to point out an anomaly than to devise a remedy: and I will not venture to do more than suggest that, if the Masters of the Schools were simply to compare the results of each day of *viva voce* examination, and, if any great difference should be observed between the two sections, to modify their standards accordingly, no such anomaly as this could possibly occur again.

Believe me, dear Mr. Vice-Chancellor, truly yours,
C. L. Dodgson.
Ch. Ch., April 18, 1877.

12.16 Natural Science at Oxford

Source: Pall Mall Gazette, May 19, 1877

To the EDITOR of the PALL MALL GAZETTE

SIR,—There is no one of the many ingenious appliances of mechanical science that is more appreciated or more successfully employed than the wedge; so subtle and imperceptible are the forces needed for the insertion of its “thin end,” so astounding the results which its “thick end” may ultimately produce. Of the former process we shall see a beautiful illustration in a Congregation to be holden at Oxford on the 24th inst., when it will be proposed to grant, to those who have taken the degrees of bachelor and master in Natural Science only, the same voting powers as in the case of the “M.A.” degree. This means the omission of one of the two classical languages, Latin and Greek, from what has been hitherto understood as the curriculum of an Oxford education. It is to this “thin end” of the wedge that I would call the attention of our non-residents and of all interested in Oxford education, while the “thick end” is still looming in the distance. But why fear a “thick end” at all? I shall be asked. Has Natural Science shown any such tendency, or given any reason to fear that such a concession would lead to further demands? In answer to that question, let me sketch, in dramatic fashion, the history of her recent career in Oxford. In the dark ages of our university (some five-and-twenty years ago), while we still believed in classics and mathematics as constituting a liberal education, Natural Science sat weeping at our gates. “Ah, let me in!” she moaned; “why cram reluctant youth with your unsatisfying lore? Are they not hungering for bones; yea, panting for sulphuretted hydrogen?” We heard and we pitied. We let her in and housed her royally: we adorned her palace with reagents and retorts, and made it a very charnel-house of bones, and we cried to our undergraduates, “The feast of Science is spread! Eat, drink, and be happy!” But they would not. They fingered the bones, and thought them dry. They sniffed at the hydrogen, and turned away. Yet for all that Science ceased not to cry, “More gold, more gold!” And her three fair daughters, Chemistry, Biology, and Physics (for the modern horse-leech is more prolific than in the days of Solomon), ceased not to plead, “Give, give!” And we gave; we poured forth our wealth like water (I beg her pardon, like H₂O), and we could not help thinking there was something weird and uncanny in the ghoulish facility with which she absorbed it.

The curtain rises on the second act of the drama. Science is still weeping, but this time it is for lack of pupils, not of teachers or machinery. “We are unfairly handicapped!” she cries. “You have prizes and scholarships for classics and mathematics, and you bribe your best students to desert us. Buy us some bright, clever boys to teach, and then see what we can do!” Once more we heard and pitied. We had bought her bones; we bought her boys. And now at last her halls were filled—not only with teachers paid to teach, but also with learners paid to learn. And we have not much to complain of in results, except that perhaps she is a little too ready to return on our hands all but the “honourmen”—all, in fact, who really need the helping hand of an educator. “Here, take back your stupid ones!” she cries. “Except as subjects for the scalpel (and we have not yet got the Human Vivisection Act through Parliament) we can do nothing with them!”

The third act of the drama is yet under rehearsal; the actors are still running in and out of the green-room, and hastily shuffling on their new and ill-fitting dresses; but its general scope is not far to seek. At no distant day our once timid and tearful guest will be turning up her nose at the fare provided for her. "Give me no more youths to teach," she will say; "but pay me handsomely, and let me think. Plato and Aristotle were all very well in their way; Diogenes and his tub for me!" The allusion is not inappropriate. There can be little doubt that some of the researches conducted by that retiring philosopher in the recesses of that humble edifice were strictly scientific, embracing several distinct branches of entomology. I do not mean, of course, that "research" is a new idea in Oxford. From time immemorial we have had our own chosen band of researchers (here called "professors"), who have advanced the boundaries of human knowledge in many directions. True, they are not left so wholly to themselves as some of these modern thinkers would wish to be, but are expected to give some few lectures, as the outcome of their "research" and the evidence of its reality; but even that condition has not always been enforced—for instance, in the case of the late Professor of Greek, Dr. Gaisford, the university was too conscious of the really valuable work he was doing in philological research to complain that he ignored the usual duties of the chair and delivered no lectures.

And, now, what is the "thick end" of the wedge? It is that Latin and Greek may *both* vanish from our curriculum; that logic, philosophy, and history may follow; and that the destinies of Oxford may some day be in the hands of those who have had no education other than "scientific." And why not? I shall be asked. Is it not as high a form of education as any other? That is a matter to be settled by facts. I can but offer my own little item of evidence, and leave it to others to confirm or to refute. It used once to be thought indispensable for an educated man that he should be able to write his own language, correctly, if not elegantly; it seems doubtful how much longer this will be taken as a criterion. Not so many years ago I had the honour of assisting in correcting for the press some pages of the *Anthropological Review*, or some such periodical. I doubt not that the writers were eminent men in their own line; that each could triumphantly prove, to his own satisfaction, the unsoundness of what the others had advanced; and that all would unite in declaring that the theories of a year ago were entirely exploded by the latest German treatise; but they were not able to set forth these thoughts, however consoling in themselves, in anything resembling the language of educated society. In all my experience, I have never read, even in the "local news" of a country paper, such slipshod, such deplorable English.

I shall be told that I am ungenerous in thus picking out a few unfavourable cases, and that some of the greatest minds of the day are to be found in the ranks of science. I freely admit that such may be found; but my contention is that *they* made the science, not the science them; and that in any other line of thought they would have been equally distinguished. As a general principle, I do not think that the exclusive study of any *one* subject is really education; and my experience as a teacher has shown me that even a considerable proficiency in Natural Science, taken alone, is so far from proving a high degree of cultivation and great natural ability that it is fully compatible with general ignorance and an intellect quite below par. Therefore it is that I seek to rouse an interest, beyond the limits of Oxford, in preserving classics as an essential feature of a university education. Nor is it as a classical tutor (who might be suspected of

a bias in favour of his own subject) that I write this. On the contrary, it is as one who has taught science here for more than twenty years (for mathematics, though good-humouredly scorned by the biologists on account of the abnormal certainty of its conclusions, is still reckoned among the sciences) that I beg to sign myself,—Your obedient servant,

*Charles L. Dodgson,
Mathematical Lecturer of Christ Church, Oxford.
May 17.*

12.17 Clerical Fellowships

Source: Pall Mall Gazette, June 4, 1877

To the Editor of Pall Mall Gazette

SIR,—The *Times* of June 2 contains a letter, signed “A Fox that has not lost his Tail,” on the subject of the Oxford memorial for the retention of clerical fellowships, and calling attention to the fact that more than 70 per cent. of those who signed it were themselves in holy orders, but that this was kept out of sight by printing the names without the title of “reverend.” (“A Fox,” by the way, has not chosen his *nom de plume* very happily: he evidently thinks that the maimed fox represents the clergyman, whereas the analogy is really on the other side; it is certainly more easy, in these days, for a clergyman to become a layman than for a layman to become a clergyman. A stern critic might add that “a fox” has no “tail” to lose, but only a “brush”—but let that pass.) Now, without going so far as to assume that “A Fox” means to impute dishonest motives to 70 per cent. of those who signed the memorial, whether in affixing their names or in *not* affixing the title “Reverend,” I may at least assume him to mean that the fact of their being in holy orders ought to lessen the value of their signatures on that side of the question. May I appeal to any readers interested in this matter to show an Englishman’s love of justice, by applying the argument impartially, and thus lessening in the same degree the value of the *lay* signatures (more than 80 per cent. of the whole number) on the opposite side? “A Fox” may reply that the cases are not parallel—that the other memorialists do not seek to restrict fellowships to laymen, but would throw them open to all alike. This has a very plausible sound, and at first suggests the idea that, supposing intellectual qualifications equal, any vacant fellowship is as likely to be filled by a clergyman as by a layman; but a moment’s thought will detect the fallacy: the practical effect of all being thrown open would necessarily be to produce the same ratio between the clerical and lay element in the class of college fellows as exists in that section of society from which they are drawn, where the clerical element can hardly be 5 per cent. of the whole. Thus the advocates of open competition are really advocating the principle that about 95 per cent. of our fellowships should be held by laymen. But surely there is no principle of natural justice in this particular proportion; its existence in society arises from causes unconnected with education, and it can hardly be thought unreasonable that those who think Christian principles an important element in education (representing, as they do, the feelings of many parents who send their sons to the universities) should wish to secure, in our educational body, a larger proportion of the clerical element. But this can only be done by restricting a certain number of Fellowships to clerical holders. At present the educational body of Oxford contains about four lay teachers to three clerical.—Your obedient servant,

*Charles L. Dodgson (Rev.),
Senior Student of Christ Church, Oxford.
June 2.*

12.18 Christ Church, Oxford

Source: The Observer, June 5, 1881

To the Editor of the Observer

Sir: Your paper of May 29 contains a leading article on Christ Church, resting on so many misstatements of fact that I venture to appeal to your sense of justice to allow me, if no abler writer has addressed you on the subject, an opportunity of correcting them. It will, I think, be found that in so doing I shall have removed the whole foundation on which the writer has based his attack on the house, after which I may contentedly leave the superstructure to take care of itself. "Christ Church is always provoking the adverse criticism of the outer world." The writer justifies this rather broad generalisation by quoting three instances of such provocation, which I will take one by one.

"At one time we are told that the Dean . . . neglects his functions, and spends the bulk of his time in Madeira." The fact is, that the Dean's absence from England more than twenty years ago during two successive winters was a sad necessity, caused by the appearance of symptoms of grave disease, from which he has now, under God's blessing, perfectly recovered.

The second instance occurred eleven years ago, when some of the undergraduates destroyed some valuable statuary in the library. Here the writer states that the Dean first announced that criminal proceedings would be taken, and then, on discovering that the offenders were "highly connected," found himself "converted to the opinion that mercy is preferable to stern justice, and charity to the strict letter of the law." The facts are that the punishment awarded to the offenders was deliberated on and determined on by the Governing Body, consisting of the Dean, the Canons, and some twenty senior students; that their deliberations, in which I took part, were most assuredly in no way affected by any thoughts of the offenders being "highly connected;" and that, when all was over, we had the satisfaction of seeing ourselves roundly abused in the papers on both sides, and charged with having been too lenient, and also with having been too severe.

The third instance occurred the other night. Some undergraduates were making a disturbance, and the junior censor "made his appearance in person upon the scene of riot," and "was contumeliously handled." Here the only statement of any real importance, the alleged assault by Christ Church men on the junior censor, is untrue. The fact is that nearly all the disturbers were out-College men, and though it is true that the censor was struck by a stone thrown from a window, the unenviable distinction of having thrown it belongs to no member of the House. I doubt if we have one single man here who would be capable of so base and cowardly an act.

The writer then gives us a curious account of the present constitution of the House. The Dean, whom he calls "the right reverend gentleman," is, "in a kind of way, Master of the College." The Canons, "in a vague kind of way, are supposed to control the College." The senior students "dare not call their souls their own," and yet somehow dare "to vent their wrath" on the junior students. His hazy, mental picture of the position of the Canons may be cleared up by explaining to him that the "control" they exercise is neither more nor less than

that of any other six members of the Governing Body. The description of the students I pass over as not admitting any appeal to actual facts.

The truth is, that Christ Church stands convicted of two unpardonable crimes—being great, and having a name. Such a place must always expect to find itself “a wide mark for scorn and jeers”—a target where the little and the nameless may display their skill. Only the other day an M.P., rising to ask a question about Westminster School, went on to speak of Christ Church, and wound up with a fierce attack on the ancient House. Shall we blame him? Do we blame the wanton schoolboy, with a pebble in his hand, all powerless to resist the alluring vastness of a barndoor?

The essence of the article seems to be summed up in the following sentence: “At Christ Church all attempts to preserve order by the usual means have hitherto proved uniformly unsuccessful, and apparently remain equally fruitless.” It is hard for one who, like myself, has lived here most of his life, to believe that this is seriously intended as a description of the place. However, as general statements can only be met by general statements, permit me, as one who has lived here for thirty years and has taught for five and twenty, to say that in my experience order has been the rule, disorder the rare exception; and that, if the writer of your leading article has had an equal amount of experience in any similar place of education, and has found a set of young men more gentlemanly, more orderly, and more pleasant in every way to deal with, than I have found here, I cannot but think him an exceptionally favoured mortal.—Yours,
&c.

*Charles L. Dodgson,
Student and Mathematical Lecturer of Christ Church.*

12.19 Oxford Responsions

Source: *Supplement to the Guardian*, February 8, 1882

Sir,

I copy the following from the letter of your Oxford Correspondent, published February 1:

“The results of the certificate examination were less satisfactory than in the previous year. In 1880 certificates were obtained by 475 out of 700 candidates, or 67” (should be 68) “per cent; but in 1881 by only 366 out of 731—i. e., by only 50 per cent. The chief failure seems to have been in elementary mathematics, in which subject 455 candidates out of 692 passed in 1881, as compared with 585 out of 666 in 1880. This being one of the essential subjects for Responsions at Oxford and Part 1 of the Previous Examination at Cambridge, it is not surprising that, while in 1880 362 certificates would have exempted from Responsions and 332 from Part 1 of the Previous Examination, in 1881 the numbers of such certificates were 240 and 239 respectively. Some light is perhaps thrown by these results upon a recent Responsions examination in which more than half the candidates were “plucked.” The assertions made after the publication of the certificate list last summer, that the large proportion of failures was due to a sudden raising of the standard, are disposed of by the statement in this report that the great majority of failures in mathematics were due to ignorance of the first two books of Euclid—in other words, to inadequate preparation, and neglect of the elementary parts of the work by teachers and taught.”

In justice to the writer, I have quoted this passage in full; but the only two points to which I wish to draw attention are—first, the fact that in the Responsions of last term more than half the candidates were “plucked”; secondly, that he offers as a sufficient explanation of this phenomenon the hypothesis that it was due to “inadequate preparation, and neglect of the elementary parts of the work by teachers and taught.” It does not seem to have occurred to him that such neglect, so sudden and so widely spread as his statistics seem to show, would be a phenomenon quite as surprising, and quite as much needing to be accounted for, as the one he disposes of so summarily.

As a teleologist, your correspondent is, perhaps, a trifle too easily satisfied—the kind of man who, on experiencing a sudden sharp pain in the back of his head, and finding himself prostrate on the pavement, would merely remark, while scrambling to his feet—“I have no doubt received a blow from behind”; and so would continue his journey, serenely conscious that all was now fully explained.

As a statistician, it would seem that he has yet much to learn—notably the fact that, when candidates can go in for two examinations and can pass in either but not in both, if he deals (as he does here) with total numbers only, he is counting many of the failures twice, while each success can be counted *only* once.

To get the true percentage of those who passed last term we must ascertain how many candidates there *would* have been and how many of these *would* have passed if the previous examination had not taken place. For the total number of candidates we add together the two lists ($321 + 308 = 629$) and deduct those common to both (81), who would otherwise be counted twice, and also those (55) who appear in the first list but had not matriculated before Responsions

($629 - 81 - 55 = 493$). To get the total number who passed, we add together those who passed in the two lists ($176 + 151 = 327$) and deduct those (15) who passed in the first list but had not matriculated before Responsions ($327 - 15 = 312$). Thus, the true percentage is 63. The average percentage, from Michaelmas, 1873, to Michaelmas, 1881, was 64.

We see, then, that the true answer to the question raised by your correspondent, "How are we to account for this phenomenon?" is simply that there is no phenomenon to be accounted for.

Charles L. Dodgson.
Christ Church, Oxford, February 2, 1882.

12.20 An Analysis of Responsions Lists

Source: printed 1882

From Michaelmas 1873 to Michaelmas 1881

The unprecedented phenomenon of last Term—when more than half the Candidates for Responsions failed to obtain “testamurs”—was a matter of surprise, not to say of consternation, alike to teachers and to taught. While enquiring into the causes of this apparent catastrophe, I was led to collect and tabulate the statistics of previous Examinations, and the results seem to be of sufficient interest to be printed and circulated. The following Tables, while exonerating the Examiners of last Term from the charge, to which at first sight they appeared liable, of extraordinary severity, yet furnish evidence that on other occasions the standard employed by the Examiners has been liable to violent fluctuations, which has sometimes led to great injustice being unintentionally done to the Candidates. Considering that the Candidates outnumber the Examiners in the ratio of at least 40 to 1, it may be fairly assumed that these fluctuations are due to the varying “personal equations” of the Examiners, rather than to sudden changes in the average quality of the Candidates.

In estimating the percentage who passed in Responsions last Term, it will be necessary to take into consideration the fact that this Examination was, for the first time, preceded by an Examination “in lieu of Responsions,” held by the same Examiners. Hence we have to estimate how many Candidates there *would* have been, and how many of these *would* have passed, if the previous Examinations had not taken place. To get the total number of Candidates, we add together the numbers in the two Lists ($321 + 308 = 629$) and deduct those (81) common to both Lists, who would otherwise be counted twice, and also those (55) who appear in the first List but had not matriculated before the Responcion-List was drawn up ($629 - 81 - 55 = 493$): thus the total number is 493. To get the total number of those who passed, we add together those who passed in the two Lists ($176 + 151 = 327$), and deduct those (15) who passed in the first List but had not matriculated before the Responcion-List was drawn up: the remainder is 312. Thus the real percentage who passed is 63.

The Analysis begins with Michaelmas 1873, as that was the first occasion when a List was published of those “*qui quaestionibus Magistrorum Scholarum in Parviso pro forma responderunt.*” I have made separate Tables for the three Terms, because they seem to be governed by different laws—the Michaelmas Term yielding the highest percentage of Candidates who passed, and the Act Term the lowest. These phenomena are probably due to the number of Honourmen who began to reside in October, and to the exceptional temptations to idleness afforded by the Summer Term.

Further, I have tabulated separately the two halves into which the List is always divided for *viva voce* (each half being under 3 only of the 6 Examiners), because I observe that the percentage of those who pass sometimes differs widely in the two halves of the same List.

These Tables give a grand total of 4474 who have passed, out of 6952 Candidates, i. e. an average percentage of 64.

Wherever the percentage on the “whole List” for some one Examination differs much from the general percentage on the Table in which it occurs, while

the two halves of the List yield nearly equal percentages, it seems fair to conclude that all 6 Examiners were using too high or too low a standard, so that probably the *papers* were too hard or too easy: e. g. they were probably too hard in Hilary 1874, Act 1874, and Michaelmas 1874, and too easy in Act 1877, Hilary 1878, and in the entirely abnormal Examination of Michaelmas 1879.

Wherever the percentage on the two halves of a List differ much from each other, it is probable that, in the *viva voce* Examination, 3 of the Examiners were using a different standard from the other 3. Instances may be noted in Hilary 1877, Act 1878, Michaelmas 1878, and Act 1879.

Charles L. Dodgson.
Ch. Ch. Feb. 9, 1882.

Hilary Term	1874	1875	1876	1877	1878	1879	1880	1881	Total
Candidates	268	281	262	237	241	256	213	200	1958
Passed, in first half	73	89	91	55	86	80	76	70	
" second do.	75	84	79	81	87	86	75	62	
" whole List	148	173	170	136	173	166	151	132	1249
Percentage, first half	51	63	69	47	72	63	71	70	
" second do.	56	60	60	68	72	67	71	62	
" whole List	55	62	65	57	72	65	71	66	64

Act Term	1874	1875	1876	1877	1878	1879	1880	1881	Total
Candidates	208	187	166	174	169	184	173	175	1436
Passed, in first half	56	57	49	60	63	56	57	50	
" second do.	57	52	45	55	52	45	50	43	
" whole List	113	109	94	115	115	101	107	93	847
Percentage, first half	54	61	59	69	74	61	66	57	
" second do.	55	56	54	63	62	49	58	49	
" whole List	54	58	57	66	68	55	62	53	59

Michaelmas Term	1873	1874	1875	1876	1877	1878	1879	1880	1881	Total
Candidates	412	387	400	346	384	339	406	391	493	3558
Passed, in first half	137	111	118	101	134	124	166	145		
" second do.	141	101	132	106	138	105	168	139		
" whole List	278	212	250	207	272	229	334	284	312	2378
Percentage, first half	67	57	59	58	70	73	82	74		
" second do.	68	52	66	61	72	62	83	70		
" whole List	67	55	63	60	71	68	82	73	63	67

12.21 Twelve Months in a Curatorship

Source: Twelve Months in a Curatorship

By One Who Has Tried It

Preface

This book is *not* a plagiarism—as its name might at first suggest—of “Five Years in Penal Servitude.” Nor, again, is it meant to traverse precisely the same ground as “Six Months on the Treadmill”. There is a *general* resemblance, no doubt, to both the above works: still, it may be claimed for the present memoir, that it deals with *some* phases of humanity not hitherto analyzed, and narrates *some* woes that are peculiarly its own.

An apology is needed for its great length: but I have not had time to condense it into smaller compass.

Quoted from *Five years' penal servitude, by one who has endured it 1877*

Quoted from *Desperate Remedies* by Thomas Hardy

1. Of Crimes

“Habemus confitentem reum.”

Quoted from *Pro Ligario 2* by Cicero

The record, which I here propose to lay before the members of Ch. Ch. Common Room, of my first—not improbably my last—year in the office to which they have done me the honour of electing me, will be found largely autobiographical (a euphemism for “egotistic”), slightly apologetic, cautiously retrospective, and boldly prophetic: it will be at once financial, carbonaceous, aesthetic, chalybeate, literary, and alcoholic: it will be pervaded with mystery, and spiced with hints of thrilling plots and deeds of darkness: in short, it will contain, as I believe, something to suit all tastes, but nothing, I sincerely trust, that can reasonably offend any.

Perhaps, as the crimes are my own, I had better take them to begin with, and so work on to something more pleasant. Would Common Room, then, “be surprised to hear” (to recur to the old “Tichbourne” formula) that I have been breaking the rules, supposed to exist for the guidance of the Curator, with all the *abandon* of a bull, when critically inspecting a collection of old Dresden China? I meant of course the *letter* of the rules, for to the *spirit* of our constitution I trust I have been, and ever shall be, loyal. To put the matter briefly, my simple wish is to do what is most for the interest of C.R.; and where their interests clash with the letter of any rule, I take the responsibility of breaking the rule.

Let me illustrate my meaning.

There are certain monthly magazines taken in—the (miscalled) *Fortnightly*, *the Contemporary*, *the Nineteenth Century*, and *the National Review*. When these were voted for (all but the last, which I added on my own responsibility), nothing was said as to *continuity*: presumably, they were to be taken in right through the year. But, being in residence, with two or three others, at the beginning of the Long Vacation, it occurred to me, “We are all going down. For the next three months these magazines will come in, and will find no one to read them. Could I not save C.R. a few shillings by conterminating them till next Term? And then, if there *is* any one (which seems unlikely) anxious to read the

Quoted from an often quoted phrase made by the Solicitor-General in the Tichborne Case

back numbers, I can easily get them.” Accordingly, I asked those who were then residing if they wanted any of the numbers for the new month: one number was asked for, and that I procured. And, when the Term began again, I had only one complaint made on the subject: but as the complaint did not seem at all to wish to read the omitted numbers, but merely bewailed the breach of the rule *because it was a rule*, I exercised a masterly inactivity. *Moderate* Conservatism always commands my respect: but a Conservatism that demands a rigid adherence to the *letter* of the constitution—no reasoning process being permitted, nor any attempt to “correspond with the environment”—this is something I cannot sympathise with nor even understand.

Let us take another instance. One of the rules, affecting Honorary Members of C.R., is that they may not have wine from the cellars, except for use in C.R. It seemed to me hardly to meet the case of the two newly-elected “non-official” Students: and I have taken the responsibility of dispensing with the rule in their case. The ultra-Conservatives may perhaps lament the broken *letter* of the law: but I trust the majority of C.R. will acquit me of having acted unreasonably, or disloyally, towards the *spirit* of the constitution.

A third instance will be found in the Rules of the Wine Committee, which have fared but badly at my hands: “compound and comminuted fracture” is the scientific term, I believe, for the process I have put them through: but this matter is too awful to be dealt with here: it must have a section to itself.

So far, then, I present myself as an old and hardened criminal, glorying in his misdeeds. Let us try a pleasanter theme.

2. Of Finance

“Quocunque modo, rem.”

Quoted from *Ep. 1*
by Horace

At the audit of Dec. 1882, the balance in favour of C.R. was declared to be £547 15s. 4d.: in Dec. 1883, it was £37 11s. 3d.; leaving a difference of £510 4s. 1d. to be accounted for.

Now, firstly, the C.R. Bills for Mich. Term, 1883, amounting to £90 6s. 10d., had not been paid in: secondly, the total amount of C.R. bills for the year has been £143 7s. 2d. less than in the previous year: thirdly, there was more wine in the cellar in Dec. 1883 than in Dec. 1882, the value of which I have calculated to be £275 5s. 3d. The sum total of these items is £508 19s. 3d.

We see, then, that some of the difference, between the balance just declared and that of a year ago, may be satisfactorily accounted for.

There remains an unexplained deficit of £1 4s. 10d., which I recommend to the attention of the lynx-eyed critics at Tunbridge Wells.

3. Of Wine

“Nunc est bibendum”

Quoted from *Carmen*
1, 37 by Horace

Whether this subject is *quite* the noblest to which Time and Thought can be devoted by Man is a question I leave on one side for the moment. *I*, at any rate, have had to give a much larger amount of both, during this past year, than I have ever given before, or (as I hope) shall ever have to give again.

Here are a few facts, selected from my summaries for the year. Roughly speaking, we had, when the year began, 23,000 bottles in our cellar: we have

added 5,000 during the year, making a total of 28,000. Of these we have consumed about 3,000, leaving 25,000 to go on with, i. e. 2,000 more than we had a year ago, the value of this addition to our stock being about £270. We have now about 700 bottles of old Port (enough for 30 years), and 11,000 ordinary (enough for 20 years). Of best Sherry, 570 (60 years); pale 1,500 (9 years); brown, 6,000 (30 years). Of best Claret, 200 (5 years); dessert Claret, 600 ($1\frac{1}{2}$ years): both these will be largely added to forthwith. Of other wines we have but small stocks, except Rauenthaler, of which we have 900 (enough for 11 years), and Madeira (B), the stock of which may be expected, as we shall see hereafter, to last for much longer time than any I have yet named.

The present Wine-tariff is by no means in a satisfactory state. I have given a good deal of attention to the subject, and will here present the tariff I propose to adopt, as well as by reasons for proposing it.

Before considering the actual Wine-tariff as a whole, I think it will be well to consider, in the abstract, the principles on which a Wine-tariff should be framed: and this we can do with a simple instance quite as well, perhaps even better, than with a complex one. To make my instance something like the truth, I will take old Port and Chablis. Of these our annual consumption is in the ratio of 1 to 3; and the original cost of each is about 3s. a bottle: but the present value of the old Port is about 11s. a bottle. Let us suppose, then, that we have to sell to C.R. one bottle of old Port and 3 of Chablis—the original cost of the whole being 12s., and the present value 20s. These are our data.

We have now two questions to answer. First, what sum shall we ask for the whole? Secondly, how shall we apportion that sum between the two kinds of wine?

To answer the first question, we must consider the two purposes for which we need the money: one is, to replace the wine that has been consumed with an equal amount of new wine of the same quality; the other, to meet the annual expenses which arise from the keeping of wine. For the first purpose it is obvious that the original cost of the wine is the sum required: to settle how much ought to be added to this for current expenses is a more difficult matter, but I think we may take past history as a safe guide, and assume that the addition that has been hitherto made to the original cost is fair. Now the wine consumed last year originally cost £480: its present value is £560: and we sold it for £550: so that, roughly speaking, we sell the wine as a whole for its *present* value—the difference between that and its original value being the sum we require to meet current expenses.

We may assume, then, in the instance before us, that we have to sell these 4 bottles of wine, as a whole, for 20s. And we have now to answer the second question—how much of this is to go for Port and how much for Chablis. We have, as so often happens in the lives of distinguished Premiers, three courses before us:—(1) to charge the *present* value for each kind of wine; (2) to put on a certain percentage to the *original* value of each kind; (3) to make a compromise between these two courses.

Course (1) seems to me perfectly reasonable; but a very plausible objection has been made to it—that it puts a prohibitory price on the valuable wines, and that they would remain unconsumed. This would not, however, involve any loss to our finances: we could obviously realise the enhanced values of the old wines by selling them to outsiders, if the members of C.R. would not buy them. But I do not advocate this course.

Course (2) would lead to charging 5s. a bottle for Port and Chablis alike. The Port-drinker would be “in clover”: while the Chablis-drinker would probably begin getting his wine direct from the merchant instead of from the C.R. cellar, which would be a “*reductio ad absurdum*” of the tariff. Yet I have heard this course advocated, repeatedly, as an abstract principle. “You ought to consider the *original* value only,” I have been told. “You ought to regard the Port-drinker as a private individual, who has laid the wine in for himself, and who ought to have all the advantages of its enhanced value. You cannot fairly ask him for more than what you need to refill the Bins with Port, *plus* the percentage thereon needed to meet the contingent expenses.” I have listened to such arguments, but have never been convinced that the course is just. It seems to me that the 8s. additional value, which the bottle of Port has acquired, is the property of *Common Room*, and that Common Room has the power to give it to whom it chooses: and it does not seem to me fair to give it all to the Port-drinker. What merit is there in preferring Port to Chablis, that could justify our selling the Port-drinker his wine at less than half what he would have to give outside, and charging the Chablis-drinker five-thirds of what he would have to give outside? At all events I, as a Port-drinker, do not wish to absorb the whole advantage, and would gladly share it with the Chablis-drinker. The course I recommend is

Course (3), which is a compromise between (1) and (2), its essential principle being to sell the new wines *above* their value, in order to be able to sell the old *below* their value. And it is clearly desirable, as far as possible, to make the reductions *where they will be felt*, and the additions *where they will not be felt*. Moreover, it seems to me that reduction is most felt where it *goes down to the next round sum*, and an addition in the reverse case, i. e., when it *starts from a round sum*. Thus, if we were to take 2d. off a 5s. 8d. wine, and add it to a 4s. 4d.—thus selling them at 5s. 6d. and 4s. 6d.—the reduction would be welcomed, and the addition unnoticed; and the change would be a popular one. This principle is especially applicable to what I regard as the most important feature of the new tariff, the change in the prices of the Port and Claret drunk at dessert. We are selling the first for 4s. 3d., which is 1s. 9. *below* its value, and the other for 4s. 9d., which is 4d. *above* its value. The annual consumption (500 and 470) is practically the same for these two wines, so that what we take off one price we may fairly put on the other. I propose to lower the first, and raise the second, to the mean value 4s. 6d., which being a round sum, comes under the rule I have laid down as to making perceptible reductions and imperceptible additions. There is also a social consideration which should have weight: it seems to me *most* desirable, when the cost of the wine, drunk during the evening, has to be equally divided among the drinkers, that no one should have cause to think “my neighbour is drinking a dearer wine than I: so that I am practically paying part of his bill.” Some such inequality was complained of, not long ago, by the Claret-drinkers, when the Claret was cheaper than the Port; and a similar complaint might now be made by the Port-drinkers.

The proposed tariff would have brought in the same total amount as the present one, namely £550. The principal changes are as follows:—

Ports, of all kinds, we are selling considerably under their real values. I propose to raise them all a little, but still keeping below the real values.¹

¹Remark: The following wine-table is omitted here, it is a long list with wines, their annual consumption, original cost, current value, present tariff, and proposed tariff.

Dessert Claret I have discussed previously.²

Champagnes and Hocks we are now selling at a profit above what we put on in other cases. I propose to reduce this. The Rauenthaler, of which we have just laid in a large supply on exceptionally favourable terms, is now becoming so popular, that I think the reduction from 3s. 4d. to 3s. (which we can well afford) will be a specially welcome one.

The other changes call for no remark, with the exception of Brandy, which we are at present selling at a profit entirely abnormal. The present price, 7s., was probably fixed by some Draconian Curator, in an age when Brandy-drinking had reached so fearful a pitch that he felt that a desperate remedy was absolutely needed.

One curious phenomenon I wish to call attention to. The consumption of Madeira (B) has been, during the past year, zero. After careful calculation, I estimate that, if this rate of consumption be steadily maintained, our present stock will last us an infinite number of years. And although there may be something monotonous and dreary in the prospect of such vast cycles spent in drinking second-class Madeira, we may yet cheer ourselves with the thought of how economically it can be done.

I have only to add that I shall be happy to receive suggestions from any member of Common Room who will take the trouble to consider the "data" of the problem and to form an opinion on the proposed tariff. And I hope thus to be able to reduce it to a form which C.R. will be prepared to accept at our next meeting.

It may be thought that this matter is one to be settled by the Wine-Committee; but I have come to the opposite conclusion. Even if C.R. intended (which is by no means clear) to include changes in the tariff among the "questions as to sending out wine"³ which it has left to the Wine-Committee to settle, I doubt if it was meant to include changes affecting the finances of C.R. At all events, if the Wine-Committee were to vote a new tariff, which considerably reduced the annual receipts, I should refuse to adopt it: and, if I were asked by what Rule I was authorised to do so, I should point to that which enacts that "no expenditure shall be made without the concurrence of the Curator." Such reduction would clearly be "expenditure," and I should decline to "concur" in such a change until I had assured myself that it was approved of by C.R.

The only changes in the tariff, that I can find recorded for a good many years back, were voted on by C.R. at the annual meeting. The Wine-Committee was no doubt devised for the purpose of doing certain things previously done by the Curator alone, but "I have yet to learn" that it was meant to supersede C.R. in any of its special functions.

4. Of Liqueurs

The following Liqueurs (arranged in order of costliness) can be supplied to Members of C.R. at the prices annexed: they are all to be had in bottles, or in half-bottles. But, since bottles vary as to contents, I append to each the contents in ounces, and the cost per 8-oz. vial. (N.B. These vials have objective existence as yet, but can easily be procured, if wished for.)

²Original has some other phrase.

³See "Rules of the Wine-Committee."

The three marked “a” are kept in stock, and can be had, either in half-bottles, or in a stand of three decanters, the contents of which will be measured before sending out, and on its return, and only the amount consumed will be charged for.

There are only two half-bottles of each of the others in stock: but I will procure more, if an order be given.

The asterisks indicate the degree of goodness, according to the views of a certain Member of the Wine-Committee, who, in the noblest spirit of self-sacrifice, came day after day to taste the samples: in which views I (being one whose opinion on such points is worth absolutely nothing) entirely coincide. * = “very good,” and ** = “specially recommended.”

		Bottle.		$\frac{1}{2}$ Bottle.		8 oz. vial.
		fluid ounces.	cost.	fluid ounces.	cost.	cost.
a	Maraschino **	20	7/.	10	3/9	2/10
a	Chartreuse, green	36	11/3	18	6/.	2/6
	Noyau, pink *	24	7/.	12	3/9	2/4
	white **	”	”	”	”	”
	Benedictine **	32	7/9	16	4/.	2/.
	Chartreuse, yellow *	36	9/3	18	5/.	”
a	Curaçoa, dry	29	7/.	14 $\frac{1}{2}$	3/9	”
	” green *	”	6/.	”	3/3	1/9
	” white **	”	”	”	”	”

In connection with Liqueurs, the following sentiments have been put forth:—

(1) On Nov. 12th, I issued a notice, in which, after naming Green Chartreuse, Dry Curaçoa, and Maraschino, as the only Liqueurs “kept in stock,” I added “but I will procure any others for which an order is given.”

(2) The following paper then appeared:

To the Members of C.R. The Curator has just issued a circular about Liqueurs, which is likely to be misleading. Mr. Dodgson as a private person is quite at liberty to “procure” any Liqueurs he pleases for his friends—at his own expense. But in this case the word *Curator*, after his signature, should be expunged. If, however, he writes officially—for the words “I will procure” read “the Wine-Committee may procure”; for the Committee, which *alone* has the power to “procure” Wines, etc. for C.R., has recently decided that the three kinds of Liqueurs now kept in stock are sufficient for the needs of the C.R. at present.

J. Barclay Thompson,

Member of the Wine-Committee.

(3) On Nov. 23rd, I issued a notice, in which I said:

I will procure any, not at present kept in stock, for which an order is given. Such purchases, being made on behalf of individual Members of C.R., and not for the cellar, do not (as has been erroneously stated) form part of the duties of the Wine-Committee. I here append the words of the Rule in which those duties are defined. “There shall be a Wine-Committee, consisting of five persons, including the Curator, whose duty shall be to assist the Curator in the management of the cellar.”

(4) The following paper then appeared:

To The Members of Common Room The Curator has issued another circular, dated November 23, 1883, in which he refers to a recent circular of mine in the following words:—

"Such purchases [purchases of a number of Liqueurs mentioned in a previous paragraph] being made on behalf of individual Members of Common Room, and not for the cellar, do not (*as has been erroneously stated*) form part of the duties of the Wine-Committee."

The Curator thus asserts that I have "erroneously stated" that "purchases . . . made on behalf of individual Members of Common Room, and not for the cellar, form part of the duties of the Wine-Committee."

I have made no such statement. I append the words of my circular, so that Members of Common Room may judge for themselves:—

"The Curator has just issued a circular about Liqueurs, which is likely to mislead. If he writes as a private person, he is, of course, at liberty to procure any Liqueurs he pleases for his friends, *at his own expense*; but in this case the word 'Curator,' after his signature, should be expunged. If he writes officially—for the words 'I will procure' read 'the Wine-Committee *may* procure'; for the Committee (which alone has the power to procure wines for the Common Room cellar) has recently decided that the three kinds of Liqueurs now kept in stock suffice for the present needs of Common Room."

The only statement I have made here about the duties of the Wine-Committee is, that it "alone has the power to procure wines for the Common Room cellar." It is obvious that the sober imagination of the Curator has been morbidly excited by the presence of so large a number of unsold Liqueurs in his rooms.

If, however, I *had* made the statement which the Curator rashly stigmatizes as "erroneous," it would have been quite correct. The Curator has quoted Rule 1. I will quote the two Rules which define the duties of the Committee:—

Rule 1.—"There shall be a Wine-Committee of five persons, including the Curator, whose duty shall be to assist the Curator in the management of the cellar."

Rule 4.—"*All* questions relating to the selection, purchase, keeping, serving, and sending out of wines shall be decided by a majority of the Committee at a *meeting*."

"The management of the cellar," in Rule 1, is explained by Rule 4 to mean "*all* questions relating to the purchase, etc. of wines." The word "cellar" is used to signify wines, etc., *bought out of the funds of the Club*; not merely the rooms under the Common Room, or the wines which are there or are ordered to be placed there. This, too, is the usual meaning of the word "cellar" as employed in Rule 1.

I submit, therefore, that the Curator is breaking the Rules of the Club *if he uses our subscriptions* in making purchases of wine, etc. "on behalf of individual members of Common Room" without the consent of the Committee "at a meeting." Such purchases are not only illegal, but may cause serious inconvenience and even loss to the Club.

I think I have shewn then,—(1) That I have not made the statement, erroneous or otherwise, which the Curator "erroneously" attributes to me. (2) That as *all* purchases of wine, etc., *out of the funds of the Club*, are to be made only by order of the Committee, the Curator has no right to make purchases of wines, etc., "on behalf of individual members of Common Room," if he uses the funds of the Club for that purpose.

It is hardly necessary to add that, if the Curator does not use the funds of the Club for such purchases, neither the Wine-Committee nor any one else has any right to interfere. In this case, too, the Curator will no doubt defray the expenses of printing his printing his private announcements to "individual members of Common Room" out of his own pocket.

J. Barclay Thompson

Postscript The following letter of the Curator, sent to me in reply to a letter of mine, remonstrating with him for ignoring the decision of Committee to purchase certain Liqueurs, will enable members of Common Room to appreciate the attitude of the new Curator towards the Wine-Committee and the Rules of the Club, and his

archaic conception of government according to law.

“I am sorry you do not approve of my having *altered* the order for Liqueurs which was *agreed on at the Wine-Committee meeting*. I can assure you my simple wish is to do what is most for the interest of Common Room. (*e. g.* if I had ordered the 12 Green Chartreuse *agreed on* [unanimously], I fear it would have been wasted money, and that it would not have been consumed.) [The Curator soon overcame this fear, and found that the order of the Committee was the wisest after all,] and where *what seems their interest* clashes with the *letter* of any Rule, *I take the responsibility of breaking the Rule.*”

To this I replied, in substance, that the Club was the best judge of its own interests, and that it had decided unanimously that, in all matters relating to wines, the Committee *as a whole* should be the judge of those interests, and not the Curator, who is the Chairman of the Committee, with a *veto* upon expenditure, but with no other special powers.

5. Of the Wine-Committee

“Four rogues in buckram let drive at me.” Shakespeare.

Quoted from *Henry IV, Part 1* by William Shakespeare

The Wine-Committee was a very simple organism at first—a sort of Amœba, with so brief a Code of Rules, that it was all but structureless; but, as time went on, it developed; and its Rules grew ever more complex and stringent, till they became, in the humble opinion of the present Curator, rather too tight a fit to be altogether comfortable.

I will first give the Rules, and then state the interpretation that I have, in practice, put upon them.

Rules for the Wine-Committee

[Agreed upon, Dec. 8, 1882]

1. There shall be a Wine-Committee, consisting of 5 persons, including the Curator, whose duty shall be to assist the Curator in the management of the Cellar.
2. The members of the Committee, other than the Curator, shall be elected at the annual audit.
3. A meeting of the Committee *shall be held in the second week of each Term*, on a day to be fixed by the Curator, who *shall give notice* of the meeting *in the preceding week*. Other meetings of the Committee may be summoned by the Curator, *a week's notice being given*. The Curator shall summon a meeting of the Committee, when requested to do so by 3 members thereof.
4. *All questions* relating to the selection, purchase, except as hereinafter provided (see Rule 6), keeping, serving, and sending out of wines shall be decided by a majority of the Committee at a meeting.
5. *No business* shall be transacted unless *at least 3 members* of the Committee shall be present, of whom the Curator shall be one.
6. No expenditure of money shall be made by the Committee without the concurrence of the Curator.

If I were as willing, as I am unwilling, to carry out this stringent Code with literal exactness, I doubt if I should find it possible to do so. If, for example, a “question” should arise during dessert as to ordering in another bottle of wine, am I to summon a meeting, giving “a week’s notice,” to settle it? As a matter of fact, though obedient to the *spirit* of these Rules (as I interpret them), I have repeatedly broken the clauses italicised, so far as the *letter* of them is concerned. I will first give my interpretation of them, and then enumerate the various ways in which I have broken them as they stand.

In Rule 3, for “in the second week of each Term” I read “when necessary”: for “shall give notice in the preceding week” I read “shall give due notice”: and for “a week’s notice” I read “due notice.”

In Rule 4, for “All questions” I read “All important questions.” (See Appendix A.)⁴

In Rule 5, for “No business” I read “No important business”: and for “at least 3 members” I read “at least 2 members.” Had I observed *this* Rule literally, very little of the business of the past year could have been done at all. (See Appendix A.)⁵

Thus it appears that I have broken every portion of the Code which it was possible for me to break by myself: the excepted portion being the last clause of Rule 5. But here, just as it began to seem inevitable that this portion of the Rule would survive unbroken, my friends the Members of the Committee gallantly came to the rescue. On Friday, Nov. 9, three Members of the Wine-Committee assembled themselves together, *the Curator not being present*, and what was then done has been repeatedly referred to by them, as business transacted at a real Meeting.

Does the reader expect to learn that I resented this unconstitutional conduct on the part of the Committee? Not I! I was a very lamb on the occasion—a sucking dove. Whether or not I laughed in my sleeve is another question, which I do not at present enter on further than to remark that the sleeve of the M.A. gown is peculiarly adapted for that purpose, the quadrantal excavation at the lower corner being apparently exactly fitted for concealing a mouth when on the broad grin.

While on the subject of these Rules, I may venture to call attention (though in such guarded language as not to criminate myself) to Rule 1, which states that the duty of the Committee, “*including the Curator*” shall be “to assist the Curator.” Hence, logically, it is the bounden duty of the Curator “*to assist himself*.” I decline to say whether this clause has ever brightened existence for me—or whether, in the shades of evening, I may ever have been observed leaving the C.R. cellars with a small but suspicious-looking bundle, and murmuring “assist thyself, assist thyself!”

Perhaps the most interesting feature in the career of the Committee has been its gentle fading away in dimensions—“fine by degrees, and beautifully less.”

Tune: “TEN LITTLE NIGGERS.”

“Four frantic Members of a chosen *Committee*!
One of them resigned—then there were Three.

“Three thoughtful Members: they may pull us through!

Quoted from *Henry and Emma* by Matthew Prior

Parody on *Ten Little Niggers*

⁴Original phrase different

⁵Original phrase different

One was invalidated—then there were Two.

“Two tranquil Members: much may yet be done!
But they never came together, so I had to work with One.”

And I find, by the records of the business transacted during the year, that much of it was done with only this very limited number of Members present besides the Curator.

The reader may perhaps expect, as the outcome of all this, a suggestion that the Committee should be abolished: but this I am by no means anxious for. It would be *possible*, I have little doubt, to carry on the business without a Committee (in fact, it has actually been done in past years): but the existence of a Committee is satisfactory to the C.R., and so long as that is so, and so long as my interpretation of the Rules is accepted, and I may feel assured that I am *not* (as has been suggested) reduced to a simple member of the Wine-Committee, I think we may work together very well.

One other matter, connected with the Committee, remains for notice. It has been sometimes suggested that it would be well to get our wines from co-operative stores instead of from the merchants who have for so many years, and so well, supplied us. This, by the letter of the Rules, is a step which is within the power of the Committee to vote. I may as well distinctly state that I should disregard such a vote. I hold that, even if we *could* get equally good wine, cheaper, from co-operative stores, we ought not to do it; this may raise a smile among those who hold that our own interests are the only safe guides: but I have noticed that some, who fail to see that we have some duties towards our tradesmen, quite recover their keenness of vision when considering *their* duties towards *us*. Still, as nothing I could say would convince such persons, and as others need no argument, I need only say that, so long as I have the honour of being Curator, I shall not leave any tradesman who has served us long and well, without a much better reason than a mere saving of a few pounds.

Secondly, I hold that in buying wine we must trust largely to the skill and honesty of the merchant: and which gives the best guarantee for these—the experienced merchant, who has a character to lose, and to whom an old customer is the best of recommendations, or a new company, to whom we are No. 666?

Thirdly, I gravely doubt much that I hear of the cheapness of Stores, and the excellence of their wines. Let me quote “From Vineyards to Decanter,” a little book about Sherry, published in 1876.

It exists as a unique characteristic of the wine trade that capital and connection are considered sufficient qualification without technical education or training. Now a man cannot practise at the bar without being duly called, or act as solicitor without having served his articles; he cannot practise as a doctor without walking the hospitals and passing certain examinations; he cannot become a civil engineer without serving a regular apprenticeship; to become a tea-broker he must be trained in tea-tasting; and should he untrained undertake any of these positions, his ignorance would shortly be his ruin. But what proficiency is wanted to qualify a wine merchant? A gentleman of good connection with money and time at command, if wishing to augment his income, would seem naturally to cast about him for a berth in the wine trade, without thinking that absence of technical education is in any way a disqualification; and if an opportunity offers, he fearlessly assumes the direction of a business. He thinks himself qualified to cater for others, because, forsooth, he likes a glass of wine as well as any of them! Possibly he may have gained the reputation of being a *first-rate judge* amongst his friends by roundly stating at dinner that the wine he is drinking is of this or that

vintage, and is worth *exactly so many shillings per dozen*; which priggish opinion was perchance arrived at, when he had just eaten mullingatawny soup, cayenne pepper, or preserved ginger. Under such circumstances a man who had spent his life in the trade would not hazard an opinion; and till he had tested the wines in question by careful tasting and comparison, he would probably mistrust his judgement.

Knowledge in this does not differ from any other kind of knowledge, in that the more a man knows the more he feels he has to learn; and a little reflection will show, that as much time and even more arduous application are necessary in the education of a wine merchant than are wanted in many other trades. A knowledge of general business, office details, &c., must be acquired, added to which there is cellar management, only to be learnt by practice; so that if a cellarman does not thoroughly know his work, his master can teach him. Lastly, the palate has to be educated in tasting, a work which, if done satisfactorily, must be commenced at the very rudiments: after these have been mastered, it is only by continued perseverance that the faculty is acquired of detecting the more subtle distinctions.⁶ In the case of those who become wine merchants *per saltum* this gradual education is never attempted. "Blood is thicker than water," they say; and pinning their faith upon the maxim, gentlemen go into the trade relying wholly upon their standing and connection.

I think, however, that the *reductio ad absurdum* of trading is to be found in the wine departments of co-operative stores which deal in miscellaneous goods. I tried sherry from a store where sales in general goods reach a total of hundreds of thousands per annum, and whose business in wine alone is such as would rival and perhaps surpass that of any London wine merchant. In order to test their value by comparison, I obtained samples, through a friend, of Sherries between 30s. and 48s. per dozen, from Messrs. Christopher and Co., Messrs. German and Co., and Messrs. John and Charles White. I did not find any advantage in the wines from the General Stores; on the contrary, I thought that the private traders gave better value for the price. Mistrusting my own judgement, I classified all the wines according to their price under three heads, and sending samples, with marks of my own, to two reliable members of the trade, I asked their opinion upon each class after having tested the wines by blind tasting. The following is the result:

In Class I., Mr. A. places the Society's sherry fourth on the list, Mr. B., third.

In Class II., both Mr. A. and Mr. B. placed the Society's wine third.

In Class III., Mr. A. placed the wine from the stores fourth, and Mr. B., third.

Besides these three Classes, I found quoted in the Company's list as an Amontillado a wine which seemed to me in no way to resemble what is known in the Spanish trade under that name, and this I marked "Amontillado." In their report the two professionals stated that they could not find the least trace of amontillado in the blend!

Now consider the advantages at which the great co-operative societies trade. They derive an income of some thousands a year from ticket-money, *though at no expense for delivery*. Bad debts are impossible; and prepayment produces cash so readily as to present the unheard-of marvel of trade safely conducted without capital. Nevertheless, at this particular Store it is evident that the sherry is sold at higher rates than would be charged by a first-class wine merchant; obviously because the committees of management have had no more technical training than our *per saltum* friend when taking his fearless leap, and the departmental managers are not of calibre to supply the lack. There exists, indeed, another alternative. Can it be that wines are sold at a profit sufficient to cover losses made in the other departments?

⁶The truth of this remark I have repeatedly verified by experiments on Members of the Wine-Committee and other friends, and have come to the conclusion that amateur-tasting is not a thing to be relied upon. Even those who—in the noble language of the Moderation-lists—"egregiè se commendaverunt" have proved to be, like other mortals, "obnoxious to error."

Here are a few of the questions which are put from time to time, showing the confused ideas existing in the public mind, as well as amongst wine merchants.

Is not the colouring of sherry given by brown sugar and treacle?

How is it that so pale a wine can have so much *brandy* in it? thinking the spirit used to be coloured, just like the Cognac commonly drunk.

What is the exact age of this sherry?

What vintage is it?

Can this wine be pure, as it has a sediment?

Of ordinary sherry—is this a natural wine?

One of the above questions—“What is the exact age of this sherry?”—has been actually put to me, with reference to our wine-tariff. Of course all I can give in reply is the date when it was bought and (presumably) bottled: “exact age” it does not possess.

6. Of Chalybeate Waters

“This is the killibeate.” Pickwick.

Quoted from *The Pickwick Papers* by Charles Dickens

It is not the happy lot of every Curator to be criticised, not only by resident members of the C.R., but also by distant correspondents. I have received, during this past year, a long series of letters from one writer, of a highly critical—not to say hostile—tendency. These have been fired off at me with a monotonous regularity, having all the persistency—without the pathos—of minute-guns. The writer’s name I think it best to suppress: but some of my readers will perhaps surmise it, when I tell them that he was a Member of the House (and, I believe, of C.R.) till the end of 1879, and that he is now residing not a hundred miles from Tunbridge Wells.

How he has possessed himself, as he evidently has, of the minutest details of what is done and said by the Members of the Wine-Committee, both individually and collectively, I will not stop to enquire: and whether the officials in the Tunbridge Wells Post-Office have struck, or are likely to strike, for an increase in salary, is another question I must leave on one side: in a pamphlet such as this, an exhaustive treatment of *all* subjects of human interest is plainly impossible.

Let me cull a few rosebuds from the rich garden of fancy, of which this series of letters are the beds and borders:—

“Is there any object or advantage gained by violating the plain Rules under which the Committee was elected to manage the C.R. cellars?” (*Ans.* Yes.)

“You know perfectly well that you had no power whatever to buy these Liqueurs” (I had ordered a few pounds worth on my own responsibility), “and that you are acting against the express wishes of those who elected you in doing so.”

“The Rules were expressly framed with a view of preventing the Curator from buying Wines, &c. of his own motion.”

“You have no more right than any other member of the Committee to purchase Wines, &c. for the C.R. cellar.”

“What is the use of the Wine-Committee, if you are free totally to ignore their wishes and orders?” (*Ans.* I do not know.)

“The C.R.” (in accepting the Rules) “deliberately reduced the Curator to a simple member of the Wine-Committee for all purposes of ordering Wine, &c.”

“I quite understand your dislike to novelties of this kind” (the abandoning our old tradesmen and dealing with co-operative stores), “and although I don’t in the least agree with you in thinking it to be a gain to any one to support the system of middlemen’s profits, I am not surprised that those who have so long been accustomed to pay them should wish to do so still.”

In the last letter from which I shall quote, after mentioning that a “friend” of mine had said that men of my standing “cannot govern constitutionally,” he adds “well, we must aid them as far as we can.” These letters are, I suppose, meant to “aid” me: but I feel inclined to say, with the man who was “aided” by an officious bull in surmounting a fence, “you have ideed assisted me: yet it was not precisely the form of assistance I most desired!”

What most amuses me in this series of projectiles is the novel view it gives me of my position as Curator. I had been weak enough to picture myself to myself as a well-worked and slightly worried individual, trying, to the best of his poor judgment, to do his duty by the friends who had entrusted their Common Room to his care—acknowledging responsibility to those friends as a body, but most certainly *not* to single members of that body, still less to outside-critics—and behold, I find I am a dark conspirator, going about in cloak and domino, with daggers and detonators, and withal liable to be put in the dock and lectured by any *soi-disant* judge that chooses to don the wig and gown! All this is, as Tennyson says “sweet and strange to me.”

Quoted from *The Dying Girl* by Alfred Tennyson

7. A Vision Of The Future

“Sequimur te.” Horace.

Quoted from *Aeneid* by Virgil

It was 1983, and the new Curator was in an awful dilemma. True, he had come out of his last difficulty with flying colours. Only a month ago, passing the Common Room one afternoon, he had noticed the cellar door open, and strolling in had found two shabbily-dressed men filling a coal-sack with bottles of old Port. They had declined to explain their motives, and had left hastily. But the Curator had been true to his duty. “It is a question of *keeping wine*,” he had said to himself, “and can only be decided by a majority of the Wine-Committee at a duly-summoned meeting.” So he had called a meeting for that day week: and, when they met, no one knew exactly where to find the men. “I feared we should lose the wine,” he told the Committee: “but *I do not think I am justified in breaking the rules made by Common Room on any pretext whatever!*” The Committee applauded as nine tailors.

And now, within the last few days, the Common Room, ever anxious to oblige their Curator in all things, had devised a new Code of Rules, which fitted him to a T, like a new pair of handcuffs—a Code of Rules which, as they fondly hoped, he would welcome as something really striking and stringent.

This was the Code:—

Rules for the Wise-Committee

“1. There shall be a Wise-Committee consisting of one person, excluding the Curator, whose duty shall be to assist the Common Room in the managing of the Curator.

“2. The member of the Committee shall be self-elected.

“3. A meeting of the Committee shall be held on every day in each Term.

“4. All questions relating to the obedience, or disobedience, of the Curator, to the Rules of the Wine-Committee, shall be decided by a majority of the Wise-Committee at a meeting.

“5. No business shall be transacted, unless at least one member of the Committee be present.

“6. Nothing shall be done, or left undone, by the Curator without the concurrence of the Committee. And, if the Curator shall complain of cold, it shall be the duty of the Committee to make things warm for him.”

After this Code had passed into law, the members of the Common Room went about with elastic steps, and hearts bursting with joy and thankfulness. “The wild beast is caged at last!” they were always saying to each other, shaking hands whenever they met. The Curator appeared to be less entirely at his ease. His walk was suggestive of Tight Boots, his countenance of Toothache, while his general deportment was that of a man whose system has been demoralised by too much Tea.

About this time also the following song became popular among the little boys:—

“I love my love with a T,
Because he is Tethered and Tied:
I hate him with a T,
Because, in spite of me,
He is not Terrified!”

(*Spoken.*) “I took him to the sign of Tom Tower, and fed him with the Tallest of Talk. My name is τικς, and I live at Tunbridge Wells.”

All this was very cheerful, but a new difficulty had arisen, and the Curator was distracted. An old member of the Common Room had just come to Oxford, who always took pale brandy and soda at dinner, and there was nothing but brown in the cellar. “What *am* I to do?” groaned the agonised Curator. “It will take 8 days to get a Committee-meeting to settle from what merchant to get samples—4 days to get the samples—8 days more to get a meeting to select the brandy and fix the price to put on it—and 4 days to get it. That is over 3 weeks, and the poor old man only stays a fortnight!” Beads of perspiration trickled down his manly forehead. After some hours of anxious thought, he nerved himself for a truly desperate step: *he ordered a bottle of pale brandy on his own responsibility!* And forthwith came a letter from Tunbridge Wells. “What! you’re at it again, are you? For ever trampling on the liberties of Common Room, and conspiring against the Constitution! What’s the good of the Wine-Committee? What’s the use of my anathematising you twice a week by post, and doing my best to make your life a burden? What’s the good of anything? And *you* pretend to be a constitutional Curator? Yah, you Cockatrice!”

I don’t quite know what became of that guilty Curator. I believe he fled to other climes; and they elected a new one: and Common Room was once more supposed to be governed on constitutional principles: and no hitch occurred—till the next time.

8. Of the Transactions of the Year.

“*If ’twere done, then ’twere well done.*” Shakespeare.

Quoted from *Macbeth*
by William
Shakespeare

Transactions are of two kinds, those done and those not done: we will take the former first.

(1) The Ledgers have cost me a great deal of time and trouble. But the saving of time and trouble, in the future, will I hope more than balance this. It appeared necessary to construct a new set, and this I did not find possible without many experiments, many failures, and I fear much cost in printing. It is not possible here to give any intelligible account of them: but if any Member of C.R. feels any interest in the subject, I shall be happy to show him what has been done.

(2) The Coal-cellar, as I found it, was a small recess on the way down into the Wine-cellar. To the Common Room it supplied coals for a few days' consumption: to those visiting the Wine-cellar it supplied an area of coal-dust, an inch deep, through which it was necessary to tread. I have had one constructed, out in the garden, which will hold a year's supply.

(3) The book-shelves, which were insufficient, I have added to by shelving the lobby at the entrance to C.R.

(4) In order that Members might be able readily to refer to back numbers of our daily papers, I have had portfolios made, each holding a fortnight's supply of one paper.

(5) I have had new tiles put to the fire-place, and have covered the blank wall above the wainscoting with one of Morris's rich papers.

(6) At the request of some of the Members, I have instituted (experimentally) "5 o'clock tea," from 4.30 to 5.30, in C.R. There are certain financial questions, connected with this, which I shall submit to C.R. at the meeting.

I proceed to the second part of my subject—transactions not done.

(1) The re-organisation of the electric bell, which was originally presented to C.R., in 1870, by Mr. R. H. M. Bosanquet.

In the record of meetings of C.R., under date Nov. 30, 1874, I find the following entry:—

"Agreed that the electric bell, with the wires, reaching to the Curator's chair, be put in order after having been destroyed two years ago by Mr. S. Owen. Mr. Baynes, Lee's Reader in Physics, arranged this."

Nine years have elapsed since this record was made, but the kind of feeling, which prompted the offer of Mr. Baynes, is as strong as ever. There can be no doubt that he will be as good as his word, and that the wires will be put in order.

(2) There have been many other things not done during the year: but I will not further tax the patience of my reader.

9. Last Words.

"A-do, Samivel," said the old gentleman.

'Wot's a do?' enquired Sam." Pickwick.

Quoted from *The Pickwick Papers* by Charles Dickens

Holding, as I do, that many of the woes of life not only have a comic side but are often best viewed from that side, I have written, so far, more as a Laughing than as a Crying Philosopher: but it is necessary to make a few serious remarks in conclusion.

It would be hard to put into words the extreme reluctance with which I took this office at the end of 1882. Had I simply consulted my own personal

inclinations and interests, I should have declined it, absolutely and inexorably. I want leisure-time, for purposes of my own, very much indeed: and during this past year I have had to give most of my working hours to the duties of my new office. The new ledgers, entailing as they did the keeping of the accounts, during a considerable part of the time, with my own hand, have cost me a great deal of very hard work. I do not doubt for a moment that others would have done the same thing better, and with less work: but that does not mend matters for *me*. Even the correspondence has been no small tax on my time and attention. I see by my register that I have written and received, during the year, about 800 letters on Common Room business alone. If I could have foreseen the work of the year, I doubt very much if I should have undertaken it: and if I thought that next year would bring the same amount, I should feel it absolutely out of the question to go on: but I do not anticipate this; now that the new ledgers are completed, I think the work will not be more than I can undertake, if Common Room wishes me to go on, while securing a reasonable amount of time for my own occupations.

But before entering on another year of office, I must come to a clear understanding on the subject of the Wine-Committee; and, in order to leave Common Room perfectly free to settle the matter to its own satisfaction, I intend, at the meeting on Shrove Tuesday, when the other business has been disposed of, to resign my office and retire from the meeting. There will then be three courses open to Common Room.

(1) To elect another Curator, without reference to any question connected with the Wine-Committee. This is the result that, personally, I desire most of all: the relief to myself would be most welcome; and if any other Curator can be found, whom Common Room would be satisfied to elect, I earnestly hope that he may be elected.

(2) To re-elect me, on the distinct understanding that I shall accept such re-election as signifying that Common Room endorses the interpretation I have put upon the Rules of the Wine-Committee, and is willing to trust me with the same amount of discretionary power in the future which I have assumed to myself in the past. I wish here to state most respectfully, but most distinctly, that I will not take office again on any other conditions. Hard *work* is good for every one, and I enjoy it: all I ask is to be spared from *worry* (which is to me far more exhausting and crushing than any amount of work), and from the liability of being taken to task by individual critics for not literally obeying the Rules of the Wine-Committee.

(3) If, however, Common Room wishes to endorse the statement of my Tunbridge Wells correspondent, that, in passing those Rules, they “deliberately reduced the Curator to a simple member of the Wine-Committee for all purposes of ordering Wine, &c.”—if, in a word, they wish to have a mechanical Curator, who will carry out their Rules, under all circumstances, with the unreasoning precision of an automaton—then it will be necessary to find some one else to take the office. They *may* find such a Curator, but it is doubtful whether, after a few months’ experience of such an environment, he would find existence easily distinguishable from a mustard-plaster.

I leave the matter in the hands of Common Room. If they can find another Curator, generally acceptable, I shall sincerely rejoice. If not, I will put personal feelings aside and resume office: and, when once assured that my “conceptions of government according to the law,” however “archaic,” are endorsed by C.R., I

shall bear with equanimity all other criticism; and even the shower of missiles—I mean missives—from Tunbridge Wells will be to me “like a tale of little meaning, though the words are strong.”
[...]⁷

Quoted from *The Lotus-eaters* by Alfred Lord Tennyson

⁷Remark: The two appendices are not reproduced here. Appendix A has the “details of rules broken”, starting with “wines, &c., ordered” until “cellar arrangements.” Appendix B has the “analysis of accounts for 1883” with “receipts” and “expenditure.”

12.22 The Proposed Procuratorial Cycle

Source: printed 1885, the Postscript could be torn off

To be Submitted to Congregation on Oct. 27, 1885

If, as will be generally admitted, the Proctorship is a dignity coveted by many members of this University, it is surely axiomatic that one's chance of attaining to it should depend on personal fitness for it—not on the mere accidental circumstance of belonging to a large or small College. Yet the proposed scheme would actually make one's chance *vary inversely* as the size of the College! For example, Keble College, with 120 members of Convocation and 5 of Congregation, is to have as many turns as Exeter with 471 members of Convocation and 22 of Congregation, so that each member of the smaller College will have *four times as good a chance* of being made Proctor as a member of the larger would have!

The obvious way to avoid this anomaly is to give to each College turns, in electing a Proctor, which shall be in proportion to its size. The now rejected Cycle was made on that principle: and, because in some details it was open to objection, it is proposed to abandon its principle, and to substitute one as crude, and as absurd in its results, as could well be imagined.

The chief objection, brought against the rejected Cycle, seems to be that it takes account of the number of Undergraduates in a College—which is considered to be an irrelevant matter. This seems to be a fair objection: but surely we need not reject, on its account, the whole well-established principle on which a Cycle should be calculated. The number of turns, assigned to a College, should clearly be proportioned to the number of its members who are eligible as Proctors. And I think no great injustice will be done if we assume this number to vary as the number of its members who are members of Convocation.

In the following 30-year Cycle, this principle has been adopted, and the reader can see for himself, by inspecting the table which follows it, that turns assigned are, as nearly as possible, proportional to the number of members of Convocation. The number of turns, assigned by the Cycle of 1859, are added in parentheses.

<i>Years.</i>	<i>Colleges.</i>	<i>Years.</i>	<i>Colleges.</i>	<i>Years.</i>	<i>Colleges.</i>
1889.	B. N. C., S. John's.	1899.	New, Univ.	1909.	Hert., Univ.
1890.	Ball., Univ.	1900.	Pemb., Wadh.	1910.	B. N. C., S. John's.
1891.	Ch. Ch., Exeter.	1901.	Ch. Ch., Queen's.	1911.	Ch. Ch., Keble.
1892.	Linc., Mert.	1902.	Exeter, Magd.	1912.	All Souls, Magd.
1893.	Queen's, Worc.	1903.	B. N. C., S. John's.	1913.	Ball., Non-Coll.
1894.	Queen's, Worc.	1904.	Oriel, Worc.	1914.	Exeter, Worc.
1895.	Hertf., Oriel.	1905.	Ball., Mert.	1915.	New, Oriel.
1896.	Ch. Ch., S. John's.	1906.	Ch. Ch., Linc.	1916.	Queen's, Wadh.
1897.	B. N. C., Exeter.	1907.	C. C. C., Trin.	1917.	Ch. Ch., Pemb.
1898.	Ball., Trin.	1908.	Exeter, Queen's.	1918.	Jesus, Trin.

<i>Colleges.</i>	<i>Mem. of Conv.</i>	<i>Turns.</i>	<i>Colleges.</i>	<i>Mem. of Conv.</i>	<i>Turns.</i>
Ch. Ch.	719	6 [8]	Wadh.	215	2 [3]
Exeter	471	5 [5]	New	213	2 [2]
Balliol, and New Inn. H.	361	4 [3]	Merton	212	2 [2]
Queen's, and S. Edmund H.	319	4 [3]	Pemb.	186	2 [2]
B. N. C.	317	4 [4]	C. C. C.	179	2 [2]
S. John's	317	4 [4]	Linc.	174	2 [2]
Univ.	285	3 [3]	Hertf.	150	2 [—]
Trinity	267	3 [2]	Keble	120	1 [—]
Oriel, and S. Mary H.	263	3 [3]	Jesus	114	1 [1]
Magd.	228	3 [2]	All Souls	96	1 [2]
Worc.	225	3 [3]	Non-Coll. [Halls]	42 [257]	1 — [3]
				5473	60 [60]

The foregoing Cycle has not been arranged at random, but the claims of the various Colleges have been estimated for each year, allowing a claim to be stronger in proportion to the number of turns the College is to have in the Cycle, and also in proportion to the number of years it has been waiting for a turn.

Though I am not offering this scheme for a Cycle with any idea of its being proposed for adoption in its present form, yet I hope that what I have said may induce many members of Congregation to pause before they assent to the adoption of a Cycle so utterly unjust and unreasonable as the one to be considered next Tuesday.

Charles L. Dodgson.
Ch. Ch.
October 24, 1885.

Postscript

Addressed to Mathematicians Only

It will, I think, be satisfactory to mathematical readers to know the details of the process by which I calculated the foregoing Cycle.

First, I divided 5473, the total number of members of Convocation, by 60, the total number of "turns" in a 30-year Cycle, which gave 91 as quotient. It seemed reasonable, then, that each College should have one turn assigned to it for every 91 members of Convocation it possessed. So I divided these numbers by 91. The quotients are as follows:—

<i>Colleges.</i>	<i>Quotients.</i>	<i>Turns.</i>	<i>Colleges.</i>	<i>Quotients.</i>	<i>Turns.</i>
Ch. Ch.	7·90	6	Worc.	2·47	3
Exeter	5·17	5	Wadh.	2·36	2
Balliol, and New Inn H.	3·96	4	New	2·34	2
Queen's, and S. Edmund H.	3·51	4	Merton	2·33	2
B. N. C.	3·48	4	Pemb.	2·04	2
S. John's	3·48	4	C. C. C.	1·96	2
Univ.	3·13	3	Linc.	1·96	2
Trinity	2·93	3	Hertf.	1·64	2
Oriel, and S. Mary H.	2·89	3	Keble	1·31	1
Magd.	2·53	3	Jesus	1·25	1
			All Souls	1·05	1
			Non-Coll.	0·46	1
				60·10	60

The number of turns assigned is, in all but 4 cases, the *nearest* integer to the quotient so obtained. The excepted cases are:—

Ch. Ch.	7·90	—6
B. N. C.	3·48	—4
S. John's	3·48	—4
Worc.	2·47	—3.

Here the integer, assigned to Ch. Ch., is 2 less than it should be; while the other 3 integers are 1 too great. But they are so similar that, if one be lowered, all must be; and, though we could then give Ch. Ch. its proper integer, 8, we should have an extra turn to dispose of, which could not be *anywhere* assigned without injustice. Moreover, I think Ch. Ch. has so exceptional a number of members of Convocation on its books that it is reasonable to ignore much of this excess, and it may well be content to have one turn more than any other College.

Having settled the number of turns each College should have, I calculated, for each College, and for each year in the Cycle, a "claiming number," and assigned "turns" to the two Colleges whose "claiming numbers" stood highest for the year. In calculating them, I assumed that, where two Colleges have the same number of "turns" assigned to them, that one, which has been longer without a turn, has the higher claim; and that, where two Colleges have been waiting equally long, that one, which has the greater number of turns assigned to it, has the higher claim. Hence, since both these elements are variable, I took their *product* as the claiming number. It was of course necessary, in commencing the Cycle, to assign fictitious periods of waiting to Keble and the Non-Collegiates, who have not as yet had turns at all. For this purpose I took the *average* of all the other periods of waiting.

In most of the years I found two of the "claiming numbers" greater than all the rest, so that it was clear which Colleges ought to have the turns. The excepted cases were as follows:—

In 1896, Ch. Ch. stood first with "30," while B. N. C. and S. John's came next with "28" each. I could not settle the question, of which to take, by actual numbers of members of Convocation, as these are exactly equal: so I took into account the fact that, at the beginning of the Cycle, S. John's had been waiting

one year longer than B. N. C. But, to be quite fair to B. N. C., I reckoned as claim, in subsequent years, as if it had been waiting since 1896, instead of 1897.

In 1905, Lincoln and Merton stood equal for the second place, with "26" each. Here I gave Merton the preference, as having more members of Convocation. I observed the same principle in 1914 and 1916.

Lastly, in 1918, I assigned a turn to Jesus College, with a "claiming number" 30, rather than to either B. N. C. or S. John's, with "32" each: this was simply because it had not yet had a turn at all, while all the other Colleges had had their proper numbers.

If the calculation were carried on into 1919, B. N. C. and S. John's would have the two turns, as they have in 1889. Thus the Cycle would begin again.

It might be found necessary, in order to make due allowance for the varying numbers of members in Colleges, to make a fresh calculation at less intervals than 30 years, e. g. every five years.

Charles L. Dodgson.

Ch. Ch.

October 24, 1885.

12.23 The Proctorial Cycle

Source: printed 1885

To be Voted on in Congregation on Tuesday, Nov. 10, 1885

For two reasons I venture to trouble Members of Congregation with a few more printed remarks on this subject, instead of waiting till Tuesday: one is, that I am no orator; the other, that I doubt if *any* oration ever affects the voting to any appreciable extent. Men come with their minds already made up: they listen, with an ill-concealed impatience, to the debate, and then immediately vote, without the least regard to it, as their consciences, or their friends, have already dictated.

The main question to settle on Tuesday is, not *which* of the possible Cycles, that might be calculated, is the best—we shall have ample time, before 1889, to consider *that* question—but whether a Cycle of Simple Rotation is better (as its supporters believe) than *any* Cycle based on the relative sizes of Colleges.

And what I would urge is that almost *any* such Cycle would be more fair than the one now proposed.

Mr. Moore, in a paper put out in answer to mine, states that “the number of members of a College who are (practically) eligible as Proctor, depends not on the number of its Members of Convocation, but rather on the number of its educational staff, or perhaps of its Governing Body, or possibly, some might say, its Members of Congregation.” That may be. I only offered my Cycle, calculated on the numbers of Members of Convocation, as a *specimen* of a Proportionate Cycle. All these different ways would have to be fully considered, if (as I hope) Congregation rejects the “Simple Rotation” Cycle: and it would be well also to inquire on what principle *Cambridge*, whose Cycle is, like our existing one, Proportionate, has calculated it.

Mr. Moore also thinks that a Proportionate Cycle would place at a disadvantage a Member of a College whose turn for electing a Proctor occurred at intervals of more than 11 years, because “it is well known that the eligibility of any person for the Proctorship is by Statute *limited to a period of 11 years*,” so that “some members of that College, however personally fitted for the office, will be excluded by standing from ever being elected by their own College.” Really, one is almost ashamed of having to refute so transparent a fallacy. A Proportionate Cycle is framed for the express purpose of giving to each man an *equal* chance of being elected, and a charge, of breaking down under so simple a test as this, is almost too absurd to discuss seriously. Let us, however, take a simple example: suppose two Colleges, one having 20 members eligible as Proctor, the other 10; and let the larger College have a turn once in 11 years, and therefore the other once in 22 years.

Any schoolboy could calculate the respective chances of election enjoyed by two members, one taken from each College. Suppose all the names on the books of the larger College during the next century could be put into a bag, and one drawn at random. What is his chance of being elected Proctor? There are only *two* elements to consider: one is, the chance that an election will occur during his statutable period of 11 years (which depends on the number of turns assigned to his College), the other, his chance, if an election *does* occur, of his

being elected (which depends on the number of members in the College, as of course we must allow them all *equal* chances). Now, it is *certain* that an election will occur in his time: hence all we have to estimate is the second of these two elements: there are 20 competitors, so that his chance is 1-20th.

Now take a member of the small College: the chance of an election occurring in his time, is evidently one-half: and the chance that, if it *does* occur, he will be elected, is 1-10th: and one-half of 1-10th is (if I may be excused for mentioning so childish a truism) 1-20th. So that the member of the smaller College has *exactly the same "expectation"* as the member of the larger. It will indeed be a memorable day for Mr. Moore, if he ever succeeds in proving that one of the most elementary formulae in Algebra is incorrect! We shall next have him proving that the angles at the base of an isosceles triangle are *not* equal!

In contrast with the above illustration of the absolute justice of a Proportionate Cycle, let us consider an instance of the working of a Cycle of Simple Rotation. Observe these 40 men coming up High Street: the 20 on the one side are radiant with happiness—those on the other side are silent and gloomy. Why this difference? Let us accost the more cheerful company:

“Whence came ye, jolly Satyrs! whence came ye,
So many, and so many, and such glee?”

Quoted from
Endymion by John
Keats

“We come,” they say, “straight from an interview with Mr. Moore. He has just told us that, as we happen to constitute *two* Colleges, ten in each College, we shall be called on to elect *two* Proctors in the next 11 years, so that *two* of us are secure of reaching that high office. ‘But you, O Unfortunate,’ he added (addressing those poor creatures on the opposite side), ‘since ye constitute but *one* College, know that but *one* of your number shall have a chance of the prize!’ Have we not, then, good cause to be jolly?” And this is Mr. Moore’s idea of even-handed justice!

Mr. Moore has one more objection to a Proportionate Cycle, viz. that “granting that it was approximately fair when first made out,” it “would almost certainly be far from corresponding with existing facts long before the Cycle of 30 years had run its course.” Now, I had said in my paper “it might be found necessary, in order to make due allowance for the varying numbers of members in Colleges, to make a fresh calculation at less intervals than 30 years, e. g. every five years.” At any rate, it would have run for *centuries* before it would be anything like so unfair as a Cycle of Simple Rotation!

Lastly, Mr. Moore states that the Cycle of Simple Rotation “has at least the merits of simplicity and permanence.” One can only admire the simplicity of a reader who finds any weight at all in such a plea. If a proposal be (as I contend his proposal is) radically unsound, its “simplicity” is a very doubtful recommendation, while its “permanence” only intensifies the evil. If you cut off a man’s nose, you undoubtedly *simplify* his features: and such an arrangement would most probably be *permanent*: still, were it proposed to apply the process to Mr. Moore himself, I feel no doubt that he would raise objections.

I trust that any Member of Congregation, who agrees with me as to the absolute unfairness of the scheme to be voted on next Tuesday, will take the trouble to come and vote against it, leaving the rival merits of the various possible Proportionate Cycles to be considered hereafter.

At least one may trust that no one will be led away by so flimsy a plea as that advanced by Mr. Pelham in the last debate—that “what is mathematically true

is usually found to be practically false!" Does Mr. Pelham suppose that Architecture, Engineering, Insurance, Land-surveying, Navigation, are not "practical" Sciences? Would he willingly take his passage in a ship, whose captain adopted this wild theory in calculating his latitude and longitude? If Mr. Pelham ever undertakes the management of a large School, I presume he will make some such speech as this to his boys. "I have noticed, Boys, a great inequality in the distribution of food at dinner-time. The long table in the middle has four times as much as the end one, and each side-table has three times as much. This was so arranged, I believe, for the ridiculous reason that the one contains four times as many boys as the end-table, and the others three times as many. But this is merely a *mathematical* truth, Boys, and is therefore *practically* false. The new arrangement, which I am sure will commend itself to your common sense, will be that of delivering dishes to the separate tables *in simple rotation*. So remember, Boys, that in future the long table will not have its four dishes, and the side ones their three; but that there will be *one leg of mutton for each table!*" (Cheers?)

Charles L. Dodgson.
Ch. Ch.
November 6, 1885.

12.24 Suggestions as to Election of Proctors

Source: printed 1885

[In the following suggestions, the word “College” is to be taken to mean “College, or College and Hall combined, or the Body of Non-Collegiate Students.”]

In any system, by which turns in electing Proctors are to be assigned to Colleges with a frequency which shall be proportional to the *size* of each College, the first question to be settled is, what criterion of size should be adopted.

Several such criteria have been suggested, e. g. the number, on the College books,

- (1) of members of Convocation;
- (2) of members of Congregation;
- (3) of its Governing Body;
- (4) of its Educational Staff;
- (5) of all members, graduates and undergraduates;
- (6) of members eligible as Proctor.

The last-named seems to be at once the most simple, the most equitable as regards aspirants to the office, and the most likely to be accepted by the University. This is the criterion adopted in the following suggestions.

In what follows, the phrase “eligible members” is to be taken to mean “members eligible as Proctor.”

If any other criterion of size be preferred to the one here adopted, this phrase may be replaced by “members of Convocation,” or by any similar phrase, without rendering any other change necessary.

Assuming, then, that the claim of any College, to elect in any given year, should be taken as proportional to its number of eligible members, at least in the case of two Colleges who have been waiting equally long for a turn, it may also be assumed that, in the case of two Colleges of equal size who have been waiting *unequally* long, the claim should be taken as proportional to the number of years of waiting. If these two conditions be granted, it follows by ordinary “Double Rule of Three” that, when both elements vary, the claim is fairly represented by the *product* of the two numbers.

The second question to be settled is whether the *data*, used in determining for any given year the claims of the several Colleges to elect in that year, should be merely the most recent obtainable, or should be an average, taken over previous years. It can hardly be necessary to point out that, if the number of members in a College has changed suddenly within the year, to multiply the new value by the number of years of waiting, and thus to make the recent change have the same effect as if it had occurred many years previously, is to give to the fluctuation far more than its due effect. The obvious answer to this question is, that the number, representing the claim of each College, should be the product of the number of years of waiting and the *average* annual number of eligible members for those years.

Now the average number of members, for a series of years, multiplied by the number of years, is identical with the sum-total of the annual numbers. Thus

the “claim” for any given year may be found by simply adding together these numbers, for all the years elapsed since the last election; and, when it is once known for any given year, the addition of the number of members for that year will give the “claim” for the next year.

It is obvious that the two Colleges, whose “claims” in any given year stand highest, are the two who should elect the Proctor for that year.

The third question to be settled is, how long beforehand it is desirable to know what Colleges will be entitled to elect in any given year.

It would seem that three or four years, at the outside, would be amply sufficient notice. It is conceivable that one, who was tolerably certain of being elected by his College in its next turn, might make his plans dependent on the question whether that turn would occur in three years or in four: but it is extremely unlikely that he would care to know whether it would occur in seven years or in eight. In the system here suggested, the rotation of Colleges would always be known rather over four years in advance.

The fourth question to be settled is, at what intervals the system of rotation should be re-adjusted, so as to give due effect to the fluctuation, in each College, of the number of its eligible members.

A Cycle of 30 years is undoubtedly too long for this purpose, and it is fairly open to the charge, brought against it by Dr. Moore, that, “granting that it was approximately fair when first made out, it would almost certainly be far from corresponding with existing facts long before the Cycle of 30 years had run its course.”

A Cycle of 5 years, re-adjusted once in five years, is less open to this charge, but labours under one of two serious disadvantages, which may be best stated as a dilemma. If it were computed on the most recent data, it could only be published just before coming into use; so that, towards the end of each period, there would be no certain information to be had as to future elections. If, on the other hand, it were published four or five years before coming into use, it would, though quite sufficiently in accordance with the facts in its first year, become less and less so from year to year; and there would always be a sudden change, with the introduction of each new Cycle, from the use of *data* ten years old to that of *data* only five years old.

But, granting that it is necessary to base the computation of claims, for any one year, on the *data* of five years back, in order that the names of the Colleges electing in any year may be published five years beforehand, there seems to be no reason for doing more than this. That is to say, if the names for the 10th year be published in the 5th, those for the 11th in the 6th, and so on, the order of rotation will always be known for the next 5 years, while the *data*, used in computing the claims for any one year, will always be neither more nor less than 5 years old.

The principle here adopted is that, in the year 1900 for example, the claims for the year 1905 shall be computed and published; and that the claim of each College shall be the product of two numbers—one, the number of years elapsed, in 1905, since its last turn, the other, what is assumed as its average annual number of members for those years, though it will really be a similar average taken, from the year 1900, back to its last previous turn.

It would be desirable for Council to publish in each Michaelmas Term, along with the list of members of Convocation the names of the ten Colleges entitled to elect during the next five years. Also, as it would be well to fix on a definite *day*,

for which each College should take the annual census of its eligible members, Michaelmas Day might be found convenient for this purpose.

In order to commence the new system in Michaelmas Term, 1886, it would be necessary to compute and publish the claims for 1889, 1890, and 1891. Those for 1889 would have to be computed by multiplied together, for each College, the number of years elapsed, in 1889, since its last turn, and the best attainable average of its annual number of eligible members. It would probably be most satisfactory, instead of going back into past years, to accept the returns for Michaelmas Day, 1886, as the average required.

This method would be easily worked out of all but 3 of the 22 Bodies contemplated in the new Statute.

But in the case of Keble and Hertford Colleges and the body of Non-Collegiates, a different method would be needed, since there is no previous "turn" to date from. For each of these Bodies an ideal "period of waiting" must be assigned: and this would equitably be half of the interval of years at which the "turns" of that Body ought to recur. To calculate this interval, it would be necessary to add together the average numbers of eligible members of *all* the Colleges, and to divide their total by the number of the College in question; and then to halve this quotient, since *two* Colleges elect in each year. This may sound complex; but, since the number of eligible members is used first as a divisor and then as a multiplier, it may be ignored altogether, and the practical result is to assign to each of these three Bodies, as its claim for 1889, one-fourth of the total number of eligible members in the University.

In the (probably rare) event of the two "claims" occurring, the rule might be adopted of giving precedence to the College that had waited longest: but this rule should be reversed, if it happened again with the same two Colleges.

The Table published (say in the year 1900) might be of the following form:—

Names of Colleges &c.	Claims for 1904.	Eligible Members in Mich. 1900.	Claims for 1905	Numbers
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The numbers in the 2nd column would, except for the 2 Colleges electing that year, be added to those in the 3rd, to give those in the 4th. For these 2 Colleges, the number in the 3rd would be repeated in the 4th.

The publication of such a Table would enable any one to calculate for himself, approximately, the order of rotation for any number of future years.

Suggested Form of Statute

Whereas it is expedient to revise the Procuratorial Cycle and to determine the qualification of the members of the several electing Bodies, the University enacts as follows.

In Statt. Tit. XVII. Sect. iv, § 1 (p. 218, ed. 1884) shall be struck out, and the following new subsection shall be substituted:—

1. Of the Election of Proctors

There shall be two Proctors, who shall be elected annually on the Wednesday after the first Sunday in Lent. In and after the year 1889, they shall be elected by the following Bodies, in an order to be determined as hereinafter provided.

University College. Corpus Christi College.
Balliol College. Christ Church.

Merton College.	Trinity College.
Exeter College.	St. John's College.
Oriel College.	Jesus College.
Queen's College.	Wadham College.
New College.	Pembroke College.
Lincoln College.	Worcester College.
All Souls College.	Keble College.
Magdalen College.	Hertford College.
Brasenose College.	Non-Collegiate Students.

For the purposes of this section members of St. Edmund Hall shall vote with Queen's College, and New Inn Hall shall be deemed to have been united with Balliol College, and St. Mary Hall with Oriel College.

Each of the above-named Bodies shall, immediately after Michaelmas Day, in and after the year 1886, furnish to Council a list of such members of Convocation as were on that day members of the said Body and eligible as Proctor. And Council shall publish, in Michaelmas Term, in and after the year 1886, the names of the ten Bodies entitled to elect Proctors for the five years next ensuing.

The names for the year 1889 shall be determined by multiplying, for each Body, the number of its eligible members by the number of years elapsed, in 1889, since its last turn. The products shall be taken as the claims for that year, and the two Bodies, whose claims stand highest, shall elect the Proctors for that year. And the claims for each subsequent year shall be computed by taking, for each Body, the last-returned number of its eligible members, and adding thereto its claim for the preceding year: but such addition shall not be made for the two Bodies electing in the said previous year.

To each of the three Bodies not included in the present Cycle, namely, Keble and Hertford College and the Body of Non-Collegiate Students, shall be assigned, as its claim for the year 1889, one-fourth of the total number of eligible members in the University.

If the name of any member of Convocation appear in more than one list at the same time, it shall be counted only in the list of that Body in which such member pays, or has compounded for, his University Dues.

The effect of the proposed Statute will be that the number, taken as the claim of each Body to elect in any given year, will be proportional to the number of years elapsed, in that year, since its last turn, and also to the average annual number of its eligible members. Hence the number of turns, assigned during any given period to each Body, will also be proportional to the average annual number of its eligible members.

The effect of assigning to each of the three Bodies, Keble and Hertford Colleges and the Body of Non-Collegiate Students, as its claim for 1889, one-fourth of the total number of eligible members in the University, is exactly the same as if each had had a previous turn, and the number of years elapsed had been, in each case, one-half of the interval at which the turns of that Body ought to recur.

Nov. 21, 1885.

Carroll's suggestion has a minor error. If there are four colleges, two with 50 members, two with 90, all four colleges will have the same number of turns, even though the larger are almost twice as fast. Instead, to calculate the claim for those colleges which had their turn that year, take the previous claim, add the number of members (as for the other colleges), but then subtract half the number of all members of all colleges.

12.25 Suggestions as to the Election of Proctors

Source: printed 1886

Introductory

As this matter is to be brought before the University on May 4, with a view to introducing a new Cycle in 1889, when (as is popularly supposed) the present Cycle will expire, I venture to circulate the following suggestions, for the information of those interested in the subject. It may be as well to mention that the present Cycle does not really expire, legally, in 1889, but will continue to revolve, if no steps be taken to change it for another, *in saecula saeculorum*. Still, as there are now two new Colleges, not included in the existing Cycle, it seems desirable, if only to do justice to *their* claims, that a new Cycle should be introduced.

The two main principles, which I desire to impress on all readers of this, are:—

(1) That the number of turns in electing Proctors, assigned to each College, ought to be proportionate to its number of eligible members: and that a “cooked” system, which assigns to a large College *less* than the number it ought to have, and to a small one more, though it may do justice, in a specious way, as between College and College, does *not* do justice as between man and man.

(2) That a Cycle, fixed beforehand to run for 30 years, however fairly calculated at first, will become less and less fair from year to year, owing to the increase and decrease, in size, of the Colleges, and the introduction of new Colleges: that, the shorter the Cycle, the fairer the result: and that the fairest of all would be a Cycle re-adjusted every year, so as to give immediate effect to every fluctuation in the *data*.

As this method—of a self-adjusting Cycle—had been submitted to the Hebdomadal Council, before they adopted the Scheme now proposed, I am not circulating the following paper with any idea of raising opposition to that Scheme. I merely wish to put on record the arguments that seem to me to prove this method equitable, so as to ensure them due consideration, if at any future time a change should seem desirable.

C. L. Dodgson
Ch. Ch.
April, 1886.

Suggestions, &c. 1. Other methods that have been proposed

In the Cycle now in use, which began in 1859, the number of turns, assigned to each College, was in some way proportional to the size of each: but of course, as the Colleges changed in size, the Cycle became, year by year, less equitable. A new Cycle, proposed last year, was objected to on the ground that it took into account certain data (e. g. the number of undergraduates in a College) that were considered irrelevant, and it was rejected, on June 2, in favour of a Cycle of “simple rotation,” by a majority of 54 to 26. This Cycle, however, did not come on for final acceptance till Nov. 11, and in the interval the subject had been so far ventilated, and opinion in Congregation so far educated, that the supporters of the theory suffered a loss of 7 votes, while the number of its opponents was exactly doubled; and the method of “simple rotation” was rejected by 52 to 47.

The existing Cycle, which there seems to be a general wish to abandon, has another defect, besides that of employing irrelevant data; it is constructed to run for too long a period, and necessarily ceases, long before its termination, to correspond properly to the relative sizes of the Colleges. (This has been well pointed out by Dr. Moore: see § 6.) The Cycle of “simple rotation” has the undoubted defect of not dealing equitably with individual aspirants to a Proctorship, in that it makes every man’s chance of election vary inversely as the size of his College.

The Cycle, to be proposed, and (I doubt not) accepted, in May, seems to me to combine the defects of both of these systems.

2. Number of turns to be proportional to number of eligible members

I claim the reader’s assent to the following Axioms:—

(1) That one man is as good as another.
(2) That, if two sets of ten men be taken, as to whom the only *datum* is that they belong to two different Colleges; then, whatever be the number of turns assigned, in a certain period of years, to *one* set, the same number should be assigned to the *other*.

(3) That, if two sets of men, one containing ten men and the other twenty, be taken, under similar conditions; then, whatever be the number of turns assigned, in a certain period of years, to one set, twice that number should be assigned to the other.

(4) That the number of turns assigned, in a certain period of years, to two different Colleges, should be proportionate to their numbers of eligible members.

These Axioms may appear to some readers very childish, and very elementary. Still, after the extraordinary schemes that have been put forth, and the extraordinary arguments that have been used, I find it difficult to imagine *any* Axiom, in this subject, too childish to enunciate, or too elementary to insist upon!

3. Criterion of size of College

In any system, by which turns in electing Proctors are to be assigned to Colleges with a frequency which shall be proportional to the *size* of each College, the first question to be settled is, what criterion of size should be adopted.

Several such criteria have been suggested, e. g. the number, on the College books,

- (1) of members of Convocation;
- (2) of members of Congregation;
- (3) of its Governing Body;
- (4) of its Educational Staff;
- (5) of all members, graduate and undergraduate;
- (6) of members eligible as Proctor.

The last-named seems to be at once the most simple, the most equitable as regards aspirants to the office, and the most likely to be accepted by the University. This is the criterion adopted in the following suggestions.

In what follows, the phrase “eligible members” is to be taken to mean “members eligible as Proctor.”

If any other criterion of size be preferred to the one here adopted, this phrase may be replaced by “members of Convocation,” or by any similar phrase, without rendering any other change necessary.

Assuming, then, that the claim of any College, to elect in any given year, should be taken as proportional to its number of eligible members, at least in the case of two Colleges who have been waiting equally long for a turn, it may also be assumed that, in the case of two Colleges of equal size who have been waiting *unequally* long, the claim should be taken as proportional to the number of years of waiting. If these two conditions be granted, it follows by ordinary “Double Rule of Three” that, when both elements vary, the claim is fairly represented by the *product* of the two numbers.

4. How the “number of members” in a College should be estimated

The second question to be settled is whether the *data*, used in determining for any given year the claims of the several Colleges to elect in that year, should be merely the most recent obtainable, or should be an average, taken over previous years. It can hardly be necessary to point out that, if the number of members in a College has changed suddenly within the year, to multiply the new value by the number of years of waiting, and thus to make the recent change have the same effect as if it had occurred many years previously, is to give to the fluctuation far more than its due effect. The obvious answer to this question is, that the number, representing the claim of each College, should be the product of the number of years of waiting and the *average* annual number of eligible members for those years.

Now the average number of members, for a series of years, multiplied by the number of years, is identical with the sum-total of the annual numbers. Thus the “claim” for any given year may be found by simply adding together these numbers, for all the years elapsed since the last election; and, when it is once known for any given year, the addition of the number of members for that year will give the “claim” for the next year.

It is obvious that the two Colleges, whose “claims” in any given year stand highest, are the two who should elect the Proctor for that year.

5. How far ahead the Cycle should be calculated

The third question to be settled is, how long beforehand it is desirable to know what Colleges will be entitled to elect in any given year.

It would seem that three or four years, at the outside, would be amply sufficient notice. It is conceivable that one, who was tolerably certain of being elected by his College in its next turn, might make his plans dependent on the question whether that turn would occur in three years or in four: but it is extremely unlikely that he would care to know whether it would occur in seven years or in eight. In the system here suggested, the rotation of Colleges would always be known rather over four years in advance.

6. How often it would need renewing

The fourth question to be settled is, at what intervals the system of rotation should be re-adjusted, so as to give due effect to the fluctuation, in each College, of the number of its eligible members.

A Cycle of 30 years is undoubtedly too long for this purpose, and it is fairly open to the charge, brought against it by Dr. Moore, that, “granting that it was

approximately fair when first made out, it would almost certainly be far from corresponding with existing facts long before the Cycle of 30 years had run its course.”

A Cycle of 5 years, re-adjusted once in five years, is less open to this charge, but labours under one of two serious disadvantages, which may be best stated as a dilemma. If it were computed on the most recent data, it could only be published just before coming into use; so that, towards the end of each period, there would be no certain information to be had as to future elections. If, on the other hand, it were published four or five years before coming into use, it would, though quite sufficiently in accordance with the facts in its first year, become less and less so from year to year; and there would always be a sudden change, with the introduction of each new Cycle, from the use of *data* ten years old to that of *data* only five years old.

But, granting that it is necessary to base the computation of claims, for any one year, on the *data* of five years back, in order that the names of the Colleges electing in any year may be published five years beforehand, there seems to be no reason for doing more than this. That is to say, if the names for the 10th year be published in the 5th, those for the 11th in the 6th, and so on, the order of rotation will always be known for the next 5 years, while the *data*, used in computing the claims for any one year, will always be neither more nor less than 5 years old.

7. Account of the Method suggested

The principle here adopted is that, in the year 1900 for example, the claims for the year 1905 shall be computed and published; and that the claim of each College shall be the product of two numbers—one, the number of years elapsed, in 1905, since its last turn, the other, what is assumed as its average annual number of members for those years, though it will really be a similar average taken, from the year 1900, back to its previous turn.

It would be desirable for Council to publish in each Michaelmas Term, along with the list of members of Congregation, the names of the ten Colleges entitled to elect during the next five years. Also, as it would be well to fix on a definite *day*, for which each College should take the annual caucus of its eligible members, Michaelmas Day might be found convenient for this purpose.

In order to commence the new system in Michaelmas Term, 1886, it would be necessary to compute and publish the claims for 1889, 1890, and 1891. Those for 1889 would have to be computed by multiplied together, for each College, the number of years elapsed, in 1889, since its last turn, and the best attainable average of its annual number of eligible members. It would probably be most satisfactory, instead of going back into past years, to accept the returns for Michaelmas Day, 1886, as the average required.

This method would be easily worked out of all but 3 of the 22 Bodies contemplated in the new Statute.

But in the case of Keble and Hertford Colleges and the body of Non-Collegiates, a different method would be needed, since there is no previous “turn” to date from. For each of these Bodies an ideal “period of waiting” must be assigned: and this would equitably be half of the interval of years at which the “turns” of that Body ought to recur. To calculate this interval, it would be necessary to add together the average numbers of eligible members of *all* the Colleges, and to divide their total by the number of the College in question;

and then to halve this quotient, since *two* Colleges elect in each year. This may sound complex; but, since the number of eligible members is used first as a divisor and then as a multiplier, it may be ignored altogether, and the practical result is to assign to each of these three Bodies, as its claim for 1889, one-fourth of the total number of eligible members in the University. The same process would serve whenever a new College had to be added to the list.

In the (probably rare) event of the two “claims” occurring, the rule might be adopted of giving precedence to the College that had waited longest: but this rule should be reversed, if it happened again with the same two Colleges.

The Table published (say in the year 1900) might be of the following form:—

<i>Colleges.</i>	<i>Claims for 1907.</i>	<i>Members in 1903.</i>	<i>Claims for 1908.</i>
A	50	10	60
B	5	5	10
C	60*	20	20
D	55	5	60*
E	30	15	45
F	30	10	40
G	25	5	30
H	20	20	40
J	20	10	30
K	35	5	40
L	60*	15	15

The number in the 2nd column would, except for the 2 Colleges electing that year, be added to those in the 3rd, to give those in the 4th. For these 2 Colleges, the numbers in the 3rd would be repeated in the 4th.

The names of the Colleges entitled to elect Proctors for the years 1904 to 1908 should be appended to this Table.

The publication of such a Table would enable any one to calculate for himself, approximately, the order of rotation for any number of future years. This would of course be only approximately correct, since it would have to be done on the assumption that the number of eligible members, in each College, would undergo no change during the period for which the calculation was made.

For the next twelve years, such a Table would be as follows:—¹

<i>Colleges.</i>	<i>No. of Members.</i>	<i>Claims for</i>											
		1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	
A	10	60*	10	20	30	40	50	60*	10	20	30	40	
B	5	10	15	20	25	30	35	40	45	50	55	60*	
C	20	20	40	60*	20	40	60*	20	40	60*	20	40	
D	5	60*	5	10	15	20	25	30	35	40	45	50	
E	15	45	60*	15	30	45	60*	15	30	45	60*	15	
F	10	40	50	60*	10	20	30	40	50	60*	10	20	
G	5	30	35	40	45	50	55	60*	5	10	15	20	
H	20	40	60*	20	40	60*	20	40	60*	20	40	60*	
J	10	30	40	50	60*	10	20	30	40	50	60*	10	
K	5	40	45	50	55	60*	5	10	15	20	25	30	
L	15	15	30	45	60*	15	30	45	60*	15	30	45	

¹The original might use some other word.

After which the series would recur in the same order.

It may be noted that, in the above “circulating period of twelve years, the numbers of turns, assigned to each College, is proportionate to its number of eligible members.

8. Suggested form of Statute

“Whereas it is expedient to revise the Procuratorial Cycle and to determine the qualification of the members of the several electing Bodies, the University enacts as follows.

In *Statt. Tit. XVII. Sect. iv, § 1* (p. 218, ed. 1884) shall be struck out, and the following new subsection shall be substituted:—

1. Of the Election of Proctors

There shall be two Proctors, who shall be elected annually on the Wednesday after the first Sunday in Lent. In and after the year 1889, they shall be elected by the following Bodies, in an order to be determined as hereinafter provided.

Each of the above-mentioned Bodies shall, immediately after Michaelmas Day, in and after the year 1886, furnish to Council a list of such members of Convocation as were on that day members of the said Body and eligible as Proctor. And Council shall publish, in Michaelmas Term, in and after the year 1886, the names of the ten Bodies entitled to elect Proctors for the five years next ensuing.

The names for the year 1889 shall be determined by multiplying, for each Body, the number of its eligible members by the number of years elapsed, in 1889, since its last turn. The products shall be taken as the claims for that year, and the two Bodies, whose claims stand highest, shall elect the Proctors for that year. And the claims for each subsequent year shall be computed by taking, for each Body, the last-returned number of its eligible members, and adding thereto its claim for the preceding year: but such addition shall not be made for the two Bodies electing in the said previous year.

To each of the three Bodies not included in the present Cycle, namely, Keble and Hertford College and the Body of Non-Collegiate Students, shall be assigned, as its claim for the year 1889, one-fourth of the total number of eligible members in the University. And the same rule shall serve for any other College which may hereafter be added to the above list.

If the name of any member of Convocation appear in more than one list at the same time, it shall be counted only in the list of that Body in which such member pays, or has compounded for, his University Dues.

The effect of the proposed Statute will be that the number, taken as the claim of each Body to elect in any given year, will be proportional to the number of years elapsed, in that year, since its last turn, and also to the average annual number of its eligible members. Hence the number of turns, assigned during any given period to each Body, will also be proportional to the average annual number of its eligible members.

The effect of assigning to each of the three Bodies, Keble and Hertford Colleges and the Body of Non-Collegiate Students, as its claim for 1889, one-fourth of the total number of eligible members in the University, is exactly the same as if each had had a previous turn, and the number of years elapsed had been, in each case, one-half of the interval at which the turns of that Body ought to recur.”

12.26 Three Years in a Curatorship

Source: Three Years in a Curatorship

By One Whom It Has Tried

Preface

Long and painful experience has taught me one great principle in managing business for other people, viz., if you want to inspire confidence, *give plenty of statistics*. It does not matter that they should be accurate, or even intelligible, so long as there is enough of them. A Curator who contents himself with simply *doing* the business of a Common Room, and who puts out no statistics, is sure to be distrusted. "He keeps us in the dark!" men will say. "He publishes no figures. What does it mean? Is he assisting himself?" But, only circulate some abstruse tables of figures, particularly if printed in lines and columns, so that ordinary readers can make nothing of them, and all is changed at once. "Oh, go on, go on!" they cry, satiated with facts. "Manage things as you like! We trust you entirely!"

Hence this pamphlet.

*C. L. Dodgson.
Curator.
Ch. Ch.
March, 1886.*

1. Of Airs, Glares, and Chairs

"Pant in your great chairs of ease."

The Committee (consisting of Mr. Harcourt, Mr. Prout, Mr. Stewart, and Mr. Thompson), who were appointed a year ago "to consider the whole question of lighting and ventilating," have grappled with, and (it is hoped) pretty nearly solved, the two problems proposed to them—though but scantily supported by the sympathies of Common Room, who, though ready enough to ventilate our proposals as to "light," have altogether made light of our "ventilation."

The latter subject was discussed, first, by the full Committee, when the plan most favoured was that of introducing "Tobin" tubes, opening at the top of the wainscot; secondly, by Mr. Harcourt, the Curator, and Mr. Axtell; and thirdly, by the Committee again, who unanimously approved the plan, suggested by Mr. Axtell, of an oblique opening, *à la Tobin*, pierced through the E. wall of Common Room, and with a valve inside, which might be opened or shut at pleasure. Accordingly the Curator, after obtaining the necessary permission from the G.B., ordered this to be done. The valve has not only served the purpose for which it was designed—it has also furnished some most interesting illustrations of the tricks the human imagination can play, and the influence it has over physical sensations. The Members of C.R., who sat on the E. side of the room, were at first terrified of the prospect of so much cold air beating down on their unsheltered heads. "It is *hair* we need—not *air*!" Thus they moaned in their anguish. But the strangest part of it was that it was usually when the

Quoted from *Timon of Athens* by William Shakespeare

valve was *shut* that they felt most keenly “the pelting of this pitiless storm”: when it was open, they made no complaint. The conclusion seems to be, that the additional ventilation has not *really* produced any inconvenience, while it has conferred an undoubted benefit, by increasing the longevity of Members of the C.R.—as is plain from the simple consideration that they are, all of them, six months older than they were when the change was made.

Quoted from *King Lear* by William Shakespeare

The question of “light” has been very fully and fiercely debated by the Committee, and the suggestions made have been so many, and so contradictory, that the great mind of the Curator nearly gave way. The Caterer of the High Table suggested “Hesperus” lamps, as the best for our chandeliers: and Mr. Stewart proposed that two Hesperus should be procured, to stand on the table. Both these ideas, though approved at first, were afterwards modified: the “Hesperus” lamps, for the chandeliers, being opposed by the Vicar of Binsey, who strongly recommended “Defries” lamps instead; while, for the table, it was agreed to request Mr. Thompson to select one of Hinck’s “Duplex” lamps—it being understood that that kind combined high art with high illumination. Mr. Thompson kindly did so, and the result has been “a thing of beauty,” which is also (probably) “a joy for ever,” but it has not yet been tested quite long enough to prove this.

Quoted from *Endymion* by John Keats

It was further agreed to try the experience of a *central* chandelier, instead of the two side ones, which were complained of as too dazzling by those who had to sit *facing* them. This was tried, and the general opinion of C.R. seemed to be that *two* lamps, in this position, gave all the light needed: this, however, was not the view of the Curator of Livings, who complained that there was not enough light to read the evening papers. With a view to increasing the light, though still retaining the central position, the Committee agreed to the plan of adding two branches to the chandelier, and supplying it with *four* small Defries’ lamps instead of *two* large ones. This plan the Curator undertook to carry out: but found, on enquiry, that no smaller lamps of that kind were made. He thought, however, that *some* increase of light might be effected by substituting ground-glass globes for the so-called “opal” ones (something like transparent china) then in use; and he took the opportunity of substituting globes of the “Lotus” shape for the ordinary spheres.

So the matter rests at present: but if anything like a general wish be found to exist for yet *more* light, the Committee will do their best to satisfy the cry of ἐν δὲ φάει καὶ ὄλεσσον.

Quoted from *Iliad* by Homer

To meet the wishes of the more recumbent Members of Common Room, two easy-chairs have during the past year been added to our furniture: and the history of the transaction is not without a certain financial interest for those who believe in the marvellous cheapness of Co-operative Stores as compared with ordinary shops. The first chair was procured from the Army and Navy Stores, by Mr. R. E. Baynes and Mr. J. B. Thompson (for whose kind trouble I take this opportunity of expressing the thanks of C.R.), and it cost, with packing and carriage, £7 18s. 0d. I thought it possible that, if we ordered (say) three more, we might get them at a rather cheaper rate—in fact Mr. Thompson had told me that the maker had said that, in the event of our ordering more chairs, “he would put the price as low as possible, in the hope that if his work gave satisfaction, C.R. would give him another trial.” Accordingly I wrote to the Stores to enquire how this might be, and at the same time I asked Messr. Badcock (whom we have employed for many years, and whose work, though certainly dear, is uniformly

excellent in quality) to examine the chair, and report at what price they would undertake to make us three more exactly like it in every respect. Had they named the same price as the Stores, or even a rather higher price, I should have felt myself justified in ordering the second chair (C.R. decided on having only *one* more) from them: but the actual result was something of a surprise. The Army and Navy Stores declined to make *any* reduction in their charges, whereas Messr. Badcock undertook to make the three chairs for £7 2s. 6d. each, being 15s. 6d. less than what the first chair had cost us, thus effecting a saving of nearly 10 per cent.

2. De Re Nummaria

"I love Sixpence, pretty little Sixpence!"

Quoted from nursery rhyme

On this topic I am nothing, if not tabular. In the first Table, the items (except those in the last line) are given in round numbers, as their *exact* values are unattainable. When once the Milk (for instance) has been fairly started on its Milky Way, I have no means of tracing *exactly* how much of it was consumed in one place and how much in another: but I have taken a good deal of trouble to estimate the proportional values as nearly as possible. My object, in printing these two Tables, is to "show case" for the changes I wish, with the consent of C.R., to make in the charges for Dessert, and for Coffee after Dessert.

Food:—Expenditure and Receipts.

	Sent to Rooms.			5 p. m. Tea.			Dessert in C.R.			Coffee in C.R.			Totals		
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Tea	2	0	0	3	0	0							5	0	0
Coffee	4	0	0							4	0	0	8	0	0
Sugar					10	0	1	5	0		15	0	2	10	0
Milk	2	0	0	3	5	0				5	10	0	10	15	0
Cake, Fruit, &c.	20	0	0	2	5	0	31	15	0				54	0	0
Totals	28	0	0	9	0	0	33	0	0	10	5	0	80	5	0
Charged in Bills	29	18	9	9	14	6	27	10	1	21	4	6	93	9	10

In the 2nd column, the charge is, apparently, more than £5 too much: but it must be remembered that an extra sum of £4 10s. is paid annually as "wages," to meet the extra trouble caused by this new institution: this reduces the excess to 16s. 6d.—a very reasonable margin.

Adding this £4 10s. to the "total expenditure," we find that the profit made, on the whole, is at the rate of 10 per cent.

The charge for Dessert is too low, while that for Coffee in C.R. is much too high. I propose to modify them as follows:—

	Dessert in C.R.			Coffee in C.R.			Totals		
	£.	s.	d.	£.	s.	d.	£.	s.	d.
Present charge per head			3			4			7
Expenditure in 1885	33	0	0	10	5	0	43	5	0
Charged in Bills	27	10	1	21	14	6	49	4	7
Proposed charge per head			4			2			6
Resulting Charge in Bills	36	13	5	10	17	3	47	10	8

which makes the profit, on the two items together, just 10 per cent.

No financial statement can possibly be complete without a word or two about wine. For surely any Curator, worthy of the name, would be found, if physically tested by one Lee's Reader, to possess a density varying directly, and a gravity varying inversely, as the potency of the Port—if tested anatomically by a second, to have the word 'WINE' neatly emblazoned on his heart—and, if finally submitted to quantitative analysis by a third, to consist principally of $C_4H_6O_2$.

There is not, however, anything specially thrilling to say about this deeply-interesting subject. Water-drinkers will be pleased to hear that we have spent during the past year, with all the recklessness of several Grand Old Men, no less than £768 18s. 9d. on wine, and that the result of this skillful financial operation has been a deficit, on the year's account, of £44 19s. 9d.—while the wine-drinkers will be equally delighted to learn that the stock of pints of *Y'quem* has this year reached the proud position occupied, two years ago, by *Madeira (B)*, and that we have enough in hand to last, at the present rate of consumption, for an infinite number of years.

On one point a few words of explanation seem desirable. It occasionally happens that wine is supplied from our Cellar to Members of C.R. residing at a distance from Oxford. This is quite an exceptional transaction, performed as a special favour; and all such applications are referred to the Curator for special sanction. Still, the thing does sometimes occur, and Members, receiving wine in this way, may perhaps be puzzled to find that it costs them decidedly more than it would to get the very same wines from a London merchant, or to get them from C.R. if they were residing in Oxford. In the first place (this affects Oxford and country residents alike), we charge more for our wines than we pay for them: the excess (which is calculated on all our wines on a uniform principle) is required to meet the incidental expenses of the Cellar. In the second place, we charge country purchasers for *bottles*: this is because we have to purchase bottles, largely, for our own use, those returned in College not being enough for the purpose, so that, when any leave us for distant climes, with the sad farewell words "*vestigia nulla retrorsum!*," we cannot afford to let them go for nothing. In the third place, we charge country purchasers for *packing*: this is because we do not keep cases, &c. in stock, so that, on those special occasions, we have to buy them: it is of course optional for any such purchaser, if he happens to have cases of his own or likes to buy them for himself, to send them to Ch. Ch. to receive the wine applied for, and to retain them when sent back to him.

These charges may perhaps be thought to compare unfavourably with those of wine-merchants, who offer the very same wines at less cost. Let it be remembered, however, that we do not recognise it as a function of C.R. to send wine into the country *at all* (were we to do so, we should need a far larger Cellar, and should have to sink a far larger capital in wine): and, in the second place, that we have no ambition to undersell the wine-merchants, but are only too glad that Members in the country, who find they can get their wine from London more cheaply than from our Cellar, should do so. It is about as much as we can manage, to supply the wine needed in C.R., in College rooms, and in Oxford.

I thought it well, as this matter does not seem to be well understood, to take this opportunity of explaining it fully and once for all.

There is one item in the Accounts which will, I fear, be almost painfully interesting to Members of C.R. It is the deficit at the end of the year. The

Quoted from the motto of Buckinghamshire, based on *Ep. I, 1* by Horace

thoughtful reader, observing that the year opened with a balance in hand of £280 5s. 10d., and that it closed with a deficit of £44 19s. 9d., will be tempted to exclaim “Oh where, and oh where, is our £325 5s. 7d. gone?” And he will hastily refer to p. 1801 of the previous pamphlet, and will whisper “Perhaps it was no joke after all? *He has been assisting himself!*”

Quoted from nursery rhyme (modified)

I think I can offer an explanation less blighting to Curatorial reputations. The value of the wine, bought in during the year, was £768 18s. 9d.: the value of the wine sold was £439 3s. 9d. Consequently, we had £329 15s. 0d. worth of wine, at the end of the year, more than we had at the beginning.

Now, for this £439 3s. 9d. worth of wine, which we sold, we charged (for I am not going to miss this opportunity of giving the reader yet another piece of statistics) £520 12s. 2d. “And where does all this handsome profit (more than 18 per cent) go to?” quoth the reader. The answer is “it goes to meet the expenses of the Cellar.” The sum to be accounted for is, as you see, £81 8s. 5d. Of this sum, £38 1s. 3d. has been actually spent on such items as lamp-oil, bottles, corks, &c.: and the remaining £43 7s. 2d. I consider a very moderate contribution, from the wine-bibbers, towards the total of £120 “wages,” considering how much of the labour, thus paid for, belongs to the category of “wine.”

There is one item of our expenditure, which I should be grateful to have the permission of C.R. to increase rather further than I can venture to do on my own responsibility. In order to have a full and satisfactory record of the statistics of C.R., I keep several ledgers myself; and this entails on me (more than it would on a better arithmetician) many hours in the year of almost mechanical work—hours which I may confess, even when addressing friends whom I am glad to be of service to—I spare with difficulty, as it keeps me from work of my own with which I am very anxious to go on. Hitherto I have got a clerk to take a little of this work off my hands, at the cost of about one pound a year: but if C.R. would not object to my spending (say) five pounds a year on getting a little more assistance, it would save me many valuable hours, and would be a great relief to me.

3. De Combibonibus

“Post amphoram sedet ater Curator.”

Quoted from *Carmen* 3, 1 by Horace (modified)

“Use every man after his dessert, and who shall scape whipping,” sings a certain Swan—meaning, no doubt, that it is only *after* that refection, when physical vigour is at its lowest ebb, that such an operation can safely be attempted. It is to be hoped, then, that some such *mollia tempora* may occur to the reader, for receiving the melancholy announcement I have to make, regarding the *Pichon Longueville* 1875, which we are now drinking at Dessert, apparently with much satisfaction. I find that our present stock can hardly meet the demands of Common Room and College Rooms for three years longer; and we must then begin drinking the *Rauzan Segla* 1881, though no doubt it would be all the better if we could keep it another year or two. Under these circumstances, in order to make the *Pichon* last as long as possible, the Committee have settled to stop its going out of College in future. Members living in Oxford will, it is hoped, not take it as a hardship to have to replenish their cellars, with dessert-Claret, by buying it direct from the merchant. Members living in the country can scarcely construe it as a hardship in any sense, considering that

Quoted from *Hamlet* by William Shakespeare

it is against the standing rules, and only possible by special permission of the Curator, for any wines whatever to be sent from our Cellar out of Oxford. The following resolution was passed at a regular C.R. Meeting:—"Ordered, that the privilege of taking out wine from the Common Room Cellar be limited to Oxford Residents paying £2 2s. subscription, except in the case of the Chaplains, who may enjoy the same privilege with their subscription of £1."

In furtherance of the same object, I try so to regulate the orders for this fluid at Dessert, that there may not be an unnecessary amount opened and thus (partially) wasted: for it must be remembered that Pichon, once opened, cannot be used at Dessert next day, but has to be consumed as dinner-Claret. Thus, I try to avoid having a whole bottle opened when there is only *one* biburient to consume it (for alas, we are no longer *virī merioris aevi*, when even "six-bottle-men" were not unknown!), or even a pint when there is *none*. I calculate that, if an extra bottle of Pichon be ordered in, and only *two* glasses taken, those two glasses cost 3s. 1d., of which 1s. 4d. is borne by the biburients present, and the remaining 1s. 9d. by C.R. It is, I think, superfluous to say, that my only motive in this is to save C.R. from needless waste of property. *Personal* interest I have none: such an occurrence *might* possibly raise my individual charge, for the evening, one penny higher—but I can honestly say I do not care twopence whether it does so or not.

One other combibulous topic I will venture to touch on—with some timidity, and yet feeling that it is one that *only* the Curator can well discuss. The ancient custom (a *really* ancient one, dating even further back than my predecessor's accession to office), of dressing for dinner, seems to be dying out—which I think is to be regretted. I do not plead for it as an aesthetic virtue, or even as a social propriety: I rest my appeal simply on the appearance such an omission must present to our guests. *They* come, almost without exception, in evening-dress, and I think it must strike them as strange that some of their hosts appeal in morning-dress. I say "their hosts" advisedly, for I have always felt (long before I became Curator) that the guest of *one* Member of C.R. is virtually the guest of *all*. As Curator, I am specially glad to act on this principle, and am always pleased when any Member puts his friend next me in Common Room, and lets me help to make him welcome: but I used to feel it, even in those earlier days of happy obscurity, that I look back on with such agonising regret! I hope I have not handled this topic so roughly as to wound the feelings of any Member, however auroral in his costume.

4. De Meri Meritis

"What is this? Mutton?"

Mais revenons à nos moutons. I have yet a word to say regarding one of our choicest wines, the "Mouton" Claret. On this subject we, the Wine-Committee, have displayed a nervous trepidation—not to say a hysterical *hyperæsthesia*—absolutely morbid. About a year ago a panic seized us. One or two bottles had turned out bad ("corked," or whatever it might have been): and suddenly the cry went up "All is lost!": wild words, such as "It is past its prime!" "It is worth only three shillings a bottle!", hurtled in the air: the very constitution of the Cellar was affected for a time: symptoms of diminished circulation and of slight consumption showed themselves. The Curator trembled, but would not quit

Quoted from *The Taming of the Shrew* by William Shakespeare

the gory field in such frantic haste, or give the order (which the then frenzied Committee would have hailed with delight) to empty the remaining bottles into Mercury—thereby certainly demoralising, and probably destroying, its scaly inmates. “We are but amateurs,” he said to himself: “and, though Christ Church Students, we are still fallible! Let us see what the experts say.” Thereupon he submitted some of the wines to a professional “taster,” Mr. F. Snow, of the firm of Snow and Co. That eminent firm seems to have resolved itself, in the service of C.R., into a “tasting-committee,” and their joint verdict will, I think, be read with interest by other Members of the C.R., besides ourselves, the scared Committee.

“The wine maturing very well: slightly coarse, almost imperceptibly ‘stalky’: will be in prime probably about three or four years: good useful wine.

“The term ‘stalky’ means a slight taste of the stalk of the grape, which sometimes gives a slight acrid taste: but in this case it is so *very* slight, that no one but a practised expert would notice it.

“Tell the gentlemen of Common Room that they have very fair property in this wine, and that the idea that it is ‘going off’ is wholly erroneous.”

This was very satisfactory; but the phrase “will be in prime probably about three or four years” seemed ambiguous: it might be intended for “is now in prime and will remain so *for* three or four years,” or “will reach its prime *after* three or four years.” Also a new terror had seized us: a few bottles, which had proved sour (“vinegar” was the Committee’s epithet), were supposed to owe their ruin to bad corks: and the Committee advised (we are only amateurs, remember!) that the remaining 160 bottles (or at least all whose corks seemed in doubtful condition) should be recorked.

Here again the Curator, afflicted with a chronic distrust of amateur theories about wine, referred to head-quarters for advice: and this is what Mr. F. Snow says in reply.

“When we wrote ‘will be in prime probably about three or four years,’ we meant that the *zenith* of its prime will be reached in that period; after that we opine that it will deteriorate.

“In other words, the wine is in thorough good order for present drinking, and will improve for the next three or four years, when the development of its several chemical constituent parts, such as tannin, flesh, saccharine matter, &c. &c., will cease.

“I am puzzled with what you tell me regarding some of the bottles turning out so badly, *which certainly ought not to be*. Perhaps this particular wine was bottled in France? The corks used in France are nearly always of inferior quality. And I attribute these little *malheurs* either to dirty bottles or cheap and inferior corks, which have not withstood the test of time.

“On no account think of having this wine recorked: the result would be most disastrous: you would have 160 bottles of vinegar, instead of the percentage now in your bin. Claret is unlike Port, Sherry, Madeira, and wines of high alcoholic strength. Decomposition would at once ensue, and all would be spoiled.”

What effect the perusal of these remarks of an expert may have on C.R. generally, I know not. To me, curatorially, they are cheering beyond words. For, though I share with the rest of the Committee the humiliation of being treated as fallible—the having the conviction forced upon me that I may (to use the eloquent words of the author of “Hugh Heron”, “that I may possibly be, on rare occasions, and in the subordinate details of some trivial question, partially

mistaken”—yet this agony is compensated by the removal of an incubus! The devouring anxiety (members of the C.R. may have noticed its crushing effect on me, producing a lambent—not to say sheepish—style of conversation?) on the subject of “Mouton” is now wholly and at once removed! Those, who have not felt the anxiety, cannot fully realise the relief. The wretch, who groans with a bad tooth, is grateful to the dentist who extracts it for him: but were the same dentist to rush, pincers in hand, into the street, stop the first passer-by, and wrench from his jaw some perfectly *sound* tooth, similar expressions of gratitude could not reasonably be looked for.

5. De Liciæ Statisticæ

“*Solvuntur risu tabulae.*”

Quoted from *Serm. 2*
by Horace

There is not much to say about the third Table, which I have reserved as a *bonne bouche* for the now jaded reader. If he does *not* peruse it with a breathless delight, and does *not* make it the solid food of his waking thoughts, the golden ideal of his dreams—why, all I can say is, he must have some *other* subject which interests him more.

Three wines occur in this Table, which are not yet entered on the wine-card, and have not yet had any values “assigned” to them by the Wine-Committee. These are the *Margaux*, the *Rauzan Segla*, and the *Médoc*/81. The values I have assigned to them are therefore entirely conjectural, and it must not be too hopefully assumed that the Wine-Committee will adopt them.

Enough, enough! I have said my say, gentle Reader! Turn the page, and revel, to your heart’s content, in

Wines, &c.	No. in hand Dec. 18, 1885	Present Stock of Wine								
		Original cost			Assigned value			Average annual consump- tion		
		per bottle	Total		per bottle	Total				
	£	s.	d.	£	s.	d.				
Claret, Best:—										
Mouton, /74	160	5/3	42	0	0	6/.	48	0	0	80
Margaux, /81	280	5/6¼	72	17	6	6/.	84	0	0	
Spirits:—										
Brandy, /65	47	5/2	12	2	10	5/6	12	18	6	26
Whisky, Scotch	2	3/11		7	10	4/.		8	0	20
Do. Irish	7	3/9	1	6	3	4/.	1	8	0	8
Totals			4297	8	8		5477	12	5	

¹Remark: 36 wines omitted here

12.27 Remarks on Report of Finance Committee

Source: printed 1886

[Strictly Confidential.]
[For Members of the Governing Body only.]
 Christ Church,
 March 15, 1886.

Most respectfully, but most earnestly, I would urge on every Member of the Governing Body, at a critical time in our fortunes like the present, and when matters of such importance are under debate, to endeavour *to understand the question for himself*, and not to accept at second-hand the opinions of others. I am very loth to come forward in a matter where I feel my familiarity with such subjects, and my power of dealing with them, to be so inadequate: but I think I ought to do my best.

The main matters to consider are:—

- (1) Our needs, present and future;
- (2) The economies to be effected with a view to meeting those needs.

I will first make a few remarks on the Report of the Committee, and then state, as briefly as I can, the conclusions which I have come to myself, as a result of the enquiries I have made.

1. The Report

In paragraph 1, it is stated that, after payment of first-charges, Sinking Fund, and interest on Loans, our available income does not exceed £12,000.

This any one can test for himself by referring to the Statement of Accounts for 1885.

	<i>£.</i>	<i>s.</i>	<i>d.</i>	<i>£.</i>	<i>s.</i>	<i>d.</i>
Rents				44,765	10	1
Less Insurance	350	10	11			
Surveyor	938	18	0			
Rates and Taxes	1077	10	8			
Annuities	1563	0	7			
				3930	0	2
				40,835	9	11
Deductions:—						
First-charges:—						
Cathedral	43	6	8			
General Repairs	806	6	8			
Chapter	15,500	0	0			
Greek Professor	500	0	0			
Sinking Fund	400	0	0			
Interest on Loans	5858	15	8			
				23,108	9	0
Remaining “available income”				£17,727	0	11

In paragraph 2, they speak of “the risks and depreciations of an estate of nominal value of more than £50,000 a year.” It should be remembered that of

this £50,000, £20,000 is the Tithe Rent Charge: and that, although this will undoubtedly depreciate for the next year or two, no great unexpected depreciation can take place in it.

It seems to me that this paragraph might be more accurately worded thus—“Consequently, £17,700 is liable for all the risks and depreciations of an estate of nominal value of £30,000 a year.”

This may, or may not, be a dangerous state of things. I doubt if the Committee, or any one else, could name the exact sum which would be absolutely satisfactory for meeting these risks. To take an example from the other Colleges: the “available external income” of S. John’s appears to be about £5000, to meet “all the risk and depreciations” of an estate of the nominal value of about £20,000 a year.

As compared with this, our prospects are favourable: but I have not pursued the comparisons, as it seems clear that the general conclusion (on whatever figures it may be based) that, in the face of probable further depreciation, we ought to economise our resources as much as possible, is quite unassailable.

In the last paragraph on p. 1, it is stated that a balance of £2373 1s. 11d. is due to the Tuition Fund for 1885. It should be remembered that £1,315 of this is merely “due” as having been voted, in May, 1885, to be paid as “Capitation Fees” out of the Corporate Revenue for that year, and that, if paid, it would be at once transferred to the Pension Fund. Whether it might not be desirable, under present circumstances, to rescind that vote, is matter for consideration. It depends, largely on what need there is, at present, for augmenting the Pension Fund (a matter I shall discuss further on). But in any case it would, I hold, be quite absurd to consider this matter as if the Electoral Board were some external creditor, ready to exact his full legal rights: this is simply, as it were, a transaction between the House and itself, to be carried out, or modified, as may be best for the interests of the House.

In the third paragraph on p. 2, it is recommended to borrow (if it be found necessary) the £2,000 Building Loan, “so as to be repaid in a term of not more than five years.” No reason is stated why we should choose a moment of temporary embarrassment to lay an *unnecessary* burden on the next five years, instead of taking the usual course and so spreading it over 30 years allowed by the Act. In that case the annual instalments would be only £66 13s. 4d.: whereas, if the Loan had to be repaid in 5 years, the Treasurer might be obliged to ask for another loan before the repayment of the first was completed.

In the next paragraph, the Committee recommended that “separate banking accounts should be kept for the Corporate Funds and the Trust Funds.” Such is not the view of our Auditor’s assistant, Mr. Carr, with whom I have had two interviews on this subject. Though strongly of the opinion that we ought not to draw upon one Trust to meet the deficits of another, he yet sees no objection to a Trust balance being on the wrong side of the ledger, where the Corporate Fund temporarily supplies the deficit: nor does he see any objection to a Trust Fund temporarily supplying, in a similar manner, a deficit in the Corporate Fund. He says therefore that, if a separate banking account be kept for the Corporate Fund, a separate banking account ought also to be kept for *each* of the Trusts. (He has seen, and approves of, what I have here said. He incidentally mentioned that he is now engaged in trying, with regard to one of the Colleges for which he is auditing, to reduce their accounts “to the Christ Church form,” which he evidently regards as a worthy model. At his suggestion I wrote to the Auditor

himself, to make sure that he also approved of what I have said. It appears to be the case that he does approve, though I have not succeeded in making my question quite clear to him. As there is no time, now, for further reference to him, I think it best to quote his exact words: *valeant quantum valent*. "I am not sure that I fully understand the matter. Speaking generally, there ought always to be a sum of money in hand sufficient to meet the balances due to the Trusts, but this of course does not render a separate banking account necessary either for the whole or any one of the Trusts. A number of banking accounts would I am afraid lead to considerable complication in keeping the accounts. Like many other questions, there is a good deal to be said on both sides.") To recur once more to the example of other Colleges, I learn that Balliol has borrowed about £26,000 of its Trusts, with the knowledge of the Visitor, and the approval of the Auditor. Magdalen has, similarly, borrowed more than £40,000 of its Trusts.

To exclude all further possibility of one of our accounts thus helping another to tide over a temporary difficulty, seems to me much as if an Alpine traveller should insist that, whenever they reached a difficult place needing the use of the rope, every one should let go of it.

In the paragraph numbered (1), near the foot of p. 2, it is stated that the balance of the Pension Fund, at the end of 1885, was £581 16s. 9d. This might easily mislead any reader, who did not refer to the Schedule for himself. He would then see that this Fund already possesses an invested capital worth about £4750: and, further, that the Tuition Fees exceed the Tutorial expenses by about £1300 a year, the whole of which excess may be paid over to the Pension Fund.

The suggestions in paragraph (2) to (5) are all, I think, most reasonable, except that such an economy as taking off 5 p. c. from Studentships would only yield (if it could be done in all cases, which it cannot) about £280 a year: it is a very small measure of relief, and, if it were left to individual Students to give or not at pleasure, it would resolve itself into a sort of subscription-list, and would fare but badly after the first enthusiasm for economy had passed away.

In the last paragraph of the Report, it is stated that the Committee "consider the cost of collection and management and the law expenses (in all about £4300) to be excessive."

In the first place, their estimate of the total amount is "excessive." They have included, in the Treasurer's pay, the £300 he has by a vote of the Governing Body on account of the Stewardship, formerly held by him: this has nothing whatever to do with any one of the three headings named by the Committee, and cannot fairly be counted. Again, they have valued, at £225 a year, a house which could not possibly be let, unfurnished, for more than £150: and they have taken the whole Law Bill, £560, whereas nearly half of it consists of exceptional items (chiefly business at Budworth) not likely to recur: £300 would be a much more reasonable estimate for its average amount.

However, making these deductions, let us allow that the total is about £3700. The next question is, is this "excessive"?

To judge by the reductions proposed in the last sentence of their Report, it would seem that it is only the "collection" and "law expenses" they think excessive: but, as I see they name "management" also, I conclude that they consider the present Treasurer and his clerks to be overpaid.

Now, first, as to "Collection" being made in future, as they suggest, "through the Treasury." Is this practicable?

It should be remembered that, to collect tithes, it is absolutely necessary

to hold a tithe audit in the place where the tithes accrue. A tithe dinner would perhaps bring together a good many of the tithe-payers: but many would remain to whom a personal application would be necessary; and this would entail many visits to the place. Local collectors are, in most of our business, indispensable: and when comparison is made (as I understand the Committee have done) between ourselves and other Colleges, the special circumstances of the individual cases need to be taken into account.

Again, as to small rents, it is absolutely necessary (as perhaps the Committee already know) to have some go-between, some one more in the position of the rent-payers, who can be going constantly among them, and extracting the payments, piecemeal, as he can. To delegate such work as this to our Treasurer would indeed be "to cut blocks with a razor."

But is it possible, even while employing collectors, to get the work more cheaply done? Our collectors receive, on an average, about 5 p. c. I understand that the Committee name 3 p. c. as a fair amount. Let us consider a few instances.

The Leeds Tithes amount to about £1000 a year. We had always paid, up to about 5 years ago, $12\frac{1}{2}$ p. c. for collecting these Tithes (amounting to about £1000 a year.) Mr. Paver resigned this business, on the ground that he could not do it for the money. Mr. Castle then undertook to do it for 10 p. c.: but, after trying it for a year or two, he came to say he really could not continue to do it for less than $12\frac{1}{2}$ p. c.; which arrangement was agreed to by the Governing Body.

Take, again, the Harrow Tithes, amounting to upwards of £800 a year, for which we pay 5 p. c. No agent would undertake to collect for so little as 5 p. c., unless he were employed by the House in other and more remunerative business as well.

Take, again, the Cheshire Tithes, amounting to upwards of £3000 a year, for which we pay 5 p. c. These require, from their being spread over so large an area, and being in many cases split up into so many small holdings, resident collectors: and the large amount of money involved, entailing the employment of collectors of position and respectability, and capable of providing bonds for large securities, would make it extremely hazardous to entrust the collection of them to less costly hands than the present one.

To take *cheapness* only as a test of a fit collector, seems a rash policy. You may, no doubt, especially in these days of universal depression, get any work undertaken, by *somebody*, for almost any pay you like to offer. The great question is, what sort of man you get, and how the work is done. The *best* workmen are really the cheapest in the long run: it will be a poor consolation, to think that we have saved (say) a few hundreds a year by "accepting the lowest tender," when some exceptionally cheap collector, whom we are proud to secure as "a great bargain," vanishes into space, taking with him two or three thousand pounds of our money!

As to making "reductions in the Law Bill," this is an operation every sane man is only too glad to perform, whenever it is possible: our Treasurer is surely no exception to this universal law.

And lastly, as to the cost of "management" being excessive: by which they cannot mean anything else than that the present Treasurer (receiving £700 and house; say £850 altogether), and the Clerks (receiving £320), are, in their opinion, overpaid. I really doubt whether, in saying this, the Committee quite

understand what they are talking about: I doubt if they quite realise the high quality of the work already done for them by their Treasurer—in bringing our Accounts into such perfect order, and inventing and constructing a set of ledgers, and a system of book-keeping, that are a credit to the House and have won the very highest commendations from competent judges (the University Commissioners, in 1873)—and the unremitting zeal and attention with which he and his clerks are still labouring in the service of the House. I even doubt if they clearly recall the circumstances under which he took his present position, by no effort of his own, but yielding to the wishes of the House, who, in 1875, appointed a Committee “to consider on what terms the services of the Treasurer could be retained”: and who persuaded him, in the interests of the House and at a considerable personal sacrifice, to remain here instead of taking the large living he had just accepted. In the name of Common Sense, let us know a good workman when we have got him. And, having got him, let us not begin asking whether we have screwed down his pay to the lowest possible figure.

2. Our Needs, and how to Meet Them

Our “needs,” other than “first charges” and necessary expenses, arise from our debt, which entails payment of (at present) about £6000 a year interest, besides the expenses of the Sinking Fund.

The debt itself, which now amounts to about £220,000, will, if all goes well, be reduced, by 1894, to about £156,000, which is not much more than two-thirds the present amount. Of course this may be delayed by further depreciation in the value of our estate: such depreciation we can neither measure beforehand nor avert. All we can do is to provide as far as possible for whatever may befall us, by practising, in all we undertake, the strictest economy that is compatible with real efficiency.

It may be necessary hereafter, if harder times come, for the Law to step in, and reduce all the “first-charges” with unsparing severity. But we need not, as yet, anticipate such evil days.

There is, however, one source of expenditure, which threatens, if no remedy be found, to drain our resources to a dangerous extent, by locking up a large amount of capital: this I propose to discuss by itself.

3. The Pension Fund

The object of this Fund it is no doubt desirable to secure—that there shall be pensions available for all suitable cases requiring them. No such cases exist as yet: there is no fear of any such need arising for five or ten years at least, and it may be many years to come before we have more than a couple of pensioners to provide for: and in future times, I think we may reasonably assume that the annual expenditure in pensions will never exceed £1200 or so.

Now to meet this need, what is it proposed to do? Is it to sink, in investments, a capital large enough to provide this sum in the form of *interest* alone, thus relieving our successors of *all* necessity to contribute out of their annual income—an income which will be, compared with *ours*, simply colossal? (For it must be remembered that we are now, at the cost of great sacrifices to *this* generation, enormously increasing the *future* income of the House.) What would be thought of a Government, that should come to Parliament with a proposal

to invest a capital of a thousand millions, in order that its interests might pay the Army and Navy for all future time? Would it not be answered “and why should our descendants pay *nothing* towards their own protection?”

Let us grant then, what seems obvious, that we cannot reasonably be expected to provide, out of the resources of the present generation, pensions for all future generations. The next question is “But is it necessary to provide *anything*?” We must pay pensions out of present resources: cannot future generations do the same? Clearly then can. The Tuition-Fees, whose sole present function is, first to pay the Tutors, and then to swell the Pension-Fund, exceeds the first requirement by about £1300 a year. This by itself would be enough, in any one year, to pay the pensions of that year: or, if a little more were needed, in excess of the £150 a year interest on the already-invested capital, it would always be possible for the House to supplement it by granting, from the Corporate Revenue, whatever was needed, in the form of Capitation Fees, payable to the Tuition Fund, thence payable to the Pension Fund, and instantly available (to quote the words of the Statute, at the end of section XI) “for payment of current pensions.” (For this interpretation of the Statute—viz. that it contemplates the payment of current pensions from *all* of these sources—I have the authority of Sir R. Harington.)

This being so, I venture to assert that a very important “economy” might be effected, by (1) rescinding the vote of May, 1885, of “Capitation Fees” to the amount of £1315; (2) reducing the “Capitation Grant,” not to £1 as the Committee suggest, but to zero; (3) sinking no more capital, at present, in the Pension Fund.

Let me say in conclusion, to anticipate any suspicion that this paper, speaking as it does of our Treasurer, has been inspired by him, that I have written it entirely *proprio motu*, and not at his or any one else’s suggestion. Some of the *facts* I have got from him—some from other sources. As to these, the only reasonable question seems to me to be, not “from whom do they come?”, but “are they true?” For the *opinions* here expressed, I am alone responsible.

C. L. Dodgson.

12.28 Curiosissima Curatoria

Source: Curiosissima Curatoria

By “*Rude Donatus*”

“*Haec olim meminisse juvabit*”

Quoted from *Aeneid*
by Virgil

Preface

As a Curatorial parting gift to friends who, during the past nine years, have so mercifully overlooked the many oversights that I, in my capacity of overseer, have so appropriately committed, I have put together, in a form convenient for reference, most of the Resolutions passed by C.R. during the last thirty years, as well as sundry interesting statistics.

Lest any Members of C.R. should feel unduly elated, on realising that they belong to so resolute a body, it may be well to point out that these Resolutions have not always been allowed to stand. Now and again, C.R. has lapsed into a mood entirely abrogatory and rescissory. In the matter of Wine-Committees, especially, it will be seen, by referring to Chap. I. § 19, (8) (10) (11), that its constant delight has been, Penelope-like, to undo all its own deeds and, whenever it got the chance (see Chap. I. § 19, (12) (13),) the deeds of its own Wine-Committee!

An enthusiastic computator of Averages will discover, from Chap. I. § 19, (1) (8), that the average time, spent by a C.R. Librarian in not completing a Book-Catalogue, is 29 years; also, from Chap. I. § 11, (5), that the average time, spent by a Picture-Committee in not commencing a Picture-Catalogue, is 2 years; also, from Chap. I. § 20, (1), that the average time, spent by a Smoking-Committee in drawing up a report, is 3 years; also, from Chap. I. § 17, (1), that the average time, spent by a Hot-Dishes-Committee in not Drawing up a report, is 6 years.

These, however, are only samples of the many pleasant surprises that lie hidden in the following pages, ready to reward the toil of the careful analyst.

C. L. Dodgson,
Ex-Curator.
Ch. Ch.
August, 1892

Chapter I. C.R. Resolutions, &c.

1. Membership of C.R., Actual

(1) Dec. 17, 1859. Resolved, “that no Senior Student on the new footing, not being an M.A., be admitted a Member of C.R., until he have passed his year of Probation.”

(2) do. Resolved, “that Members of the Old Foundation be eligible as Members of C.R. in their 22nd Term.”

(3) Mar. 13, 1863. Resolved, “that new Senior Students be eligible as Members of C.R. after their year of Probation.”

(4) do. Resolved, "that Bachelor Students on the Old Foundation be eligible as Members of C.R. after their 22nd Term." [see No. (2).]

(5) May 27, 1872. Resolved, "that the Curator do not ask a certain person whether he wishes to be a Member of C.R., but that, if he himself applies for admission, the Curator take the opinions of all Resident Members."

(6) Nov. 30, 1874. Resolved, "that no one, who becomes a Member of C.R. after this date, shall continue to be a Member after taking his name off the Books of the House."

(7) Feb. 28, 1884. Resolved, "(α) that when the Curator thinks it desirable to ascertain the wishes of C.R. with regard to the admission of any person as a Member, this shall be done, after the person has been duly proposed and seconded, by the Curator sending round the names of the person proposed, his proposer, and his seconder, to all Members in residence, with ballot-papers to be marked and returned to him within a stated time; (β) that the person, so voted on, shall not be admitted as a Member unless the proportion of "Ayes" to "Noes" be at least 4 to 1: (γ) that the Curator alone shall examine the ballot-papers, and shall act on the result, but shall not communicate to any one the number of the votes."

(8) June 12, 1884. Resolved, "that Members of C.R., who entered before Nov. 30, 1874, and who have, by ceasing to be Members of the House, ceased to pay Quarterage, shall not be reckoned as being any longer Members of C.R."

(9) do. Proposed, "that the Curator send notice, of the above decision, to those affected by it, offering re-enter them on the Roll, without a fresh Entrance-fee, at any time during the current year, if they are willing to compound for Quarterage." [Carried, *uno dissentiente*.]

(10) do. Resolved, "that those Members of C.R. who, after this date, cease to be Members of the House, shall be retained as Members of C.R., if they notify their willingness to compound for Quarterage."

(11) do. Resolved, "that the offer, named in No. (9), to re-enter names on the Roll, be extended to those who entered on and since Nov. 30, 1874, and who have ceased to be Members of the House."

(12) do. Resolved, "that any one who enters C.R. more than a year after taking his M.A. Degree be charged 2 guineas as Entrance-fee."

(13) Feb. 19, 1885. Resolved, "that, in the preceding Resolution, for 'a year' be substituted '3 years.'"

(14) do. Resolved, "that the Dean and Canons be invited to become Actual Members of C.R."

[N.B. *All of them accepted the invitation.*]

2. Membership of C.R., Honorary

(1) Jan. 19, 1863. Resolved, "that Senior Students under the Ordinance be eligible as Honorary Members of C.R. immediately on their Election."

(2) do. Resolved, "that Students on the Old Foundation be eligible as Honorary Members of C.R. immediately on taking the Degree of B.A."

(3) Ap. 26, 1864. Proposed, "that the Curator find out whether the Dean and Canons would like to be Honorary Members of C.R., and that so many of them as wish it shall become so." [Carried by 8 to 2.]

[N.B. *All of them accepted the invitation.*]

(4) Nov. 5, 1874. Resolved, "that Mr. Joseph Prestwich, Professor of Geology, and Mr. Frederick York Powell, recently appointed Law Lecturer, be elected Honorary Members of C.R."

3. Privileges of Honorary Members of C.R.

(1) Feb. 24, 1865. Resolved, "that the Curator, with Mr. Prout and Mr. Blore, consider and draw up regulations applying to Honorary Members of C.R."

(2) Nov. 11, 1865. Resolved, "that the following Regulations, as to Honorary Members, drawn up by the Curator with Mr. Prout and Mr. Blore, be adopted:

1. They shall pay neither Entrance-fee nor Subscription.
2. They shall have the privilege of using either Common Room, on all ordinary occasions, on the same footing as Actual Members.
3. They may read the Newspapers, Periodicals, or Books in Common Room, and may write letters there.
4. They may not take Newspapers, Periodicals, or Books out of Common Room.
5. They may make use of the New Common Room for a private party.
6. They may not have wine from the Common Room Cellar, except for use in either Common Room."

(3) June 12, 1884. Resolved, "that all Honorary Members of C.R. be allowed to attend Dessert."

4. Payments to be made by Members of C.R.

(1) Feb. 9, 1864. Resolved, "that Resident Members of C.R. should settle their accounts at the end of each Term."

(2) Feb. 24, 1865. Resolved, "that, looking forward to the time when the Curator shall collect the Subscriptions of Members of C.R., instead of their passing, as at present, through the hands of the Butler, who exacts $13\frac{1}{3}$ per cent, the Curator may inform any one, on his becoming a Member of C.R., that he may either make one payment, according to a fixed scale of Composition, for life, or pay $1/6$ a Quarter, and continue a Member of C.R. so long as he does so, even if he take his name off the Books of the House."

(3) Feb. 13, 1866. Resolved, "that the Steward and the Curator examine the Scale of Subscriptions to C.R., paid by different classes of its Members, with a view to forming a fresh system."

(4) Feb. 26, 1872. Resolved, "that every Member of C.R., who resides for 6 weeks in any Quarter of the year and makes use of the C.R., shall pay $10/6$ a Quarter (or $9/6$, if he shall have compounded)."

(5) do. Resolved, "that henceforward Chaplains, as well as Students, shall pay $10/6$ a Quarter."

(6) Feb. 25, 1873. Resolved, "that, in future, C.R. bills be paid through the Steward; that the items be sent in, weekly, to Residents, as now, and the bills quarterly."

[N.B. The first clause of the above required an order of the G.B., which was made Mar. 8, 1873.]

(7) Mar. 7, 1889. Proposed, “that the Curator be authorised, in the case of any Member withdrawing his name from C.R. (when there is good ground for believing that such Member entered C.R. under the erroneous impression that it was necessary to do so in order to continue a Member of the House, and that, but for that impression, he would never have entered), to refund to such Member his Entrance-fee and the Quarterage he has paid to C.R.” [Rejected by 9 to 7.]

[N.B. The following statement had been circulated, by the Curator, before the Meeting:

“At present, there is given, to every Member of the House taking his M.A. degree, a printed paper (supplied to the Steward by the Curator) containing full information as to cost of containing on the books of the House, of entering Common Room, of containing a Member of it, &c., &c., so that no such erroneous impression can be formed. But, before these papers (introduced by the present Curator) were thus given, such mistakes might easily arise.

Just a year ago, the Curator accidentally learned what the previous system had been, and realised the possibility of there being a considerable number of Members, from whom Common Room is receiving an annual payment made under a false impression.

In consequence of this, he sent round a circular, to about 170 Members paying Quarterage, pointing out that the entrance-fee, and the annual Quarterage, are purely *optional* payments, and begging to be informed whether any false impression, as to their being *necessary* payments, had existed: and whether any one wished to withdraw from Membership.

From the replies which have, as yet, come to hand, it appears that some 14 had entered under false impressions, 8 of whom wished to withdraw from Membership—which of course was at once arranged for. To refund to these 8 Members—who have thus been paying to Common Room (some of them for many years) money they could probably ill afford, under an erroneous impression that it was *necessary*—would cost, roughly speaking, £50. The Curator does not say there is any *legal* claim on Common Room to refund this money: but he feels strongly, that there is a perfectly binding *moral* claim. And he earnestly hopes that Common Room will authorise him to refund it.”

(8) Feb. 20, 1890. Resolved, “that, when a non-resident Member, who is paying 1/. Quarterage, having come to Oxford, wishes to be placed, for the current Quarter, on the list of those who pay 10/6 Quarterage, the Curator be authorised to transfer his name accordingly.”

(9) do. Resolved, “that, when a non-resident Member, who is paying 10/6 Quarterage, wishes to be placed on the list of those who pay 1/. Quarterage, and is willing to resign all the special privileges enjoyed by those who pay the higher Quarterage, the Curator be authorised to transfer his name accordingly.”

5. Meetings, and Polls, of C.R.

(1) Feb. 24, 1887. Resolved, “that Meetings of C.R. shall be held only in Full Term; and that at least 7 days’ notice shall be given.”

(2) do. Resolved, “that, for an Audit-Meeting, 6 Members, with the Curator, shall be a quorum.”

(3) Feb. 20, 1890. Resolved, "that the Curator be authorised to take a Poll, of the Students and Resident Members of C.R., on any question which he deems of sufficient importance, instead of summoning a Special Meeting of the same."

(4) do. Resolved, "that whenever, at a Meeting or on a Poll, the votes are equally divided, the Curator shall have a casting vote."

6. The Curator

(1) Mar. 11, 1886. Resolved, "that the Curator be permitted to spend up to £5 a year in getting clerk's assistance for ledgers."

7. The Servants of C.R.

(1) Feb. 18, 1868. Resolved, "that one of the two C.R. Servants must be in attendance on Week-Days between 8 a. m. and 10 p. m. (except from 3 to 5 p. m.), unless the Curator give them leave of absence."

8. Finance

(1) Feb. 9, 1864. Resolved, "that Mr. Prout and the Curator make enquiries concerning a safe investment for the £300, belonging to C.R., now in Exchequer Bills."

(2) Feb. 13, 1866. Resolved, "that an additional £100 be invested in Exchequer Bills."

(3) Feb. 2, 1867. Resolved, "that £100 be invested in Exchequer Bills."

(4) Feb. 24, 1870. Resolved, "that the Curator and the Steward make enquiries, and, if it seems good to them, invest the C.R. money in a security bringing higher interest than Exchequer Bills."

(5) June 20, 1870. Resolved, "to advance, out of C.R. money now in Exchequer Bills, £200 to the Steward of the Senior Masters' Estate, at 4 p. c., to be paid off in sums of not less than £100 at a time."

[N.B. In Nov., 1870, £100 more was advanced on the same terms.]

(6) Nov. 30, 1882. The Curator read, for the information of Members of C.R., the following statement:—

"In June, 1881, it was proposed in the G.B., (1) that the Curator of C.R. should no longer receive the Guinea paid by every Candidate for the M.A. Degree to the M.A. Table; (2) that this fee should no longer be required by Candidates for the M.A. Degree.

To this the Curator demurred, on behalf of C.R., and obtained thus much:—that the Guinea-fee should be retained as part of the College-fees, and paid over to the Curator by the Steward at the end of each Quarter.

The result of this plan is that the Curator does not see now every Candidate for the M.A. Degree.

Since that date an increasing number of M.A.'s do not become Members of C.R.: and so there will be loss under the heads of Entrance-fees, Annual Subscriptions, and Composition."

(7) Feb. 16, 1888. The Curator having required authority to sell, or buy, Exchequer Bills whenever it should seem desirable to do so, it was resolved "to leave the matter to the discretion of the Curator."

(8) Mar. 7, 1889. "That the Curator be authorised to borrow, up to £300, from any Member of C.R., at 4 p. c. interest, provided the principal be repaid at the end of 2 years."

[N.B. On Feb. 12, 1891, the time of repayment was extended by an addition of 2 years.]

9. Books

(1) Feb. 12, 1861. Resolved, "that Mr. Bayne's offer to undertake the office of C.R. Librarian be accepted."

(2) Feb. 9, 1864. Proposed, "that, when the Second Edition appears of Smith's Dictionary of the Bible, it be bought." [Carried by 9 to 5.]

(3) Feb. 13, 1866. Proposed, "that a Dictionary or Dictionaries of French, German, and English, be bought for C.R." [Carried by 5 to 3.]

(4) Feb. 9, 1869. Resolved, "that enquiry be made of Mudie or Cawthorn for what annual subscription they would supply a certain number (hereafter to be fixed) of new Books, excluding Novels, immediately after publication."

(5) Feb. 28, 1884. Resolved, "that 'Vanity Fair Album' be taken in, in continuation of the set presented by the Curator, which contained the complete series from the commencement in 1869 to 1883 inclusive."

(6) Feb. 24, 1887. Resolved, "that books of reference may not be removed from C.R."

(7) Mar. 7, 1889. Proposed by Mr. Sampson, seconded by Mr. Harcourt, and resolved, *nem. con.*, "that 'Vanity Fair Album' be no longer taken in."

(8) Feb. 20, 1890. The Curator having stated, in answer to a question put by Mr. Harvey, that the Book-Catalogue is incomplete, it was proposed by Mr. Harvey, seconded by Mr. Hassall, and resolved, *nem. con.*, "that the attention of the C.R. Librarian (Mr. Bayne) be drawn to this fact."

(9) Feb. 12, 1891. Proposed by Mr. Powell (seconder not recorded) and carried, *nem. con.*, "that the Resolution (No. 7) of Mar. 7, 1889, be rescinded, and that the series of 'Vanity Fair Album' be completed, by purchasing the volumes for 1889 and 1890, and be continued."

[N.B. The Curator had the greatest difficulty in purchasing the two missing volumes, as they were quite out of print; but he did at last succeed in finding copies.]

10. Periodicals

(1) Feb. 9, 1864. Resolved, "that Quarterly Journals, after they have been in C.R. a fortnight, may be taken out from 6 p. m. to 9 a. m., upon informing the C.R. Servant."

(2) Feb. 2, 1867. Resolved, "that two copies of *The Times* be taken in during Term, and that one of them be marked with the C.R. stamp, and be not taken out of C.R. on any pretence whatever."

(3) Nov. 30, 1875. Resolved, "that Papers, now discontinued at the end of the Term of residence, except the second copy of *The Times*, be taken in during the University Term."

(4) Nov. 30, 1876. Resolved, "that *The Contemporary Review* and *The Fortnightly Review* be sold by Auction at the end of the year."

(5) Feb. 28, 1884. Resolved, “that Periodicals, taken during Term only, be continued into Vacation, at the discretion of the Curator, so long as may seem desirable.”

(6) do. The Curator having stated that he had bound, at his own cost, for giving away, several volumes of old *Illustrated London News*, which would otherwise have been sold as waste paper, it was resolved, “that C.R. pay for the binding of those volumes, and further like volumes, to be given away by the Curator at his discretion.”

(7) do. Resolved, “that Magazines, unless bought by Members of Common Room, may be given away by the Curator at his discretion.”

(8) Feb. 19, 1885. Resolved, “that Periodicals, at present sold as waste paper, may be sent by the Curator to Africa, for the Universities’ Mission, the Weeklies when 3 months old, and the Monthlies when 6.”

(9) May 7, 1889. Resolved, “that, in the preceding Resolution, the last words be altered to ‘the Weeklies when 2 months old, and the Monthlies when 4.’”

(10) do. Resolved, “that, at future Audits, the existing list of Periodicals shall be assumed to go on for the ensuing year, unless Motions, of which previous notice has been given, be made for alterations in it.”

(1) Feb. 12, 1891. The Curator having stated that the two Evening-Papers, delivered by Messrs. Slatter and Rose at about 6 p. m., are the editions published in London at 1.30; but that Messrs. Smith, who have a book-stall at the Railway-Station, would, if they could have orders to supply 6 Papers, all the year round, in the neighbourhood of Ch. Ch., send a special messenger direct to Ch. Ch. on the arrival of the train due here at 8.23, so that Papers, which had been published as late as 5.30, could be supplied by about 8.40, it was proposed, and carried by a majority (8 ‘ayes,’ ‘noes’ not recorded), “that the Curator be authorised to procure the ‘Pall Mall Gazette’ in the manner suggested.”

[N.B. The Curator made arrangements in accordance with the above Resolution: but the result was not satisfactory; the paper never arrived at the specified time; and in March he returned to the old arrangement.]

11. Pictures

(1) Feb. 12, 1861. Resolved, “that Lord Derby, Lord Canning, Sir Cornwall Lewis, Mr. Gladstone, and the Dean of Ch. Ch. be requested to present their portraits (prints) to C.R.” Also “that a portrait of Lord Wellesley be purchased by the Curator.”

(2) Feb. 13, 1866. Resolved, “that the Dean be requested to give his Portrait to the College and to use his influence to obtain a copy of Watts’ Portrait of Mr. Gladstone, and of Weigall’s Portrait of Sir Cornwall Lewis, for the Hall.”

(3) Feb. 24, 1887. The late W. Scoltock had bequeathed to his niece, Miss S. A. Parker, three valuable oil-paintings (“A Portrait of Garrick” by Gainsborough, “A Cattle-Piece” by Cuyp, and “Study of a Female Head” by Frank¹ Hals), for her life-time, and then to become the property of the Dean and Chapter of Ch. Ch., “to be placed in the Common Room of that House, or elsewhere, as the Members of such Common Room for the time being shall from time to time direct.” Miss Parker, however, had surrendered her life-interest in the pictures, and had presented them “to Ch. Ch.,” so that they had now become,

¹should be “Frans”

to all intents and purposes, the property of Common Room. They had been forwarded to the Dean, and by him transmitted to the Curator, who, pending the decision of C.R. as to where they should permanently remain, had hung them, as a temporary arrangement, in the Old Common Room.

Proposed by Mr. Bayne, seconded by Mr. Prout, "that they remain in the Old Common Room." [Carried by 10 to 3.]

Proposed by Mr. Sampson, seconded by Mr. Harcourt, "that they remain in the position they now occupy." [Carried, *nem. con.*]

(4) Mar. 7, 1889. Resolved, "that a 'Catalogue Raisonné' be made of the Prints, Drawings, and Pictures belonging to Common Room."

(5) Feb. 20, 1890. The Curator having stated, in answer to a question put to him by Mr. Harvey, that he had not been able to find time to do any of the work entailed on him by the previous Resolution, it was resolved "that Mr. Harvey be associated with Mr. Bayne for the purpose of drawing up the said Catalogue."

12. Premises of C.R.

(1) May 27, 1868. Proposed, "that it is desirable to add a third room to C.R." [Carried by 7 to 3.]

(2) Feb. 26, 1872. Proposed, "that it is desirable to make a spiral staircase up to Hall from C.R. passage." [Carried by 6 to 2.]

(3) Dec. 5, 1877. Resolved, "to ask the G.B. to assign to the C.R., rent-free, the rooms opposite" (to be used as a Drawing-Room).

[N.B. This was granted by the G.B.]

13. Lighting and ventilation of C.R.

(1) Feb. 12, 1881. Resolved, "that, in order to ventilate the Old Common Room, 4 blocks be used, 2 in the smaller window about $3\frac{1}{2}$ inches deep, and 2 in the larger window about 5 inches deep, so as to raise each sash to that height, and thereby let in fresh air to go up to the ceiling and so create no draught."

[N.B. In thus raising the sashes of the larger window to a greater height than those of the smaller, C.R. seems to have acted on the theory that, the *more* the sashes overlapped each other, the *greater* would be the ventilation; the fact being that, the *more* they overlap, the *larger* is the area of friction, and therefore the *less* the ventilation.]

(2) Feb. 19, 1885. Resolved, "that a Committee be appointed to consider the whole question of lighting and ventilating."

[The Committee was appointed, consisting of Mr. Harcourt, Mr. J. B. Thompson, and Mr. Stewart.]

This Committee provided "Defries" lamps, with opal globes. These being complained of as not giving enough light, the Curator substituted ground-glass globes: and subsequently, as the lamps failed to give satisfaction, Duplex lamps with globes ground above and clear below.

They also provided additional ventilation by means of an oblique opening, *à la Tobin*, pierced through the eastern wall of Common Room, and furnished with a valve inside, which could be opened or shut at pleasure. This appears to give entire satisfaction, so long as it is kept shut.]

14. High Table Dinner when transferred to C.R.

(1) Mar. 7, 1889. Resolved, "that, in Vacations, the High Table Dinner shall be in the *New*, instead of the *Old*, Common Room; and that the Dessert shall also be in the New Common Room."

(2) May 9, 1889. Proposed, "that the old custom, of having High Table Dinner, during Vacations, in the *Old* Common Room, be returned to." [Rejected by 6 to 5, owing to its causing the newspapers to be inaccessible, during dinner, to any one not a Member of the High Table.]

(3) do. Resolved, "that the above proposal be adopted, and the newspapers placed, during Dinner, in another room."

[See Chap. II. § 4.]

15. Dessert in C.R.

(1) Mar. 15, 1878. Resolved, "that the use of the C.R., for Dessert after Hall, shall be reserved for Members of the High Table, Actual and Honorary."

(2) do. Resolved, "that the Chaplains shall, as heretofore, have the right of coming to C.R. for Dessert."

(3) June 12, 1884. Resolved, "that the Resolution of Mar. 15, 1878 [see No. (1)] be abrogated, so as to allow all Actual Members of C.R. to attend Dessert."

(4) do. Resolved, "that the privileges, at present enjoyed by the Chaplains, be extended to the Organist."

(5) do. Resolved, "that all Honorary Members of C.R. be allowed to attend Dessert."

(6) do. Resolved, "that the permission, hitherto accorded to non-resident M.A.'s, not being Members of C.R., who, on coming up for a few days only, are allowed to dine by implied invitation at the High Table, of attending Dessert, be no longer accorded."

(7) Feb. 19, 1885. Proposed, "that any Member bringing friends to Dessert, be permitted to order Wine for himself and them only; such bottles to be marked with his name and not passed round." [It was not seconded.]

(8) do. Proposed, "that the old practice, of allowing any Member, attending Dessert, who gives notice to the C.R. Servant that he takes only one glass of Wine, to be charged accordingly, be revived." [Rejected, *nem. con.*]

(9) Feb. 24, 1887. Proposed, "that, if any Member, attending Dessert, informs the C.R. Servant, that he, or any friend introduced by him, takes one glass of Wine, he shall be charged 9d. only." [Rejected by 6 to 2.]

(10) Feb. 16, 1888. The above proposal was again brought forward. An Amendment was proposed, and carried *nem. con.*, "that the proposed privilege be granted to the present Curator (Mr. Dodgson)."

(11) Mar. 7, 1889. Resolved, "that, in Vacations, the High Table Dinner shall be in the *New*, instead of in the *Old*, Common Room; and that the Dessert shall also be in the New Common Room."

(12) May 9, 1889. Resolved, "that the latter clause of the preceding Resolution be rescinded, and that Dessert always be in the Old Common Room."

(13) Feb. 20, 1890. Proposed, "that any Member of C.R., taking only one glass of Wine at Dessert, and notifying the fact to the C.R. Servant the same

evening, be charged for that one glass only." To this an Amendment was proposed, and carried by 5 to 3, "that the matter be left to the Curator."

16. Afternoon-Tea in C.R.

(1) Feb. 28, 1884. The Curator stated that he had tried, at the request of some Members, the experiment of having tea, cocoa, and bread and butter supplied in C.R. between 4.30 and 5.30 on all week-days. It was resolved "that it be continued."

(2) Mar. 11, 1886. Resolved, "that Afternoon-Tea begin to be supplied on the Friday of Meeting, and be continued till the evening of the last day of Collections."

(3) Feb. 12, 1891. Resolved, "that Afternoon-Tea be supplied till the end of the week after the close of Collections in the Lady Day and Michaelmas Terms, till the end of the second week after the close of Collections in the Midsummer Term, and begin to be supplied, every Term, on the Thursday of the week of Meeting."

17. Dinner-Parties in New C.R.

(1) Mar. 11, 1886. Proposed by Mr. J. B. Thompson, seconded by Mr. Prout, and resolved, *nem. con.*, "that a Committee be appointed to consider means (at an expenditure not exceeding £5) of keeping dishes hot for parties in the New C.R."

[The Committee was appointed, consisting of Mr. J. B. Thompson and Mr. Baynes, the former of whom, as Senior Member of the Committee, undertook, at the request of the Curator, to conduct an informal enquiry, the Curator undertaking to summon a Meeting of the Committee, as soon as there was any proposal ready to be laid before it.]

18. Wine-Cellars

(1) Feb. 13, 1866. The Curator was requested to get an estimate from Mr. Bruton for fitting up with Binns one of the Cellars in No. 5, Meadow Buildings, which the Dean has placed at the disposal of C.R.

(2) Feb. 24, 1870. Resolved, "that two thermometers be placed, one in each Cellar."

(3) June 18, 1886. Resolved, "that the Curator be authorised to construct a new Wine-Cellar, if the Steward should approve, under the New Common Room, at an outlay not exceeding £200."

[N.B. The actual cost was £220 7s. 10d.]

(4) Feb. 16, 1888. Resolved, "that the Curator be authorised to spend a sum not exceeding £60 on having the Cellars ventilated, and the oil-lamps replaced by gas-jets, so as to warm the Cellars in the same way as the Cellar, lately constructed under the New Common Room, is warmed."

[N.B. The actual cost was £43 12s. 7d.]

19. Wines, and the Wine-Committee

(1) Feb. 19, 1863. Resolved, "that the 1842 Port be charged 5/., and not go out of College."

(2) Feb. 9, 1864. Resolved, “that the price of Nierstein be lowered from 6/ to 5/.”

(3) Feb. 24, 1870. Resolved, “that the privilege of taking Wine from the C.R. Cellars be limited to Oxford Residents paying 2 guineas a Quarter, except in the cases of the Chaplains, who may enjoy the same privilege with their Subscription of £1.”

(4) Dec. 3, 1873. Resolved, “that, when any Claret is left in C.R., the remnant be taken next day into Hall, and charged as ordinary Dinner Claret.”

(5) June 2, 1874. Resolved, “that a Committee be appointed to assist the Curator in the choice and purchase of Wines for the use of C.R.”

(6) do. Proposed, “that the number of the Committee be five, of whom the Curator shall be one.” [Carried by 6 to 5.]

(7) do. Resolved, “that the Members of the Committee be elected at the annual C.R. Audit: that the Curator state at the annual Audit the amount proposed to be laid out in Wine during the ensuing year: and that the duties of the Committee shall be as follows:—

(α) to decide upon the *quality* and *kind* of Wine to be bought;

(β) to obtain samples, and to make choice of such Wine and Wine-merchants as may seem good;

(γ) to decide upon the *quality* and *kinds* of Wines which shall be drunk in C.R., and those which may be allowed to go out;

(δ) to superintend generally the C.R. Cellars, and to decide all questions regarding Wines.”

It was further resolved “that no alterations shall be made in the quality of Wines used in College, nor shall any fresh purchases be made, without the consent of the majority of the Committee at a Meeting: that the Committee shall meet at least once a Term: that the Meeting of the Committee shall be called by the Curator: that, at the Meetings, the Curator, or in his absence the senior Member of the Committee present, shall act as Chairman and shall have a casting vote: that no business shall be transacted unless at least three Members of the Committee are present: and that all questions shall be decided by a majority of votes.”

(8) Nov. 30, 1874. Resolved, “that the Rules, adopted on June 2, 1874 [see No. (7)], be abrogated, and that the following be substituted:—

(α) A Committee of five, including the Curator, shall be appointed to assist the Curator in the choice and purchase of Wines.

(β) The Members of the Committee shall be elected at the annual Audit.

(γ) The Committee shall meet, at least once a Term, at a time fixed by the Curator; but that the Curator shall summon a special Meeting at the request of any three Members.

(δ) All questions, as to the quality and kinds of Wines to be bought, shall be decided by a majority of the Committee at a Meeting.”

(9) Nov. 30, 1877. Resolved, “that the Curator ask Messrs. Barret and Clay, whether they will take back 264 Pints of ‘S. Estephe’ Claret, or exchange it for other wine.”

(10) Dec. 8, 1882. Resolved, “that the Rules, adopted on Nov. 30, 1874 [see No. (8)], be abrogated, and that the following be substituted:—

(α) There shall be a Wine-Committee, consisting of five persons, including the Curator, whose duty shall be to assist the Curator in the management of the Cellar.

(β) The Members of the Committee, other than the Curator, shall be elected at the annual Audit.

(γ) A Meeting of the committee shall be held in the second week of each Term, on a day to be fixed by the Curator, who shall give notice of the Meeting in the preceding week. Other Meetings of the Committee may be summoned by the Curator, a week’s notice being given. The Curator shall summon a Meeting of the Committee when requested to do so by three Members thereof.

(δ) All questions relating to the selection, purchase, keeping, serving, and sending out of Wines shall be decided by a majority of the Committee at a Meeting.

(ε) No business shall be transacted unless at least three Members of the Committee shall be present, of whom the Curator shall be one.”

The following additional Rule was proposed, and carried by 14 to 10:—

(ζ) No expenditure of money shall be made by the Committee without the concurrence of the Curator.

(11) Fe. 28, 1884. Resolved, “that the Rules, adopted on Dec. 8, 1882 [see No. (10)], be abrogated, and the following be substituted:—

(α) There shall be a Wine-Committee, consisting of five persons, including the Curator, whose duty shall be to assist the Curator in the management of the Cellar.

(β) The Members of the Committee, other than the Curator, shall be elected at the annual Audit.

(γ) The Curator shall hold a Meeting of the Committee during the first fortnight of each Term, and at any time when requested to do so by three of the Members. He may also hold a Meeting at any other time, if he see reason to do so.

(δ) All questions, which involve an appreciable expenditure of money and which are not mere routine, shall be decided, at a Meeting of the Committee, by a majority of those present and voting; the Curator having a casting-vote when the numbers be equal. In all other details of the management of the Cellar, the Curator shall exercise his own discretion; and no orders shall be given except by the Curator or with his sanction.

(ε) The Curator shall report to the Committee, at each Meeting, all that he has done since the previous Meeting.

(ζ) No business shall be transacted unless the Curator, and two other Members of the Committee be present.”

(12) Mar. 11, 1886. Resolved, “that it be an instruction to the Wine-Committee, that, in sending out Wines, no distinction is to be made among Members paying the same Quarterage.”

(13) May 28, 1886. A Special Meeting of C.R. was held, to consider the Report of the Wine-Committee, who were unanimously of opinion that the distinction, hitherto made between Residents in *College* and Residents in *Oxford* as to taking out Wines, but abrogated on Mar. 11, 1886, was fair in principle. It was proposed “that the Resolution of Mar. 11, be rescinded.” [Proposal rejected by 8 to 4.]

20. Smoking

(1) Mar. 11, 1886. Proposed by Mr. Shute, seconded by Mr. Sampson, and resolved, *nem. con.*, “that a Committee be appointed, to consider means of providing a Smoking-room, every night, by utilising one or other of the ‘tutorial’ rooms, the expense to be borne by C.R., when the room is used by Members after Dessert; but, if it be taken for a private party, the expenses to be borne by the giver of the party.”

[The Committee was appointed, consisting of Mr. Stewart, Mr. Shute, and Mr. Hassall, the first of whom, as Senior Member of the Committee, undertook, at the request of the Curator, to conduct an informal enquiry, the Curator undertaking to summon a Meeting of the Committee, as soon as there was any proposal ready to be laid before it.

Nothing further was done until Feb. 16, 1889, when the following Motion was sent to the Curator, to be placed on the “Agenda” for the Audit-Meeting of Mar. 7, 1889:—“that an Executive Committee be appointed to provide arrangements for persons desirous to smoke.” This was signed by Mr. Stewart, Mr. Onions, Mr. Hassall, and Mr. Skene. The Curator intimated, in reply, that a Committee, appointed to consider this matter, had been in existence for nearly 3 years, and that 2 of the proposers of this Motion were Members of it. This led to a Meeting of the Committee, who drew up a report.]

(2) Mar. 7, 1889. Proposed by Mr. Harvey, seconded by Mr. J. B. Thompson, “that smoking be permitted in the Old Common Room after 9 p. m. on week-days.” [Rejected by 15 to 2.]

(3) do. The Report of the above-named Committee was considered, and it was resolved “that the Drawing-Room be ready for smoking every evening during Term, and (with notice) in Vacation, unless required for a private party.”

(4) May 9, 1889. Resolved, “that an Executive Committee be appointed for the purpose of lighting the Smoking-Room.”

(5) do. Proposed, “that, in Resolution 2, the words ‘with notice’ apply to Term as well as to Vacation.” [Rejected, *nem. con.*]

(6) do. Proposed, “that the Curator be authorised to place an asbestos-fire in the Smoking-Room.” [Carried by 6 to 4.]

(7) May 17, 1889. The Curator, having asked permission, at the Meeting of May 9, to give to the C.R. Servants what he considered to be reasonable remuneration for the additional trouble entailed on them by the new Smoking-Room, and having been refused that permission, summoned this Meeting to receive his resignation. It was thereupon resolved, *nem. con.*, to leave the whole matter in his hands. The Curator did not tender his resignation.

(8) Mar. 4, 1892. The Curator having stated that, when smoking takes place in the New Common Room (as sometimes occurs when a dinner-party is given there), the effect is to render the set of rooms, immediately over it, almost uninhabitable, it was proposed by him, and seconded by Mr. Prout, "that it be henceforward a rule of C.R., that smoking is not permitted on the premises, except in the room that has been specially provided for the purpose." This was objected to, and the Motion, altered to the following form, was carried *nem. con.*:—"that a builder be consulted, and an attempt made to remedy the structural defects, which at present allow the smoke to penetrate the rooms over the New Common Room; that, in case of this attempt failing, it be henceforward a rule of C.R., that smoking is not permitted in any of its rooms, except in the one specially provided for the purpose; and that, meanwhile, it be understood that smoking is not permitted in the New Common Room."

[N.B. It was of course understood, though not formally stated, that, in case of this attempt succeeding, smoking should henceforward be permitted in the New Common Room.]

21. Miscellaneous

(1) After the "Gaudy" of Nov. 1, 1862, the Senior and Junior M.A. Tables were transferred to the North and South ends of the Dais.

(2) Nov. 8, 1862. Proposed, "that it is expedient that the Senior and Junior M.A. Tables should be united as soon as possible." [Carried by 6 to 5.]

(3) Nov. 7, 1864. Letter from the Dean to the Curator of C.R., concerning the opening of Canterbury Gate. "Dear Mr. Bayne, In answer to the Memorial which (as Curator of C.R.) you sent me last Term, I beg leave to inform you that I have ordered the Porter at Canterbury Gate to open the Gate for M.A.'s resident within walls between the hours of 7 a. m. and 11 p. m. Will you be so good as to furnish to the Porter a list of such resident M.A.'s, signed with your name, and make a note that a fresh list should be given by the Curator of the C.R. at the beginning of every Term. Yours very truly, Henry G. Liddell."

[N.B. This privilege was afterwards extended to all Senior Students resident within the walls.]

(4) Feb. 13, 1866. Resolved, "that the Curator with the Steward and Mr. Sandford form a Committee to see whether arrangements could be made for supplying the Undergraduates with Coffee and Toast from the C.R."

Chapter II. C.R. Finance, &c.

1. Curators of C.R.

The following are the names of the last nine Curators, with the dates of appointment.

- Cox, Rev. C. H.
1826. Shuldham, Rev. J.
 1845. Hill, Rev. E.
 1850. Rogers, Rev. J. P.
 1851. Marshall, Rev. G.
 1857. Joyce, Rev. F. H.
 1862. Bayne, Rev. T. V.
 1882. Dodgson, Rev. C. L.
 1892. Strong, Rev. T. B.

2. Ancient and Modern Finance

The following Summaries, of C.R. Receipts and Expenditure for the years 1818 and 1891, are here given for comparison:² but, as to the amounts of Wine bought, a fairer comparison may be made by taking averages of periods of (say) 5 years: this gives, for 1818, £268, and, for 1891, £588. Thus, while the amount consumed has only increased by one-half, the amount bought has more than doubled. The explanation is to be found, I believe, in the fact that we now have a much larger stock in hand than we used to have. The stock, in 1802, had cost about £1020; in 1886 it had cost about £4300.

The item "wine consumed," in the Receipts for 1818 and 1891, needs explanation. The ancient system was to keep a "Wine and Tea Account" in a separate Ledger—the "Expenditure," for wine, being of course the sum total of the wine-bills paid during the year, and the "Receipts," for wine, being the value assigned to the wine recorded as having left the cellar. This latter sum was credited to C.R. by the Curator; and *if* all this wine was duly entered in Member's Bills, it was duly paid to the Curator by the Steward, as part of the sum total of those Bills; otherwise, the loss apparently fell on the unfortunate Curator. This system was abandoned about 20 years ago, and since then the practice has been to credit C.R., not with the assigned value of the wine taken out, but simply with the money received on account of Members' Bills; so that, if any of the wine taken out fails to be duly entered in those Bills, the loss falls on C.R., and *not*, as was previously the case, on the Curator.

Previously to 1882, no means existed, that I can discover, for ascertaining whether these entries had or had not been properly made; and one of the tasks I set myself, on taking the Curatorship, was to construct Ledgers which should furnish such means.

The Curator is now able, at the conclusion of a year, to ascertain the totals of the values, assigned by C.R. to the wines that have been taken out of the cellar, under the three headings of "Common Room," "Hall," and "Rooms"; and also the totals of the sums, charged in Members' Bills, under the same three headings; as well as the total "loss" incurred, by sending into Hall the remnants of Claret opened for Dessert in Common Room, and charging it as Dinner-Wine.

²Remark: These are not reproduced here.

3. Ancient method of dealing with Wine-Merchants

The Table³ furnishes some curious information as to the contented spirit in which C.R., at the beginning of this century, went on, from year to year, ordering more wines, though already heavily in debt to the Wine-Merchant—debt which in some cases remained unpaid for several years together, and must have entailed on the Merchant (unless interest was paid on it) a considerable annual loss. Thus, it appears that, during the whole period 1803 to 1807, C.R. owed “Hugh Powell” about £700. The acme of recklessness seems to have been reached in 1805, when, though owing “Hugh Powell” £667, and having only £261 cash at their command, C.R. actually ordered £531 worth of wine, and began the new year £937 in debt!

4. The High Table

For the convenience of readers, the following Regulations as to the High Table, adopted by the G.B. on May 4th, 1892, are here reprinted. At a subsequent Meeting of the G.B., it was agreed that Rule 4 should also apply to all who, in accordance with Rule 5, should “dine at the High Table by implied invitation.”

1. Members of the Governing Body alone are by right Members of the High Table.

2. All Students on the Old Foundation, and all Non-Official Students who are not Members of the Governing Body, are Honorary Members of the High Table.

3. All former Canons, Students and Senior Students whose names are on the Book of the House, together with all Honorary Students, are Honorary Members of the High Table.

4. Any Member of the High Table may introduce a guest, and as a general rule not more than one guest on any one day.

5. All Members of the House who have taken the degree of M.A., or any equivalent or superior degree, and have not been invited to become Honorary Members of the High Table by a resolution of the Governing Body, may dine at the High Table by implied invitation for three days in each Term; and also, if they be Members of the Common Room, for three days only in each Vacation.

6. The Caterer, or in his absence the Senior Canon or Student present, shall take the Chair on week-days at 7 p. m. and on Sundays at 6.15 p. m. by the Cathedral clock.

7. If any Member of the High Table, having given in his name for dinner, do not dine, a charge of 2/6 shall be made in his battels, unless he have sent notice to the kitchen before 3 p. m.

8. The list of those who intend to dine shall be made up at 2 p. m., and all names should be given in before that time.

9. The cost of dinner shall not as a rule exceed the amount of the statutory dinner allowance: if on any occasion it does so, the excess shall be divided among all Members of the High Table dining on that day. But this rule shall be applied only if the total outlay for a Term or for a Vacation exceed the aggregate of the allowances and the charges for the same period.

³Remark: The original has some reference; the table itself with the money due to wine-merchants from 1796 to 1820 is not reproduced here.

12.29 Resident Women-Students

Source: printed 1896

In the bewildering multiplicity of petty side-issues, with which the question, of granting University Degrees to Women, has been overlaid, there is some danger that Members of Congregation may lose sight of the really important issues involved.

The following four propositions should, I think, be kept steadily in view by all who wish to form an independent opinion as to the matter in dispute.

(1)

One of the chief functions, if not *the* chief function, of our University, is to prepare young Men—partly by teaching, partly by discipline, partly by the personal influence of those who have charge of them, and partly by the influence they exercise on one another—for the business of Life.

[This needs to be *specially* borne in mind in connection with the assumption, so constantly made in this controversy, that the *sole* meaning of the B.A. Degree is that it guarantees the possession of a large amount of *knowledge*.]

Consequently,

(2)

The first question to be asked, as to any Scheme proposed to our University, is, “How will it affect those for whose well-being we are responsible?” When we have assured ourselves that it will not exercise any harmful influence on our own Students, then, and not till then, may we fairly proceed to consider how it will affect those for whose well-being we are *not* responsible.

(3)

Any Scheme for the recognition of Women-Students—whether by a series of Certificates or a single Diploma—whereby those who have resided here will have an advantage, in the keen competition for educational posts, over those who have not, will most certainly end in making residence *compulsory* on all. Whether they wish it or not, whether they can afford it or not, Women-Students will find that they *must* reside, unless they are content to be hopelessly distanced in the race whose prize is “daily bread.”

Consequently,

(4)

Any such Scheme is certain to produce an enormous influx of resident Women-Students. Considering that we have over 3000 young Men-Students, and that the number of young Women, who are devoting themselves to study, is increasing “by leaps and bounds,” it may be confidently predicted that any such Scheme will bring to Oxford at least 3000 more young Women-Students. Such an immigration will of course produce a rapid increase in the size of Oxford, and

will necessitate a large increase in our teaching-staff and in the number of our lecture-rooms.

The main question before us is, "Will the mutual influence, of two such sets of Students, residing in such close proximity, be for good or for evil?"

Some Members of the Congregation will reply, "For good," some, "For evil." By all means let each form his own independent judgement, and give effect to it by his vote: but let him do it *deliberately*, and in the full light of *facts*.

The late Dr. Liddon was strongly of opinion that such an influence would be for *evil*, at any rate for the young *Women*. I have myself heard him—no doubt many others have done the same—express, most warmly and earnestly, his fears as to the effect the new movement, for flooding Oxford with young Women-Students, would have on the young Women themselves. And I have no doubt that, were he yet among us, his silvery tones would have been heard in Congregation last Tuesday, deprecating the introduction, into our ancient University, of that social monster, the "He-Woman".

Surely the real "way out", from our present perplexity, is to be found in some such course as that advocated by Mr. Strachan-Davidson, that Oxford, Cambridge, and Dublin, should join in a petition to the Crown to grant a charter for a Women's University.

Such a University would very soon attract to itself the greater portion of young Women-Students. It takes no great time to build Colleges; and we might confidently expect to see "New Oxford," in the course of 20 or even of 10 years, rivaling Oxford, not only in numbers, but in attainments. At first, perhaps, they might need to borrow some teachers from the older Universities; but they would soon be able to supply all, that would be needed, from among themselves; and Women-Lecturers and Women-Professors would arise, fully as good as any that the older Universities have ever produced.

This proposal has been met by the plea that it is *not* what the Women themselves "desire." Surely no weaker plea was ever urged in any controversy. Even *men* very often fail to "desire" what is, after all, the best thing for them to *have*. And those ancients, on whom the onerous task was laid, of weighing and, if reasonably possible, satisfying the claims of the horse-leech and her two daughters, had other things to consider than the mere shrillness of their outcries.

Charles L. Dodgson.

Ch. Ch.

Mar. 7th, 1896

Part 13

Texts concerning Vivisection

See also the poem *Fame's Penny-Trumpet* (→ 18.24, p. 2042).

13.1 Vivisection as a Sign of the Times

Source: Pall Mall Gazette, February 12, 1875

To the EDITOR of the PALL MALL GAZETTE

SIR,—The letter which appeared in last week's *Spectator*, and which must have saddened the heart of every one who read it, seems to suggest a question which has not yet been asked or answered with sufficient clearness; and that is, how far may vivisection be regarded as a sign of the times, and a fair specimen of that higher civilization which a purely secular State education is to give us? In that much-vaunted panacea for all human ills we are promised, not only increase of knowledge, but also a higher moral character; any momentary doubt on this point which we may feel is set at rest at once by quoting the great crucial instance of Germany. The syllogism, if it deserves the name, is usually stated thus: Germany has a higher scientific education than England; Germany has a lower average of crime than England; *ergo*, a scientific education tends to improve moral conduct. Some old-fashioned logician might perhaps whisper to himself, "Præmissis particularibus nihil probatur," but such a remark, now that Aldrich is out of date, would only excite a pitying smile. May we, then, regard the practice of vivisection as a legitimate fruit, or as an abnormal development, of this higher moral character? Is the anatomist, who can contemplate unmoved the agonies he is inflicting, for no higher purpose than to gratify a scientific curiosity, or to illustrate some well-established truth, a being higher or lower, in the scale of humanity, than the ignorant boor whose very soul would sicken at the horrid sight? For if ever there was an argument in favour of purely scientific education more cogent than another, it is surely this (a few years back it might have been put into the mouth of any advocate of science; now it reads like the merest mockery): "What can teach the noble quality of mercy, of sensitiveness to all forms of suffering, so powerfully as the knowledge of what suffering really is? Can the man who has once realized by minute study what the nerves are,

Quoted from *Artis
Logicae Compendium*
by Henry Aldrich

what the brain is, and what waves of agony the one can convey to the other, go forth and wantonly inflict pain on any sentient being?" A little while ago we should have confidently replied, "He cannot do it;" in the light of modern revelations we must sorrowfully confess "He can." And let it never be said that this is done with serious forethought of the balance of pain and gain; that the operator has pleaded with himself "Pain is indeed an evil, but so much suffering may fitly be endured to purchase so much knowledge." When I hear of one of these ardent searchers after truth giving—not a helpless dumb animal, to whom he says in effect, "*You shall suffer that I may know.*"—but his own person to the probe and to the scalpel, I will believe in him as recognizing a principle of justice, and I will honour him as acting up to his principles. "But the thing cannot be!" cries some amiable reader fresh from an interview with that most charming of men, a London physician. "What! Is it possible that one so gentle in manner, so full of noble sentiments, can be hardhearted? The very idea is an outrage to common sense!" And thus we are duped every day of our lives. Is it possible that that bank director, with his broad honest face, can be meditating a fraud? That the chairman of that meeting of shareholders, whose every tone has the ring of truth in it, can hold in his hand a "cooked" schedule of accounts? That my wine merchant, so outspoken, so confiding, can be supplying me with an adulterated article? That the schoolmaster, to whom I have entrusted my little boy, can starve or neglect him? How well I remember his words to the dear child when last we parted. "You are leaving your friends," he said, "but you will have a father in me, my dear, and a mother in Mrs. Squeers!" For all such rose-coloured dreams of the necessary immunity from human vices of educated men, the facts in last week's *Spectator* have a terrible significance. "Trust no man further than you can see him," they seem to say. "Qui vult decipi, decipiatur."

Quoted from
Nicholas Nickleby by
Charles Dickens

Allow me to quote from a modern writer a few sentences bearing on this subject:—

We are at present, legislature and nation together, eagerly pushing forward schemes which proceed on the postulate that conduct is determined, not by feelings, but by cognitions. For what else is the assumption underlying this anxious urging-on of organizations for teaching? What is the root-notion common to Secularists and Denominationalists but the notion that spread of knowledge is the one thing needful for bettering behaviour? Having both swallowed certain statistical fallacies, there has grown up in them the belief that State education will check ill-doing. . . . This belief in the moralizing effects of intellectual culture, flatly contradicted by facts, is absurd *à priori*. . . . This faith in lesson-books and readings is one of the superstitions of the age. . . . Not by precept, though heard daily; not by example, unless it is followed: but only by action, often caused by the related feeling, can a moral habit be formed. And yet this truth, which mental science clearly teaches, and which is in harmony with familiar sayings, is a truth wholly ignored in current educational fanaticisms.

There need no praises of mine to commend to the consideration of all thoughtful readers these words of Herbert Spencer. They are to be found in "The Study of Sociology," pp. 361–367.

Let us, however, do justice to science. It is not so wholly wanting as Mr. Herbert Spencer would have us believe in principles of action—principles by which we may regulate our conduct in life. I myself once heard an accomplished man of science declare that his labours had taught him one special personal lesson which, above all others, he had laid to heart. A minute study of the nervous system and of the various forms of pain produced by wounds had inspired in

him one profound resolution; and that was—what think you? Never, under any circumstances, to adventure his own person into the field of battle! I have somewhere read in a book—a rather antiquated book, I fear, and one much discredited by modern lights—the words “the whole creation groaneth and travaileth in pain together until now.” Truly we read these words with a new meaning in the present day! “Groan and travail” it undoubtedly does still (more than ever, so far as the brute creation is concerned); but to what end? Some higher and more glorious state? So one might have said a few years back. Not so in these days. The τέλος τέλειον of secular education, when divorced from religious or moral training, is, I say it deliberately, the purest and most unmitigated selfishness. The world has seen and tired of the worship of Nature, of Reason, of Humanity; for this nineteenth century has been reserved the development of the most refined religion of all—the worship of Self. For that, indeed, is the upshot of it all. The enslavement of his weaker brethren—“the labour of those who do not enjoy, for the enjoyment of those who do not labour”—the degradation of woman—the torture of the animal world—these are the steps of the ladder by which man is ascending to his higher civilization. Selfishness is the key-note of all purely secular education; and I take vivisection to be a glaring, a wholly unmistakable, case in point. And let it not be thought that this is an evil that we can hope to see produce the good for which we are asked to tolerate it, and then pass away. It is one that tends continually to spread. And if it be tolerated or even ignored now, the age of universal education, when the sciences, and anatomy among them, shall be the heritage of all, will be heralded by a cry of anguish from the brute creation that will ring through the length and breadth of the land! This, then, is the glorious future to which the advocate of secular education may look forwards: the dawn that gilds the horizon of his hopes! An age when all forms of religious thought shall be things of the past; when chemistry and biology shall be the A B C of a State education enforced on all; when vivisection shall be practised in every college and school; and when the man of science, looking forth over a world which will then own no other sway than his, shall exult in the thought that he has made of this fair green earth, if not a heaven for man, at least a hell for animals.—I am, Sir, your obedient servant,

Quoted from Romans
8:22

Lewis

Carroll.

February 10.

13.2 Vivisection

Source: Pall Mall Gazette, February 16, 1875

To the EDITOR of the PALL MALL GAZETTE

SIR,—I have no desire to trouble you with a correspondence, but will you kindly allow me room to suggest to your correspondent “Y.” that he is (to use a sporting phrase) “running the wrong fox?” The position *I* had taken was (to put it into technical form) “not all men of anatomical science are merciful;” the position *he* is assailing is “all men of anatomical science are unmerciful.” The fact that army surgeons (a race whom I honour from my heart) are often noble and self-sacrificing tells well for the argument *he* is maintaining; but, so far as concerns the question really at issue, it is irrelevant.—I am, Sir, your obedient servant,

Lewis Carroll

13.3 Some Popular Fallacies about Vivisection

Source: The Fortnightly Review, June 1, 1875

At a time when this painful subject is engrossing so large a share of public attention, no apology, I trust, is needed for the following attempt to formulate and classify some of the many fallacies, as they seem to me, which I have met with in the writings of those who advocate the practice. No greater service can be rendered to the cause of truth, in this fiercely contested field, than to reduce these shadowy, impalpable phantoms into definite forms, which can be seen, which can be grappled with, and which, when once fairly *laid*, we shall not need to exorcise a second time.

I begin with two contradictory propositions, which seem to constitute the two extremes, containing between them the golden mean of truth:—

1. *That the infliction of pain on animals is a right of man, needing no justification.*

2. *That it is in no case justifiable.*

The first of these is assumed in practice by many who would hardly venture to outrage the common feelings of humanity by stating it in terms. All who recognise the difference of right and wrong must admit, if the question be closely pressed, that the infliction of pain is in *some* cases wrong. Those who deny it are not likely to be amenable to argument. For what common ground have we? They must be restrained, like brute beasts, by physical force.

The second has been assumed by an Association lately formed for the total suppression of Vivisection, in whose manifesto it is placed in the same category with Slavery, as being an absolute evil, with which no terms can be made. I think I may assume that the proposition most generally accepted is an intermediate one, namely, that the infliction of pain is in some cases justifiable, but not in all.

3. *That our right to inflict pain on animals is coextensive with our right to kill, or even to exterminate a race (which prevents the existence of possible animals), all being alike infringements of their rights.*

This is one of the commonest and most misleading of all the fallacies. Mr. Freeman, in an article on Field Sports and Vivisection, which appeared in the *Fortnightly Review* for May, 1874, appears to countenance this when he classes death and pain together, as if they were admitted to be homogeneous. For example—

“By cruelty then I understand, as I have understood throughout, not all infliction of death or suffering on man or beast, but their wrongful or needless infliction. . . . My positions then were two. First . . . that certain cases of the infliction of death or suffering on brute creatures may be blameworthy. The second was, that all infliction of death or suffering for the purpose of mere sport is one of those blameworthy cases.”

But in justice to Mr. Freeman I ought also to quote the following sentence, in which he takes the opposite view: “I must in all cases draw a wide distinction between mere killing and torture.”

In discussing “the rights of animals,” I think I may pass by, as needing no remark, the so-called right of a race of animals to be perpetuated, and the still more shadowy right of a non-existent animal to come into existence. The only question worth consideration is whether the killing of an animal is a real infringement of right. Once grant this, and a *reductio ad absurdum* is imminent,

unless we are illogical enough to assign rights to animals in proportion to their size. Never may we destroy, for our convenience, some of a litter of puppies—or open a score of oysters when nineteen would have sufficed—or light a candle in a summer evening for mere pleasure, lest some hapless moth should rush to an untimely end! Nay, we must not even take a walk, with the certainty of crushing many an insect in our path, unless for really important business! Surely all this is childish. In the absolute hopelessness of drawing a line anywhere, I conclude (and I believe that many, on considering the point, will agree with me) that man has an *absolute* right to inflict death on animals, without assigning any reason, provided that it be a painless death, but that any infliction of pain needs its special justification.

4. *That man is infinitely more important than the lower animals, so that the infliction of animal suffering, however great, is justifiable if it prevent human suffering, however small.*

This fallacy can be assumed only when unexpressed. To put it into words is almost to refute it. Few, even in an age where selfishness has almost become a religion, dare openly avow a selfishness so hideous as this! While there are thousands, I believe, who would be ready to assure the vivisectors that, so far as their personal interests are concerned, they are ready to forego any prospect they may have of a diminution of pain, if it can only be secured by the infliction of so much pain on innocent creatures.

But I have a more serious charge than that of selfishness to bring against the scientific men who make this assumption. They use it dishonestly, recognising it when it tells in their favour, and ignoring it when it tells against them. For does it not presuppose the axiom that human and animal suffering differ *in kind*? A strange assertion this, from the lips of people who tell us that man is twin-brother to the monkey! Let them be at least consistent, and when they have proved that the lessening of *human* suffering is an end so great and glorious as to justify any means that will secure it, let them give the anthropomorphoid ape the benefit of the argument. Further than that I will not ask them to go, but will resign them in confidence to the guidance of an inexorable logic.

Had they only the candour and the courage to do it, I believe that they would choose the other horn of the dilemma, and would reply, "Yes, man *is* in the same category as the brute; and just as we care not (you see it, so we cannot deny it) how much pain we inflict on the one, so we care not, unless when deterred by legal penalties, how much we inflict on the other. The lust for scientific knowledge is our real guiding principle. The lessening of human suffering is a mere dummy set up to amuse sentimental dreamers."

I come now to another class of fallacies—those involved in the comparison, so often made, between vivisection and field-sports. If the theory, that the two are essentially similar, involved no worse consequence than that sport should be condemned by all who condemn vivisection, I should be by no means anxious to refute it. Unfortunately the other consequence is just as logical, and just as likely, that vivisection should be approved of by all who approve of sport.

The comparison rests on the assumption that the main evil laid to the charge of vivisection is the pain inflicted on the animal. This assumption I propose to deal with, further on, as a fallacy: at present I will admit it for the sake of argument, hoping to show that, even on this hypothesis, the vivisectors have a very poor case. In making this comparison their first claim is—

5. *That it is fair to compare aggregates of pain.*

“The aggregate amount of wrong”—I quote from an article in the *Pall Mall Gazette* for February 13—“which is perpetrated against animals by sportsmen in a single year probably exceeds that which some of them endure from vivisection in half a century.” The best refutation of this fallacy would seem to be to trace it to its logical conclusion—that a very large number of trivial wrongs are equal to one great one. For instance, that a man, who by selling adulterated bread inflicts a minute injury on the health of some thousands of persons, commits a crime equal to one murder. Once grasp this *reductio ad absurdum*, and you will be ready to allow that the only fair comparison is between individual and individual.

Supposing the vivisectionists forced to abandon this position, they may then fall back on the next parallel—

6. *That the pain inflicted on an individual animal in vivisection is not greater than in sport.*

I am no sportsman, and so have no right to dogmatize, but I am tolerably sure that all sportsmen will agree with me that this is untrue of shooting, in which, whenever the creature is killed at once, it is probably as painless a form of death as could be devised; while the sufferings of one that escapes wounded ought to be laid to the charge of unskilful sport, not of sport in the abstract. Probably much the same might be said of fishing; for other forms of sport, and especially for hunting, I have no defence to offer, believing that they involve very great cruelty.

Even if the last two fallacies were granted to the advocates of vivisection, their use in the argument must depend on the following proposition being true:—

7. *That the evil charged against vivisection consists chiefly in the pain inflicted on the animal.*

I maintain, on the contrary, that it consists chiefly in the effect produced on the operator. To use the words of Mr. Freeman, in the article already quoted, “the question is not as to the aggregate amount of suffering inflicted, but as to the moral character of the acts by which the suffering is inflicted.” We see this most clearly, when we shift our view from the act itself to its remoter consequences. The hapless animal suffers, dies, “and there an end:” but the man whose sympathies have been deadened, and whose selfishness has been fostered, by the contemplation of pain deliberately inflicted, may be the parent of others equally brutalised, and so bequeath a curse to future ages. And even if we limit our view to the present time, who can doubt that the degradation of a soul is a greater evil than the suffering of a bodily frame? Even if driven to admit this, the advocates of the practice may still assert—

8. *That vivisection has no demoralising effect on the character of the operator.*

“Look at our surgeons!” they may exclaim. “Are they a demoralised or a brutalised class? Yet you must admit that, in the operations they have to perform, they are perpetually contemplating pain—aye, and pain deliberately inflicted by their own hands.” The analogy is not a fair one; since the *immediate* motive—of saving the life, or diminishing the sufferings, of the person operated on—is a counteracting influence in surgery, to which vivisection, with its shadowy hope of some day relieving the sufferings of some human being yet unborn, has nothing parallel to offer. This, however, is a question to be decided by evidence, not by argument. History furnishes us with but too many examples of the degrada-

Quoted from *Macbeth*
by William
Shakespeare

tion of character produced by the deliberate pitiless contemplation of suffering. The effect of the national bull-fights on the Spanish character is a case in point. But we need not go to Spain for evidence: the following extract from the *Echo*, quoted in the *Spectator* for March 20, will be enough to enable the reader to judge for himself what sort of effect this practice is likely to have on the minds of students:—

“But if yet more be necessary to satisfy the public mind on this latter point” (the effect on the operators), “the testimony of an English physiologist, known to the writer, may be useful in conclusion. He was present some time past at a lecture, in the course of which demonstrations were made on living dogs. When the unfortunate creatures cried and moaned under the operations, many of the students *actually mimicked their cries in derision!* The gentleman who related this occurrence adds that the spectacle of the writhing animals and the fiendish behaviour of the audience so sickened him, that he could not wait for the conclusion of the lecture, but took his departure in disgust.”

It is a humiliating but an undeniable truth, that man has something of the wild beast in him, that a thirst for blood can be aroused in him by witnessing a scene of carnage, and that the infliction of torture, when the first instincts of horror have been deadened by familiarity, may become, first, a matter of indifference, then a subject of morbid interest, then a positive pleasure, then a ghastly and ferocious delight.

Here again, however, the analogy of sport is of some service to the vivisectionist, and he may plead that the influence we dread is already at work among our sportsmen. This I will now consider.

9. *That vivisection does not demoralise the character more than sport.*

The opponents' case would not, I think, suffer much even if this were admitted; but I am inclined to demur to it as a universal truth. We must remember that much of the excitement and interest of sport depend on causes entirely unconnected with the infliction of pain, which is rather ignored than deliberately contemplated; whereas in vivisection the painful effects constitute in many cases a part, in some cases the whole, of the interest felt by the spectator. And all they tell us of the highly developed intellect of the anatomical student, with which they contrast so contemptuously the low animal instincts of the foxhunter, is but another argument against themselves; for surely the nobler the being we degrade, the greater is the injury we inflict on society. *Corruptio optimi pessima.*

“But all this ignores the *motive* of the action,” cry the vivisectionists. “What is it in sport? Mere pleasure. In this matter we hold an impregnable position.” Let us see.

10. *That, while the motive in sport is essentially selfish, in vivisection it is essentially unselfish.*

It is my conviction that the non-scientific world is far too ready to attribute to the advocates of science all the virtues they are so ready to claim; and when they put forward their favourite *ad captandum* argument that their labours are undergone for one pure motive—the good of humanity—society is far too ready to exclaim, with Mrs. Varden, “Here is a meek, righteous, thorough-going Christian, who, having dropped a pinch of salt on the tails of all the cardinal virtues, and caught them every one, makes light of their possession, and pants for more morality!” In other words, society is far too ready to accept the picture of the pale, worn devotee of science giving his days and nights to irksome and thankless toil, spurred on by no other motive than a boundless philanthropy. As

Quoted from
Barnaby Rudge by
Charles Dickens

one who has himself devoted much time and labour to scientific investigations, I desire to offer the strongest possible protest against this falsely coloured picture. I believe that any branch of science, when taken up by one who has a natural turn for it, will soon become as fascinating as sport to the most ardent sportsman, or as any form of pleasure to the most refined sensualist. The claim that hard work, or the endurance of privation, proves the existence of an unselfish motive, is simply monstrous. Grant to me that the miser is proved unselfish when he stints himself of food and sleep to add one more piece of gold to his secret hoard, that the place-hunter is proved unselfish when he toils through long years to reach the goal of his ambition, and I will grant to you that the laborious pursuit of science is proof positive of an unselfish motive. Of course I do not assert, of even a single scientific student, that his real motive is merely that craving for more knowledge, whether useful or useless, which is as natural an appetite as the craving for novelty or any other form of excitement. I only say that the lower motive would account for the observed conduct quite as well as the higher.

Yet, after all, the whole argument, deduced from a comparison of vivisection with sport, rests on the following proposition, which I claim to class as a fallacy:—

11. *That the toleration of one form of an evil necessitates the toleration of all others.*

Grant this, and you simply paralyze all conceivable efforts at reformation. How can we talk of putting down cruelty to animals when drunkenness is rampant in the land? You would propose, then, to legislate in the interests of sobriety? Shame on you! Look at the unseaworthy ships in which our gallant sailors are risking their lives! What! Organize a crusade against dishonest shipowners, while our streets swarm with a population growing up in heathen ignorance! We can but reply, *non omnia possumus omnes*. And surely the man who sees his way to diminish in any degree even a single one of the myriad evils around him, may well lay to heart the saying of a wise man of old, "Whatsoever thy hand findeth to do, do it with thy might."

Quoted from
Ecclesiastes 9:10

The last parallel to which the advocates of vivisection may be expected to retreat, supposing all these positions to be found untenable, is the assertion—

12. *That legislation would only increase the evil.*

The plea, if I understand it aright, amounts to this,—that legislation would probably encourage many to go beyond the limit with which at present they are content, as soon as they found that a legal limit had been fixed beyond their own. Granting this to be the tendency of human nature, what is the remedy usually adopted in other cases? A stricter limit, or the abandonment of all limits? Suppose a case—that in a certain town it were proposed to close all taverns at midnight, and that the opponents of the measure urged, "At present some close at eleven—a most desirable hour: if you pass this law, all will keep open till midnight." What would the answer be? "Then let us do nothing," or "Then let us fix eleven, instead of twelve, as our limit"? Surely this does not need many words: the principle of doing evil that good may come is not likely to find many defenders, even in this modern disguise of forbearing to do good lest evil should come. We may safely take our stand on the principle of doing the duty which we see before us: secondary consequences are at once out of our control and beyond our calculation.

Let me now collect into one paragraph the contradictions of some of these fallacies (which I have here rather attempted to formulate and classify than to

refute, or even fully discuss), and so exhibit in one view the case of the opponents of vivisection. It is briefly this—

That while we do not deny the absolute right of man to end the lives of the lower animals by a painless death, we require good and sufficient cause to be shown for all infliction of pain.

That the prevention of suffering to a human being does not justify the infliction of a greater amount of suffering on an animal.

That the chief evil of the practice of vivisection consists in its effect on the moral character of the operator; and that this effect is distinctly demoralising and brutalising.

That hard work and the endurance of privations are no proof of an unselfish motive.

That the toleration of one form of an evil is no excuse for tolerating another.

Lastly, that the risk of legislation increasing the evil is not enough to make all legislation undesirable.

We have now, I think, seen good reason to suspect that the principle of selfishness lies at the root of this accursed practice. That the same principle is probably the cause of the indifference with which its growth among us is regarded, is not perhaps so obvious. Yet I believe this indifference to be based on a tacit assumption, which I propose to notice as the last of this long catalogue of fallacies—

13. *That the practice of vivisection will never be extended so as to include human subjects.*

That is, in other words, that while science arrogates to herself the right of torturing at her pleasure the whole sentient creation up to man himself, some inscrutable boundary-line is there drawn, over which she will never venture to pass. "Let the galled jade wince, *our* withers are unwrung."

Not improbably, when that stately Levite of old was pacing with dainty step the road that led from Jerusalem to Jericho, "bemused with thinking of tithe-concerns," and doing his best to look unconscious of the prostrate form on the other side of the way, if it could have been whispered in his ear, "*Your* turn comes next to fall among the thieves!" some sudden thrill of pity might have been aroused in him: he might even, at the risk of soiling those rich robes, have joined the Samaritan in his humane task of tending the wounded man. And surely the easy-going Levites of our own time would take an altogether new interest in this matter, could they only realise the possible advent of a day when anatomy shall claim, as legitimate subjects for experiment, first, our condemned criminals—next, perhaps, the inmates of our refuges for incurables—then the hopeless lunatic, the pauper hospital-patient, and generally "him that hath no helper,"—a day when successive generations of students, trained from their earliest years to the repression of all human sympathies, shall have developed a new and more hideous Frankenstein—a soulless being to whom science shall be all in all. *Homo sum: quidvis humanum a me alienum puto.*

And when that day shall come, O my brother-man, you who claim for yourself and for me so proud an ancestry—tracing our pedigree through the anthropomorphoid ape up to the primeval zoophyte—what potent spell have *you* in store to win exemption from the common doom? Will you represent to that grim spectre, as he gloats over you, scalpel in hand, the inalienable rights of man? He will tell you that this is merely a question of relative expediency,—that, with so feeble a physique as yours, you have only to be thankful that natural selection

Quoted from *Hamlet*
by William
Shakespeare

Quoted from *A
Dream Of Hindostan*
by Thomas Moore

Quoted from Psalm
72:12

Quoted from *Heauton
Timorumenos* by
Terence (modified)

has spared you so long. Will you reproach him with the needless torture he proposes to inflict upon you? He will smilingly assure you that the *hyperæsthesia*, which he hopes to induce, is in itself a most interesting phenomenon, deserving much patient study. Will you then, gathering up all your strength for one last desperate appeal, plead with him as with a fellow-man, and with an agonized cry for "Mercy!" seek to rouse some dormant spark of pity in that icy breast? Ask it rather of the nether mill-stone.

Lewis Carroll.

13.4 Vivisection Vivisected

Source: The St. James's Gazette, March 19, 1885

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—The dialogue, headed “Vivisection,” which appeared in your journal on March 13, hardly gave, as I venture to think, a complete view of the “pros and cons” of this difficult question. May I hope that the author of that clever *jeu d’esprit* will pardon the liberty I take in attempting a sequel to it, which might very well have occurred in the same house a few hours later?—I am, Sir, your obedient servant,

Lewis Carroll.

March 18.

MR. JUSTICE T.: Oh, come in, Smith! So glad you'll join us in a midnight cigar. Carver and I were just talking over the beating you've had at Oxford—“Science *versus* Sentiment” shall we call it? You don't look the worse for it, though. Beating agrees with your constitution, I fancy!

MR. JOHN SMITH, M.A.: Well, perhaps we don't know when we *are* beaten, as Napoleon said of us. There are more than 5000 members of Convocation, while those who voted were 10 short of the Number of the Beast. But the question is disposed of, I admit. It takes a bigger question than that to tear the Briton from his own fireside. It must be something that touches him in a more sensitive place than his heart!

SIR SAMUEL CARVER, F.R.C.S.: And now it's all over, don't you think, between ourselves, it's a little illiberal of you and your friends to anathematise a branch of Science which some of your best men will tell you has done real service to the human race?

MR. SMITH: Speaking for my party generally (of course there are individual exceptions), we don't anathematise it.

SIR S. CARVER: Well, at any rate you did your best to put an end to it in *Oxford*?

MR. SMITH (*smiling*): Most certainly not!

MR. JUSTICE T.: This is interesting. Do tell us, Smith, what it was you really wanted. I always fancied the papers exaggerated the thing. As they put it, you hadn't a leg to stand on, moral or intellectual.

MR. SMITH: I am quite aware of it. Morally, we are bigots: intellectually, idiots. We ignore all the good that Vivisection, properly conducted, is proved to have done. We desire to exclude it entirely from our University, or, failing that, at any rate to hamper it with restrictions beyond what the Legislature has thought sufficient.

MR. JUSTICE T.: So the papers say.

MR. SMITH: Yet, in fact, we fully recognise the good it has done. We do *not* plead for its total exclusion, but only that it shall not be used for mere teaching-purposes, and that for purposes of research it shall not be practised without anæsthetics.

SIR S. CARVER: I quite admit, with many of my scientific brethren, that it should not be used for teaching-purposes.

MR. JUSTICE T.: And I beg to point out that you have a solemn promise, from the present Professor, that it shall not be so used.

MR. SMITH: That of course would suffice during his tenure of office. We wished to have a security for the *future*: and I dare say, if we had asked no more than this, we might have got an enactment passed, embodying the Professor's promise. The real bone of contention was that we wished it enacted that, even for purposes of research, the Oxford Professor should not perform painful experiments without anæsthetics.

SIR S. CARVER: I can assure you that, in my own practice, I *always* use anæsthetics, excepting when their use would nullify the experiment. Such cases are rare, but they do happen; for instance, in investigating the action of the nerves.

MR. SMITH: I am not prepared to deny that cases may arise where the infliction of pain is justified by the importance of the object. But is it a very extravagant boon to ask that in a University whose function so largely consists in teaching the *young*, this one kind of vivisection should be omitted? There are many of us who do not think this kind of vivisection justified at all, and many, I should hope, of the young to whom the very thought that such things are done in the midst of us is a painful one. Is it quite outrageous to ask that their feelings should be spared this, so long as such research can be conducted in other places?

MR. JUSTICE T.: Oh, but your friends who call it unjustifiable are clearly out of court. They are setting up as better judges than the Legislature!

MR. SMITH: Madness, indeed! How could we hint that the Legislature is fallible? No scientific man has ever breathed a suspicion of its fallibility in the *other* direction, by too much restriction!

SIR S. CARVER: There, I admit, you score one.

MR. JUSTICE T.: But you're not going to have it all your own way, my dear fellow! I wish you had been here in the evening, to hear some of the inconsistencies of your side. Fox-hunting, now. With all your fine feelings about giving pain, what right have you to go and see a fox hunted to death, merely for sport?

MR. SMITH: Personally, I claim no such right. All pain, inflicted for sport, is abhorrent to me. But I must allow that the question is a mixed one, as to *some* sport. Where, for instance, wild beasts have to be exterminated for the safety of man, it seems almost inevitable that the hunter should enjoy the excitement of the chase. But that is a totally different matter from keeping up the breed of some animals, such as foxes, for the sole purpose of sport. That I don't justify for a moment.

MR. JUSTICE T.: As to pigeon-shooting, now?

MR. SMITH (*warmly*): Utterly and entirely unjustifiable.

MR. JUSTICE T.: But, as the ladies were saying just now, the dear Prince goes to Hurlingham!

MR. SMITH: The dear Princess doesn't.

SIR S. CARVER: Had you there, Judge! You can't press the question of sport, unless your man's a sportsman. But you are not a vegetarian, Smith, are you? I suppose you enjoy your turtle-soup, your veal-cutlet, your lobster-salad, as much as most men? Are you aware of the wanton cruelty that is practised in furnishing you with a dinner? Set the vivisectionists against the butchers, in the way of giving pain!

MR. SMITH: Not for one moment would I justify brutal cruelty in *any* one. But which is worst, think you, in the sight of God (who judges by the heart, not the outward act), the ignorant butcher, brought up from childhood to witness brutality and who has never fully realized what he is doing in torturing God's creatures, or the educated and intelligent vivisectionist, who realizes to the last iota all the pain he is giving, and yet deliberately inflicts it for an unworthy object, some meaningless point of science, or perhaps merely to gratify his curiosity?

MR. JUSTICE T.: True enough. *Corruptio optimi pessima.*

MR. SMITH: And may I not turn the tables on *you* for a moment, dear Sir Samuel? When will you and your brother-physiologists take in hand this burning question (I hardly know whether, in this age of burning questions, there is *one* more vital than this), how to put an end to the heart-sickening cry, that rises from the whole brute-creation, that man, their masters, is needlessly torturing them for his own selfish ends? When will you teach us, in words that all may understand, the plain laws of physiology, so that our horses (for instance) may no longer suffer from bearing-reins, and blinkers, and over-driving? What fairer field of experiment could you desire than to ascertain some painless method for killing the creatures we need for food? Depend upon it, the first vivisectionist that does this for us, and lets us sit down to our meals with the certainty that no needless pain has been given in providing them, will have his reward, even in *this* life, if the blessings of thousands on thousands of grateful hearts be any sufficient reward; and in the great day of account it shall be said to him, "inasmuch as thou hast done it to one of the least of these My creatures, thou hast done it unto Me"!

Quoted from
Matthew 25:40

MR. JUSTICE T.: You are getting excited, Smith. Allow me to suggest that it is time for bed.

Part 14

Texts concerning Theatres

14.1 The Guildford Gazette Extraordinary

Source: printed 1870

'If I chance to talk a little wild, forgive me.'—*Shakespeare.*

No. 9999. Dec. 29, 1869.

Quoted from *Henry VIII* by William Shakespeare

Opening of the New Theatre.

(From our Special Correspondent, Mr. LEWIS CARROLL.)

It was towards the close of one of those days of dreamy and delicious languor for which Guildford is so justly celebrated. The unbroken calm of the weather had been pleasingly varied by an incessant hailstorm, and its sultriness subdued by a severe frost, and now the mellow shades of Evening were fast deepening into the brilliant obscurity of Night. At such a moment might have been observed (had there been light enough for the purpose, and any one present to observe) a small but resolute band of wayfares (they numbered a poor thousand at most) wending their solitary way in the direction of the new and spacious Theatre, just about to be opened for its great and long-to-be-remembered Inaugural Entertainment.

Of these travellers (for we must not yet desert the guidance of the great model of Romance-writing) one was older than the other—in fact, it might be said that several of them were older than several others—or, to state it in more general, though less poetical, language, they were of various ages. And here, great G. P. R. JAMES, farewell! We quit thy guiding hand, and assume the pen of the antiquarian and the philosopher.

The earliest instance, afforded us by the annals of our beloved country, of an 'Entertainment' strictly so called, was given under most exceptional circumstances, and with an audience which appears to have consisted of Royalty pure and simple. The incident is embodied in the following lines of rude, yet pathetic, doggrel:—

*Cheerful sang the monks of Ely,
As Knut the King was passing by:
'Row to the shore, Knights,' said the King,
'And let us hear these Churchmen sing!'*

Quoted from *Merry
sang the monks of Ely*
by Cnut the Great

Though the loyalty of an age, whose bards could thus dare to abridge the name of their sovereign (properly Kanute or Canute) into a monosyllable, to suit the exigencies of their verse, may fairly be called in question, yet we may not doubt that it was to the King's ear alone that the lay was addressed: for him alone were those monastic voices raised in harmony—voices which appear, by the way, to have been so low and weak (but whether from fast or feast deponent sayeth not) that the King was driven perforce to bring his boat to land, and moor it at the very feet of the mellifluous, but inaudible, ascetics.

Let us contemplate for a moment the simple condition of things indicated by this venerable tetrastich. Monks and knights appear to have divided society; Music and War we may judge to have been their principal occupations: probably the two verbs most in use in those days were the simple, but most suggestive, monosyllables 'to sing' and 'to shoot.'

The few incidents that occurred between the reigns of Canute and Victoria are all so admirably recorded by the graphic pens of Hume and Macaulay, that we should but insult our readers were we to venture to depict them with our humbler goosequill.

We proceed, then, by a transition which we trust may prove as successful as it is sudden, to the consideration of the memorable epoch, Dec. 28, 1869. Those two simple verbs 'to sing' and 'to shoot' were perhaps, even at that late period, after the lapse of so many centuries, not wholly forgotten.

And both are appropriate to the Entertainment now to be recorded: for the 'singing,' the mere mention of the 'Dirge of Dundee' will suffice for all who had the privilege of being present; while, if it be doubted how 'shooting' could find a place in such a scene, we can only say that if Cupid's darts were not flying thick as hail, it was not for want of bright eyes to rain them down—let each reader lay his hand upon his heart (if he happen to possess one) and make reply.

There *is*, however, we have reason to believe, some deeper allusion in these apparently simple phrases, than we have been able to fathom: for the following cabalistic phrase was on many a tongue during that eventful evening—that 'to have seen sing shoot, and to have heard shoot sing, was a treat well worth coming for.' We have devoted our whole intellectual energies, during several hours, to the task of grappling with this profound enigma, and are compelled at last to leave it, in all its original obscurity, to the sagacity of the reader.

The fact that the Inaugural Entertainment was to be given solely by amateurs lent an additional zest to the evening, and even if the enterprising Manager had not, with his usual liberality, given away orders of admission in almost reckless profusion, the house would still have been filled to overflowing. The reporters of the Press were alone excluded on this occasion, the Manager tersely remarking that there would be 'press enough without them.'

Time would fail us to describe the decorations, and the many contrivances for the comfort of the audience, and we must content ourselves by briefly mentioning a most original feature in the arrangements—the abolition of pit, gallery, and boxes; so that the whole house constituted one magnificent dress-circle. We

append the programme of the performance.¹

So soon as the audience had comfortably seated themselves, and an expectant silence reigned throughout that vast assembly, the following Prologue was delivered by a speaker, invisible to the eye, but in whose genial tones the audience had no difficulty in recognizing the worthy Manager himself.²

The Prologue concluded, the curtain rose on the scene from 'King Lear' where the blinded Duke of Gloucester is discovered by the King, and the elaborate costume of the latter at once suggested a sufficient reason for the Manager not having appeared *in propria personâ* to recite the Prologue. We have much pleasure in presenting our readers with the text of the second Act.³

This portion of the Charade was succeeded by a scene from Miss Edgeworth's lively drama 'Old Poz,' which served by way of contrast to heighten the effect both of the Tragedy which preceded it and of the Dirge which followed it.

The Muses of Tragedy and of Comedy having been thus efficiently represented, it remained only to cater for the votaries of the more modern Muse, (not numbered among the tuneful Nine,) yclept Low Comedy or Face; and for their delight was provided an abridged version of the popular favourite, 'Poor Pillicoddy.'

The well-known interpolated song in this farce, though usually omitted in representation, was on the present occasion re-introduced with considerable effect. The words are by Lord Byron; but, as our readers may not have the volume at hand to refer to, we here print it *in extenso*.

Now what's the most appropriate thing
To do whilst waiting at the wing?
Of course you guess the answer?
Spoken [All give it up? Did I hear any one allude to the name of our worthy
host? Why, of course it is——]

Parody on Hoop de dooden doo by A. Nish

Synge.
And I hope the tune will do!
I sing the joys of married life,
Which Pillicoddy finds so rife.
In fact, good folk, you'll find a wife
is——Hoop de dooden doo!

[Produces large bundle of bills.]

Her bills! Ten pounds for boots, I see:
And six for gloves, and—oh dear me!
Here's just one hundred ninety-three
for——Hoop de dooden doos!

¹Remark: Programme omitted here: Charade in four acts (*Killiecrankie*): Act I: Scene from 'King Lear', Act II (In Five Scenes): Episode from 'Kenilworth' (Versified), Act III: Old Poz (Abridged), Act IV (The whole word): A Dirge over a Hero; Charades (In dumb show); Concluding with Poor Pillicoddy (Curtailed)

²Remark: "Prologue. Written and Spoken by Mr. W. W. FOLLETT SYNGE" omitted here

³Remark: "Episode from 'Kenilworth.' (Versified.) Written by Mr. W. W. FOLLETT SYNGE" omitted here

[Produces written paper, piece of chintz, and an enormous lace cuff.]

Commissions. 'Twenty yards of stuff
To pattern—try and match this cuff—
And—just bring home—another Muff!'
That's Hoop de dooden doo!

[Pantomimic action expression of parental affection.]

The little kids! It seemed a treat
At first to see them frisk and bleat—
But now I find that they—*can—eat—*
like—Hoop de dooden doo!

So, gin a body meet a body
And make a match, some day you'll modi-
fy your views like Pillicoddy,

Quoted from *Comin thro' the Rye* by Robert Burns

Spoken [and admit that all the so-called joys of matrimonial life are, when carefully analysed and boiled down, nothing in the world but—]

Hoop de dooden doo!

Sir, are you married? Yes, you sigh!
Well, 'Happy man!' I make reply.
What, single? 'Lucky dog!' say I,

Spoken [and conclude with the valuable and original remark with which I began]

Hoop de dooden doo!

Detailed criticism on an amateur performance would, we think, be out of place, nor can it be necessary to remind the audience how zealously the actors exerted themselves for their amusement, nor the actors with what ready sympathy the audience welcomed their efforts. It is enough to record that the Entertainment, as a whole, was most deservedly successful. The theatrical portion of the evening was brought to a close by the following⁴

On the conclusion of the theatrical portion of the Entertainment, an excellent supper was provided for the guests, after which dancing was kept up to a late hour with much spirit, and the brilliance of the court-dresses worn by the ladies in 'Kenilworth' and retained throughout the evening, enhanced in no small degree the effect produced by the mazy motion of that gay and glittering assemblage. 'Fast and furious' was the fun, but the excitement rose to a climax when the indefatigable Manager, most kindly aided by the wife of our great ecclesiastical novelist, delighted the assembled company by their consummate execution of an Irish jig. So brilliant was the performance of each in this most spirited of dances, that it is scarcely possible to award to either the palm of superiority: all we can say is, that all the previous Terpsichorean feats of the

⁴Remark: "Epilogue. Written by Mr. W. W. FOLLETT SYNGE, and Spoken by Master THACKERAY SYNGE and Miss EVA SHUTE" omitted here

evening were fairly overtopped and thrown into the shade, and that the spectators applauded with an unbounded enthusiasm this richest, most comical, and most memorable gem of their evening's amusement.

And thus came to an end an evening not soon to be forgotten, and as each departing guest wended his homeward way, and cast, in the words of the poet, a 'longing lingering look behind,' not even the frosty air of the wintry night could wholly efface a glow of gratitude to the hospitable host and hostess who had provided the means for so pleasant a meeting—gratitude to which the writer of the present article desires here to add his own earnest tribute of thanks.

We cannot more fitly conclude this hasty sketch than by furnishing our readers with the words of the 'Dirge of Dundee,' written by Mr. W. W. FOLLETT SYNGE, and sung by Miss ALICE SHUTE, in the character of the Genius of Scotland, while soldiers are carrying from the field the bier on which rests the body of the hero.⁵

Quoted from *Elegy
Written in a Country
Churchyard* by
Thomas Gray

Finis.

⁵Remark: "Dirge" omitted here

14.2 Misleading Playbills

Source: The Standard, October 10, 1879

To the Editor of the Standard

SIR,—Will you kindly allow me space in your columns for a word of warning to the play-going public against putting implicit confidence in the advertisements and playbills of the Strand Theatre?

Last Saturday afternoon I went there with three friends; we had purchased our tickets a week beforehand, and I myself had come up to town for the day from a distance of nearly thirty miles, with the special purpose of seeing Miss St. John play Madame Favart. Her name was advertised as usual in the papers: it occupied its usual place in the bill handed to us in the theatre; but the part was played by a substitute, and that without a word of explanation or apology for the absence of the principal performer. I feel sure that my feeling of disappointment, and of having failed to get that for which I had paid my money, was shared by many of those present.

As the name of Miss St. John continues to be advertised in the papers, I think a timely warning may save others from being misled, as I was, by an artifice unworthy of a theatre like the Strand.

I am, Sir, your obedient servant,

Lewis Carroll.
October 9.

14.3 Education for the Stage

February 27, 1882

Source: The St. James's Gazette, February 27, 1882

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—There is a large class of the British Public who attend theatres and take an intelligent interest in plays, keenly enjoying all the good they find in them, and resenting with equal keenness all that is bad or even worthless. There is another class, who abstain from them on account of the evils they find associated with them, but who regard those evils as being accidental rather than essential, and as robbing the Stage of that influence for good which it might otherwise exercise on Society. And there is yet a third class, who neither attend theatres nor believe in the possibility of raising the Stage to the position of an educator of Society; but who would gladly recognize in it, if only it could be freed from its attendant evils, a source of innocent amusement for the many who find recreation of one kind or another necessary for their mental and bodily health.

To these three classes of your readers I desire, with your kind permission, to say a word. I do not propose, within the narrow limits of this letter, to address even a word to those who regard the Stage as essentially evil; nor to those who view its evils with indifference, or even with relish, and for whom impurity and profanity have more attraction than good acting.

An effort is being made to set on foot in England an institution somewhat similar to the *Conservatoire* in Paris, where actors and actresses may receive a thorough and systematic education. The proposed “Dramatic School of Art” has the sympathy and support of the leading members of the dramatic profession—I content myself with instancing the honoured names of Mrs. Kendal and Mr. Irving—but, unless well supported by the general public, it has, I fear, but little chance of gaining a sure foot-hold and becoming a permanent institution.

I need not dwell on the many advantages that would result to all—players and playgoers alike—if the Stage were supplied with competent and trained performers instead of the tyros whom managers must often accept for want of better material; but it may be worth while to recall one or two of the “thousand natural shocks” that the playgoer is “heir to,” owing to the players’ want of training. I will take three instances only—faults in elocution, in rendering the text of the play, and in “business” (the *action* of a play, as distinct from the *words*).

How often we find a pointed and witty dialogue entirely thrown away by the words being so ill-pronounced that only half the audience can hear them, while the unlucky holder of a back stall or of a seat in the second row of the dress-circle feels like a deaf man at a dinner-party, at once tantalized by the unmeaning fragments that reach his ear and exasperated by the laughter of those who have caught the joke! How often, again, do speakers of all sorts—players, preachers, and others—forget that, as the strength of a chain is that of its weakest link, so the audibility of a sentence is that of its least audible portion. Each fresh paragraph they begin in a clear resonant voice; but with the approach of the full-stop the sound dies away, and the last few words are

Quoted from *Hamlet*
by William
Shakespeare

pronounced *sotto voce*, giving the sentence all the vagueness, but, alas! none of the beauty, of a vignette. I have heard a clergyman so give out the Banns of Marriage that the most eager listener could learn no more than that two human beings proposed to commit matrimony; their names remained an unfathomable mystery. Let any visitor at the Lyceum listen to Miss Ellen Terry, and then try to realize what a rich treat a play would be if the other players had but half of her marvellous powers of elocution!

Who's there?
Ratcliff, my lord, 'tis I. The early village cock
Hath twice done salutation to the morn.

Quoted from *Richard III* by William Shakespeare

What a difference it makes if the speaker, as was once amusingly depicted by *Punch*, calmly announces himself with

My lord, tis I the early village cock!

Quoted from *Punch*, July 21, 1855

And when a repartee is to be delivered, how agonizing it is, instead of being allowed to watch the mental process of the speaker—first grasping the meaning of the words that lead up to it, and then, after a moment's pause, suddenly lighting on the happy thought—to see that the reply is as ready as an answer in a catechism, and is begun before the other speaker has well got the words out of his mouth!

How much good and appropriate "business" would add to our enjoyment of a play we can hardly realize till we get it. For want of it we are for ever being disillusionized, and dragged back out of the realms of fancy into common life, and our "sweet dream" falls "into nothing."

Ah! my sighs, my tears,
My clenched hands; for lo! the poppies hung
Dew-dabbled on their stalks, the oused sung
A heavy ditty, and the sullen day
Had chidden herald Hesperus away.

Quoted from *Endymion* by John Keats

Quoted from *Endymion* by John Keats

But I must not trespass on your space by dwelling further on a subject of ever-widening area. Let me simply say, in conclusion, that it is only as an outsider and an amateur that I plead the cause of the Dramatic School. I am unconnected with its promoters, and it is by no suggestion of theirs that I have written this letter; but I feel that the work is a good one, that it deserves support and encouragement, and that every one who wishes well to the Stage should do what he can. Suppose every one of the thousands who crowd our theatres were just for once to deny himself (oh! almost superhuman effort of self-sacrifice!) one single visit he had projected to the play, and to give the value of his ticket to the fund, the future of the new School would indeed be nobly provided for. This, of course, is not to be expected; yet surely in the three classes I named at the opening of this letter enough may be found who are capable of taking a not entirely selfish view of this matter, and willing to give *something* without expecting a *quid pro quo*.

The treasurer of the fund is Mr. Cecil Raleigh, of 35, York Street, Portman Square; the bankers are Messrs. Robarts, Lubbock, and Co., of 15, Lombard Street, E.C. Need I say more?—I am, Sir, your obedient servant,
Lewis Carroll.

February 23.

March 6, 1882

Source: The St. James's Gazette, March 6, 1882

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—The letter of mine, which you published on the 27th of February under the above title, having elicited two replies, one friendly to the scheme and one hostile, in your paper on the 2nd of March, I shall be grateful if you will let me say a few words in reply.

Both writers seem to me to suggest for the projected "Dramatic School of Art" work which lies outside its proper sphere of action. "Sir Charles Young" holds that "one of the most effectual and practical steps they can take at the outset is to use their best endeavours to dissipate what still remains of the notion that to 'go upon the stage' is, for educated ladies and gentlemen, a proceeding highly derogatory to their social position." The new School will, I trust, do much *indirectly* to dissipate such a notion; but, since those who hold it are little likely to offer themselves as students, it cannot reasonably hope to exert any *direct* influence in this matter. "Spectator" finds that the committee, "as far as he can make out" (an amount we have no data to determine) is "mainly composed of fashionable *dilettanti*." He adds, "I never knew any case in which the interference of *dilettanti* was productive of much good to the British drama." Even if he were right (which is open to question) as to the character of the committee it surely is not a necessary sequence that the teaching staff of the School should be also *dilettanti*? Yet this sequence is indispensable to his argument. He concludes with these words: "How Lewis Carroll's friends intend to supply the requisites at which I have hinted I do not understand; and until I see that they are trying to do so, and have some fair chance of success, they will not draw a sixpence from my pocket." Is it not a little premature thus to raise the question *how* the committee (whom I cannot presume to call my "friends," not having the honor of their personal acquaintance) "intend to supply" these requisites, without first settling whether they *do* intend it? The requisites are as follows:—"As to those who seek to study the actor's art, two things are essential to success in such a pursuit—first, the advantage of discriminating applause and censure; next the opportunity for frequent variety in the impersonations which they undertake." Surely the only institutions which can supply these "requisites" are a school for audiences and a school for managers. Such schools are not as yet projected; when they are, their promoters may cheer themselves with the hope of sharing the donation so generously offered by "Spectator."

Is it not a little hard on the new "School" to assign to it functions it has never assumed, and then take its friends to task because it fails to fulfil them? You might just as well find fault with Jumbo for not having secured himself against expatriation by taking his seat in the House of Commons.—I am, Sir, your obedient servant,

Lewis Carroll. March 4.

14.4 “Alice” on the Stage

Source: The Theatre, April 1887



“—you know you say things are ‘much of a muchness’; did you ever see such a thing as a drawing of a muchness?” ALICE IN WONDERLAND

Alice and the Dormouse

From a Photograph specially taken for “The Theatre” by Rakraud, 263, Oxford Street, W.

By Lewis Carroll

“Look here; here’s all this Judy’s clothes falling to pieces again.” Such were the pensive words of Mr. Thomas Codlin; and they may fitly serve as a motto for a writer who has set himself the unusual task of passing in review a set of puppets that are virtually his own—the stage-embodiments of his own dream-children.

Quoted from *The Old Curiosity Shop* by Charles Dickens

Not that the play itself is in any sense mine. The arrangement, in dramatic form, of a story written without the slightest idea that it would ever be so adapted, was a task that demanded powers denied to me, but possessed in an eminent degree, so far as I can judge, by Mr. Savile Clarke. I do not feel myself qualified to criticise his play, as a play; nor shall I venture on any criticism of the players, as players.

What is it, then, I have set myself to do? And what possible claim have I to be heard? My answer must be that, as the writer of the two stories thus adapted, and the originator (as I believe, for at least I have not *consciously* borrowed them) of the ‘airy nothings’ for which Mr. Savile Clarke has so skilfully provided, if not a name, at least, a ‘local habitation,’ I may without boastfulness claim to have a special knowledge of what it was I meant them to be, and so a special understanding of how far that intention has been realised. And I fancied there might be some readers of THE THEATRE who would be interested in sharing that knowledge and that understanding.

Quoted from *A Midsummer Night’s Dream* by William Shakespeare

Many a day had we rowed together on that quiet stream—the three little maidens and I—and many a fairy-tale had been extemporised for their benefit—whether it were at times when the narrator was ‘i’ the vein,’ and fancies unsought came crowding thick upon him; or at times when the jaded Muse had to be goaded into action, and plodded meekly on, more because she had to say something than that she had something to say—yet none of those many tales got written down: they lived and died, like summer midges, each in its own ‘golden afternoon,’ until there came a day when, as it chanced, one of my little listeners petitioned that the tale might be written out for her. That was many a year ago, but I distinctly remember, now as I write, how, in a desperate attempt to strike out some new line of fairy-lore, I had sent my heroine straight down a rabbit-hole, to begin with, without the least idea what was to happen afterwards. And so, to please a child I loved (I don’t remember any other motive), I printed in manuscript, and illustrated with my own crude designs—designs that rebelled against every law of Anatomy or Art (for I had never had a lesson in drawing)—the book which I have just had published in facsimile. In writing it out, I added many fresh ideas, which seemed to grow of themselves upon the original stock; and many more added themselves when, years afterwards, I wrote it all over again for publication: but (this may interest some readers of ‘Alice’ to know) every such idea, and nearly every word of the dialogue, *came of itself*. Sometimes an idea comes at night, when I have had to get up and strike a light to note it down—sometimes when out on a lonely winter walk, when I have had to stop, and with half-frozen fingers jot down a few words which should keep the new-born idea from perishing—but whenever or however it comes, *it comes of itself*. I cannot set invention going like a clock, by any voluntary winding-up: nor do I believe that any *original* writing (and what other writing is worth preserving?) was ever so produced. If you sit down, unimpassioned and uninspired, and *tell* yourself to write for so many hours, you will merely produce (at least I am sure *I* should merely produce) some of that article which fills, so far as I can judge, two-thirds of most magazines—most easy to write, most weary to

Quoted from *Richard III* by William Shakespeare

read—men call it ‘padding,’ and it is, to my mind, one of the most detestable things in modern literature. ‘Alice’ and the ‘Looking-Glass’ are made up almost wholly of bits and scraps, single ideas which came of themselves. Poor they may have been; but at least they were the best I had to offer: and I can desire no higher praise to be written of me than the words of a Poet, written of a Poet,

“He gave the people of his best:
The worst he kept, the best he gave.”

Quoted from *To—* by
Alfred Lord Tennyson

I have wandered from my subject, I know: yet grant me another minute to relate a little incident of my own experience. I was walking on a hill-side, alone, one bright summer day, when suddenly there came into my head one line of verse—one solitary line—‘For the Snark *was* a Boojum, you see.’ I knew not what it meant, then: I know not what it means, now: but I wrote it down: and, some time afterwards, the rest of the stanza occurred to me, that being its last line: and so by degrees, at odd moments during the next year or two, the rest of the poem pieced itself together, that being its last stanza. And since then, periodically, I have received courteous letters from strangers, begging to know whether ‘the Hunting of the Snark’ is an allegory, or contains some hidden moral, or is a political satire: and for all such questions I have but one answer, “*I don’t know!*” And now I return to my text, and will wander no more.

Stand forth, then, from the shadowy past, ‘Alice,’ the child of my dreams! Full many a year has slipped away, since that ‘golden afternoon’ that gave thee birth, but I can call it up almost as clearly as if it were yesterday—the cloudless blue above, the watery mirror below, the boat drifting idly on its way, the tinkle of the drops that fell from the oars, as they waved so sleepily to and fro, and (the one bright gleam of life in all the slumberous scene) the three eager faces, hungry for news of fairy-land, and who would not be said ‘nay’ to: from whose lips “tell us a story, please,” had all the stern immutability of Fate!

What wert thou, dream-Alice, in thy foster-father’s eyes? How shall he picture thee? Loving, first, loving and gentle: loving as a dog (forgive the prosaic simile, but I know no earthly love so pure and perfect), and gentle as a fawn: then courteous—courteous to *all*, high or low, grand or grotesque, King or Caterpillar, even as though she were herself a King’s daughter, and her clothing of wrought gold: then trustful, ready to accept the wildest impossibilities with all that utter trust that only dreamers know; and lastly, curious—wildly curious, and with the eager enjoyment of Life that comes only in the happy hours of childhood, when all is new and fair, and when Sin and Sorrow are but names—empty words, signifying nothing!

And the White Rabbit, what of *him*? Was *he* framed on the ‘Alice’ lines, or meant as a contrast? As a contrast, distinctly. For *her* ‘youth,’ ‘audacity,’ ‘vigour,’ and ‘swift directness of purpose,’ read ‘elderly,’ ‘timid,’ ‘feeble,’ and ‘nervously shilly-shallying,’ and you will get *something* of what I meant him to be. I *think* the White Rabbit should wear spectacles. I am sure his voice should quaver, and his knees quiver, and his whole air suggest a total inability to say ‘Bo!’ to a goose!

But I cannot hope to be allowed, even by the courteous Editor of THE THEATRE, half the space I should need (even if my *reader’s* patience would hold out) to discuss each of my puppets one by one. Let me cull from the two books a Royal Trio—the Queen of Hearts, the Red Queen, and the White Queen. It was certainly hard on my Muse, to expect her to sing of *three* Queens, within such

brief compass, and yet to give to each her own individuality. Each, of course, had to preserve, through all her eccentricities, a certain queenly *dignity*. That was essential. And, for distinguishing traits, I pictured to myself the Queen of Hearts as a sort of embodiment of ungovernable passion—a blind and aimless Fury. The Red Queen I pictured also as a Fury, but of another type; *her* passion must be cold and calm; she must be formal and strict, yet not unkindly; pedantic to the tenth degree, the concentrated essence of all governesses! Lastly, the White Queen seemed, to my dreaming fancy, gentle, stupid, fat and pale; helpless as an infant; and with a slow, maundering, bewildered air about her, just *suggesting* imbecility, but never quite passing into it; *that* would be, I think, fatal to any comic effect she might otherwise produce. There is a character strangely like her in Mr. Wilkie Collins's novel 'No Name:' by two different yet converging paths we have somehow reached the same ideal, and Mrs. Wragg and the White Queen might have been twin-sisters.

As it is no part of my present purpose to find fault with any of those who have striven so zealously to make this 'dream-play' a waking success, I shall but name two or three who seemed to me specially successful in realising the characters of the story.

None, I think, was better realised than the two undertaken by Mr. Sydney Harcourt, 'the Hatter' and 'Tweedledum.' To see him enact the Hatter was a weird and uncanny thing, as though some grotesque monster, seen last night in a dream, should walk into the room in broad daylight, and quietly say 'good morning!' I need not try to describe what I mean the Hatter to be, since, so far as I can now remember, it was exactly what Mr. Harcourt had made him: and I may say nearly the same of Tweedledum: but the Hatter surprised me most—perhaps only because it came first in the play.

There were others who realised my ideas nearly as well; but I am not attempting a complete review: I will conclude with a few words about the two children who played 'Alice' and 'the Dormouse.'

Of Miss Phœbe Carlo's performance it would be difficult to speak too highly. As a mere effort of memory, it was surely a marvellous feat for so young a child, to learn no less than two hundred and fifteen speeches—nearly three times as many as Beatrice in "Much Ado About Nothing"! But what I admired most, as realising most nearly my ideal heroine, was her perfect assumption of the high spirits, and readiness to enjoy *everything*, of a child out for a holiday. I doubt if any grown actress, however experienced, could have worn this air so perfectly; *we* 'look before and after, and sigh for what is not': a child never does *this*: and it is only a child that can utter from her heart the words poor Margaret Fuller Ossoli so longed to make her own, 'I am all happy *now*!'

And last (I may for once omit the time-honoured addition 'not least,' for surely no tinier maiden ever yet achieved so genuine a theatrical success?) comes our dainty Dormouse. 'Dainty' is the only epithet that seems to me exactly to suit her: with her beaming baby-face, the delicious crispness of her speech, and the perfect realism with which she makes herself the embodied essence of Sleep, she is surely the daintiest Dormouse that ever yet told us 'I sleep when I breathe!' With the first words of that her opening speech, a sudden silence falls upon the house (at least it has been so every time *I* have been there), and the baby-tones sound strangely clear in the stillness. And yet I doubt if the charm is due only to the incisive clearness of her articulation; to me there was an even greater charm in the utter self-abandonment and conscientious *thoroughness* of her acting. If

Quoted from *To a Skylark* by Percy Bysshe Shelley

Quoted from *Memoirs of Margaret Fuller Ossoli, Vol. II* by Margaret Fuller Ossoli

Dorothy ever adopts a motto, it ought to be 'Thorough.' I hope the time may soon come when she will have a better part than 'Dormouse' to play—when some enterprising manager will revive the 'Midsummer Night's Dream,' and do his obvious duty to the Public by securing Miss Dorothy d'Alcourt as 'Puck'!

It would be well indeed for our churches if some of the clergy could take a lesson in enunciation from this little child; and better still, for 'our noble selves,' if *we* would lay to heart some things that she could teach us, and would learn by her example to realise, rather more than we do, the spirit of a maxim I once came across in an old book, "whatsoever thy hand findeth to do, *do it with thy might.*"

Quoted from
Ecclesiastes 9:10

14.5 Children in Theatres

Source: The St. James's Gazette, July 19, 1887

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—In your Gazette of this day (July 16) I see an account of a meeting of ladies, held in South Kensington, in support of a movement the object of which is to make it illegal for children under ten years of age to be engaged in performances at theatres and pantomimes.

One of the speakers (with a true ladylike disregard for that law in statistics, which tells us that numbers are only relative magnitudes, and have no argumentative value unless stated as percentages) informed the meeting that “there were known to be 10,000 children employed in connection with pantomimes throughout the country,” and that “the physical strain of this work on very little children was exceedingly heavy, and she had personally known cases in which it had led to fatal results.”

With the utmost respect for the motives of this lady, I cannot but think that her audience must have been in the same frame of mind as the judge who declined to hear the pleadings on both sides “because it confused him so,” if they accepted without question such sweeping assertions as that “the physical strain is exceedingly heavy,” or the deduction evidently meant to be drawn from the statement that certain cases “had led to fatal results.” As, in these days, ladies know everything (a category in which Latin may fairly be included), I may perhaps without pedantry address her with the words *audi alteram partem*.

As to the fact that the fair speaker “had personally known cases in which it had led to fatal results,” I would venture to suggest that if she would devote a short time to tabulating (with a due regard for percentages) the “cases” of high pressure in Board-Schools which “have led to fatal results,” or even the “cases” of “three children sliding on the ice” which “have led to fatal results,” it might perhaps cause her to modify her views.

As to her assertion that “the physical strain is exceedingly heavy,” I demur to it altogether as a matter of fact. The “cases” of children “personally known to” myself, some in shools and some in theatres, are very many—as many, possibly, as those known to the speaker whose words I have quoted: and I deliberately assert that, while I have known several cases of complete break-down in health, due to the physical strain of competitive examinations, I have met with none, where the strain could even be called “heavy,” among children employed in drama or pantomime.

Such counter-arguments as that stage-children are well-paid, and that they bring sorely-needed help to very poor parents who are straining their utmost to support large families of young children, are well enough in themselves, but go for nothing unless the “physical strain” objection can first be disposed of.

May I relate my experiences of yesterday, and thus, even if I cannot “point a moral,” at least “adorn a tale”?

I spent yesterday afternoon at Brighton, where for five hours I enjoyed the society of three exceedingly happy and healthy little girls, aged twelve, ten, and seven. We paid three visits to the houses of friends: we spent a long time on the Pier, where we vigorously applauded the marvellous under-water performances

Quoted from *The Vanity of Human Wishes* by Samuel Johnson

of Miss Louey Webb, and invested pennies in every mechanical device which invited such contributions and promised anything worth having, for body or mind, in return: we even made an excited raid on head-quarters, like Shylock with three attendant Portias, to demand the “pound of flesh”—in the form of a box of chocolate-drops—which a dyspeptic machine had refused to render. I think that any one, who could have seen the vigour of *life* in those three children—the intensity with which they enjoyed everything, great or small, that came in their way—who could have watched the younger two running races on the Pier, or have heard the fervent exclamation of the eldest at the end of the afternoon, “We *have* enjoyed ourselves!”—would have agreed with me that here, at least, there was no excessive “physical strain,” nor any *imminent* danger of “fatal results”!

But these, of course, were *not* stage children? They had never done anything more dangerous than Board-school competition? Far from it: all three are on the stage—the eldest having acted for five years at least, and even the tiny creature of seven having already appeared in four dramas!

But, at any rate, it is their holiday-time, and they are not at present suffering the “exceedingly heavy strain” of work on the stage? On the contrary. A drama, written by Mr. Savile-Clarke, is now being played at Brighton: and in this (it is called “Alice in Wonderland”) all three children have been engaged, with only a month’s interval, ever since Christmas: the youngest being “Dormouse” as well as three other characters—the second appearing, though not in a “speaking” part—while the eldest plays the heroine, “Alice”—quite the heaviest part in the whole play, and, I should think, the heaviest ever undertaken by a child: she has no less than 215 speeches! They had been acting every night this week, and *twice* on the day before I met them, the second performance lasting till after half-past ten at night—after which they got up at seven next morning to bathe!

That such (apparently) severe work should co-exist with blooming health and buoyant spirits seems at first sight a paradox: but I appeal to any one who has ever worked *con amore* at any subject whatever to support me in the assertion that, when you really love the subject you are working at, the “physical strain” is absolutely *nil*: it is only when working “against the grain” that any strain is felt. And I believe the apparent paradox is to be explained by the fact that a taste for *acting* is one of the strongest passions of human nature, that stage-children show it nearly from infancy, and that, instead of being, as these good ladies imagine, miserable drudges who ought to be celebrated in a new “Cry of the Children,” they simply *rejoice* in their work, “even as a giant rejoiceth to run his course.”—I am, Sir, your obedient servant,
Lewis Carroll.

Quoted from Psalm
19:5

July 16.

14.6 The Stage and the Spirit of Reverence

Source: The Theatre, June 1888

By Lewis Carroll

This article is *not* going to be a sermon in disguise. This I protest, at the outset, knowing how entirely usage—a mistaken usage, as I think—has limited the word to *religious* topics only, and that the reader is only too likely to turn this page hastily over, muttering “*Chacun son goût*.” This is meant for sectarians of *some* kind. *I* have no such narrow sympathies. Talk to me as a *man*, and I’ll listen!”

But that is exactly what I want to do. I want to talk to the play-going, or play-writing reader, who may honour me with his attention, as a *man*: not as a churchman, not as a Christian, not even as a believer in God—but simply as a man who recognises (*this*, I admit, is essential) that there is a distinction between good and evil; who honours good men and good deeds, simple as being good; and who realises that from evil men and evil deeds comes much, if not all, of the sorrow of life.

And may not the word “good,” also, have a broader meaning than usage has assigned to it? May it not fairly include all that is brave, and manly, and true in human nature? Surely a man may honour *these* qualities, even though he own to no *religious* beliefs whatever? A striking example of *this* kind of “reverence” is recorded of the robber-tribes of Upper Scinde, during Sir Charles Napier’s campaign (I quote from a lecture by Robertson, of Brighton, on “The Influence of Poetry on the Working Classes”):—

“A detachment of troops was marching along a valley, the cliffs overhanging which were crested by the enemy. A sergeant, with eleven men, chanced to become separated from the rest by taking the wrong side of a ravine, which they expected soon to terminate, but which suddenly deepened into an impassable chasm. The officer in command signalled to the party an order to return. They mistook the signal for a command to charge; the brave fellows answered with a cheer, and charged. At the summit of the steep mountain was a triangular platform, defended by a breast-work, behind which were seventy of the foe. On they went, charging up one of these fearful paths, eleven against seventy. The contest could not long be doubtful with such odds. One after another they fell: six upon the spot, the remainder hurled backwards; but not until they had slain nearly twice their own number.

“There is a custom, we are told, amongst the hillsmen, that when a great chieftain of their own falls in battle, his wrist is bound with a thread either of red or green, the red denoting the highest rank. According to custom, they stripped the dead, and threw their bodies over the precipice. When their comrades came, they found their corpses stark and gashed; but round both wrists of every British hero was twined the red thread!”

In “reverence” such as this I am happy to believe that the standard reached on the Stage is fully as high as in the literature of Fiction, and distinctly higher than what often passes without protest in Society.

Take, for instance, the treatment of *vice*. In Fiction and in many a social circle, vice is condoned, and sentiments utterly vile and selfish are freely expressed, in language that would be hissed off the stage of a respectable theatre, unless put into the mouth of the stage “villain.” In the “Silver King,” as I saw it some

years ago, when the gentlemanly scoundrel, splendidly acted by Mr. Willard, sent the coarser scoundrel, who served as his tool on the hateful mission of turning out of doors the poor mother whose child was dying, it was good to hear the low fierce hiss that ran through the audience as the old wretch went off. Any one who witnessed that fine drama would, I think, believe with me that those who thus hiss—evil as their own lives may be in some cases—yet have their better moments, when the veil is lifted, when they see Sin in all its native hideousness, and shudder at the sight!

And, for an example of the sympathy shown by play-goers for what is pure and good, I may recall the experience of a few weeks back, when I went to see “The Golden Ladder” (produced by the same conscientious actor and manager—Mr. Wilson Barrett—who gave us “The Silver King”), and heard with delight the ripple of applause which greeted the soliloquy of the comical old greengrocer, Mr. George Barrett, about his child, to whom he has given the ambitious name “Victoria Alexandra.” “And I giv her them two names, because they’re the best two names as is!” That ripple of applause seemed to me to say “Yes, the very sound of those names—names which recall a Queen whose spotless life has for many long years been a blessing to her people, and a Princess who will worthily follow in her steps—is sweet music to English ears!”

The reader can no doubt recall many occasions when Pit and Gallery have shown equally keen sympathy with self-denial, generosity, or any of the qualities that ennoble human nature. I will content myself with two more examples.

Years ago I saw Mr. Emery play the hero of “All is not Gold that Glitters”—a factory-owner, with a rough manner but a tender heart; and I well remember how he “brought down the house,” when speaking of the “hands” employed in his factory, with the words, “And a’ couldn’t lie down and sleep in peace, if a’ thowt there was man, woman, or child among ’em as was going to bed cold and hungry!” What mattered it to us that all this was fiction? That the “hands,” so tenderly cared for, were creatures of a dream? We were not “reverencing” that actor only, but every man, in every age, that has ever taken loving thought for those around him, that ever “hath given his bread to the hungry, and hath covered the naked with a garment.”

Quoted from Ezekiel
18:7

My other example shall be a memory of the greatest actor our generation has seen—one whose every word and gesture seemed inspired, and made one feel “He has me in his power; he can make me laugh and weep as he will!”—I mean Frederick Robson. Who, that ever saw him in “The Porter’s Knot”, can forget the delicious pathos of the scene where the old father, who has sacrificed the earnings of a lifetime to save his son’s reputation and send him abroad, is in an innocent conspiracy, with the girl to whom his son is betrothed, to keep the old mother happy by reading her a letter they pretend to have come from her boy. Unknown to him, the loving girl has resolved on giving her last earnings to the old couple, and has added a postscript. “Dear Mother,—I am getting on so well that I send you this five-pound note,” which the old man, reading the letter to his wife, comes upon so unexpectedly that he nearly betrays the whole plot. Then came the “aside”—with that humorous glance at the audience that none ever gave as he did—“Well! This here has growed since the morning!” And then, suddenly detecting the loving stratagem, and shaking his fist at the girl, “Oh, you little *rascal!*” As Borachio would say, “I tell this story vilely.” Would that any words of mine *could* convey to the reader the infinite tenderness that breathed in those whispered “words of unmeant bitterness”!

Quoted from
Christabel by Samuel
Taylor Coleridge

And now, before narrowing the field of discussion and considering how “reverence” is due to subjects connected with religion, I wish to give to this word also a broader sense than the conventional one. I mean by it simply a belief in *some* good and unseen being, above and outside human life as we see it, to whom we feel ourselves responsible. And I hold that “reverence” is due, even to the most degraded type of “religion,” as embodying in a concrete form a principle which the most absolute Atheist professes to revere in the abstract.

These subjects may be classed under two headings, according as they are connected with the principle of good or with that of evil. Under the first heading we may name the Deity, and good spirits, the act of prayer, places of worship, and ministers; under the second, evil spirits and future punishment.

The “irreverence” with which such topics are sometimes handled, both on and off the Stage, may be partly explained by the fact (not unlikely to be overlooked) that no word has a meaning *inseparably* attached to it; a word means what the speaker intends by it, and what the hearer understands by it, and that is all.

I meet a friend, and say “Good morning!” Harmless words enough, one would think? Yet possibly, in some language he and I have never heard, these words may convey utterly horrid and loathsome ideas. But are *we* responsible for this? This thought may serve to lessen the horror of some of the language used by the lower classes, which, it is a comfort to remember, is often a mere collection of unmeaning *sounds*, so far as speaker and hearer are concerned.

And even where profane language seems really blameworthy, as being consciously and deliberately used, I do not think the worst instances occur on the Stage; you must turn for such to fashionable Society and popular Literature.

No type of anecdote seems so sure to amuse the social circle as that which turns some familiar Bible-phrase into a grotesque parody. Sometimes the wretched jest is retailed, half-apologetically, as said by a child, “and, of course,” it is added, “the *child* meant no harm!” Possibly: but does the *grown man* mean no harm, who thus degrades what he ought to treat with reverence, just to raise a laugh?

Again, can such jesting as that of the “Ingoldsby Legends,” where evil spirits are treated as subjects for uproarious merriment, be tolerated by any one who realises what “evil” means, whether in disembodied spirits (whose existence he may possibly doubt) or in living men and women? Shall the curse of all the race, the misery of all the ages, serve us for a passing *jest*?

But the lowest depths of conscious and deliberate irreverence that my memory recalls, have been, I am sorry to say, the utterances of *reverend* jesters. I have heard, from the lips of clergymen, anecdotes whose horrid blasphemy outdid anything that would be even *possible* on the Stage. Whether it be that long familiarity with sacred phrases deadens one’s sense of their meaning, I cannot tell: it is the only excuse I can think of: and such a theory is partly supported by the curious phenomenon (which the reader can easily test for himself) that if you repeat a word a great many times in succession, however suggestive it may have been when you began, you will end by divesting it of every shred of meaning, and almost wondering how you could ever have meant anything by it!

How far can the Stage use of oaths, or phrases introducing the name of the Deity, be justified? To me it is only when lightly and jestingly uttered that they seem profane. Used gravely, and for a worthy purpose, they are at any rate not to be condemned by any appeal to the *Bible*: one of the loveliest pieces of its prose-poetry, the well-known “Entreat me not to leave thee,” &c., ends with an undeniable oath, “The Lord do so to me, and more also, it aught but death part

Quoted from Ruth
1:16

Quoted from Ruth
1:17

thee and me." And it is on Society, rather than on the Stage, that we should lay the blame of the light use of such language, common in the last generation, when such phrases as "My God!" "Good Lord!" were constantly used as mere *badinage*, and when so refined a writer as Miss Austen could make a young lady say (in "Pride and Prejudice") "Lord, how ashamed I should be of not being married before three-and-twenty!" When quite common, such words possibly conveyed no meaning either to speaker or hearer: in these days they jar on the ear, for their strangeness forces us to realise their meaning. When Shakespeare wrote "Much Ado," Beatrice's "O God, that I were a man! I would eat his heart in the market-place," and Benedick's "O God, sir, here's a dish I love not; I cannot endure my lady Tongue," no doubt fell with equally innocent effect on the ear: but in our day, though the first may well be retained, as gravely said and on a worthy occasion, the second comes as a false note; and I think Mr. Irving, instead of toning it down into "O Lord!" would have done better by omitting it altogether.

The act of prayer is almost uniformly treated with reverence on the Stage. My experience furnishes only one instance to the contrary, where the heroine of a ballet, supposed to be in her chamber at night, and soon to be serenaded by her lover at the window, went through the horrid mockery of kneeling in semblance of prayer. But I see no objection to its introduction on the Stage, if reverently represented, as in the scene in "Hamlet," where Claudius is found praying: and I well remember the grand effect produced by Charles Kean (in "Henry V.," just before the battle of Agincourt), by kneeling, for a short passionate prayer, on the battle-field.

Places of worship, also, when made the subjects of stage representation, are usually treated with perfect propriety: one must turn to the orgies of the Salvation Army, or the ribaldry of the street preacher, to realise how far religion can be vulgarised, and with what loathsome familiarity the holiest themes can be insulted. We have lately been privileged to see an instance of exquisite taste and reverent handling in the church-scene in "Much Ado" at the Lyceum. Some objected, at the time, to any such scene being put on the Stage, yet probably none of its censors would condemn "sacred" pictures? And surely the distinction between a picture painted on canvas, and a picture formed by living figures on a stage is more fanciful than real? To me the solemn beauty of that scene suggested the hope that some might see it—some to whom the ideas of God, or heaven, or prayer, were strange—and might think "Is *this* what church is like? I'll go and see it for myself!" Yet *one* false note there certainly was to mar the beauty of that scene. The dialogue between Beatrice and Benedick, with all its delicate banter and refined comedy, spoken amid such surroundings, must have given pain to many to whom the special scene had been a pure delight. I heartily wish Mr. Irving could see his way to transfer it to the *outside* of the church. Surely a manager, who could endure an interpolation so utterly alien to the spirit of the scene as "Kiss my hand again!" can have no *very* strong feeling about keeping the text of Shakespeare inviolate!

As for ministers of religion, I would not seek to shield them from ridicule *when they deserve it*; but is it not sometimes too indiscriminate? Mr. Gilbert—to whom we owe a deep debt of gratitude for the pure and healthy fun he has given us in such comedies as "Patience"—seems to have a craze for making bishops and clergymen contemptible. Yet are they behind other professions in such things as earnestness, and hard work, and devotion of life to the call of

duty? That clever song, "The pale young curate", with its charming music, is to me simply painful. I seem to see him as he goes home at night, pale and worn with the day's work, perhaps sick with the pestilent atmosphere of a noisome garret where, at the risk of his life, he has been comforting a dying man—and is your sense of humour, my reader, so keen that you can *laugh* at that man? Then at least be consistent. Laugh also at that pale young doctor, whom you have summoned in such hot haste to your own dying child: ay, and laugh also at that pale young soldier, as he sinks on the trampled battle-field, and reddens the dust with his life-blood for the honour of Old England!

Quoted from *The Sorcerer* by W. S. Gilbert and Arthur Sullivan

Still, the other side of this picture is now and again given us on the Stage, and one could not desire a more gentle and lovable type of old age than the "Vicar of Wakefield," as played by Mr. Irving, or a more manly and chivalrous hero than the young clergyman in "The Golden Ladder," played by Mr. Wilson Barrett.

The comic treatment of such subjects as *evil spirits* must be regarded from a fresh stand-point. "What reverence," it might fairly be asked, "is due to the Devil, whether we believe that such a being exists or not?" My answer is, that *seriousness* at least is due in dealing with such subjects. The darkest deeds of lust or cruelty that have blasted human happiness have often seemed to the guilty wretch to be due to influences other than his own thoughts: but, even setting aside such evidence, the whole subject is too closely bound up with the deepest sorrows of life to be fit matter for jesting. Yet how often one hears in Society the ready laughter with which any sly allusion to the Devil is received—ay, even by clergymen themselves, who, if their whole life be not one continuous lie, do believe that such a being exists, and that his existence is one of the saddest facts of life.

In this respect I think the tone of the Stage not lower than—I doubt if it be so low as—that of Society. Such a picture as Irving gives us of "Mephistopheles" must surely have a healthy influence. Who can see it and not realise, with a vividness few preachers could rival, the utter *hatefulness* of sin?

The same claim, for seriousness of treatment, may be made as to the subjects of Hell and future punishment. In the last generation the Stage, in its constant light use of words, connected with "damnation," was simply following the lead of Society; and it is satisfactory to notice that the idle curses, no longer heard in respectable Society, are fast vanishing from the Stage. Let me mention one instance of false treatment of this subject on the Stage, and conclude with two of the better kind.

I have never seen Mr. Gilbert's clever play "Pinafore" performed by grown-up actors: as played by *children*, one passage in it was to me sad beyond words. It occurs when the captain utters the oath "Damn me!" and forthwith a bevy of sweet innocent-looking little girls sing, with bright, happy looks, the chorus "He said 'Damn me!' He said 'Damn me!'" I cannot find words to convey to the reader the pain I felt in seeing those dear children taught to utter such words to amuse ears grown callous to their ghastly meaning. Put the two ideas side by side—Hell (no matter whether *you* believe in it or not: millions do), and those pure young lips thus sporting with its horrors—and then find what *fun* in it you can! How Mr. Gilbert could have stooped to write, or Sir Arthur Sullivan could have prostituted his noble art to set to music, such vile trash, it passes my skill to understand.

But I am no such purist as to object to *all* such allusions: when gravely made, and for a worthy purpose, they are, I think, entirely healthy in their effect. When the hero of "The Golden Ladder," claimed as prisoner by a French officer, is taken under the protection of a British captain (finely played by Mr. Bernage), and the Frenchman's "He is my prison-erre!" is met by the choleric captain's stentorian reply, "Then, damn it, come on board my ship and take him!" the oath did not sound "irreverent" in any degree. Here was no empty *jesting*: all was grim earnest!

One more example, and I have done. No dramatic version of "David Copperfield" would do justice to the story if it failed to give the scene after Steerforth has eloped with "little Em'ly", leaving her betrothed, Ham Peggotty, a broken-hearted man. Ham has brought the news to his father, and David is present.

"Mas'r Davy," implored Ham, "go out a bit, and let me tell him what I must. You doen't ought to hear it, sir."

"I want to know his name!" I heard said, once more.

"For some time past," Ham faltered, "there's been a servant about here at odd times. There's been a gen'lm'n, too. . . . A strange chay and horses was outside town this monhing. . . . When the servant went to it, Em'ly was nigh him. The t'other was inside. He's the man."

"For the Lord's love," said Mr. Peggotty, falling back, and putting out his hand, as if to keep off what he dreaded, "doen't tell me his name's Steerforth!"

"Mas'r Davy," exclaimed Ham, in a broken voice, "it ain't no fault of yourn—and I am far from laying of it to you—but his name is Steerforth, and he's a damned villain!"

The critic who would exclaim, on witnessing such a scene, "Shocking irreverence! That oath ought to be cut out!", attaches a meaning to the word "irreverence" with which I have no sympathy.

May I conclude with an allusion to the distinctly dramatic tone of much of the language of the Bible? In doing so I make no special appeal to Christians: any one, who possesses any literary taste at all, will admit that, for poetry and simple pathos, it stands high in the literature of the world. Much of the vivid force of the parables depends on their dramatic character: one fancies, in reading the parable of the "Sower", that the recital was illustrated by the actual events of the moment: one pictures a neighbouring hill-side, with its sharp skyline, along which slowly moves a figure, seen clear and black against the bright sky, and giving, by the regular swing of his arm, a sort of rhythmic cadence to the words of the speaker.

Whether the parable of "The Prodigal Son" has ever served as the basis of a drama I know not: the general idea has no doubt been so used again and again: but the story, as it stands, simply translated into modern life, would make a most effective play.

The First Act, with the splendour of the wealthy home, would be in picturesque contrast with the Second, where we should find the spendthrift in gaudy and ostentatious vulgarity, surrounded by unmanly men and unwomanly women, wasting his substance in the "far country." The Third might depict his downward career, ending in a deep despair—then the revulsion of feeling—then the pathetic words "I will arise, and go to my Father!" And when the Fourth Act took us back to the ancestral halls, and showed us the wretched outcast, pausing irresolute at the door, mocked by a troop of listless menials, who would fain drive the beggar back to starvation and death, and the old father rushing

Quoted from Luke
15:18

forth to clasp the wanderer to his breast—might not some eyes, even among the
rougns of the Gallery, be “wet with most delicious tears”, and some hearts be
filled with new and noble thoughts, and a spirit of “reverence” be aroused, for
“whatsoever things are just, whatsoever things are pure, whatsoever things are
lovely,” which would not lightly pass away?

Quoted from
Carillon by Henry
Wadsworth Longfellow
Quoted from
Philippians 4:8

14.7 Mrs. Fawcett and the Stage Children

Source: The St. James's Gazette, July 20, 1889

Parody on an earlier letter to the editor

To the EDITOR *of the* ST. JAMES'S GAZETTE

SIR,—Most reluctantly do I seek to trespass on your space with another personal matter. Some remarks of mine, relative to the well-known Mr. John Smith, have probably attracted your notice, having been widely repeated in the best circles. These were to the effect that he has committed several burglaries and forged two cheques for large amounts. Similar publicity has, unfortunately, been given to Mr. William Brown's assertion that my statements "were fabrications."

May I be allowed to say, once for all, that, some months ago, when Mr. Brown made a similar charge against me, I challenged him to produce any one statement which I have ever made about Mr. John Smith, and prove it to be false.

To this challenge he made no reply, except to mutter some wretched Latin jargon about "onus probandi." I leave the public to judge where the fabrication lies.—I am, Sir, your obedient servant,

Lewis Carroll.

July 19.

14.8 Stage Children

Source: The Sunday Times, August 4, 1889 (also reprinted in *The Theatre*, September 1889)

SIR,—I am neither a stage manager nor a dramatic author; I have no children of my own on the stage, or anywhere else; and I have no pecuniary interest in anything theatrical. But I have had abundant opportunities, for many years, for studying the natures of children, including many stage children, and have enjoyed the friendship of many dear children, both on and off the stage.

To these reasons for writing I may, perhaps, be allowed to add that I have given some attention to logic and mathematics, which help so largely in the *orderly* arrangement of topics of controversy—an art much needed when so many controversialists are ladies. Long experience of that delightful sex has taught me that their system of arrangement is that of a circulating decimal, that with them analogy is identity, and reiteration proof, and that they always lay the *onus probandi* on their opponents. A beautiful instance of this occurred in a newspaper letter on this very controversy a few days ago (I forget the signature, but it was surely a lady's writing). She stated that the Americans are stricter in this matter than the British, and asked, "Why should not we do as the Americans do?" forgetting that it might be asked, with exactly the same logical force, "Why should not the Americans do as we do?"

My contention is:—

I. That the employment, in theatres, of children under ten is *not* harmful.

II. That it *is* beneficial.

III. That, while this practice needs certain safeguards not yet provided by the law, it does *not* call for absolute prohibition.

(I.) The harm attributed to this practice may be classed under three headings—(1) physical; (2) intellectual; (3) moral.

(1) "Physical harm."—Take first the charge that it causes "excessive bodily fatigue." To this there was at first an additional item, "enforced by cruelty," which is now practically abandoned, it appearing, on investigation, that no evidence in support of it was forthcoming, while abundant evidence was produced of the kindness such children met with in theatres, and of their thorough enjoyment of their work. According to my experience, the work is well within healthy limits, and the children enjoy it with an intensity difficult to convey by mere words. They like it better than any game ever invented for them. Watch any children you know, in any rank of life, when thrown on their own resources for amusement, and, if they do not speedily extemporise a little drama, all I can say is that they are not normal children, and they had better see a doctor.

Take next such charges as "late hours, impure air, draughts, exposure to night air," &c. The good people who raise these cries seem to think that the homes of these little ones are perfect models of regular habits and good sanitary arrangements, and that such a sight as a child outside its house after 9 p. m. would thrill the neighbourhood with horror! Let them visit a few London alleys, and judge for themselves.

(2) "Intellectual harm."—This is asserted to exist in two forms, "excess of dramatic study," and "defect of other studies." A lady writer lately drew a sensational parallel between the little Josef Hoffmann, who was so nearly killed by being encouraged to give constant public exhibitions of his precocious musical

talent, and the ordinary stage child. It was not a fair parallel; in fact no really parallel case on the stage has yet been produced (the pathetic death of the tiny Midshipmite in "Patience" was due to causes quite unconnected with stage work); and I have myself known intimately stage children who have played the heaviest child parts on record without receiving the slightest harm.

As to defect of other studies, if we contemplate the weary man of useless knowledge which, in the present craze for teaching everybody everything, so many little minds are compelled, not to *digest*, for that is impossible, but merely to swallow, we may well hope that the stage child is all the better for escaping much of this. Frequent mental collapse among Board school children and pupil teachers is slowly teaching us the valuable psychological fact that a child's mind is *not* a sausage; but we have not quite learned our lesson yet!

(3) "Moral harm."—As this danger exists in every phase of human life, those who plead it in this controversy are bound to show that it is *greater* for children under ten than for older actors and actresses; otherwise they commit the fallacy of "proving to much."

Take first "immorality, whether of general tone or particular passage, in the play itself." Ignorance of the ways of the world, and of the meanings of most of the words they hear, is a protection enjoyed by young children, and by them only. The evil itself is undeniably great—though less, I believe, in this age than in any previous one—but it is almost wholly limited to the adult members of the company and of the audience.

Take next "the encouragement of vanity, love of dress," &c. Here, again, the danger is distinctly greater in the case of adults. Children are too deeply absorbed in attending to their stage "business," and in observing the discipline enforced in all well-conducted theatres, to have much opportunity for self-consciousness.

Take, lastly, the gravest and most real of all the dangers that come under the category of "moral harm," viz., "the society of profligate men" For adult actresses this danger is, I believe, in well-conducted theatres, distinctly less than it would be in most of the lines of life open to them. Here again the good people, who see such peril in the life of an actress, seem to be living in a fool's paradise, and to fancy they are legislating for young ladies who, if they did not go on the stage, would be secluded in drawing-rooms where none but respectable guests are admitted. Do they suppose that attractive-looking young women, in the class from which the stage is chiefly recruited, would be safer as barmaids or shopwomen from the insidious attentions of the wealthy voluptuary than they are as actresses?

But if it be granted that young women of this class may choose a stage life with as fair a chance of living a reputable life as they would have in any other profession open to them, it is surely desirable to begin learning their business as soon as they are competent, unless it can be shown that they are in greater danger as children than as young women. I believe the danger is distinctly less. Their extreme youth is a powerful safeguard. To plot evil against a child, in all its innocence and sweet trustfulness and ignorance of the world, needs no common voluptuary; it needs one so selfish, so pitiless, and so abject a coward as to be beneath one calling himself a man.

II. My second contention is that stage life is beneficial to children, even the youngest; and this in three ways—(1) physically, (2) intellectually, and (3) morally.

(1) Physically. The deportment that must be acquired for even moderately good acting, and the art of dancing, which most stage children acquire, not only give grace of figure and of action, but are excellent for the health. In girls' schools, not so many years ago, spinal curvature was so common that an eminent surgeon, Dr. Mayo, put it on record that scarcely three per cent. escaped it. I am glad to believe that they are more sensibly managed now, and that the days are passed away when it was "vulgar" for young ladies to run, and where the only bodily exercise allowed them was to walk two-and-two; but I feel sure that, even now, if one hundred children were taken at random from the highly educated classes, and another hundred from the stage, the latter would show a better average for straightness of spine, strength, activity, and the bright, happy look that tells of health. The stage child "feels its life in every limb"—a locality where the Board school child only feels its lessons.

Quoted from *We Are Seven* by William Wordsworth

(2) Intellectually. Comparing children with children, my belief is that stage life distinctly *brightens* the mind of a child. Of course the same result is produced at schools, whenever they can manage to *interest* the pupils in their work. But how often they fail to do this! How often are the poor little victims made to do work "against the grain"! And all such work is not only badly done, but is intensely fatiguing and depressing to spirits and intellect alike.

(3) Morally. I believe that stage life, in a well-conducted theatre, is valuable moral training for young children. They learn—

(a) Submission to discipline.

(b) Habits of order and punctuality.

(c) Unselfishness (this on the principle on which you always find children in large families less selfish than only children).

(d) Humility. This because, however clever they may think themselves, they soon find that others are cleverer.

III. My third contention is that, though it is desirable to provide, by law, certain safeguards for the employment of children in theatres, there is no need for its absolute prohibition.

The legislation that seems to me desirable would take some such form as this:—

That every child under sixteen (ten is too low a limit), employed in a theatre, should hold a licence, annually renewable.

That such licence should only be granted on condition of the child having passed the examination for a certain "standard," adapted to the age of the child.

That a limit should be fixed for the number of weeks in the year that the child may be engaged, and for the number of hours in the day that he or she may be at the theatre. (This rule to be relaxed during rehearsals.)

That, during a theatrical engagement, the child shall attend a specified number of hours, during the afternoons, at some school; at other times in the year during the usual hours, if attending a Board school. (High schools would probably adopt the same principle, and allow half-day attendance during engagements.)

That some guarantee be required that girls under sixteen are provided with sufficient escort to and from a theatre.

But I do not believe that the law can absolutely prohibit children under ten from acting in theatres without doing a cruel wrong to many a poor struggling family, to whom the child's stage salary is a godsend, and making many poor

children miserable by debarring them from a healthy and innocent occupation
which they dearly love.

Faithfully yours,

Lewis Carroll.

Part 15

Texts about Letters, Post, etc.

15.1 The Telegraph-Cipher

Source: printed 1868

Directions for Use

Cut this card in two along the line.

In order to send messages in this cipher, a key-word (or sentence) must be agreed on between the correspondents: this should be carried in the memory only.

To translate a message into cipher, write the key-word, letter for letter, over the message, repeating it as often as may be necessary: slide the message-alphabet along under the other, so as to bring the first letter of the message under the first letter of the key-word, and copy the letter that stands over 'a': then do the same with the second letter of the message and second letter of the key-word, and so on.

Translate the cipher back into English by the same process. [T. O.]

For example, if the key-word be 'war,' and the message 'meet me at six,' we write it thus:—

$$\left\{ \begin{array}{cccccccc} w & a & r & w & a & r & w & a & r & w & a \\ m & e & e & t & m & e & a & t & s & i & x \\ k & w & n & d & o & n & w & h & z & o & d \end{array} \right\}$$

The cipher sent, 'kwndonwhzod,' may be re-translated by the same process.

KEY-ALPHABET.																										
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a
MESSAGE-ALPHABET.																										

15.2 The Alphabet-Cipher

Source: printed 1868?

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
B	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a
C	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b
D	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c
E	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d
F	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e
G	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f
H	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g
I	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h
J	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i
K	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j
L	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k
M	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l
N	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m
O	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n
P	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Q	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
R	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
S	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
T	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
U	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
V	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u
W	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v
X	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w
Y	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x
Z	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

An explanation of the method of using the above table for sending Messages will be found on the other side.

Explanation

Each column of this table forms a dictionary of symbols representing the alphabet: thus, in the A column, the symbol is the same as the letter represented; in the B column, A is represented by B, B by C, and so on.

To use the table, some word or sentence should be agreed on by two correspondents. This may be called the “key-word,” or “key-sentence,” and should be carried in the memory only.

In sending a message, write the key-word over it, letter for letter, repeating it as often as may be necessary: the letters of the key-word will indicate which column is to be used in translating each letter of the message, the symbols for which should be written underneath: then copy out the symbols only, and destroy the first paper. It will now be impossible for any one, ignorant of the key-word, to decipher the message, even with the help of the table.

For example, let the key-word be *vigilance*, and the message “meet me on Tuesday evening at seven,” the first paper will read as follows:—

v i g i l a n c e v i g i l a n c e v i g i l a n c e v i
m e e t m e o n t u e s d a y e v e n i n g a t s e v e n
h m k b x e b p x p m y l l y r x i i q t o l t f g z z v

the second will contain only "h m k b x e b p x p m y l l y r x i i q t o l t f g z z v."

The receiver of the message can, by the same process, retranslate it into English.

N.B. If this table be lost, it can easily be written out from memory, by observing that the first symbol in each column is the same as the letter naming the column, and that they are continued downwards in alphabetical order. Of course it would only be necessary to write out the particular columns required by the key-word: such a paper, however, should not be preserved, as it would afford means for discovering the key-word.

15.3 Letter from Mabel

Source: cyclostyled 1880

*Edinborough,
February 14*

My dear Emily,

Last Saterdag was my birthday. I wish it was your's too: then we'd be the same ages. A pedlar came to the door. He said he was a cobbler and soled doll's shoes. I was rather frightened of him for there was only Aunt and me in the house, as the maid don't sleep here. Aunt bought a pair of shoes for my doll. Wasn't she aimiable? I was in an extasy. I wish you'd come and see her and I, like you did last year.

Your loveing Mabel

15.4 A Complete Postage Guide

Source: The Times, September 1, 1883; also probably published separately

To the Editor of the Times

Sir,—As the scales of charges for postage are not supplied at post-offices in any cheaper form than the sixpenny “Postal Guide,” and as all tables for reference are liable to be mislaid, your readers will perhaps find the following rules useful.

*I am, Sir, your obedient servant,
Charles L. Dodgson.
Christ Church, Oxford.*

Rules for Reckoning Postage

Book Post.—Find the number of ounces. Take the first even number not less than this and halve it. This gives the cost in half-pence.

Letter Post.—A letter not over 1oz. costs 1d. Otherwise use last rule and add 1d.

Parcel Post.—Find the number of pounds and add one. Take the first even number not less than this and halve it. This gives the cost in threepenny-pieces.

N.B.—A book must not be over 5lb. nor a parcel over 7lb. A letter over 12oz. is charged 1d. an ounce, beginning with the first ounce.

Examples.—For a book of $5\frac{1}{2}$ oz., say “ $5\frac{1}{2}$, 6, 3 half-pence.” For a letter of $5\frac{1}{2}$ oz., say “ $5\frac{1}{2}$, 6, 3 half-pence; and a penny makes $2\frac{1}{2}$ d.” For a parcel of $5\frac{1}{2}$ lb., say “ $5\frac{1}{2}$, $6\frac{1}{2}$, 8, 4 threepenny-pieces make 1s.”

15.5 What to Call a “Telephone-Message”

Source: St. James’s Gazette, January 17, 1889

To the EDITOR *of the* ST. JAMES’S GAZETTE

SIR,—Why spend time in discussing the twenty-two rival words proposed, while the simple and obvious word “teltale” is—so to speak—staring one in the face?—
I am, Sir, your obedient servant,

Lewis Carroll.
January 16.

15.6 Eight or Nine Wise Words About Letter-Writing

Source: Eight or Nine Wise Words About Letter-Writing, first edition (with differences as noted), and fifth edition

The title is quoted from *Much Ado About Nothing* by William Shakespeare.

§ 1. On Stamp-Cases

Some American writer has said “the snakes in this district may be divided into one species—the venomous.” The same principle applies here. Postage-Stamp-Cases may be divided into one species, the “Wonderland.” [The title is entered at Stationers’ Hall: the two Pictorial Surprises, and the ‘Wise Words,’ are copyright.]¹

You don’t see why I call them ‘Surprises’? Well, take the Case in your left-hand, and regard it attentively. You see Alice nursing the Duchess’s Baby? (An entirely new combination, by the way: it doesn’t occur in the book.) Now, with your right thumb and forefinger, lay hold of the little book, and suddenly pull it out. *The Baby has turned into a Pig!* If *that* doesn’t surprise you, why, I suppose you wouldn’t be surprised if your own Mother-in-law suddenly turned into a Gyroscope!

This Case is *not* intended to carry about in your pocket. Far from it. People seldom want any other Stamps, on an emergency, than Penny-Stamps for Letters, Sixpenny-Stamps for Telegrams, and a bit of Stamp-edging for cut fingers (it makes capital sticking-plaster, and will stand three or four washings, cautiously conducted): and all these are easily carried in a purse or pocket-book. No, *this* is meant to haunt your envelope-case, or wherever you keep your writing-materials. What made me invent it was the constantly wanting Stamps of other values, for foreign Letters, Parcel Post, &c., and finding it very bothersome to get at the kind I wanted in a hurry. Since I have possessed a “Wonderland Stamp Case”, Life has been bright and peaceful, and I have used no other. I believe the Queen’s laundress uses no other.

Each of the pockets will hold 6 stamps, comfortably. I would recommend you to put them in, one by one, in the form of a *bouquet*² making them lean to the right and to the left alternately: thus there will always be a free *corner* to get hold of, so as to take them out, quickly and easily, one by one: otherwise you will find them apt to come out two or three at a time.

According to *my* experience, the 5*d.*, 9*d.*, and 1*s.* Stamps are hardly ever wanted, though I have constantly to replenish all the other pockets. If your experience agrees with mine, you may find it convenient to keep only a couple (say) of each of these 3 kinds, in the 1*s.* pocket, and to fill the other 2 pockets with extra 1*d.* stamps.

¹Imitations of it will soon appear, no doubt: but they cannot include the two Pictorial Surprises, which are copyright.

²I would recommend you to arrange the 6, before putting them in, something like a *bouquet*,

§ 2. How to begin a Letter

If the Letter is to be in answer to another, begin by getting out that other letter and reading it through, in order to refresh your memory, as to what it is you have to answer, and as to your correspondent's *present address* (otherwise you will be sending your letter to his regular address in *London*, though he has been careful in writing to give you his *Torquay* address in full).

Next, Address and Stamp the Envelope. "What! Before writing the *Letter*?" Most certainly. And I'll tell you what will happen if you don't. You will go on writing till the last moment, and, just in the middle of the last sentence, you will become aware that 'time's up!' Then comes the hurried wind-up—the wildly-scrawled signature—the hastily-fastened envelope, which comes open in the post—the address, a mere hieroglyphic—the horrible discovery that you've forgotten to replenish your Stamp-Case—the frantic appeal, to every one in the house, to lend you a Stamp—the headlong rush to the Post Office, arriving, hot and gasping, just after the box has closed—and finally, a week afterwards, the return of the Letter, from the Dead-Letter Office, marked "address illegible!"

Do not, however, in your anxiety to observe this rule, commit the error of *addressing two Envelopes at once!* The inevitable result of *that* would be that the Letters would get into wrong Envelopes, and if (as is most probable) one was a Letter of congratulation, and the other of condolence, the out-come of your morning's work would be to turn two of your best and oldest friends into *bitter enemies for life! Verb. sap. sat.*³

Next, put your own address, *in full*, at the top of the note-sheet. It is an aggravating thing—I speak from bitter experience—when a friend, staying at some new address, heads his letter "Dover," simply, assuming that you can get the rest of the address from his previous letter, which *of course*⁴ you have destroyed.

Next, put the date *in full*. It is another aggravating thing, when you wish, years afterwards, to arrange a series of letters, to find them dated "Feb. 17", "Aug. 2", without any year to guide you as to which comes first. And never, never, dear Madam (N.B. this remark is addressed to ladies *only*: no *man* would ever do such a thing), put "Wednesday", simply, as the date!

"That way madness lies."

Quoted from *King Lear* by William Shakespeare

§ 3. How to go on with a Letter

Here is a golden Rule to begin with. *Write legibly.* The average temper of the human race would be perceptibly sweetened, if everybody obeyed this Rule! A great deal of the bad writing in the world comes simply from writing *too quickly*. Of course you reply, "I do it to save *time*". A very good object, no doubt: but what right have you to do it at your friend's expense? Isn't *his* time as valuable as yours? Years ago, I used to receive letters from a friend—and very interesting letters too—written in one of the most atrocious hands ever invented. It generally took me about a *week* to read one of his letters! I used to carry it about in my pocket, and take it out at leisure times, to puzzle over the riddles which composed it—holding it in different positions, and at different distances, till at last the meaning of some hopeless scrawl would flash upon me,

³missing in first edition

⁴perhaps

when I at once wrote down the English under it; and, when several had been thus guessed, the context would help with the others, till at last the whole series of hieroglyphics was deciphered. If *all* one's friends wrote like that, Life would be entirely spent in reading their letters!

This Rule applies, specially, to names of people or places—and *most* specially to *foreign names*. I got a letter once, containing some Russian names, written in the same hasty scramble in which people often write “yours sincerely”. The *context*, of course, didn't help in the least: and one spelling was just as likely as another, so far as *I* knew: it was necessary to write and tell my friend that I couldn't read any of them!

My second Rule is, don't fill *more* than a page and a half with apologies for not having written sooner!

The best subject, to *begin* with, is your friend's last letter. Write with the letter open before you. Answer his questions, and make any remarks his letter suggests. *Then* go on to what you want to say yourself. This arrangement is more courteous, and pleasanter for the reader, than to fill the letter with your own invaluable remarks, and then hastily answer your friend's questions in a postscript. Your friend is much more likely to enjoy your wit, *after* his own anxiety for information has been satisfied.

In referring to anything your friend has said in his letter, it is best to *quote the exact words*, and not to give a summary of them in *your* words. ⊥You know, yourself, how aggravating it is to have ‘words put into your mouth’—so to speak—which you have neither said nor meant to say.⁵

⊥This caution⁶ is specially necessary when some point has arisen as to which the two correspondents do not quite agree. There ought to be no opening for such writing as ⊥“You have quite misunderstood my letter. I never said so-and-so, &c. &c.”,⁷ which tends to make a correspondence last for a lifetime.

A few more Rules may fitly be given here, for correspondence that has unfortunately become *controversial*.

One is, *don't repeat yourself*. When once you have said your say, fully and clearly, on a certain point, and have failed to convince your friend, *drop that subject*: to repeat your arguments, all over again, will simply lead to his doing the same; and so you will go on, like a Circulating Decimal. *Did you ever know a Circulating Decimal come to an end?*

Another Rule is, when you have written a letter that you feel may possibly irritate your friend, however necessary you may have felt it to so express yourself, *put it aside till the next day*. Then read it over again, and fancy it addressed to yourself. This will often lead to your writing it all over again, taking out a lot of the vinegar and pepper, and putting in honey instead, and thus making a *much* more palatable dish of it! If, when you have done your best to write inoffensively, you still feel that it will probably lead to further controversy, *keep a copy of it*. There is very little use, months afterwards, in pleading “I am almost sure I never expressed myself as you say: to the best of my recollection I said so-and-so”. *Far* better to be able to write “I did *not* express myself so: these are the words I used.”

⁵A's impression, of what *B* has said, expressed in *A*'s words, will never convey to *B* the meaning of his own words.

⁶This

⁷You are quite mistaken in thinking I said so-and-so. It was not in the least my meaning, &c., &c.

My fifth Rule is, if your friend makes a severe remark, either leave it unnoticed, or make your reply distinctly *less* severe: and if he makes a friendly remark, tending towards 'making up' the little difference that has arisen between you, let your reply be distinctly *more* friendly. If, in picking a quarrel, each party declined to go more than *three-eighths* of the way, and if, in making friends, each was ready to go *five-eighths* of the way—why, there would be more reconciliations than quarrels! Which is like the Irishman's remonstrance to his gad-about daughter—"Shure, you're *always* goin' out! You go out *three* times, for *wanst* that you come in!"

My sixth Rule (and my last remark about controversial correspondence) is, *don't try to have the last word!* How many a controversy would be nipped in the bud, if each was anxious to let the *other* have the last word! Never mind how telling a rejoinder you leave unuttered: never mind your friend's supposing that you are silent from lack of anything to say: let the thing drop, as soon as it is possible without discourtesy: remember 'speech is silver, but silence is golden'! (N.B.—If you are a gentleman, and your friend is a lady, this Rule is superfluous: *you wo'n't get the last word!*)

My seventh Rule is, if it should ever occur to you to write, jestingly, in *dispraise* of your friend, be sure you exaggerate enough to make the jesting *obvious*: a word spoken in *jest*, but taken as *earnest*, may lead to very serious consequences. I have known it to lead to the breaking-off of a friendship. Suppose, for instance, you wish to remind your friend of a sovereign you have lent him, which he has forgotten to repay—you might quite *mean* the words "I mention it, as you seem to have a conveniently bad memory for debts", in jest: yet there would be nothing to wonder at if he took offence at that way of putting it. But, suppose you wrote "Long observation of your career, as a pickpocket⁸, has convinced me that my one only⁹ hope, for recovering that sovereign I lent you, is to say 'Pay up, or I'll summons yer!'" he would indeed be a matter-of-fact friend if he took *that* as seriously meant!

My eighth Rule. When you say, in your letter, "I enclose £5 bank-note¹⁰," or "I enclose John's letter for you to see", get¹¹ the document referred to—and *put it into the envelope*. Otherwise, you are pretty certain to find it lying about, *after the Post has gone!*

My ninth Rule. When you get to the end of a note-sheet, and find you have more to say, take another piece of paper—a whole sheet, or a scrap, as the case may demand: but whatever you do, *don't cross!* Remember the old proverb '*Cross-writing makes cross reading*'. "The *old* proverb?" you say, enquiringly. "*How old?*" Well, not so *very* ancient, I must confess. In fact, I'm afraid I invented it while writing this paragraph! Still, you know, 'old' is a *comparative* term. I think you would be *quite* justified in addressing a chicken, just of the shell, as "Old boy!", *when compared* with another chicken, that was only half-out!

If¹² doubtful whether to end with 'yours faithfully', or 'yours truly', or 'your most truly', &c. (there are at least a dozen varieties, before you reach

⁸pickpocket and a burglar

⁹lingering

¹⁰cheque for £5

¹¹leave off writing for a moment—go and get

¹²In the first edition preceded by the headline "§ 4. How to end a Letter", the next is § 5 instead of § 4.

‘yours affectionately’), refer to your correspondent’s last letter, and make your winding-up *at least as friendly as his*: in fact, even if a shade *more* friendly, it will do no harm!

A Postscript is a very useful invention: but it is *not* meant (as so many ladies suppose) to contain the real *gist* of the letter: it serves rather to throw into the shade any little matter we do *not* wish to make a fuss about. For example, your friend had promised to execute a commission for you in town, but forgot it, thereby putting you to great inconvenience: and he now writes to apologize for his negligence. It would be cruel, and needlessly crushing, to make it the main subject of your reply. How much more gracefully it comes in thus! “P.S. Don’t distress yourself any more about having omitted that little matter in town. I wo’n’t deny that it *did* put my plans out a little, at the time: but it’s all right now. I often forget things, myself: and ‘those, who live in glass-houses, mustn’t throw stones’, you know!”

My tenth Rule. When your letter is finished, read it carefully through, and put in any ‘not’ that you may chance to have omitted. (This precaution will sometimes save you from saying what you had not quite intended: *e. g.*, suppose you had *meant* to write “Dear Sir, I am not prepared to accept the offer you make me of your hand and heart.”) Then fold up the letter with all the enclosures *in* it, so that all must come out *together*. Otherwise your friend will simply draw out the letter, and put the envelope into the fire, and it will only be when he reaches the words “I enclose £5 bank-note” that he will turn to watch, with tearful gaze, a fragment of white paper-ash, as it flickers up the chimney!¹³

My eleventh Rule. Do not fasten up the envelope till Post-time is close at hand. Otherwise, you will have to tear it open again, to insert something you had forgotten to say.¹⁴

My last Rule.¹⁵ When you take your letters to the Post, *carry them in your hand*. If you put them *into*¹⁶ your pocket you will take a long country-walk (I speak from experience), passing the Post-Office *twice*, going and returning, and, when you get *home*¹⁷, will find them *still* in your pocket.

§ 4. On registering Correspondence

Let me recommend you to keep a record of Letters Received and Sent. I have kept one for many years, and have found it of the greatest possible service, in many ways: it secures my *answering* Letters, however long they have to wait; it enables me to refer, for my own guidance, to the details of previous correspondence, though the actual Letters may have been destroyed long ago; and, most valuable feature of all, if any difficulty arises, years afterwards, in connection with a half-forgotten correspondence, it enables me to say, with confidence, “I did *not* tell you that he was ‘an *invaluable* servant in *every* way’, and that you *couldn’t* ‘trust him too much’. I have a *précis* of my letter. What I said was ‘he is a *valuable* servant in *many* ways, but *don’t* trust him too much’. So, if he’s cheated you, you really must not hold *me* responsible for it!”

¹³missing in first edition

¹⁴missing in first edition

¹⁵missing in first edition

¹⁶in

¹⁷home

I will now give you a few simple Rules for making, and keeping a Letter-Register.

Get a blank book, containing (say) 200 leaves, about 4 in.¹⁸ wide and 7 high. It should be *well* fastened into its cover, as it will have to be opened and shut hundreds of times. Have a line ruled, in red ink, down each margin of every page, an inch off the edge (the margin should be wide enough to contain a number of 5 digits, easily: *I* manage with a $\frac{3}{4}$ inch margin: but, unless you write very small you will find an inch margin¹⁹ more comfortable).

Write a *précis* of each Letter, received or sent, in chronological order. Let the entry of a 'received' Letter reach from the left-hand edge to the right-hand marginal line; and the entry of a 'sent' Letter from the left-hand marginal line to the right-hand edge. Thus the two kinds will be quite distinct, and you can easily hunt through the 'received' Letters by themselves, without being bothered with the 'sent' Letters; and *vice versâ*.

Use the *right-hand* pages only: and, when you come to the end of the book, turn it upside-down, and begin at the other end, still using right-hand pages.²⁰

Write, at the top of every sheet of a 'received' Letter, and of every copy you keep of a 'sent' Letter, its Register-Number in full.²¹

I will now give a few (ideal) specimen pages of my Letter-Register, and make a few remarks on them: after which I think you will find it easy enough to manage one for yourself.

¹⁸inches

¹⁹inch

²⁰Additional sentence in first edition: You will find this much more comfortable than using left-handed pages.

²¹You will find it convenient to write, at the top of every sheet of a 'received' Letter, its Register-Number in full.

29217	/90.	
(217)	Ap. 1 (Tu.) <i>Jones, Mrs.</i> am sendg, as present from self and Mr. J., a white elephant.	27518 225
(218)	do. <i>Wilkins & Co.</i> bill, for grand piano, £175 10s. 6d. [pd]	28743 221, 2
(219)	do. <i>Scareham, H.</i> [writes from 'Grand Hotel, Monte Carlo'] asking to borrow £50 for a few weeks (!)	⊙
⊙	(220) do. <i>Scareham, H.</i> would know object, for wh loan is and <i>security</i> offered.	like to asked,
218	(221) Ap. 3. <i>Wilkins & Co.</i> previous letter, now before me, undertook to supply one for declining to pay more.	in pre- vious you £120:
246	(222) do. <i>Cheetham & Sharp.</i> written 221—enclosing previo 218 ter—is law on my side? 228	have us let- |
(223)	Ap. 4. <i>Manager, Goods Statn,</i> <i>G. N.</i> R. White Elephant arrived, ad- dresse to you—send for it at once— 'very savage.'	226

29225	/90.	
217	(225) Ap. 4 (F) <i>Jones, Mrs.</i> th but no room for it at present, am 230 ing it to Zoological Gardens.	anks, sendin-
223	(226) do. <i>Manager, Goods Sta</i> <i>N.R.</i> please deliver, to bearer note, case containing White Ele- addressed to me.	<i>tn, G.</i> of this phant
223	(227) do. <i>Director Zool. Garde</i> closing above note to R. W. Ma call for valuable animal, prese 229 Gardens.	<i>ns.</i> (en- nager) nted to
(228)	Ap. 8. <i>Cheetham & Sharp.</i> you misquote enclosed letter, limit named is £18 0	222 237
(229)	Ap. 9. <i>Director, Zoo. Gardens.</i> case delivered to us contained 1 doz. Port—consumed at Directors' Ban- quet—many thanks.	227 230
225	(230) do. T <i>Jones, Mrs.</i> why ⊙ doz. of Port a 'White Elephant'?	call a
(231)	do. T <i>Jones, Mrs.</i> 'it was a joke.'	⊙

29233	/90.	
	(233) Ap. 10 (Th) <i>Page & Co.</i>	orderg
242	Macauley's Essays and "Jane Eyre" (cheap edtn).	Eyre"
(234)	do. <i>Aunt Jemima</i> —invitg for 2 or 3 days after the 15th. [	236
(235)	do. <i>Lon. and West. Bk.</i> have recevd £250, pd to yr Acct fm Parkins & Co. Calcutta. [en	
234	(236) do. <i>Aunt Jemima</i> —can possibly come this month, will write when able. [	not
239		
228	(237) Ap. 11. <i>Cheetham and</i>	Co. re-
240	turn letter enclosed to you. [x	
	(238) do. <i>Morton, Philip.</i> Co	uld you
245	lend me Browning's 'Dramati sonæ' for a day or 2?	s Per-
(239)	Ap. 14. <i>Aunt Jemima</i> , leav- ing hou se at end of month: address '136, Royal Avenue, Bath.' [	236
(240)	Ap. 15. <i>Cheetham and Co.</i> , returng letter as reqd, bill 6/6/8. [	237 244
29242	/90.	
(242)	Ap. 15. (Tu) <i>Page & Co.</i> bill for boo ks, as ordered, 15/6 [	} 233 247
(243)	do. ¶ <i>do.</i> books	
240	(244) do. <i>Cheetham and Co.</i> c	an un-
248	derstand the 6/8—what is £6	for?
(245)	Ap. 17. ¶ <i>Morton, P.</i> 'Dra- matis Personæ,' as asked for. [retd	238 249
221	(246) do. <i>Wilkins and Co.</i> w	ith
250	bill, 175/10/6, and ch. for do. [en	
243	(247) do. <i>Page and Co.</i> bill, postal $\frac{1}{\Sigma}$ 107258 for 15/- and 6 stps.	15/6, 6 stps.
(248)	Ap. 18. <i>Cheetham and Co.</i> it was a 'clerical error' (!)	244
245	(249) Ap. 19. <i>Morton, P.</i> retu ring Browning with many thanks.	
(250)	do. <i>Wilkins and Co.</i> receiptd bill.	246

I begin each page by putting, at the top left-hand corner, the next entry-number I am going to use, *in full* (the last 3 digits of each entry-number are enough afterwards); and I put the date of the year, at the top, in the centre.

I begin each entry with the last 3 digits of the entry-number, enclosed in an oval (this is difficult to reproduce in print, so I have put round-parentheses here). Then, for the *first* entry in each page, I put the day of the month and the

day of the week: afterwards, 'do.' is enough for the month-day, till it changes: I do not repeat the week-day.

Next, if the entry is *not* a letter, I put a symbol for 'parcel' (see Nos. 243, 245) or 'telegram' (see Nos. 230, 231) as the case may be.

Next, the name of the person, underlined (indicated here by italics).

If an entry needs special further attention, I put [] at the end: and, when it has been attended to, I fill in the appropriate symbol, e. g. in No. 218, it showed that the bill had to be *paid*; in No. 222, that an answer was really *needed* (the 'x' means 'attended to'); in No. 234, that I owed the old lady a visit; in No. 235, that the item had to be entered in my account book; in No. 236, that I must not forget to write; in No. 239, that the address had to be entered in my address-book; in No. 245, that the book had to be returned.

I give each entry the space of 2 lines, whether it fills them or not, in order to have room, in the margin, for a head-reference and a foot-reference.²² And, at the foot of each page I leave 2 or 3 lines *blank* (often *useful*²³ for entering omitted Letters) and I miss²⁴ one or 2 numbers before I begin the next page.

At any odd moments of leisure, I 'make up' the entry-book, in various ways, as follows:—

(1) I draw a *second* line, at the right-hand end of the 'received' entries, and at the left-hand end of the 'sent' entries. This I usually do pretty well 'up to date'. In my Register the first line is *red*, the second *blue*: here I distinguish them by making the first thin, and the second *thick*.

(2) Beginning with the last entry, and going backwards, I read over the names till I recognise²⁵ one as having occurred already: I then link the two entries together, by giving the one, that comes first in chronological order, a *foot-reference*, and the other a *head-reference*. When the two entries belong to the same *thousand*, I use only the last 3 digits of their reference-numbers (see Nos. 221, 246): otherwise, I write the number in full (see head-reference of No. 217).²⁶ I do not keep this 'up-to-date', but leave it till there are 4 or 5 pages to be done. I work back till I come among entries that are all supplied with 'foot-references', when I once more glance through the last few pages, to see if there are any entries not yet supplied with head-references: *their* predecessors may need a special search. If an entry is connected, in subject, with another under a different name, I link them by cross-references, distinguished from the head- and foot-references by being written *further from the marginal line* (see No. 229). When 2 consecutive entries have the same name, and are both of the same kind (i. e. both 'received' or both 'sent') I bracket them (see Nos. 242, 243); if of different kinds, I link them with the symbol used for Nos. 219, 220.

(3) Beginning at the earliest entry not yet done with, and going forwards, I cross out every entry that has got a head- and foot-reference, and is done with, by continuing the extra line *through* it (see Nos. 221, 223, 225). I also cross out every entry that is done with, even if it have no head-reference, provided it is the *first of its kind*, so that no head-reference is possible: also every is done with, even if it have no foot-reference, provided it is likely to be the *last of its kind*; but in this case it is convenient, in order to find it again if the

²²room for references

²³useful afterwards

²⁴miss

²⁵recognize

²⁶'foot-reference' (see Nos. 217, 225)

correspondence should ever re-commence, to enter it in an alphabetical index of 'Closed Correspondences'.²⁷ The result of this system of crossing-out is that²⁸ wherever a *break* occurs in this extra line, it shows there is some matter still needing attention. I do not keep this anything like 'up to date', but leave it till there are 30 or 40 pages to look through at a time. When the first page in the volume is thus completely crossed out, I put a mark at the foot of the page to indicate this; and so with pages 2, 3, &c. hence, whenever I do this part of the 'making up', I need not begin at the beginning of the volume, but only at the *earliest page that has not got this mark*.

All this looks very complicated, when stated at full length: but you will find it perfectly simple, when you have had a little practice, and will come to regard the 'making-up' as a pleasant occupation for a rainy day, or at any time that you feel disinclined for more severe mental work. In the Game of Whist, Hoyle gives us one golden Rule, "When in doubt, win the trick"—I find that Rule admirable for²⁹ real life: when in doubt what to do, I 'make-up' my Letter-Register!

Quoted from *Hoyle's Games Improved* by Edmond Hoyle

²⁷missing in first edition

²⁸Thus

²⁹in

Stamp case: outer part



front

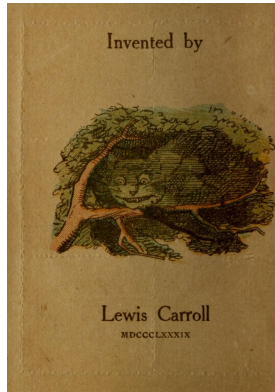


back

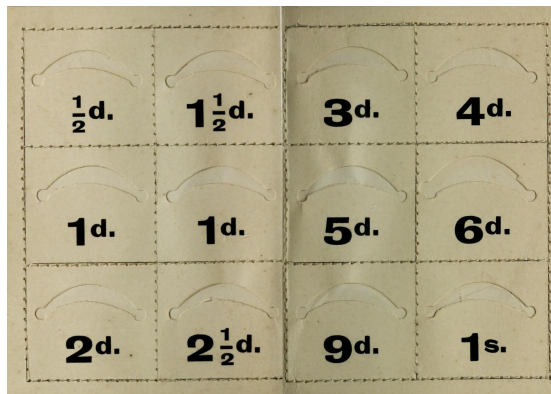
inner part



front



back



inside

15.7 A Postal Problem. June, 1891

Source: printed 1891

The Rule, for Commissions chargeable on overdue Postal Orders, is given in the "Post Office Guide," in these words, (it is here divided, for convenience of reference, into 3 clauses):—

"(a) After the expiration of 3 months from the last day of the month of issue, a Postal Order will be payable only on payment of a Commission, equal to the amount of the original poundage

"(b) with the addition (if more than 3 months have elapsed since the said expiration) of the amount of the original poundage for every further period of 3 months which has so elapsed

"(c) and for every portion of any such period of 3 months over and above every complete period.

You are requested to answer the following questions, in reference to a Postal Order for 10. (on which the 'original poundage' would be 1*d.*) issued during the month of January, so that the 1st 'period' would consist of the months February, March, April; the 2nd would consist of the months May, June, July; and the 3rd would consist of the months August, September, October.

(1) Supposing the Rule to consist of clause (a) only, on what day would a 'Commission' begin to be chargeable? []

(2) What would be its amount? []

(3) Supposing the Rule to consist of clauses (a) and (b), on what day would the lowest 'Commission' begin to be chargeable? []

(4) What would be its amount? []

(5) On what day would a larger 'Commission' (being the sum of 2 'Commissions') begin to be chargeable? []

(6) What would be its amount? []

(7) On what day would a yet larger 'Commission' begin to be chargeable? []

(8) What would be its amount? []

(9) Taking the Rule as consisting of all 3 clauses, in *which* of the above-named 3 'periods' does clause (c) first begin to take effect? []

(10) *Which* day, of any 'period,' is the earliest on which it can be said that a 'portion' of the 'period' has elapsed? []

(11) On what day would the lowest 'Commission' begin to be chargeable? []

(12) What would be its amount? []

(13) On what day would a larger 'Commission' begin to be chargeable? []

(14) What would be its amount? []

(15) On what day would a yet larger 'Commission' begin to be chargeable? []

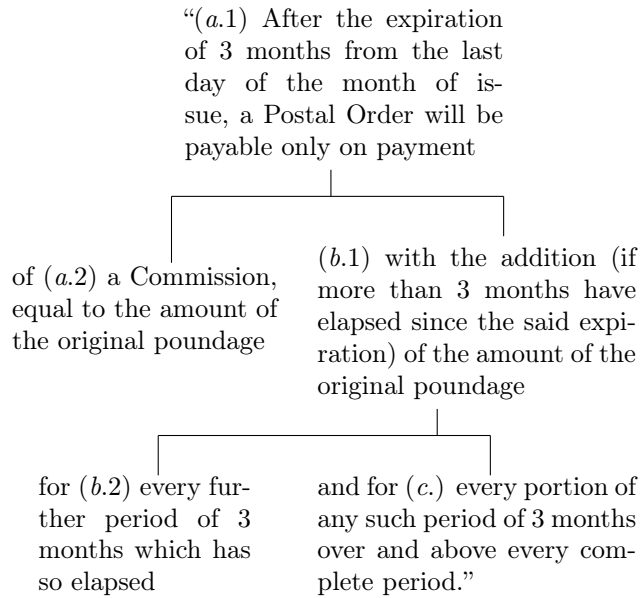
(16) What would be its amount? []

Signature _____

Date _____

Supplement

The Rule is given, below, in a form which exhibits its grammatical construction:—



15.8 A Postal Problem

Source: *The Lady*, December 17, 1891 (as part of the Syzygy column)

As the new Rules for Syzygies are not quite ready yet, I will give the competitors an altogether new kind of Problem.

In the "Post Office Guide" the following Rule is laid down as to certain charges to be made, in certain cases, on the presentation for payment of Postal Orders:—

"After the expiration of three months from the last day of the month of issue, a postal order will be payable only on payment of a commission equal to the amount of the original poundage, with the addition (if more than three months have elapsed since the said expiration) of the amount of the original poundage for every further period of three months which has so elapsed, and for every portion of any such period of three months over and above every complete period."

My Problem is as follows:—Assume that 360 Postal Orders, for 2s. each (so that the "poundage" on each would be 1d.), were purchased on the 6th of January, and that one is presented, for payment, every day till the end of the year. State the various amounts of commission chargeable, naming the first and last day on which each such amount would be charged.

Answers to this Problem should be written in the following form:—

7d. July 24 to Aug. 8.

8d. Aug. 9 to Oct. 20.

and so on;

And it is requested that they may reach the Editor by or before the first post on Dec. 24. They shall be scored in order of unanimity. Answers obtained from lawyers will be especially interesting. I have already been thus favoured by various judges, solicitors, &c., whose replies exhibit a pleasing variety and contrast. Of course, no real names need be given.

Part 16

Other Texts

16.1 Railway Rules

Source: manuscript written about 1847 (text might not be complete)

Station master must mind his station, and supply refreshments: he can put anyone who behaves badly to prison, while a train goes round the garden: he must ring for the passengers to take their seats, then count 20 slowly, then ring again for the train to start. The L one shall be a surgeon, the wounded must be brought there gratis by the next train going that way and cured gratis. There shall be a place at the L station for lost luggage. If there is anyone to go, a flag is to be hoisted.

Passengers may not go on the line on any pretence: parents responsible for their children: may not get in or out of the train when moving: the money is divided equally among all except drivers: the parents take their childrens': any one without money works at one of the stations.

16.2 “Love’s” Railway Guide

Source: manuscript written about 1847 (table hard to decipher)

Trains leave	I	II
Croft	immediatly after dinner	when the engine is rested
Liverpool	about 5 m after	durant stage
York	about 3 p. m.	4. 1 m p. m.
Manchester	3. 5 m p. m.	Train left behind as the engine &c. go to tea

Rule I. All passengers when upset are requested to lie still until picked up—as it is requisite that at least 3 trains should go over them, to entitle them to the attention of the doctor and assistants.

II. If a passenger comes up to a station after the train has passed the next (i. e. when it is about 100 m off) he may not run after it but must wait for the next.

III. When a passenger has no money and still wants to go by the train, he must stop at whatever station he happens to be at, and earn money—by making tea for the station master (who drinks it all hours of the day and night) and grinding sand for the company (what use they make of it they are *not* bound to explain).

16.3 Answers to Correspondents

Source: Rectory Magazine

Part 1

- M. B. F. Catherine may be spelt indifferently with a “C” or “K”.
- D. S. Your question is unintelligible. What do you mean by “with-some”?
- K. P. 235.
- C. S. K. “Boz” stands for Charles Dickens, “Phiz” for Hablot K. Browne¹.
- M. We do not know the way in which Indian rubber balls are made.
- E. F. We must refer you to Johnson’s Dictionary.
- S. V. We cannot inform you.
- A. B. “Cupboard” is pronounced “cubberd.”

Part 2

- A. S. “F. M.” stands for Field Marshal.
- E. L. K. Whatever you please, my little dear, you pays your money, and you takes your choice.
- N. C. No.
- E. B. M. Yes.
- J. P. Ca’n’t say.

Part 3

- F. F. What a stupid you are!
- L. B. York Minster has been burnt 3 times, the last time by a madman.
- M. N. We should *rather* think not.
- S. What tiber will roof us? (Wat Tyler. Will Rufus.)
- M. F. Chichester or Norfolk. We forget which.

Part 4

- F. Z. We cannot undertake to return rejected communications.
- L. F. D. Derived from “darling” and “town,” an expression of admiration.
- N. W. Contracted from “shelf funnier,” meaning that it is a funnier sort of shelf than any hitherto invented.
- D. D. 43 miles.
- R. N. We cannot answer you.

¹originally erroneously “George Cruikshank”

Part 5

- M. M. The gutta percha is mixed with treacle, we believe, or some such substance, to soften it.
- D. J. Do you mean,
 ‘An Austrian army awfully arrayed,
 ‘Boldly by battery besiege Belgrade &c.’?
- C. Z. We will try.
- M. B. We think not, at least as far as regards snails and turpentine.
- F. Julius Cæsar.
- B. C. Perhaps.

Quoted from *The Siege of Belgrade* by Alaric Alexander Watts

Part 6

- A. Q. Invert the divisor, and proceed as in multiplication.
- F. N. ‘Round the rugged rocks the ragged rascals ran.’
- D. T. To the north of Mexico.
- L. C. Shouldn’t wonder.
- N. B. W. Yes.
- Q. G. Bird lime is best.
- S. S. We do not understand you.

Part 7

- H. H. The fable is as follows. ‘She went into the garden to cut a cabbageleaf to make an apple pie; while she was gone, an old she-bear looked in at the window, ‘What? no soap?’ so *he* died, and *she* very imprudently married the barber, and there were present at the wedding the Picanninnies and the Joblillies and the great Panjorum himself, with a little round button at the top, and they all played at Catch-who-catch-can till the gunpowder ran out at the heels of their boots.’ We do not know the moral.
- L. B. Try for yourself. Surely you’ve got a spoon?

Quoted from *The Grand Panjandrum* by Samuel Foote

Part 8

- F. L. W. You may go on as long as you please, for anything *we* care.
- M. What buisness is it of yours?
- Y. Y. Platinum.
- S. H. We never tasted a decoction of indian-rubber, or boiled log-wood.
- L. F. Aldiboronto-foscoforneo Crononhoton-thologus.
- Z. B. Yes: for instance a brass shoe-horn.
- D. R. Hop-o’-my-thumb is a contraction for Hop-over-my thumb.

16.4 Reviews

Source: Rectory Magazine

According to our monthly custom, we sit down to review the works published during the last month, and sent for our approval. First in order stands a ponderous volume: "Natural Logic, by Professor Poddle:" which purports to be a variety of arguments drawn from observations of nature: these arguments are as ponderous as the book, and, to our weak intellect, perfectly incomprehensible: let us take the first sentence of his chapter on tadpoles, (p. 46.) "*Upon this subject we could wish to deduce even more arguments than we are about: first, the reverberatory processes of Nature, as interwoven with the calumniation (what calumniation?) of astronomy present a picture to the pleasing eye varied as the never-ending kaleidoscope (we never saw one) the probability of paralysation, is, we should say, greater than (than what? do you suppose) than the inferiority of other things as combined in the reciprocity of reaction.*" if you can understand this reader you are wiser than we. Next comes, "The Bandy-legged Butterfly, a tale for youth," *we should say for infants less than a month old, witness the following extract*

"My darling little Mousey-pousey, said the butterfly, good bye, lovey: ta ta pet: take care no naughty wolfey-pulfey hurts my little chicksey-picksey."

we suppose you've had about enough now.

The next is, "The child's first question book" by a Lady: we consider the questions as rather foolish, and the answers as particularly so, but of course the author may judge for herself:

"Q. Who was Alexander the Great?"

A. Please, ma'am, I don't know, but I believe he was king of England.

Q. Who was king of France?

A. Louis the XIth.

Q. Who was king of Rome?

A. Servius Tullius.

Q. Who was king of England?

A. Henry the 3^d.

Q. Well then you see it couldn't have been Alexander, now, what other country is there left?

A. China.

Q. Who was emperor of China.

A. don't know, Ma'am.

Q. What'll you do if you're naughty?

A. Hang.

Q. Very well, then what conclusion do you draw from that?

A. Please 'm, that I won't do naughty.

Q. No, I meant that Hang was Emperor of China, so Alexander couldn't have been him; who was he?

A. King of Macedon."

here eight questions are interposed between the question and answer: what the effect on the unhappy child would be, the reader shall judge.

Editor.

16.5 Moans from the Miserable,¹ or The Wretch's Wail

Source: The Rectory Umbrella

Pitiful Sirs,

We, the undersigned victims of unfeeling, heartless barbarity, entreat you of your pitifulness to “lend an ear,” as the poet saith: alack! we would not have you give it, knowing the treatment our own are subject to. Our owners, or guardians, we know not which they be, declare that they love us, but ah! it must be as Isaak Walton loved the frog, for the essence of their love is cruelty. In proof of this love they do daily bear us about by our ears, kind sirs; mine tingle even to think of it, they do put us down, do catch us up again, do whirl us round, and do howl into our ears words of affection and endearment, the very recollection whereof maketh us to shudder:

“Oh ye whose hearts have nerves,
“Oh ye whose eyes have tears,
“It is not your love you are wearing out,
“But living victim's ears!”

So, an *earnest*² Adieu,
from your *heart*-wrung victims,
The Loved and Tortured.

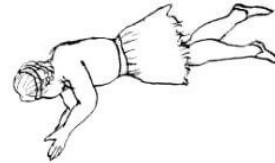
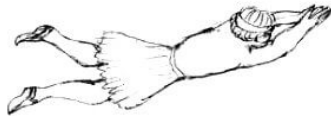
¹the real authors were the Rectory rabbits.

²reader! pray observe the pun.

16.6 Zoological Papers

Source: The Rectory Umbrella

No. 1. Pixies



The origin of this curious race of creatures is not at present known: the best description we can collect of them is this, that they are a species of fairies about two feet high,¹ of small and graceful figure; they are covered with a dark reddish sort of fur; the general expression of their faces is sweetness and good humour; the former quality is probably the reason why foxes are so fond of eating them. From Coleridge we learn the following additional facts; that they have “filmy pinions,” something like dragon flies’ wings, that they “sip the furze-flower’s fragrant dew,” (that, however, could only be for breakfast, as it would dry up before dinner time), and they are wont to “flash their faery feet in gamesome prank,” or, in more common language, “to dance the polka² like winking.”

Quoted from *Elfin music. Songs of the Pixies* by Arthur Edward Waite

From an old English legend³ which, as it is familiar to most of our readers, we need not here repeat, we learn that they have a strong affection for raw turnips, decidedly a more vulgar sort of food than “fragrant dew”; and from their using churns and kettles we conjecture that they are not unacquainted with tea, milk, butter &c. They are tolerably good architects, though their houses must unavoidably have something the appearance of large dog kennels, and they go to market occasionally, though from what source they get the money⁴ for this purpose, has hitherto remained an unexplained mystery. This is all the information we have been able to collect on this interesting subject. In our next paper we propose to discuss the natural history of “the Lory.”

No. 2. The Lory

This creature is, we believe, a species of parrot: Southey informs us that it is a “bird of gorgeous plumery,”⁵ and it is our private opinion that there never existed more than one, whose history as far as practicable we will now lay before our readers.

Quoted from *Mount Meru* by Robert Southey

The time and place of the Lory’s birth is uncertain: the egg from which it was hatched was most probably, to judge from the colour of the bird, one of those magnificent Easter eggs⁶ which our readers have doubtless often seen; the experiment of hatching an Easter egg is at any rate worth trying.

¹so they are described by the inhabitants of Devonshire, who occasionally see them.

²or any other step.

³a tradition, introduced into notice by the Editor.

⁴vide a similar difficulty, page 1932.

⁵plumage, feathers.

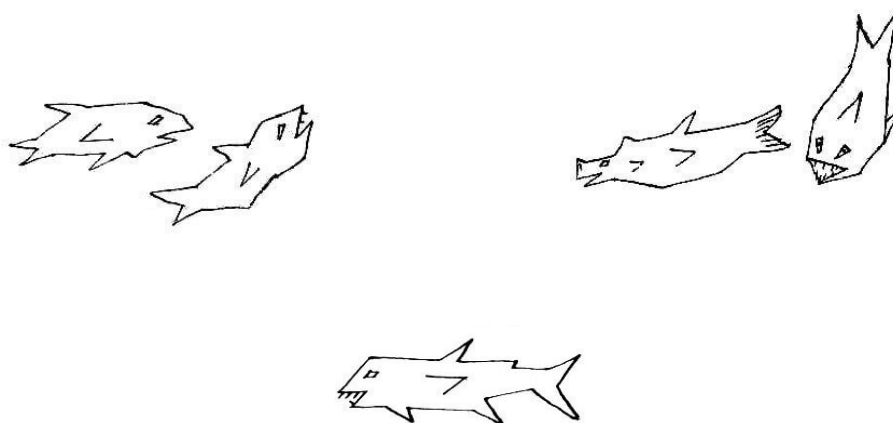
⁶of these a full description may be found in the sixth number of the “Comet.”

That it came into the possession of Cambeo, or Cupid, at a very early age, is evident from its extreme docility, as we find him using it, by all accounts without saddle or bridle,⁷ for a kind of shooting pony in Southey's poem of "the Curse of Kehama." We need not relate its history therein contained, as our readers may see it themselves, so we proceed at once to the conclusion. When Kehama had done for the rest of the gods, and had been thereupon scorched by the combined influence of Seeva's angry eye, and the Amreeta drink, which must have been something like fluid curry powder, it is more than probable that in the universal smash which then occurred, Cambeo's affairs among others were wound up. His goods and chattels were then most likely put up to auction, the Lory included, which we have reason to believe was knocked down to the Glendoveer,⁸ in whose possession it remained for the rest of its life.

Quoted from *The Curse of Kehama* by Robert Southey

After its death we conjecture that the Glendoveer, unwilling to lose sight of its "plumery," had it stuffed, and some years afterwards, at the suggestion of Kailyal, presented it to the Museum at York, where it may now be seen, by the inquiring reader, admittance one shilling. Having thus stated all we know, and a good deal we don't know, on this interesting subject, we must conclude: our next subject will probably be "Fishes."

No. 3. Fishs



The facts we have collected about this strange race of creatures are drawn partly from observation, partly from the works of a German author, whose name has not been given to the world. We believe that they⁹ are only to be found in Germany: our author tells us they have "ordinarely¹⁰ angles¹¹ at them," by which they "can be fanged, and heaved out of the water." The specimens which fell under our observation had *not* angles, as will shortly be seen, and therefore this sketch¹² is founded on mere conjecture.

⁷a bridle would be useless.

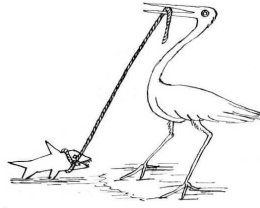
⁸a happy spirit with large blue wings like an Aerial Machine.

⁹i. e. Fishs.

¹⁰as he spells it.

¹¹or corners.

¹²the "angles" however may be supposed to be correct.



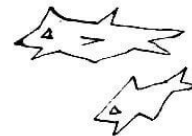
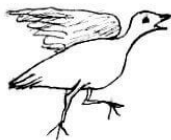
What the “fanging” consists of we cannot exactly say: if it is anything like a dog “fanging” a bone, it is certainly a strange mode of capture, but perhaps the writer refers to otters. The “heaving out of the water” we have likewise attempted to pourtray, though here again fancy is our only guide. The reader probably will aks, “why put a *Crane* into the picture?” our answer is “the only “heaving” we ever saw done was by means of a Crane.”

This part of the subject however will be more properly treated of in the next paper.¹³ Another fact our author gives us is that “they will very readily swim¹⁴ after the pleasing directions of the staff”: this is easier to understand, as the simplest reader at once perceives that the only “staff” answering to this description is a stick of barley sugar.¹⁵

We will now attempt to describe the “fishs” which we examined. Skin hard and metallic; colour brilliant, and of many hues; body hollow; (surprising as this fact may appear, it is *perfectly true*); eyes large and meaningless; fins fixed, and perfectly useless. They are wonderfully light, and have a sort of beak or snout of a metallic substance: as this is solid, and they have no other mouth, their hollowness is thus easily accounted for. The colour is sticky and comes off on the fingers, and they can swim back downwards just as easily as in the usual way. All these facts prove that they must not on any account be confounded with the English “fishes,” which the similarity of names might at first lead us to do. They are a peculiar race of animals,¹⁶ and must be treated as such. Our next subject¹⁷ will be “The One-winged Dove.”



No. 4: The One-Winged Dove



All the information we can collect on this subject is taken from an advertisement in the *Times*, July 2, 1850, the rest is conjecture.

To begin with the advertisement. “The One-winged Dove must Die, unless the Crane returns to be a shield against her enemies.” From this we draw the

Quoted from *Agony* column in the *Times*, July 15, 18, 22, 25, 1850, and more occurrences in other papers

¹³vide page 1930.

¹⁴“float” would be a better word, as their fins are immoveable.

¹⁵there is an objection to this solution, as “fishs” have no mouth.

¹⁶an incorrect expression: “creatures” would be better.

¹⁷vide page 1930

following facts. (1.) It is a dove with one wing. (2.) The Crane is it's friend. (3.) It has enemies who wish it's death. (4.) The Crane alone can resist these enemies. (5.) The Crane has left it. (6.) (from the mere fact of the advertisement being sent to the Times) The Dove can write. (7.) (from the same fact) The Crane can read. (8.) (do.) The Dove has more than 12s in the world. (9.) (do.) The Crane takes in the Times.

So that here is at any rate a reasonable foundation for conjecture. You are not so clever¹⁸ as we are, Reader, so it will not be surprising if you have not yet discovered that facts (1) and (6) are connected together,¹⁹ and explain each other. Have you now? confess! There is another discovery which has probably hitherto escaped your notice, namely, that fact (2) and (3) are similarly connected.²⁰ So now to begin.²¹

The Crane and the Dove are friends.²² This is natural, as they are both birds: it seems hardly necessary to speculate on the origin of this friendship, perhaps their natural talents,²³ namely, reading and writing, first led to it.

The Dove has but one wing,²⁴ that is, it has lost the other. This is *unnatural*, but we hope to account for it soon. It is evidently this misfortune which prevents it's escaping from it's enemies,²⁵ and this gives us the first clue as to the nature of those enemies. Clearly they cannot be birds; two wings would be no protection against *them*: neither can they be beasts,²⁶ against whom the Crane could be no protection²⁷: they are as clearly not English; the Crane is not wild in England:²⁸ insects are too contemptible a foe. There is only one thing left: come, Reader! you shall have the credit of guessing! that's right! "Fishes." Not "fishes," mind! *that* is an English name, but "fishs."

And we are here met by a startling, a thrilling confirmation in the fact that a *Crane* is to be the shield against these enemies. Turn back, Reader, to the paper²⁹ on "Fishes": what is employed to "fang" those "fishs"? to "heave them out of the water," and so to destroy them? is it not a Crane? This conclusion, then, cannot be disputed.

"Fishes," then, are the Dove's enemies. But why? what occasioned this enmity? everything must have a reason. Be patient, Reader. The Dove, we know, is talented³⁰: it therefore probably writes in Punch: "fishs" have "angles": "angle" is a word of two meanings. What so natural, then, as that it should write jokes on "fishs"? This would of course enrage the said "fishs," and enmity would thereby arise. Is not this clear enough? We know also that "fishs" were

¹⁸this is not meant to dispane the mental capacities of readers in general, or of any reader in particular. Who knows but that Faraday himself may read these pages? Yet, considering the transcendent intellects of the Editor, this assertion, in any given case, has every probability of being true.

¹⁹vide page 1932.

²⁰vide page 1932.

²¹not that we have not begun already, but here commences that close, learned, and unanswerable argument which has made this paper so deservedly celebrated.

²²fact (2).

²³or "accomplishments," which, though common among men, are rarely found in other creatures.

²⁴fact (1.)

²⁵fact (3.)

²⁶or quadrupeds

²⁷fact (4.)

²⁸see Buffon: "wild" does not here mean "savage," but "undomesticated."

²⁹page 1929.

³⁰the use of this word is explained on this page above: note (23).

long ere this enemies to the Crane, because of it's habit of "fanging" them, and "heaving them out of the water." The Crane then was, of all birds, the most proper friend for the Dove to appeal to.

"But," say you, "how could "fishs" kill the Dove?" Oh most stupid and ignorant Reader! have not "fishs" got "angles"? are not "angles" sharp and jagged? How easy then with them to kill so tender³¹ a creature as a One-Winged Dove! And now for the grand question, "how did the Dove lose it's wing?" and the mysterious connection between facts (1) and (6). Reader! you shall guess again. The Dove writes in Punch³²: pens are used in writing: pens are procured from feathers³³: feathers from—yes! you're right! "it uses it's own feathers." Perhaps you are not aware that Punch has been in existence nine years, so that if the Dove was a contributor from the first, the loss of one whole wing is thus easily accounted for. You will surely allow that thus far at least, we build our conjectures entirely on fact?

Is it likely that the Crane should have left the Dove³⁴ in it's present defenceless condition? Certainly not.³⁵ We may safely conclude that it left it while still able to defend itself. When was that? Calculate for yourself, Reader. Punch comes out once a week: probably the Dove writes one article in each number,³⁶ that is, uses one pen or feather each week: thirteen feathers would probably³⁷ make a wing large enough to fly with: it has evidently *none* now: thirteen weeks from the date of it's first advertisement brings us to April 7: can't you guess now? Well then, we must tell you. On April 9th a great *Protectionist* Meeting took place in London. Still stupid? Reader! you are wonderfully slow of comprehension! does not the Crane *protect* the Dove? what other motive *could* it have then for going up to London on the 9th but attending that meeting?

And now what conclusion are we to draw from the facts that the Dove has more than 12s,³⁸ and that the Crane takes in the Times³⁹? We may as well just mention that 12s is the usual price⁴⁰ for inserting such an advertisement in a newspaper. Simply this. The Dove is rich⁴¹: therefore it pays the Crane for defending it, and this accounts for the Crane's taking in the Times: where else could it get the money to do so? "But where," you ask, "where does the Dove get *it's* money?" That, gentle Reader, is it's own affair. We know that it *has* money because otherwise it could not advertise.

One question yet remains unanswered; "where does the Dove live?" that is easily disposed of. "Fishs" are only found in Germany. *There* then the Dove lives. As evidently the Crane is in England, else why advertise⁴² for it in an English paper? "But it left Germany thirteen weeks ago!" you say, "cruel Crane!

³¹by this is not meant that it is tenderer than other doves.

³²see preceding page.

³³generally of a goose or swan, but there is no reason why a Dove's should not be used.

³⁴fact (5.)

³⁵if the Dove was tender-bodied, we may safely conclude that the Crane was tender-hearted, and would "heave" a sigh at the misfortunes of others.

³⁶that is every Thursday. The Umbrella comes out every rainy day.

³⁷this cannot be known for certain without making the experiment.

³⁸fact (8.)

³⁹fact (9.)

⁴⁰we believe the charge is five shillings a line: an advertisement lately inserted, which took up a whole page, cost three hundred pounds.

⁴¹this is further seen from the fact that this advertisement was put in three or four days running.

⁴²how the Dove being abroad, could advertise in England, we confess we can not explain.

why does it not return?" Reader, we echo the question, and we tremble as we do so.

The life of a Crane in England is no safe or easy life: even at this moment probably the Crane is either dead or in a cage. This alone can account for its silence. Alas! poor Dove⁴³! what will you do? you state yourself that you "must die." We fear it is only too true.

Quoted from *Hamlet*
by William
Shakespeare

We are aware that one objection can be brought against this argument, namely, that no one remembers seeing any jokes in *Punch* about "Fishes." This however is no real argument, as the statement at best is negative, and besides, how faithless a thing is memory! Will you, oh Reader, be certain you can remember every joke *Punch* has published for nine years?

We have dwelt thus long and earnestly on this subject, as knowing its difficulty and importance: still we hope we have established *some* facts, cleared up *some* doubts, solved *some* difficulties. At all events we have done our best: we cannot name any subject for our next paper, nor are we at all sure there will be another at all, so at any rate for the present, good Reader, farewell!

⁴³Shakespeare's "Alas, poor Yorick!" though inferior to this passage in simplicity, is almost equal to it in poetical pathos. It seems hardly necessary to add that the idea was *originated* by the Editor, who would scorn to copy any author.

16.7 Representative Men¹

Source: The Rectory Umbrella

The first section ends with “(continued page ...)”, the second with “(continued at page ...)” in the original.

Parody on *Representative Men* by Ralph Waldo Emerson

Lecture 1st. “On the Uses of Little Men”

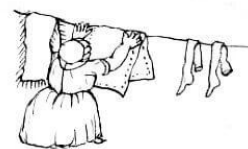


“The world is made of little men.” ’Tis a little saying, but how true! Go where you will, you meet them: they are the majority of the people, the nobility, the army, the orators. Can an army exist without private soldiers? no more than a house without bricks. For every great man, there are 10,000 little men: aye, and there is work for them, which no great man would do. Do not little men build our houses and ships, till our land, and supply our various wants? Ask the great Alexander to make a pudding. Faugh! But the pudding *must* be made. A most important class truly! and all-worthy of a representative. How profoundly little was the saying of the countryman² when the dumplings came to table. “them’s the jockeys for my money!”

The great men round him laughed at it; *we* know it’s value. Look at the Times: “the smallest terrier in England, lowest price £25” Little! little! is still the cry. Draw up the curtain! Enter, little man!

Quoted from *The book of modern English anecdotes, humour, wit, and wisdom* by Tom Hood

Lecture 2nd. “Cuffey, or the Chartist”



Chartism, or democracy, has always had it’s little men. It is intrinsically a little ambition which inspires it’s followers: they would have all men level: natural representative is Cuffey.³ The little Cuffey was born in humble life: so are all little men: it is a remarkable and peculiar trait *of* little men: in body⁴ he

¹after “Emerson’s Representative Men.”

²a well-known anecdote.

³the history of this man may be found in the Times.

⁴he was a tailor and therefore only ninth part of a man, as every one knows.

was little, in mind, less: his wife took in washing: he gloried in making the fact public: could anything be littler? One fact shews the profound littleness of this man: he declared in public, “I gave my wife *leave* to take in washing.” Leave! no doubt his wife boxed his ears for it afterwards: it was a fitting reward for such littleness. His little seditious attempts had little effect: he and his littleness were transported. Ah! little, *little* man!

Lecture 3d. “Jack Sprat, or the Epicure”



We have the highest authority for stating the fact that Jack, or John Sprat⁵ could eat no fat. The conviction bursts upon us with such a blaze of evidence, that room for doubt there is none. Now, even if we grant that he had a “little” appetite, and so was not sufficiently hungry to desire to eat fat—even granting this, I say, and the admission, instead of lessening, would but strengthen my argument for the littleness of the man—still how can anyone pretend to set aside or step over the fact that he permitted his wife to refuse lean? Yes! it is so stated: “his wife would eat no lean”: not a word his said of his pulling a stop to her whims: no, he submitted with true littleness of mind. All epicures are little, and he is but a common specimen of the class.

Quoted from nursery rhyme

⁵a shade of doubt has been cast over the authenticity of this anecdote on account of the rhyme between “Sprat” and “fat” a singular coincidence.

16.8 Difficulties

Source: The Rectory Umbrella

No. 1

Half of the world, or nearly so, is always in the light of the sun: as the world turns round, this hemisphere of light shifts round too, and passes over each part of it in succession.

Supposing on Tuesday, it is morning at London; in another hour it would be Tuesday morning at the west of England; if the whole world were land we might go on tracing¹ Tuesday morning, Tuesday morning all the way round, till in 24 hours we get to London again. But we *know* that at London 24 hours after Tuesday morning it is Wednesday morning. Where then, in its passage round the earth, does the day change its name? where does it lose its identity?

Practically there is no difficulty in it, because a great part of its journey is over water, and what it does out at sea no one can tell: and besides there are so many different languages that it would be hopeless to attempt to trace the name of any one day all round. But is the case inconceivable that the same land and the same language should continue all round the world? I cannot see that it is: in that case either² there would be no distinction at all between each successive day, and so week, month, &c so that we should have to say "the Battle of Waterloo happened to-day, about two million hours ago," or some line would have to be fixed, where the change should take place, so that the inhabitants of one house would wake and say "heigh ho³! Tuesday morning!" and the inhabitants of the next, (over the line,) a few miles to the west would wake a few minutes afterwards and say "heigh ho! Wednesday morning!" What hopeless confusion the people who happened to live *on* the line would always be in, it is not for me to say. There would be a quarrel every morning as to what the name of the day should be. I can imagine no third case, unless everybody was allowed to choose for themselves, which state of things would be rather worse than either of the other two.

I am aware that this idea has been started before, namely, by the unknown author of that beautiful poem beginning "If all the world were apple pie &c."⁴ The particular result here discussed however does not appear to have occurred to him, as he confines himself to the difficulties in obtaining drink which would certainly ensue.

Any good solution of the above difficulty will be thankfully received and inserted.

¹the best way is to imagine yourself walking round with the sun and asking the inhabitants as you go "what morning is this?" if you suppose them living all the way round, and all speaking one language, the difficulty is obvious.

²this is clearly an impossible case, and is only put as an hypothesis.

³the usual exclamation at waking: generally said with a yawn.

⁴

"If all the world were apple pie,
"And all the sea were ink,
"And all the trees were bread and cheese,
"What *should* we have to drink?"

Other versions:

→ 9.10, p. 1450

→ 16.11, p. 1945

Quoted from nursery rhyme

No. 2

Which is the best, a clock that is right only once a year, or a clock that is right twice every day? “The latter,” you reply, “unquestionably.” Very good, reader, now attend.

I have two clocks: one doesn’t go *at all*, and the other loses a minute a day: which would you prefer? “The losing one,” you answer, “without a doubt.” Now observe: the one which loses a minute a day has to lose twelve hours, or seven hundred and twenty minutes before it is right again, consequently it is only right once in two years, whereas the other is evidently right as often as the time it points to comes round, which happens twice a day. So you’ve contradicted yourself *once*: “ah, but,” you say, “what’s the use of it’s being right twice a day, if I can’t tell when the time comes?” Why, suppose the clock points to eight o’clock, don’t you see that the clock is right *at* eight o’clock? Consequently, when eight o’clock comes round your clock is right. “Yes, I see *that*,” you reply.⁵ Very good, then you’ve contradicted yourself *twice*: now get out of the difficulty as you can, and don’t contradict yourself again if you can help it.

⁵you *might* go on to ask, “How am I to know when eight o’clock *does* come? my clock will not tell me.” Be patient, reader: you know that when eight o’clock comes your clock is right: very good: then your rule is this: keep your eye fixed on your clock, and the very moment it is right it will be eight o’clock. “But—” you say. There, that’ll do, reader; the more you argue, the farther you get from the point, so it will be as well to stop.

16.9 Hints for Etiquette; or Dining out Made Easy

Source: The Comic Times, October 13, 1855; Mischmasch (as newspaper cutting)
Parody on *Hints on Etiquette and the Usages of Society* by Ἀγώγος (Charles William Day)



As caterers for the public taste, we can conscientiously recommend this book to all diners-out who are perfectly unacquainted with the usages of society. However we may regret that our author has confined himself to warning rather than advice, we are bound in justice to say that nothing here stated will be found to contradict the habits of the best circles. The following examples exhibit a depth of penetration and a fulness of experience rarely met with.

V.

In proceeding to the dining-room, the gentleman gives one arm to the lady he escorts—it is unusual to offer both.

VIII.

The practice of taking soup with the next gentleman but one is now wisely discontinued; but the custom of asking your host his opinion of the weather immediately on the removal of the first course still prevails.

IX.

To use a fork with your soup, intimating at the same time to your hostess that you are reserving the spoon for the beefsteaks, is a practice wholly exploded.

XI.

On meat being placed before you, there is no possible objection to your eating it, if so disposed; still in all such delicate cases, be guided entirely by the conduct of those around you.

XII.

It is always allowable to ask for artichoke jelly with your boild venison; however there are houses where this is not supplied.

XIII.

The method of helping roast turkey with two carving-forks is practicable, but deficient in grace.

XVII.

We do not recommend the practice of eating cheese with a knife and fork in one hand and a spoon and wine-glass in the other; there is a kind of awkwardness in the action which no account of practice can entirely dispel.

XXVI.

As a general rule, do not kick the shins of the opposite gentleman under the table, if personally unacquainted with him: your pleasantry is liable to be misunderstood—a circumstance at all times unpleasant.

XXVII.

Proposing the health of the boy in buttons immediately on the removal of the cloth, is a custom springing from regard to his tender years, rather than from a strict adherence to the rules of etiquette.

16.10 Life of Richard Hakluyt

Source: manuscript for Gaudy oration given on May 31, 1856

Foremost in the ranks of those who have aided the progress of science and civilisation by their writings, and have earned for themselves an imperishable name in the records of History, stand original writers, inventors, and projectors: second to these, and second only so far as their genius is less brilliant, and their names less widely known, are those who have recorded the advance of those before them, who have mapped out the landmarks of the fields of Science already in possession, and from which future investigators are to begin their labours.

It is among this latter class that the name of Richard Hakluyt, sometime Student of Ch. Ch. deserves an honorable mention: the few facts which history has recorded of him all bear testimony to the care and unremitting diligence with which he cultivated Science, and to the success with which his labours were crowned.

He was born, as the learned Anthony Wood informs us, of an ancient and honourable family at Yetton or Yatton in Herefordshire: the date of his birth does not appear to have been accurately ascertained, but it was very nearly in the middle of the 16th century. He received his education in Westminster School, and it was during his residence there that his thoughts were first accidentally directed to those subjects which were destined to engross his attention and labour during the greater portion of his life. He paid frequent visits to the house of a relative, a man of great learning and influence, who is related to have given up his whole life to the encouragement of navigation, commerce, arts and manufactures. The constant sight of the maps and books with which his house was filled, aided probably by the pleasing associations with which the young schoolboy would naturally look back upon these visits, awoke in his mind a love for Science, and inspired him with the resolution to devote his life to these studies.

How effectually he adhered to this resolution we find abundantly proved in the history of his Collegiate Life: he was elected as a student from Westminster to Ch. Ch. in the year 1570, and while here he prosecuted with such success the studies he had begun at Westminster, that we find him soon after taking his degree made Professor of Naval History, in which capacity he delivered public lectures on cosmography and its kindred sciences. We cannot doubt but that there was seen in him some peculiar fitness for this office, a fitness which had led him as a mere boy to devote himself to studies which are usually found so laborious and uninteresting, and obtained for him as a young man a distinction all the more honorable, as he appears to have been at once the first lecturer in this subject, and the cause of the lecture itself being instituted.

A great friend and patron of his, Sir Francis Drake, who about this time made his celebrated voyage round the world, was encouraged by the success of these lectures on naval history, to offer funds for the institution of a lecture on navigation. This was intended to be a continuation of the lecture begun on Hakluyt, and he was requested by Sir Francis to look out a fit person to succeed himself: Hakluyt succeeded in the search, but the nearest approach that was ever made to an arrangement in this matter, was that Sir Francis offered £20 per annum for the lecturer, and that Hakluyt's friend demanded £40, alleging

that less would not support him: and as neither party would alter his terms to accommodate the other, the proposition came to nothing.

Hakluyt however persevered for some years in the lecture to which he had been appointed, and in so rude a state did he find that science at the outset of his course, that to him is ascribed the introduction into England of the use of the globe and other instruments of geography. Besides this, he kept up an active correspondence with all the noted seamen of the day, among whom we may find the name of Gerard Mercator. About at this time, he entered for a short time on the study of law, in the Middle Temple, but whether from the little success he had in that study, or that with a mind so preoccupied as his he found it uncongenial to his tastes, he appears to have soon deserted it for his favourite pursuits. We are informed that he entered into holy orders, probably soon afterwards, but in connection with this we have no further information than the names of the different livings and other ecclesiastical preferments which he held.

His fame as one learned in nautical matters had now reached a more than Oxford celebrity, and we find him frequently consulted by various companies as well as private individuals on the subject of voyages to be undertaken. Through all this he appears to have kept one object steadily before him, the accumulation of all the documents he could find relating to former voyages, and these afterwards constituted the large and valuable collection of voyages which bears his name, and on which his claim to celebrity as a writer chiefly rests.

His was a curious instance of the exclusive direction of the mind to one especial branch of a subject: we do not find that the interest he took in voyages of discovery ever led him to join one in person; nor that his aptitude for collecting and compiling documentary evidence was ever applied to any other branch of history: but for the one of these two great features in his character, he might have been a sailor; but for the other, he might have been an historian. The union of the two made him that character, as which alone he is presented to our view in history, the recorder of naval enterprise.

As secretary to Sir Edward Stafford, who went as ambassador to Paris in the year 1584, Hakluyt found an opportunity for extending the researches he had so long carried on in England. Here it was that he came upon a manuscript, by a captain Laudonnière, relating to the discovery of Florida, and generously furnished the funds necessary for its publication: as this was done under the editorship of Martin Basanier, it does not appear that Hakluyt had any thoughts of acquiring celebrity for himself in doing this: indeed throughout the whole of his literary career, his devotion to Science appears to have been most sincere and disinterested.

On his return to England he gave to the world the first result of his laborious research in the form of a *Collection of Voyages*, in one folio volume, which he dedicated to another patron, Sir Francis Walsingham. This appeared in 1589, but he continued to enlarge this collection during the remainder of his life, until it had reached the bulk of three folio volumes. In the course of this work he records the voyage which his earliest patron, Sir Francis Drake, made round the world. Another voyage, in the relation of which he must have taken an almost personal interest, was that made by Thomas Randolphe, who was also a student at Ch. Ch. and who was sent as an ambassador to the Emperor of Russia in the year 1568. This account is worth noticing, as it furnishes us with a curious picture of the manners and customs of the Russian court of that day.

At the conclusion of his interview with the Emperor, as the ambassador himself relates, he "said unto me: 'I dine not this day openly for great affaires I have, but I will send thee my dinner, and give leave to thee and thine to go at liberty, and augment our allowance to thee, in token of our love and favour to our sister the Queene of England.' I with reverence took my leave, being conveyed by two other of greater calling than those that brought me to the Emperor's sight, who delivered me to the two first gentlemen, who conducted me to the office where I first was, where came unto me one called the Long duke, with whom I conferred a while, and so returned to my lodging. Within one houre after comes to my lodging a duke richly appavelled, accompanied with fiftie persons, ech of them caryng a silver dish with meat, and covered with silver. The duke first delivered twenty loaves of bread of the Emperor's own eating, having tasted the same, and delivered every dish into my hands, and tasted of every kind of drinke that he brought. This being done, the duke and his company sate downe with me, and tooke part of the Emperor's meat, and filled themselves well of all sorts, and went not away from me unrewarded."

The duke here mentioned appears to have filled a situation to which in England we should have given a very different name, but there can be little doubt that this strange and inconvenient honour was intended as a real mark of the Emperor's regard, for we find that this visit was very shortly followed by a grant, made by the Emperor at the ambassador's request, of a great number of privileges for the accomodation of English merchants trading in Russia.

Throughout the whole of this work the style is uniformly simple and unpretending, aiming at no brilliance of writing, but merely at relating in as truthful a manner as possible, the bare facts of the history on which he was engaged. And he does this with all the minuteness of detail, and all the apparent credulity of Herodotus himself.

In another account of a Russian voyage, made by D^r. Giles Fletcher, who went out as ambassador in the year 1588, we find accounts of popular legends and superstitions, which might almost have been taken from the pages of the father of History: "They say that to the men of Lucomoria chaunceth a marveilous thing and incredible: For they affirme, that they die yearly at the XXVII. day of November, being the feast of S. George among the Muscovites: and that at the next spring, about the XXIII. day of April, they revive againe as doe Frogges. With these also the people of Grustintzi and Serponowtzi exercise a new and strange kinde of trade: For when the accustomed time of their dying, or rather of sleeping, approcheth, they leave their wares in certaine places appointed, which the Grustintzi and Serponowtzi carry away, leaving other wares of equal value in their places: which if the dead men at the time of their reviving perceive to be of unequal price, they require their owne againe: by reason whereof, much strife and fighting is betweene them."

He remained with Sir Edward Stafford in Paris for 5 years, during which time he published, or rather re-edited, two works. One of these, by Peter Martyr, bears the title of "De novo orbe," and he afterwards published an English version of it, under the name of "The history of the West Indies." The other was originally written in Portuguese, by Antonio Galvano, governor of Ternate, the chief island of the Moluccas. Hakluyt gave to his translation of this work the name of "The discoveries of the World from the first, original, unto the year of our Lord 1555."

The next of his works is also taken from the Portuguese, and is entitled "Virginia richly valued by the description of the main land of Florida her next neighbour." The author of this work was Ferdinand de Soto.

In the year 1598, just before the publication of this book, he brought out the 3 folio volumes, into which his Collection of Voyages had now grown, and this is in fact the only work which we can, with any idea of the originality of writing, ascribe to his pen. In the year 1605 the government recompensed him, as we are informed, by presenting him to the Rectory of Wetheringset in Suffolk, as well as to a prebendaryship at Bristol: he had been for some years before this a prebendary of Westminster. Whether this recompense had reference to the services he had done to Science or to the Church, we are not informed: indeed there is scarcely any fact preserved in the history of his life, which does not bear, directly or indirectly, upon his literary career.

He did not live long enough to enlarge still further his great work, although he has left sufficient materials to constitute a fourth volume; these, while still in manuscript, fell into the hands of Samuel Purchass, a very similar literary character, and were by him embodied in one or other of his collections of travels and voyages; probably in that which bears the name of "Purchass his Pilgrims."

Richard Hakluyt died in the year 1616, and was buried in Westminster Abbey: a more enduring monument to his fame is to be found on the coast of Greenland, one of whose promontories was named by the navigator Hudson "Hakluyt's Headland."

He had married in the year 1594, and he left behind him one son, named Edmund, to whom he bequeathed his country estate, as well as some property which he held in Westminster. The name of one other of his relations is handed down to us, Oliver Hakluyt, his brother, who was also a student at Ch. Ch. and who, we are told "having graduated in Physic, had an happy hand in the practice of it."

In the works which bear his name, little claim can be found to any originality of authorship: he appears to have been far more zealous to advance the science which he cultivated than to raise his own reputation as a writer. Three of the 5 works which he has left to the world are merely English versions of foreign works, in which accuracy of translation is the only point for which he was personally responsible: what Coleridge said of his system of philosophy, he would doubtless have felt with regards to these records of British Naval Enterprise, namely that he would have been "also lately glad, if he could hear that the thing had already been done before him."

The genius of an original writer, like the enterprising zeal of a first discoverer, or the resistless energy of a conqueror, is apt to dazzle the eyes of those that look on: and they too easily overlook the heavier toil and almost equal abilities which belong to those that come after, and whose part it is to collect and shape the stray efforts of genius, to record for time to come the results of discovery, to secure and perpetuate the gains of conquest.

In the rush and glare of a conqueror's triumphal procession as it sweeps by, the eye is naturally drawn to the one royal figure who forms the nucleus of all that splendour, the ear naturally dwells upon the swelling music which heralds his approach: and we scarcely hear the measured tread of the soldiery, who fill up the intervals in the line, and we hardly notice the dense dark masses against whom the gaudy banners show in such bold relief, and many and many a one, general, and counsellor, and minister of state, goes by unheeded in that

glittering stream, and yet they may have wrought as well and as fully in their work as the great chief himself, whose fortune has been higher than theirs; and but for their labours, unrequited and forgotten, even that mighty genius might have spent himself in vain.

The following set of complimentary verses, addressed to Hakluyt on the subject of his great work "The Collection of Voyages," may not inappropriately conclude this notice of his life.

In Navales Richardi Hakluyti Commentarios

Anglia magnarum facunda puerpera cerum,
Sive solum spectes nobile sive salum.
Quæ quantum sumptis se nobilarerit armis,
Sive domi gessit prælia, sive foris;
Multorum celebrant matura volumina: tanta
Insula materiem parvula landis alit.
At se in quot qualesque et quando effuderit oras,
Quâ fudit ignotum pervia classis iter,
Solius *Hakluyti* decus est, prædivite pennâ
Ostendisse suis civibus ausa mari.
Quæcunque idcirco celeri gens Anglica navi,
Oceani tristes spernere docta minas,
A primâ generisque et gentis origine gessit,
Quæ via per fluctus ulla patere potest,
Sive decus laudemque secuta, ut et hostibus ala
Demeret, atque suis læta pararet opes:
Hoc opus *Hakluyti*; cui debet patria multum,
Cui multum, patriæ quisquis amicus erit.
Quâ re namque magis se nostra Britannia jactat,
Quàm quod sit præter cætera classe potens?
Quam prius obsessam tenebris sic liberat, ut nunc
Quisque sciat, quàm sit nobile classis opus.
Quâ si Dædalicè utemur, surgemus in altum,
Sin autem Icaricè, quod voret, aquor habet.

16.11 Where Does the Day Begin?

Source: The Illustrated London News, April 18, 1857

Observing that this question is now under discussion in your columns (a question which occurred to myself years ago, and for which I have never been able to meet with a satisfactory solution), I am anxious that your correspondents should be aware what the real difficulty of the question is. According to the statement of "T. J. Buckton, Lichfield," the day is always commencing at some point or other on the globe; so that if one could travel round it in twenty-four hours, arriving everywhere exactly at midnight by the time of the place, we should find each place in a state of transition of name. But if for midnight we substitute mid-day we are at once involved in a difficulty. The case may be briefly stated thus:—Suppose yourself to start from London at mid-day on Tuesday, and to travel with the sun, thus reaching London again at mid-day on Wednesday. If at the end of every hour you ask the English residents in the place you have reached the name of the day, you must at last reach some place where the answer changes to Wednesday. But at that moment it is still Tuesday (one p.m.), at the place you left an hour before. Thus you find two places within an hour in time of each other, using different names for the same day, and that not at midnight when it would be natural to do so, but when one place is at mid-day, and the other at one p.m. Whether two such places exist, and whether, if they do exist, any communication can take place between them without utter confusion being the result, I shall not pretend to say: but I shall be glad to see any rational solution suggested for the difficulty as I have put it.—

A Mathematical Tutor, Oxford.

Other versions:

→ 9.10, p. 1450

→ 16.8, p. 1936

16.12 Photographic Exhibition

Source: Illustrated Times, January 28, 1860; Mischmasch (as newspaper cutting)
In *Mischmasch* the newspaper cutting is preceded by the headline "Review" and
"From the *Illustrated Times*, Jan. 28/60. N.B.—The concluding sentence is *not* by
the Editor of this Magazine."

There is very little novelty to call for notice this year, either in subject, or mode of treatment, or chemical process. In the last respect—with some few exceptions, as Janpenot's and Fothergill's process, collodio-albumen, &c.—the old collodion process constitutes the staple of the exhibition.

The merits and demerits of photographs are, generally speaking, so entirely chemical as to leave little subject for art-criticism. In the quality of chemicals employed the photographer has generally no further concern than in the choice of a chemist; and in such subjects as copies of painting, &c., there is really nothing by which the skill, or want of skill, of the artist himself can be tested. All is done for him. The chief merit of which photographs are capable as chemical productions is sensitiveness of collodion, or other vehicle, and capability of reproducing minute details. This is best tested by foliage and old stonework—foliage especially, as the green presents an obstacle to the photographer which has never been perfectly overcome. The best examples of successful treatment of this may be found in Messrs. Cundall and Downes'—No. 31, Mr. L. Smith's 23 and 47, Lieut. Holder's No. 66 (though suffering a little from a want of light), and Mr. Robinson's Nos. 73 and 61; the latter is, perhaps, the best specimen of this year. In stonework we would call especial notice to Messrs. Bisson's beautiful pictures—(Nos. 30, 34, 35, 36)—nothing can exceed the perfection of detail exhibited by the roof in No. 30; and 35 contains a most successful moonlight effect, though no doubt taken in sunlight. Then there are those of Messrs. Cundall and Downes (No. 40); Mr. Barnes (No. 17), where the crumbling stonework of the old college fronts is most truthfully rendered; Mr. Grice (21), all Mr. Piper's; while, perhaps, the best specimen of detail in architecture and foliage combined is to be found in Mr. Bedford No. 432. As similar subjects we may call attention to Mr. White's 155 and Mr. Fenton's 121 and 145; in the latter he has most successfully contended with the additional difficulty of winter light. However, this merit of sensitiveness of collodion may be carried to an extreme, so as to fail in giving the necessary contrast of light and shade, and so to produce a general flat effect. An instance of this may be seen in Mr. Fenton's 130.

The artist himself is mainly responsible in views for choice of point of view and time of day, and (occasionally) the arrangement of foreground accessories; in such subjects as copies of pictures, &c., for focussing alone; and in portraits, for choice of light, altitude, and grouping.

As instances of taste in choice of view Lord Alfred Churchill's 234 and Mr. Bedford's 238 are well worthy of notice; the former is a thoroughly poetical picture. In the upper picture of 238 the tree in the foreground is perfectly placed, and in the lower remarkable taste has been shown in getting the mass of white formed by the cottage and the cascade just far enough out of the centre to avoid stiffness of composition, and yet not so far as to overbalance the picture by an excess of light on one side; two other good specimens of this may be found in Messrs. Cundall and Downes' 281, and Mr. Mudd's 315.

Instances of good choice of light may be found in Messrs. Maull and Polyblank (No. 5), Mr. Grice (21), Mr. Mudd (37), and Mr. Fenton (150); the last, an interior, is an especially difficult subject.

For good focusing Mr. White's No. 155 may be taken as an instance. This picture is excellent in every way, the collodion having been perfectly sensitive, and a very still day chosen for taking the picture, thus avoiding the too common fault of woolly foliage. The facsimiles of music by Mr. Ripplingham (Nos. 558, 561, and 562), and the copy of a map which faces the spectator on entering, are also first-rate.

In taking portraits a well-arranged light is of paramount importance. We have already noticed a remarkable instance of this in No. 5, and another may be found in Mr. Hering's 237, and Messrs. Watkins' 2 and 26. This point is of especial importance, as without it all softness of feature is hopeless.

The grouping of Messrs. Hennah and Kent's 312, and Mr. Robinson's 98 and 493, is especially good. In all the important result of unity of picture has been obtained by giving to the different figures one object of attention; thus, the cricketing group in 312 may be supposed to be watching a match going on behind the spectator, and in 98 some object to the right has evidently diverted for a moment the attention which would naturally be directed to the spectator himself.

In single portraits the chief difficulty to be overcome is the natural placing of the hands; within the narrow limits allowed by the focussing power of the lens there are not many attitudes into which they naturally fall, while, if the artist attempts the arrangement himself, he generally produces the effect of the proverbial bashful young man in society who finds for the first time that his hands are an incumbrance, and cannot remember what he is in the habit of doing with them in private life. Mr. Hering's portraits generally are specimens of what may be done overcoming this difficulty. His portraits of children in No. 327 are nearly all excellent, while the two end ones, and the third from the left in the upper row, are as nearly perfection in this line of art as the present state of photography admits of; the last-mentioned picture (with the trifling drawback of an awkward pose of the right hand) is not surpassed by any in the room. Among pictures of this sort Messrs. Lock and Whitfield also deserve notice, especially the child in profile No. 231, and the same exquisitely coloured in 331. The colouring itself does not of course constitute a branch of photography. Beautiful instances of this may be found in Nos. 331, 342, 343, 357, and 366. All Mr. Herbert Watkins's portraits are artistic and lifelike.

We turn now to a less pleasing portion of our task—the fault of photographs. These, like their merits, chiefly consist in choice of view, lighting, focussing, grouping, &c., and in all these respects instances may be pointed out which may act as beacons to the young adventurer in the art.

A common fault in choice of view is getting the principal object exactly into the centre, or, at all events, so near to it that the calculating faculty is at once aroused instead of the imaginative, and the spectator longs for a foot rule to ascertain whether the picture is exactly bisected or not. Instances of this may be seen in 197 and 295, the latter having the additional fault of facing the spectator full instead of a little obliquely, which is the more pity as Magdalen Tower presents so many much better aspects from other directions. In No. 120 a very curious effect is produced by the absence of all the usual standards of measurement, for want of which the spectator can scarcely avoid taking the

edging to the flower-borders for the height of ordinary railings, and so raising the windows above into gigantic proportions.

Bad lighting is another very common fault; this may be studied in Nos. 67 and 135, the latter giving one the idea of the fish having been left out till so late at night that the forgetful sportsman is forced to bring a lantern to look for them.

But it is grouping that the chief difference lies between the artist and the mere chemical manipulator, and melancholy instances of what may be done in this way are only too easy to point out. Mr. Robinson's groups are usually exquisite, and some of his have already been noticed as such; but in No. 68 not only has the head of the principal figure been thrown out of focus for the sake of other parts of the picture, but the infant has been so placed that its feet are terribly magnified, giving it the effect of a hideous dwarf. The same remark applies to 459, where this group is repeated, though the effect is rather less apparent from the diminution of the picture. Mr. Robinson has also inflicted a pair of very large feet on the central figure in 98, a picture otherwise admirable. In No. 183 he has thrown all three figures into strained and unlikely attitudes while the eyes of the right-hand girl would most certainly be fixed on the spectator, who is necessarily close upon the group. In No. 142 there is a unity of attention given to the group, but it is centred on nothing; the eye involuntarily wanders over the pile of logs in search of the figure of the stump orator or field preacher who *ought* to be there, but whose motions appear to have been too continuous and energetic for photography to catch him. In 501 the figures, though practised actors, are greatly wanting in life and meaning; but perhaps the crowning instance of what may be achieved by a resolutely stiff and conventional arrangement may be found in No. 537. A resigned gloom has settled over nearly all the unfortunate victims; and if the second picture from the right in the top row were only labelled "Entrance to a Panoramic Exhibition, all the seats full, and no view to be had from the door," it would be indeed excellent.

One other fault, but much less common than any of the preceding, remains to be noticed—the attempting of manifest impossibilities. Some instances of this may be found in Mr. Piper's beautiful pictures, where, by taking a point of view too near for the powers of the lens, a disagreeable pyramidal effect is given to the buildings—see Nos. 44, 51, and 196. This effect may be especially noticed in 244, where the buildings actually appear to be falling. In 198 and 305 effects are attempted which cannot possibly be all in focus at once, and a woolliness of effect is inevitable.

Mr. Paul Pretsch's nature engraving is interesting, though the result is so uniformly dark as to be hardly satisfactory.

I have omitted to mention some fine views of Niagara Falls exhibited by the London Stereoscopic Company. Through an oversight, probably, they are not numbered in the catalogue, but they nevertheless are well worthy the attention of the visitor. I would especially mention "The General View of Niagara," embracing the Horseshoe Fall, Goat Island, and the American Fall.

The Lounger.

16.13 Feeding the Mind

Source: Oxford Magazine and Church Advocate, December 1861 (based on a lecture given on April 9, 1861); posthumous publication based on a variant of the lecture given in October 1884 with minor differences as noted

Breakfast, dinner, tea; in extreme cases, breakfast, luncheon, dinner, tea, supper, and a glass of something hot at bed-time. What care we take about feeding the lucky body! Which of us does as much for his mind? And what causes the difference? Is the body so much the more important of the two?

By no means: but *life* depends on the body being fed, whereas we can continue to exist as animals, (scarcely as men,) though the mind be utterly starved and neglected. Therefore nature provides that, in case of serious neglect of the body, such terrible consequences of discomfort and pain shall ensue, as will soon bring us back to a sense of our duty: and some of the functions necessary to life she does for us altogether, leaving us no choice in the matter. It would fare but ill with many of us, if we were left to superintend our own digestion and circulation. "Bless me!" one would cry, "I forgot to wind up my heart this morning! To think that it has been standing still for the last three hours!" "I can't walk with you this afternoon," a friend would say, "as I have no less than eleven dinners to digest. I had to let them stand over from last week, being so busy—and my doctor says he will not answer for the consequences if I wait any longer!"

Well is it¹, I say, for us, that the consequences of neglecting the body can be clearly seen and felt: and it might be well for some, if the mind were equally visible and tangible—if we could take it, say, to the doctor, and have its pulse felt. "Why, what have you been doing with this mind lately? How have you fed it? It looks pale, and the pulse is *very* slow." "Well, doctor, it has not had much regular food lately: I gave it a lot of sugar-plums yesterday." "Sugar-plums? What kind?" "Well, they were a parcel of conundrums, Sir." "Ah, I thought so. Now, just mind this: if you go on playing tricks like that, you'll spoil all its teeth, and get laid up with mental indigestion. You must have nothing but the plainest reading for the next few days. Take care, now! No novels on any account?"

Considering the amount of painful experience many of us have had in feeding and dosing the body, it would, I think, be quite worth our while to try and translate some of the rules into corresponding ones for the mind.

First, then, we should set ourselves to provide for our mind its *proper kind* of food: we very soon learn what will, and what will not, agree with the body, and find little difficulty in refusing a piece of the tempting pudding or pie which is associated in our memory with that terrible attack of indigestion, and whose very name irresistibly recalls rhubarb and magnesia; but it takes a great many lessons to convince us how indigestible some of our favourite lines of reading are, and again and again we make a meal of the unwholesome novel, sure to be followed by its usual train of low spirits, unwillingness to work, weariness of existence,—in fact, by mental night-mare.

Then we should be careful to provide this wholesome food in *proper amount*. Mental gluttony, or *over-reading*, is a dangerous propensity, tending to weakness

¹it is

of digestive power, and in some cases to loss of appetite; we know that bread is a good and wholesome food, but who would like to try the experiment of eating two or three loaves at a sitting? I have heard of a physician telling his patient—whose complaint was merely gluttony and want of exercise—that “the earliest symptom of hyper-nutrition is a deposition of adipose tissue,” and no doubt the fine long words greatly consoled the poor man under his increasing load of fat. I wonder if there is such a thing in nature as a *fat mind*? I really think I have met with one or two: minds which could not keep up with the slowest trot in conversation, could not jump over a logical fence to save their lives, always got stuck fast in a narrow argument, and, in short, were fit for nothing but to waddle helplessly through the world.

Then, again, though the food be wholesome, and in proper amount, we know that we must not consume *too many kinds at once*. Take the thirsty haymaker² a quart of beer, or a quart of cider, or even a quart of cold tea, and he will probably thank you (though not so heartily in the last case): but what think you his feelings would be if you offered him a tray, containing a little mug of beer, a little mug of cider, another of cold tea, one of hot tea, one of coffee, one of cocoa, and corresponding vessels of milk, water, brandy-and-water, and buttermilk? The sum total might be a quart, but would it be the same thing to the haymaker?

Having settled the proper kind, amount, and variety of our mental food, it remains that we should be careful to allow *proper intervals* between meal and meal, and not swallow the food hastily without mastication; so that it may be thoroughly digested; both which rules, *bodily*³, are also applicable at once to the mind. First as to the intervals—these are as really necessary as they are for the body, with this difference only, that, while the body requires three or four hours’ rest before it is ready for another meal, the mind will in many cases do with three or four minutes: I believe that the interval required is *much shorter* than is generally supposed, and from personal experience I would recommend *the reader*⁴, who has to devote several hours together to one subject of thought, to try the effect of such a break, say once an hour—leaving off for five minutes only each time, but taking care to throw the mind absolutely “out of gear” for those five minutes, and to turn it entirely to other subjects. It is astonishing what an amount of impetus and elasticity the mind recovers during those short periods of rest. And then as to the mastication of the food; the mental process answering to this is simply *thinking over* what we read: this is a very much greater exertion of mind than the mere passive taking in the contents of our author—so much greater an exertion is it, that, as Coleridge says, the mind often “angrily refuses” to put itself to such trouble—so much greater, that we are far too apt to neglect it altogether, and go on pouring in fresh food on the top of the undigested masses already lying there, till the unfortunate mind is fairly swamped under the flood. But the greater the exertion, the more valuable, we may be sure, is the effect: one hour of steady thinking over a subject, (a solitary walk is as good an opportunity for the process as any other,) is worth two or three of reading only.

And just consider another effect of this thorough digestion of the books we read; I mean the arranging and “ticketing,” so to speak, of the subjects in our

²missing in later version

³for the body

⁴anyone

minds, so that we can readily refer to them when we want them. Sam Slick tells us that he has learnt several languages in his life, “but somehow couldn’t keep the parcels sorted in his mind;” and many a mind, that hurries through book after book, without waiting to digest or arrange anything, gets into that sort of condition, and the unfortunate owner finds himself far from fit really to support the character all his friends give him—“A thoroughly well-read man: just you try him in any subject, now. You can’t puzzle him!” You turn to the thoroughly well-read man, you ask him a question, say in English History; (he is understood to have just finished reading Macaulay): he smiles good-naturedly, tries to look as if he knew all about it, and proceeds to dive into his mind for the answer. Up comes a handful of very promising facts, but, on examination, they turn out to belong to the wrong century, and are pitched in again; a second haul brings up a fact much more like the real thing, but unfortunately along with it comes a tangle of other things, a fact in political economy, a rule in arithmetic, the ages of his brother’s children, the market-days in Oxfordshire,⁵ and a stanza of Gray’s Elogy, and among all these the fact he wants has got hopelessly twisted up and entangled: meanwhile, every one is waiting for his reply, and, as the silence is getting more and more awkward, our well-read friend has to stammer out some half-answer at last, not nearly so clear or so satisfactory as an ordinary schoolboy would have given. And all this for want of making up his knowledge into proper bundles, and ticketing them!

Do you know the unfortunate victim of ill-judged mental feeding when you see him? Can you doubt him? Look at him, dreadingly wandering round a reading-room, tasting dish after dish—we beg his pardon, book after book—and⁶ keeping to none: first a mouthful of novel, but no, faugh! he has had nothing but that to eat for the last week, and is quite tired of the taste: then a slice of science, but you know at once what the result of *that* will be—ah, of course, much too tough for *his* teeth! And so on through the old weary round, which he tried⁷ (and failed in) yesterday, and will probably try (and fail in) to-morrow.

Mr. Holmes⁸, in his very amusing book, “The Professor at the Breakfast-table,” gives the following rule, (I quote from memory,) for finding a person’s age: “to ascertain the age of a given human animal, place within its reach, about an hour before dinner time, a large bun; if accepted, and greedily devoured, the individual is certainly young; if politely declined, the individual has, as certainly, reached maturity.”⁹

To ascertain the healthiness of the mental appetite of a human animal, place in its hands a short, well-written, but not exciting treatise on some popular subject:¹⁰ if read with eager interest and perfect abstraction¹¹, and if the reader can answer questions on the subject afterwards, the mind is in first-rate working order; if it be politely laid down again, or perhaps lounged over for a few minutes, and then, “I can’t read this stupid book! Would you hand me the

⁵missing in later version

⁶missing in later version

⁷accidentally printed as “tred” in the *Oxford Magazine and Church Advocate*

⁸Mr. Oliver Wendell Holmes

⁹rule for knowing whether a human being is young or old: ‘The crucial experiment is this—offer a bulky bun to the suspected individual just ten minutes before dinner. If this is easily accepted and devoured, the fact of youth is established.’ He tells us that a human being, ‘if young, will eat anything at any hour of the day or night.’

¹⁰subject—a mental *bun*, in fact.

¹¹attention

second volume of the “Mysterious Murder?” you may be equally sure that there is something wrong in the digestive organs¹².

I wonder into what class of mental food, my reader, you will put this paper? It is rather difficult to find anything exactly analogous to it in the case of the body—something like dining on a cookery-book, I am afraid you will say. It matters little, however, what you think of the paper itself.¹³ If it¹⁴ has given¹⁵ any useful hints on the important subject of reading, and made you see that it is one’s duty, no less than one’s interest, to “read, mark, learn, and inwardly digest,” the good books that fall in your way, its purpose will have been fully answered¹⁶.

Quoted from Collect
for the Second Sunday
in Advent from the
*Book of Common
Prayer*

¹²mental digestion

¹³missing in later version

¹⁴this paper

¹⁵given you

¹⁶be fulfilled

16.14 Enigma

Source: printed 1866, with "Explication" separate; attributed to Bishop Samuel Wilberforce, though this is probably the earliest printed version, though it is not sure whether indeed Carroll printed it

I have a large Box, with two lids, two caps, three established Measures, and a great number of articles a Carpenter cannot do without.—Then I have always by me a couple of good Fish, and a number of a smaller tribe,—besides two lofty Trees, fine Flowers, and the fruit of an indigenous Plant; a handsome stag; two playful Animals; and a number of a smaller and less tame Herd:—Also two Halls, or Places of Worship; some Weapons of warfare; and many Weathercocks:—The Steps of an Hotel: The House of Commons on the eve of a Dissolution; Two Students or Scholars, and some Spanish Grandees, to wait upon me.

All pronounce me a wonderful piece of Mechanism, but few have numbered up the strange medley of things which compose my whole. *Nov. 1866.*

Explication of the Enigma

The WHOLE,—is MAN.

The PARTS are as follow.

A large Box—The Chest.

Two lids—The Eye lids.

Two Caps—The Knee Caps.

Three established Measures—The nails, hands, and feet.

A great number of articles a Carpenter cannot do without,—Nails.

A couple of good Fish—The Soles of the Feet.

A number of a smaller tribe—The Muscles. (Mussels).

Two lofty Trees—The Palms (of the hands).

Fine Flowers—Two lips, (Tulips), and Irises.

The fruit of an indigenous Plant—Hips.

A handsome Stag—The Heart. (Hart).

Two playful Animals—The Calves.

A number of a smaller and less tame Herd—The Hairs. (Hares).

Two Halls, or Places of Worship—The Temples.

Some Weapons of Warfare—The Arms, and Shoulder blades.

Many Weathercocks—The Veins. (Vanes).

The Steps of an Hotel—The Insteps. (Inn-steps).

The House of Commons on the eve of a Dissolution—Eyes and Nose.

(Ayes and Noes).

Two Students or Scholars—The Pupils of the Eye.

Some Spanish Grandees—The Tendons. (Ten Dons).

Nov. 1866.

16.15 The Organization of Charity

Source: Pall Mall Gazette, January 24, 1867

To the EDITOR of the PALL MALL GAZETTE

SIR,—At this inclement season, when the appeal for aid from the benevolent is rising from all quarters, it seems a fit opportunity for discussing methods of facilitating and stimulating the flow of national benevolence.

I believe that a great deal of possible charity is retarded, or altogether withheld, through the difficulty, first of selecting the objects for benevolence, and secondly of reaching them when selected.

Let us take the case of some wealthy and charitably disposed Englishman. By reference to the advertisements, and to the lists of contributions acknowledged in the newspapers, he can with some trouble collect for himself the names of the principal institutions in need of help. Such a list will of course be far from complete, and that is of itself unsatisfactory to any one wishing to do the *best* with the means at his disposal. Let us suppose, however, that he has selected half a dozen of these, and has decided on the sums to be contributed to each; he will now have to procure half a dozen post-office orders, payable to as many different secretaries, and to post each of them in a separate envelope. Now, without diverging into a discussion of the existing system of post-office orders, it is enough to say that no one can have often gone through the process of procuring them without retaining a tolerably lively sense of the tediousness of the operation; and in addition to the trouble, there is a clear waste of money entailed on our charitable friend. I do not think that the process of sending the money by cheques (which would generally be paid into different banks) would be found, on the whole, less troublesome or less expensive.

Now the charitably disposed Englishman, like the rest of his countrymen, is a lover of ease, and not unlikely to limit the flow of his benevolence to those directions in which he found its exercise least troublesome and least trammelled with the necessity of additional and (so far as his object is concerned) wasted expenditure.

It is much more easy to point out an evil than to suggest a practicable remedy; but I am inclined to believe that if the following ideas, Utopian as they may seem, could be in some form realized, the cause of national benevolence would be furthered. The object to be aimed at I take to be a central point, *to* which, and again *from* which, the streams of benevolence should flow: one where contributions could be received, by some simple process, from all quarters, and for all charitable purposes, and handed over again, *without deduction*, to the objects designated, and from which information should be circulated of the names, purposes, claims, and progress of the various charitable institutions. Could such an object be attained, I believe that the giving of charity would be made so much more easy and attractive to those who, having abundance to give, need only information as to where and how to give it, that probably much more would be given.

To give this idea more of a tangible shape, let us imagine the existence of a "National Philanthropical Society." It would have something of the character of a bank, in which money might be deposited to be hereafter assigned to charitable

objects, if any chose so to do. It would receive as money cheques on all country banks, and would transfer the amount without deduction to the accounts of the various charities designated. There would be a register kept, in which, by paying a small annual fee, any charitable society or institution might have its name entered, with a short statement of its history and objects, and might add any further statement by paying for it as an advertisement. This register, with list of contributions, would be published from time to time, as cheaply as possible, and also largely circulated gratuitously (for instance, copies might be sent to all ministers of religion, to libraries, waiting-rooms on railways, &c.) And it would be a great addition to the usefulness of this society if there were a committee, who would receive money sent for general purposes (such as hospitals, churches, &c.), and make grants from time to time from such "general" funds to whichever particular institutions they considered most in need of help.

The necessary expenses of such a society might be defrayed partly by the fees for registration, partly by the advertisements, and partly by voluntary contributions.—I am, Sir, your obedient servant,

Charles L. Dodgson,
Student of Christ Church, Oxford.
Jan. 22, 1867.

16.16 Woodstock Election

Source: Oxford University Herald, November 28, 1868

To the Editor of the "Oxford University Herald."

SIR,—With your well-known impartiality, you will not, I trust, object to admit a Liberal communication to your columns. The proceedings at the recent election at Woodstock were so remarkable, and reflect so deep a discredit on the Conservative cause, that a sense of honour should compel even a Conservative paper to give publicity to them, if only as a warning to others of that misguided faction.

The following account appeared in the 'Oxford Chronicle' of Saturday last, and I am sure the eloquent writer will not object to my quoting it 'in extenso':—

"Having been present as a spectator at the Woodstock election during the whole of Tuesday, I should be glad if you would allow me the use of your columns to state one or two significant facts which may be interesting to the public. At the declaration of the result of the poll, the successful candidate, Mr. Barnett, endeavoured in vain to address the crowd. Not a word was audible amidst the hootings and execrations which greeted him. The defeated candidate, Mr. Brodrick, was received with enthusiastic cheering, and listened to in perfect silence. The successful candidate had to be escorted at every appearance in public by twenty or thirty policemen, and even then seemed hardly secure from personal violence. His unsuccessful rival walked without a single person attending him through the middle of the cheering crowd. Throughout the whole time I did not hear one shout for Barnett or one groan for Brodrick. In what sense, Sir, may I ask, is Mr. Barnett to be considered to 'represent Woodstock?'"

Facts like these, Sir, speak for themselves: but, with your permission, I will offer a few remarks 'to point the moral and adorn the tale.' The real origin of the scandal, the true cause of the cowardly conduct of the Conservative majority is not far to seek. What but ducal influence could have so far degraded the spirit of true-born Britons, and banished the cabbage-stalks and dead kittens, the natural weapons of freemen? But enough on this painful theme: let us turn to the account of the actual proceedings.

We are told, Sir, that the successful candidate, Mr. Barnett, "*attempted in vain to address the crowd. Not a word was audible amidst the hootings and execrations which greeted him.*" I cannot, Sir, tell you in words how refreshing to my ears were those manly voices! Though Tory tricks, aristocratic art, and the brute force of numerical superiority, had turned the day against that noble and enlightened minority, I seemed to hear in those voices the knell of a dying monster, the crashing downfall of the rotten fabric of Conservatism!

Mark, however, the contrast when the defeated candidate, Mr Brodrick, comes forward. He "*was received with enthusiastic cheering, and listened to in perfect silence.*" I do not, of course, suppose that the Conservative electors were hypocrites enough to join in the enthusiastic cheering; such depths of baseness have not yet, let us hope, been reached, even in degenerate Woodstock. But that he should be "*listened to in perfect silence!*" Sir, my blood boils within me at the thought. What! That a set of electors, with lungs in their bodies and breath in their lungs, should listen to a political opponent "*in perfect silence!*"

Quoted from *The Vanity of Human Wishes* by Samuel Johnson

It is too mean, too pitiful for belief: "execrations," possibly, their vocabulary may have been deficient in, (though even these they might have picked up, with attention, from their Liberal brethren), but surely they might have hooted!

But we have not yet nearly reached the depths of this abyss of infamy. The successful candidate, we are told, "*had to be escorted at every appearance in public by twenty or thirty policemen, and even then seemed hardly secure from personal violence.*" This is as it should be: else what are fists meant for in 'Merrie Englande'? Arguments may fail to convince the Conservative blockheads; even hootings and execrations may be unheeded by such crass intellects as theirs: but the 'one, two,' delivered from the shoulder, is a mode of reasoning that the dullest cannot ignore—it is a thick skull indeed that is insensible to a brickbat!

And now, Sir, for the contrast—Look on this picture, and on this. "*His unsuccessful rival walked without a single person attending him through the middle of the cheering crowd.*" Sir, the feats of Van Amburgh pale before this unprecedented display of heroism. His experience of the tender mercies of the gallant Liberal electors towards the Conservative candidate had doubtless prepared him for very different conduct: he felt that he was courting danger—that from that hostile crowd he could scarcely expect to emerge without a torn coat, a black eye or two, and possibly a broken head. And for the first few yards of his perilous march no doubt he moved on with beating heart, with fists clenched, and elbows squared ready for the combat. But he little knew the cowards among whom he went! Not a man dared to lay a finger on him: with bowed heads and bated breath the poltroons sneaked away wherever his manly form was seen. If the indignation of his soul could have found vent in words, might he not in some such sort as this have apostrophised those lily-livered minions?—

"Conservative cravens, where are ye? Brodrick, the son of Brodrick, dares you to the fray. Have ye voices, only to vote with—and are political fights to be waged only in the polling-booth? What is demonstration to a dig in the ribs? Is there any reasoning like rotten eggs? What, not one shout for Barnett? Not one groan for Brodrick! And you call yourselves Englishmen? O tempora, O mores!"

The writer asks, in conclusion, "*in what sense is Mr. Barnett to be considered to represent Woodstock?*" Let Oxford, Liberal Oxford, make reply. So long as Woodstock is degraded by a voiceless, heartless, Conservative majority, who can neither hoot, pelt, nor even execrate their foes, we must with shame confess that Mr. Barnett only too truly represents them. *But* if the noble band of Liberals, whose prowess I have here recorded, should ever become the majority—then indeed, to represent so fine a phase of political enthusiasm, no Barnett, no Brodrick, may we not add no English gentleman whatever, can be found fully and really competent!

I am, Sir, your obedient servant,

"A LIBERAL OF THE LIBERALS."
Nov. 24, 1868.

16.17 Original Research

Source: Pall Mall Gazette, October 29, 1874

To the EDITOR of the PALL MALL GAZETTE

SIR,—The scientific men of this day may well congratulate themselves, whatever Mr. Roscoe may say to the contrary, on having found in Dr. Appleton so eloquent an advocate of their claims. What they could not gracefully say for themselves he has said for them; and even if it be true, as Mr. Roscoe insinuates, that the learned Doctor does not know by his own experience all that is conveyed by the phrase “original research,” and so has no personal interest in the result of his efforts, surely that circumstance only gives him a greater claim to be heard. But there is a danger of which he hardly seems aware—that the very moderation and modesty of his proposal may prove fatal to it. This is not a thing that can be done by halves: a tentative and parsimonious experiment would be almost sure to fail, and then the whole theory would be discredited. I cannot but hope that Dr. Appleton will now essay a bolder flight, and give us a scheme really worthy of the nation and of the age. To begin with, the income offered must be ample: original research can never be carried on as a *πάρεργον*: the investigator must not only be saved from the necessity of running any other occupation, but he must also be set entirely above the petty cares which make such inroads upon the time and temper of those to whom ceremony is a duty. A thousand a year is the very least sum that can be named for this purpose. This is only for the necessities of life. Books, machinery, chemicals, assistants, &c., must all be liberally provided; and this would require at least a thousand more. But not only must the means provided be ample; ample time must also be allowed; and on this point I venture to think that Dr. Appleton has understated his case. To set a really scientific man to a great investigation and then to demand a tangible result in so short a time as three years is really almost as if the nation were to pension Mr. Holman Hunt and then request him to produce a picture every three weeks. “All great things” (I am quoting from Professor Tyndall’s eloquent address to the British Association) “come slowly to the birth. Copernicus pondered his great work for thirty-three years; Newton for nearly twenty years kept the idea of gravitation before his mind; Darwin for two-and-twenty years pondered the problem of the origin of species.” I do not think that Dr. Appleton would find forty years an excessive period to name. When a man feels that he is secure for such a period as that of an ample income, free from interruption, and furnished with all appliances needful to follow out the bent of his genius, remarkable results may fairly be expected.

One other point remains to be noticed—the question of providing funds. Dr. Appleton’s suggestion, made in the *Fortnightly Review*, that suitable funds exist at Oxford and Cambridge, is too indefinitely stated to be practical. To withdraw any large portion of the funds now employed in paying professors and tutors would seriously interfere with the educational work of the place; but no such objection can be urged against the course of abolishing all sinecure and non-resident Fellowships. In many cases, of course, it would be necessary to wait for a vacancy, as vested rights must be respected; still, it may be hoped that some holders would be found who, happy in the consciousness that they were

thus aiding a great and glorious work, would be willing to resign at once.—I
am, Sir, your obedient servant,

Rusticus Expectans.

October 28.

16.18 Memoria Technica (1877)

Source: cyclostyled 1877

for Numbers

1	2	3	4	5	6	7	8	9	0
<i>b</i>	<i>d</i>	<i>t</i>	<i>f</i>	<i>l</i>	<i>s</i>	<i>p</i>	<i>h</i>	<i>n</i>	<i>z</i>
<i>c</i>	<i>w</i>	<i>j</i>	<i>qu</i>	<i>v</i>	<i>x</i>	<i>m</i>	<i>k</i>	<i>g</i>	<i>r</i>

Each digit is represented by one or other of two consonants, according to the above table: vowels are then inserted *ad libitum* to form words, the significant consonants being always at the *end* of a line: the object of the is to give the important words the best chance of being, by means of the rhyme, remembered accurately.

The consonants have been chosen for the following reasons.

- (1) *b*, *c*, first two consonants.
- (2) *d* from “*deux*”; *w* from “*two*”
- (3) *t* from “*trois*”; *j* was the last consonant left unappropriated.
- (4) *f* from “*four*”; *qu* from “*quatre*.”
- (5) *l* = 50; *v* = 5.
- (6) *s*, *x*, from “*six*.”
- (7) *p*, *m*, from “*septem*.”
- (8) *h* from “*huit*”; *k* from ὀκτώ.
- (9) *n* from “*nine*”; *g* from its shape.
- (0) *z*, *r*, from “*zero*.”

They were also assigned in accordance, as far as possible, with the rules of giving to each digit *one* consonant in common use, and one rare one.

Since *y* is reckoned as a vowel, many whole words, (such as “*ye*,” “*you*,” “*eye*”), may be put in to make sense, without interfering with the significant letters.

Take as an example of this system the two dates of “Israelites leave Egypt—1495,” and “Israelites enter Canaan—1455”:—

“Shout again! We are free!”
Says the loud voice of glee.
“Nestle home like a dove,”
Says the low voice of love.

Ch. Ch. June 27/77

16.19 Specific Gravities of Metals, &c.

Source: cyclostyled 1877

[Water is taken as the unit. Translate into numbers the last four consonants of the couplet, and place a decimal point in the middle, e. g. Gold = 19.36]

Gold	Would you have enough Gold for your rents? Invest in the seven per cents.
Silver	With Silver the young soldier tip, And with a new sabre equip.
Copper	I bet you a copper that nook Is the place where the salmon broke hook.
Tin	It is merely a question of Tin, Where the wealthier suitor may win.
Lead	Leaden shot had been busy that day, Where many a dead rabbit lay.
Iron	Yes, Iron's the metal, old stoker, To make a superior poker!
Brass	Brass trumpet and brazen bassoon Will speedily mark you a tune.
Mercury	Quicksilver is quicker by far Than the liveliest live rabbits are.
Platinum	Of Platinum's little to spare: It is a commodity rare.
Lithium	From Lithium dread no fatigue, Though a lump you should carry a league.
Glass	Spun Glass will delight girl or boy: Nothing else makes so pretty a toy.
Deal	Yes, Deal is the timber, old mate, To make you a door or a gate.
Cork	This Cork to my shoulders I tie, And all marine terror defy.
Alcohol	For Alcohol cherish a dread; In excess it will injure your head.
Sea-water	Sea-water is held in repute. An invalid's health to recruit.

Gold: 19·36, Silver: 10·47, Copper: 8·88, Tin: 7·29, Lead: 11·35, Iron: 7·80, Brass:
8·39, Mercury: 13·60, Platinum: 23·00, Lithium: 0·59, Glass: 3·33, Deal: 0·93, Cork:
0·24, Alcohol: 0·82, Sea-water: 1·03 (most values deviate more or less from those in
modern tables)

16.20 Logs of Nos.

Source: manuscript, begun June 11, 1877, finished March 26, 1878

from 101 to 109, and from 1001 to 1009

With one grave bow he welcomes me:
But, when I leave the place,
Although requited by a fee,
He leers with crafty face.

Two days, at most, he lets me stay:
Not that he *says* "Don't stop."
He goes to work a surer way,
And slyly works a mop.

Three pence I gave him, half afraid,
And faltered "Worthy sage,
Though not enriched by what I paid,
Prithee abate your rage!"

Four pounds he wanted, but I *knew* it
Was a preposterous fee:
"I will not be a party *to* it!
Bring my receipt to me!

"A fine-pound note? Am I the Mint?
Or is your trade to rob?
I never heed a booby-hint:
Such loss would cause a sob.

"Six months I have travelled unshaven,
(That's exactly one half of a year:)
I have changed from a dove to a raven—
But I will not be shaved, even here!"

"Seven days make a week," say the folk:
For *weakness* malt-liquors avail.
There is not much new in the joke,
But I've always been nurtured on ale.

My eight-oar crew, your breath
Comes thick and short today!
Think not a jot of death!
Your stalwart foe survey!

At nine we'll sup, ye brave!
Nor will it harm our head
One atom, if we save
A glass to take in bed!

Logarithms of 1.01 to 1.09 (last 6 consonants of third lines, with implied 0.0) and of 1.001 to 1.009 (last 5 consonants of fourth lines, with implied 0.00):

$\lg 1.01 = 0.0043218$, $\lg 1.001 = 0.0004341$
 $\lg 1.02 = 0.0086002$, $\lg 1.002 = 0.0008677$
 $\lg 1.03 = 0.0128372$, $\lg 1.003 = 0.0013009$
 $\lg 1.04 = 0.0170333$, $\lg 1.004 = 0.0017337$
 $\lg 1.05 = 0.0211893$, $\lg 1.005 = 0.0021661$
 $\lg 1.06 = 0.0253059$, $\lg 1.006 = 0.0025980$
 $\lg 1.07 = 0.0293838$, $\lg 1.007 = 0.0030295$
 $\lg 1.08 = 0.0334238$, $\lg 1.008 = 0.0034605$
 $\lg 1.09 = 0.0374265$, $\lg 1.009 = 0.0038912$

16.21 Various Memoria Technica Verses

Source: various manuscripts, most undated, some other sources, 1877–1897
(Foundation of Colleges: June 1, 1877 according to diary, but later reconstructed from memory; Date of Easter: unpublished proof sheets, 1897?; Wycliffe: letter, October 14, 1894)

Date of Easter

List my song to!
'Tis as wrong to
Save a flea
As rob a bee.

The consonants of the last two lines give part of the *ah*-table used to calculate the date of Easter by Carroll's method:

Century	21	22	23	24
<i>a</i>	6	5	4	5
<i>h</i>	6	0	1	1

Kings and Queens of England

8 Henrys

Crazy belief we cause to none:
A fact, if dead of a hilly run.

...¹

Anne—Victoria

Poor I die
Hay-time

Execution of Charles

We pardon faults like thine,
Whose ending was so fine.

¹Remark: 6 Edwards, 4 Williams, 4 Georges, 3 Richards, 2 Charles, 2 James, Stephen—John, Mary and Elizabeth omitted for now, as the verses might still be protected by copyright

Cromwell made Protector

Ambition was *thy* fault:
Thine own self to exalt.

Years of enthronisations (all consonants):

Henry I: 1100, Henry II: 1154, Henry III: 1216, Henry IV: 1399, Henry V: 1413,
Henry VI: 1422, Henry VII: 1485, Henry VIII: 1509

Anne: 1702, Victoria: 1837

Execution of Charles: 1649

Cromwell made Protector: 1653

Foundation of Colleges

Brasenose College

With a nose that is brazen
Our gate we emblazon.

Christ Church

Ring Tom when you please:
We ask but small fees.

St John's College

They must have a bevel
To keep them so level.

Brasenose College: 1509, Christ Church: 1546, St John's College: 1555

Other Dates

Battle of Crécy

The string is wet! If so,
Useless is my bow!

Wycliffe's Bible completed

The Bible to translate
Brought Wycliffe nought but hate.

Battle of Crécy: 1346 (first line), Wycliffe's Bible completed: 1383

16.22 Memoria Technica (1888)

Source: typewritten 1888

My “Memoria Technica” is a modification of ¹Gray’s; but, whereas he used both consonants and vowels to represent digits, and had to content himself with a syllable of gibberish to represent the date or whatever other number was required, I use only consonants, and fill in with vowels “ad libitum”, and thus can always manage to make a real word of whatever has to be represented.

The principles on which the necessary 20 consonants have been chosen are as follows:—

- [1] “b” and “c”, the first two consonants in the Alphabet.
- [2] “d” from “duo”; “w” from “two”.
- [3] “t” from “tres”; the other may wait awhile.
- [4] “f” from “four”; “q” from “quatuor”.
- [5] “l” and “v”, because “L” and “V” are the Roman symbols for “fifty” and “five”.
- [6] “s” and “x”, from “six”.
- [7] “p” and “m”, from “septem”.
- [8] “h” from “huit”; & “k” from the Greek “okto”.
- [9] “n” from “nine”; & “g”, because it is so like a “9”.
- [0] “z” and “r”, from “zero”.

There is now one consonant still waiting for its digit, viz. “j”; and one digit waiting for its consonant, viz. “3”: the conclusion is obvious.

The result may be tabulated thus

1	2	3	4	5	6	7	8	9	0
b	d	t	f	l	s	p	h	n	z
c	w	j	q	v	x	m	k	g	r

When a word has been found, whose last consonants represent the number required, the best plan is to put it as the last word of a rhymed couplet, so that, whatever other words in it are forgotten, the rhyme will secure the only really important word.

Now suppose you wish to remember the date of the discovery of America, which is “1492”: the “1” may be left out as obvious; all we need is “492”.

Write it thus:—

4 9 2

f n d
q g w

and try to find a word that contains “f” or “q”, “n” or “g”, “d” or “w”. A word soon suggests itself—“found”.

The poetical faculty must now be brought into play, and the following couplet will soon be evolved:—

“Columbus sailed the world around,
Until America was FOUND”.

¹should be “Grey”

If possible, invent the couplets for yourself: you will remember them better than any made by others.

June, 1888.

16.23 The Electric Pen

Source: cyclostyled 1877

The Electric Pen, with which I am now writing, seems to me to be quite the best thing yet invented for taking a number of copies of M.S., drawings, or maps.

The “pen” consists of a needle, in a holder like a pencil: the needle is worked in and out with enormous rapidity by electricity, & projects just far enough to go through a thin sheet of paper. The result is that every line of the M.S. or drawing consists of a row of minute holes, almost close together. The paper thus prepared (which is called the “stencil”) is placed in a frame with blank paper underneath, & an inked roller is passed backwards & forwards over it: the ink is thus squeezed through the holes, & the little dots, so formed, run together, forming continuous lines.

The writing of the stencil is rather slower than ordinary writing, but the copies are easily worked off at the rate of 2 a minute—probably, with practice, much faster. When as many copies have been worked off as are required at the time, the stencil may be cleaned with methylated spirits of wine, and laid aside for future use.

It is said that 3000 copies may be taken from one stencil.

This writing is not as good as it might be, but I have only had a few days’ practice. I have tried drawing as well, & am delighted with the result.

The pen is a patented invention, & may be had, with battery &c., for 8 guineas, from the Electric Pen Company, 9. New Broad Street, City, London.

*C. L. Dodgson.
Ch Ch June 28/77*

16.24 Testimonial

Source: The Edison Electric Pen and Duplicating Press, 1878, untitled entry in Testimonials section of instruction manual

July 11th, 1877.

I have tried the new Electric Pen for writing MS, printing and drawing, and consider it perfectly successful for all three purposes. For simplicity, expedition, and cleanliness in working, it seems to me to be quite unrivalled, and those who, like myself, often require twenty or thirty copies of a paper of questions or formulæ, &c., will save the cost of the machine in printer's bill several times over in a year.

*Charles L. Dodgson.
Mathematical Lecturer of Ch. Ch., Oxford.*

16.25 Is it Well to have Children Vaccinated?

August 18, 1877

Source: The Eastbourne Chronicle, August 18, 1877

By the way, Lewis Carroll was vaccinated on May 14, 1863, and again in September or October 1871.

Sir: A letter, with the signature of “William Hume Rothery,” in your paper of Aug. 4th, contained an argument in proof of the assertion that vaccination increases the liability to small-pox, based on such facts as the following:—That in Berlin, in 1871, of 17,000 small-pox patients, 14,287 had been vaccinated: *i. e.*, 84 per cent. And reducing his other statistics to per centages, we find that in Bavaria, in 1871, the per centage was 95; in London in 1870–72 it was 75; and in Leipzig in 1858–59 it was 92. Now it cannot be too widely known, or too often repeated, that this argument is a fallacy, and that these statistics by themselves prove nothing; we need to know as well what per centage of the population have been vaccinated and then to compare the two per centages together.

Let me illustrate that in some other subject. Suppose a certain city, whose inhabitants are known to be, 80 per cent. of them, church people and the rest dissenters; and suppose a great meeting to be held on the subject of drainage, and that it is found that 80 per cent. of the meeting are churchmen; what would be thought of my argument if I said, “It is clear that drainage is more interesting to churchmen than to dissenters?” Would not anyone answer at once, “Why, that is the proportion through the whole city! The fact that the same proportion occurs in the meeting merely shows that church principles have had nothing to do with it.” But if, in another meeting, it were found that considerably over 80 per cent., say 95, were church people, it would be quite legitimate to conclude that it was a meeting more attractive to church people than to dissenters, or if it were found that only 60 or 70 per cent. were church people, we might fairly conclude that some cause was at work to keep church people away.

Now every word of this is applicable to vaccination. We may fairly assume, I think, that at least 98 per cent. of the population have been vaccinated. Hence, if in a certain hospital we found the same per centage, we should say “Vaccination has no effect in bringing people in or keeping them out.” If we found a larger per centage, we should say “vaccination increases the liability to this complaint.” But if, as in the statistics quoted above, we find that the per centage of vaccinated persons is considerably less among small-pox patients than among the whole population, we may fairly draw the important conclusion that vaccination diminishes the liability to take small-pox.

I heartily wish that these simple facts could be brought to the notice of all members of that well-meaning, but most mischievous association, the “Anti-vaccination League.” Your obedient Servant,

*Charles L. Dodgson,
Mathematical Lecturer of Christ Church, Oxford.
7, Lushington-road.*

September 8, 1877

Source: The Eastbourne Chronicle, September 8, 1877

Sir: I hope you will be able to afford me space for a few words in reply to Mr. Hume-Rothery's letter in your paper of August 25th. He quotes from his previous letter some statistics of the number of vaccinated persons who died in small-pox, which statistics, he says, I have taken "care not to reproduce," implying (as I understand him to mean) that I omitted them in order to make my case look better than it really was. Surely this insinuation of an unworthy motive is a little uncourteous? But whether it be so or not, let me assure him that it is at least unfounded; my only motive for not reproducing those statistics was that they were irrelevant to the subject of my letter. I limited myself to the one question whether vaccination increases or diminishes the liability to take small-pox, and I reproduced the statistics which related to that question. I thought my letter long enough as it stood; otherwise I should have taken the question whether vaccination increases or diminishes the liability to die of small-pox, and have pointed out that the statistics given by Mr. Rothery (the per centage of deaths among vaccinated patients) require to be compared with other statistics (the per centage of deaths among the non-vaccinated) and that by themselves they prove nothing.

But Mr. Rothery further says that I am in error in thinking he used the statistics for any such purpose. "I in no part of my letter attempt," he says, "by the figures he has quoted, or by those he has omitted to quote, or by both together, to prove that vaccination increases the liability to small-pox." I am sorry to have misunderstood him, and can only say that I find in his letter, at the end of the statistics, the words "To this indisputable evidence anyone who desires it may find in England and elsewhere very much of the same nature which may be added, making a mass of testimony against vaccination, &c." Clearly, then, he thinks that the statistics prove something "against vaccination," and if that something is not "liability to small-pox" I am at a loss to know what it is.

I will not attempt to follow Mr. Rothery through the medical portions of his letter; I wrote as a mathematician, not as a doctor, with the object of asserting one single proposition, which is of such vital importance in the vaccination controversy that I gladly take this opportunity of repeating it:—The statistics so constantly quoted by the opponents of vaccination, namely, the per centage of vaccinated persons among small-pox patients, prove nothing, when taken alone, as to vaccination increasing or diminishing the liability to take small-pox; in order to prove anything, they must be compared with other statistics, namely, the per centage of vaccinated persons among the whole population; and, when so compared, they prove that vaccination diminishes that liability. Your obedient Servant,

*Charles L. Dodgson,
7, Lushington-road, Eastbourne,
August 30th, 1877*

September 22, 1877

Source: The Eastbourne Chronicle, September 22, 1877

Sir: Mr. Hume-Rothery has at last supplied the missing link in his argument. In your paper of the 15th he states that, according to recent reports, only two-thirds of the population (which we may call a per centage of 66) have been vaccinated. This differs widely from the 98 which, in the absence of statistics, I had taken as a probable per centage, and the statistics, as now completed,

undoubtedly go to prove that vaccination increases the liability to take small-pox. There is no hiatus in the argument. All depends now on the correctness of the statistics themselves, a matter which I am not qualified to discuss. I do not mean, of course, that this if proved would settle the whole question. Vaccination may still be good, even if it increases the liability to take small-pox, provided it diminishes the severity of the disease, or the pain, or the disfigurement, or the bad consequences, or the risk of death. On all such questions valuable evidence may be got from statistics, if we bear in mind the simple rule that we must compare two per centages together, *e. g.*, as to the severity of the disease, we must compare the per centage of sever cases among vaccinated patients with the per centage among the un-vaccinated.

Mr. Hume-Rothery thinks it "comical" that I should see any discourtesy in the charge he made against me of suppressing evidence (with the implied dishonourable motive of wishing to make my case look better than it really was), and says he was "simply crediting me with the intention to make the best of my case." And he holds that I was equally discourteous in speaking of the League as "well-meaning, but most mischievous" (where I expressly avoided implying any dishonourable motive by introducing the word "well-meaning"). He now makes a new charge against me of "garbling statistics." Perhaps he thinks that here also he is within the bounds of courtesy, and is not implying any dishonourable motive; if so, I can only say that we do not take quite the same view, either as to what is honourable in controversy, or as to what is courteous in language. This is the last letter with which I need trouble you. I did not come forward as a champion in the controversy, but as a critic; and I concerned myself rather with the logical accuracy of the weapons than with the result of the fight. My object in addressing you is fully effected, if I have made it clear (as I hope I have) that the statistics which I quoted from Mr. Hume-Rothery's first letter were useless by themselves, and that the conclusion which he drew from them had no logical force. Your obedient Servant,

*Charles L. Dodgson,
7, Lushington-road,
Sept. 20th, 1877*

16.26 Notices to Correspondents (January 1882)

Source: The Monthly Packet, January 1882

‘A TANGLED TALE’—ANSWERS TO CORRESPONDENTS.—I beg to thank BALBUS and CERTAIN FRIENDLY SPIRITS for their communications, and would entreat the latter to abandon their wish, and to make what allowance they can for the feelings of one to whom anything like *personal* publicity is absolutely distasteful. ‘*Digito monstrari, et dicier, Hic est,*’ is doubtless desired, and even sought after, by many; but *my* wishes are all in the opposite direction, and I would prefer as my motto, ‘*Nec vixit malè, qui natus moriensque fefellit.*’ (N.B.—I do not offer the Spirits any translation. In these days young ladies learn *everything*; and ‘everything’ includes Latin.)

Lewis Carroll

Quoted from Persius

Quoted from Horace

16.27 Notes

Source: St. James's Gazette, March 23, 1882

May I (writes "Lewis Carroll") presume to anticipate the *Daily News* in making an announcement which will shake to its centre the whole scientific world? The *Perpetuum Mobile* is discovered! We may confidently expect that a clock will shortly be exhibited which, as often as it runs down, is able to wind itself up again. The discoverer of this marvellous principle—the mere details of construction being trifles that any watchmaker can arrange—is no less a person than Mr. Gladstone, on whose great mind it has dawned, for the first time in the world's history, that a body of men *can confer on themselves* rights, over another body of men which they do not already possess. What he says is, in effect, this:—"We, the Majority of the House of Commons, admit that we have not at present any constitutional right to close a debate against the wish of you, the Minority. We can, however, effect our object by a twofold process. First, we will propose and carry against your wish, a Resolution conferring upon us this right: secondly, we will transfer ourselves from the position of donors to that of recipients, and will proceed to exercise the right we have thus received." That is to say, Mr. Pyke will first introduce Mr. Pluck, and then Mr. Pluck, being regularly introduced, will be qualified to introduce Mr. Pyke. It will not, I hope, be deemed impertinent, while the fate of the First Resolution is yet hidden in the future, to raise the question whether the operation proposed by Mr. Gladstone is either ethically or logically possible.

16.28 Aunt Judy's Correspondence

April

Source: Aunt Judy's Magazine, April 1882

'A Friend' of the Editor's is about to publish a selection of Shakespeare's Plays adapted for the acting of young people up to sixteen or eighteen years of age; and he will be greatly obliged if any readers who have learned by experience which plays are most popular and suitable for this purpose, will send him lists of such plays arranged in succession according to their popularity. All letters to be addressed *X. Z., care of the Editor, 71 Warwick Road, Earl's Court, S. W.*

May

Source: Aunt Judy's Magazine, May 1882

'Mr. Lewis Carroll' (who advertised last month under the *soubriquet* of 'A Friend') is about to publish a selection of Shakespeare's Plays, adapted for the acting of young people up to sixteen or eighteen years of age, and he will be greatly obliged if any readers, who have learned by experience which plays are most popular and suitable for the purpose, will help him by sending lists of them, arranged in succession according to their popularity.—Address *Care of the Editor, 71 Warwick Road, Earl's Court, S. W.*

16.29 Notices to Correspondents (April 1882)

Source: The Monthly Packet, April 1882

A friend of the Editor is anxious to prepare a 'Shakespeare for Girls,' fit to be unhesitatingly placed in all hands in 'Shakespeare Readings.' He would be obliged if persons would send the Editor—to be forwarded to him—lists, drawn up from memory or experiment, of the plays that have been found most to interest young people.

16.30 Note about “Shakespeare for Girls”

Source: The Monthly Packet, June 1882 (untitled, after the *Tangled Tale*)

The Editor kindly allows me a little extra space to make a request to my lady readers. I am thinking of trying whether a selection of Shakespeare’s Plays can be produced, in which many of the beauties should be preserved, and yet the whole made so absolutely free from objectionable matter, whether in plot or language, that any English mother might, without scruple, put it into the hands of her daughters from the age of 10 or 12 up to 16 or 18. Younger girls would not be likely to understand or appreciate the greatest of poets: and older ones may safely be left to read Shakespeare in any edition, expurgated or not, they may prefer: but it seems a pity that so many children should be debarred from a great enjoyment for want of an edition suitable to them. Neither Bowdler’s, Chambers’, Brandram’s, nor Cundell’s ‘Boudoir’ Shakespeare, seems to me to meet the want: they are not sufficiently expurgated to suit children.

I hope to produce a cheap and handy volume, containing about 15 plays, and shall be much obliged to any lady who will send a list (founded on recollections of her own girlhood, or on observation of her daughters’ reading) of the plays she thinks suitable. When there are several ladies in one family, if each would draw up an *independent* list, each such list would have its own value as a separate piece of evidence. And a list arranged *in order of merit* would be even more useful: but this, I fear, would entail some trouble. Mistresses of girls’ schools could give, probably, more information than any private individual as to which plays are most liked by girls.

Lewis Carroll

16.31 The Profits of Authorship

Source: probably printed 1884, only one paragraph available

The publisher contributes about as much as the bookseller in time and bodily labour, but in mental toil and trouble a great deal more. I speak with some personal knowledge of the matter, having myself, for some twenty years, inflicted on that most patient and painstaking firm, Messrs. Macmillan and Co., about as much wear and worry as ever publishers have lived through. The day when they undertake a book for me is a *dies nefastus* for them. From that day till the book is out—an interval of some two or three years on an average—there is no pause in “the pelting of the pitiless storm” of directions and questions on every conceivable detail. To say that every question gets a courteous and thoughtful reply—that they are still outside a lunatic asylum—and that they still regard me with some degree of charity—is to speak volumes in praise of their good temper and of their health, bodily and mental. I think the publisher’s claim on the profits is on the whole stronger than the bookseller’s.

Quoted from *King Lear* by William Shakespeare

In connection with this, advertisements for Carroll’s books contained the following note (here from *A Tangled Tale*):

N.B. In selling the above-mentioned books to the Trade, Messrs. Macmillan and Co. will abate 2*d.* in the shilling (no odd copies), and allow 5 per cent. discount for payment within six months, and 10 per cent. for cash. In selling them to the Public (for cash only) they will allow 10 per cent. discount.

16.32 Mr. Gladstone's New Book¹

Source: The St. James's Gazette, March 21, 1885; authorship not entirely certain

In the first six volumes of this eagerly awaited work Mr. Gladstone leads up to his subject. Vols. i. to iii. consist of prefatory matter, in which the indefatigable author explains the lines on which he proposes to work, and in vols. iv. to vi. he revises. The treatise, which, when it is completed, will form a handsome library in itself, is dedicated to the late Gabriel Harvey, "as a slight token of admiration for a writer whose MSS. broke the wheels of a carrier's cart." To judge the book at present would be manifestly unfair; but we cannot think these six introductory volumes unworthy of their author's reputation.

Mr. Gladstone defines logic as "the art of explaining that it is all right," and he then hastens to point out (pp. 42–118, vol. i.) the inadvisability of using definitions at all. "For the meaning of a word or term," continues our author, "is that which we think about when we use another word or term; and no word or term has the same signification (or connotation) in one proposition that it has in another." Mr. Gladstone cites numerous examples. "When I use the word 'retire,'" he says, "in reference to a Government's policy, I may mean 'annex.'" Again, "The term 'atrocities,' when applied to certain persons and certain regions, connotes blood-guiltiness; applied to others it may imply, if it has any connotation at all, butchery for the ultimate advantage of the butchered."

Want of space prevents us dwelling at length on Mr. Gladstone's second volume, which is, perhaps, the most suggestive of the series, so far as it has gone. It may be briefly described as a caution against taking vol. i. too literally; "for all written or spoken statements must be considered in their relation to current events." Of the conversion of propositions Mr. Gladstone says little (pp. 15–182, vol. iii.) at present, holding this part of his subject too important for treatment in introductory volumes. He, however, makes merry over so-called "limited conversion." "Conversion," says Mr. Gladstone emphatically, "is unlimited;" and he adds, by way of caution to beginners, "it is well when you employ an affirmative proposition to explain that you use it in its negative sense."

After a noble but somewhat discursive peroration, Mr. Gladstone briefly states his rules of the syllogism (pp. 312–407). It will surprise no one that these differ from the views on the subject held by Whately; for Mr. Gladstone's work is sufficiently original to upset the old-fashioned Aristotelian theories of reasoning altogether. The new rules of the syllogism are five in number, and are stated in five sentences occupying two pages apiece. Each word is explained at length in brackets; but, with these reluctantly omitted (for the sake of brevity), the rules stand thus:—

(1) *A syllogism must contain not less than four terms.* "Three terms," says our author, "sufficed for Aristotle and his contemporaries; but in these days of complexity we cannot do with less than four." It is to be noted that Mr. Gladstone does not confine the syllogism to four terms. "Five," he adds in an appendix, "are sometimes employed with effect; and it is worth remembering that by varying your connotations you really increase the number of your terms." This is the example given:—

¹"The Elements of Logic." By W. E. Gladstone, M.P., Author of "Homer and the Homeric Age," etc. Vols. I. to VI. (London: Eyre and Spottiswoode.)

The English Government is responsible for Egyptian affairs.
 But the late Conservative Government was an English Govern-
 ment.
 ∴ The late Conservative Government is responsible for Egyptian
 affairs.

As Mr. Gladstone truly observes, “there seems something wrong about this syllogism when thus baldly expressed; but there can be no doubt of its validity when stated at proper length.” The author then proceeds to prove in a masterly dissertation (pp. 480–601) that the Conservatives are to blame for the imbroglio in Egypt.

A syllogism (says Rule 2) must similarly consist of not less than four propositions; “for plainly we can draw more deductions from four propositions than from three;” e. g.:—

To pour out our best blood for our country is noble.
 Gordon’s was our best blood.
 I poured it out.
 ∴ I am noble.

“But there are some terms,” we learn from a foot-note, “apt to lead to confusion and ambiguity. This word ‘Gordon’ is one of them, and I would be glad to see it expunged from the language.”

Passing over Rule 3—which, “though you would hardly think it,” is only Rule 2 in disguise—we reach the fourth rule: *If we are told a little about the terms in the premisses, we are entitled to infer a great deal more in the conclusion.* The last rule is a beautiful exposition of the doctrine that “from two negative premisses anything can be inferred.” For example:—

A Government with a policy cannot do as it is told.
 Not to obey other Governments is to be independent.
 But we have no policy.
 ∴ We can do as we are told.

Mr. Gladstone prefaces his remarks on the hypothetical syllogism with the truism that “we must first take for granted whatever we want to prove, and should always prove one thing by arguing about another.” And in another place he says, “Often an important premiss is not stated but merely conceived in the mind.” As thus:—

The noble Arabs fight for liberty.
 How noble a thing is liberty!
 ∴ We slay the Arabs.

“The hidden premiss,” continues our author, “is extremely useful, and it is difficult to see how we could get on without it.” It is not, however, a subject on which Mr. Gladstone dwells very long.

Vols. iv. to vi. may be best regarded as a commentary on the preceding volumes. “I have laid down my plan of procedure,” Mr. Gladstone explains, “at considerable length and with great caution; for I have not yet *absolutely* determined what my plan of procedure is to be. If I have anywhere left a statement unguarded by a qualifying phrase, such error is owing to want of careful revision. Wherever my assertions are contradictory it must be understood that in

the one I express my own opinion, subject to explanations, and in the others the opinions of other persons. At the present stage of the work I cannot undertake to decide which are my opinions; but wherever a syllogism is given in Barbara it will be advisable to convert it at once into Camestres. This will leave my original statement unchallenged, besides affording wholesome exercise for the student, and the result, of course, will in all cases be the same."

Mr. Gladstone's sixth volume concludes in the middle of a most interesting chapter on "the suicidal policy of using one word when two will do as well." "Every additional word," argues the author eloquently, "is an additional loophole of escape; and, indeed, by a judicious blending of terms the logician can always unsay in one sentence what he said in the preceding one."

We have frequently had occasion to question the utility of Mr. Gladstone's services as a statesman, but it would be ungenerous to deny that there is much thought-compelling matter in his latest work. There is no sham about it, the author laying bare the working of his mind for the benefit of a generation soon, to soon, to come after him; and so honest a book is far on its way to being a great book. There is much in it that may fairly be called biographical. The Premier has been fortunate in his publishers, though cloth binding is perhaps desirable. The volumes are issued in stiff blue paper covers that do not seem unfamiliar, and the general get-up of the work is excellent. We notice a few misprints, but these will doubtless be corrected in the second edition; to the reviser we may suggest that sentences of more than one page in length are apt to confuse.

16.33 Too Many Dogs

Source: The Standard, April 10, 1885

To the Editor of The Standard

SIR,—I trust the advocates of the diminution of the number of pet Dogs will not be deterred from their useful efforts by any outcry about their want of sympathy with a noble animal, or even by the charge of discourtesy to ladies, in adopting St. Paul's phrase, "silly women"! The Dog at his best is noble indeed; and has some human virtues—such as unselfishness and forgiveness of injuries—in a degree that few men ever attain to. The Dog, at his worst, the overfed and ill-tempered pet that ladies delight in, is about as mean a thing as the animal race has to show.

Quoted from 2
Timothy 3:6

As to this danger of personal suffering, and even of the terrible maledy hydrophobia, that this increasing craze for pet Dogs entails on all friends of the crazy owners, I can speak feelingly. Twice, after calling on lady friends, I have been attended down the gravel-walk by a savage Dog, and have only escaped a severe bite by the thickness of cloth trousers—the cloth itself being torn to rags: and twice, in the drawing-rooms of lady friends I have been attacked by a pet Dog—the Dog being, on one occasion, in the first stage of rabies, which necessitated its being shot the same afternoon. But what I wish to speak of now is the enormous waste of human food caused by this excessive *cultus* of pet Dogs.

No doubt the philo-doggist will plead "It is, in each particular case, so small a quantity. It is but the crumbs that fall from the rich man's table!" Well, but add up the sum-total of those crumbs throughout the land, and see how many poor people, who are at their wits' end to keep body and soul together, they would provide for. And if it be urged "how are the needy mouths and the food be brought together?" one can but reply, "If you took half the pains to find out the hungry paupers that surround you which you take to pamper the bloated pets that monopolise all your attention, you would not find you had many crumbs to spare!"

If, by opening your columns to this subject, you can lead the way to a heavier Dog-tax, to the diminution of Dog Shows, or to any humane expedient for reducing the plague of Dogs, you will have done a good deed.

I am, Sir, your obedient servant,

Lewis Carroll.

April 9.

16.34 Hydrophobia Curable

Source: The St. James's Gazette, October 21, 1885

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—As I see that some of your correspondents assert hydrophobia to be absolutely incurable, I enclose an extract from Dr. Tuke's book, which I hope may furnish some comfort to any of your readers who are nervous on the subject. Here however, preëminently, "prevention is better than cure," and an increased dog-tax, with a greater diligence in shutting up all dogs found wandering without owners, are perhaps the best available means for meeting the danger.—I am, Sir, your obedient servant,

Lewis Carroll.

October 19.

"At a séance of the Royal Academy of Medicine of Paris, Dr. Barthélemy expressed his conviction that the symptoms of hydrophobia in man were mainly due to the imagination and irritability of the patient. In proof of this he adduced his own case. He had introduced his finger into the throat of a mad dog, and drew it out covered with frothy saliva; in drying it he observed that he had a slight excoriation on his finger. He lightly cauterized it, but, ten days after, he experienced a sense of constriction about the throat. He felt alarmed; the difficulty of swallowing increased until he could not drink anything, and the sight of water caused spasms. The Will, however, was strongly exercised, and at last gained the day; the symptoms gradually abated, and in about a week he was well.

"An event in the life of Andrew Crosse, the electrician, illustrates, in a striking manner, the power of the Will over threatened disease, the symptoms in his case being those of hydrophobia. It would seem to illustrate the force of this influence, not only directly over the incipient irregular action of certain motor nerves and muscles, by forcing them into healthy exercise, but over the automatic action of the cerebrum itself, by resolutely arresting the train of ideas which have been excited. If 'an act of the Will frequently excites such changes in the brain as to arrest an incipient paroxysm of angina pectoris or epilepsy' (Laycock), there seems no reason why it should not exert the same influence over the symptoms present in this case.

"Mr. Crosse was severely bitten by a cat, which died the same day hydrophobic. He appears to have thought little of the circumstance, and was certainly not nervous or imaginative in regard to it. Three months, however, after he had received the wound he felt one morning great pain in his arm, accompanied by extreme thirst. He called for a glass of water. The sequel will be best told in his own words:—'At the instant that I was about to raise the tumbler to my lips, a strong spasm shot across my throat; immediately the terrible conviction came to my mind that I was about to fall a victim to hydrophobia, the consequence of the bite that I had received from the cat. The agony of mind I endured for one hour is indescribable; the contemplation of such a horrible death—death from hydrophobia—was almost insupportable; the torments of hell itself could not have surpassed what I suffered. The pain, which had first commenced in my hand, passed up to the elbow, and from thence to the shoulder, threatening to extend. I felt all human aid was useless, and I believed that I must die. At length I began to reflect upon my condition. I said to myself, either I shall die or I shall not; if I do, it will only be a similar fate to that which many have suffered, and many more must suffer, and I must bear it like a man; if, on the other hand, there is any hope of my life, my only chance is in summoning my utmost resolution, defying the attack, and exerting every effort of my mind. Accordingly, feeling that physical as

well as mental exertion was necessary, I took my gun, shouldered it, and went out for the purpose of shooting, my arm aching the while intolerably. I met with no sport, but I *walked the whole afternoon, exerting, at every step I went, a strong mental effort against the disease.* When I returned to the house I was decidedly better; I was able to eat some dinner, and drank water as usual. The next morning the aching pain had gone down to my elbow, the following it went down to the wrist, and the third day left me altogether. I mentioned the circumstance to Dr. Kinglake, and he said he certainly considered that I had had an attack of hydrophobia, which would possibly have proved fatal had I not struggled against it by a strong effort of mind.”

16.35 ‘Game of Logic’

Source: Ad Lucem, July 1887

Examination Paper done June 15, 1887

Out of the 23 girls, who have done this paper, I have selected 8, who are fairly ready to go on with harder work; their names I will give in order of merit:—

1. Caroline J. M. Hubback
2. J. Bessie Wieppert
3. Maggie Earle
4. { Millicent C. Bigg
Mabel L. Newton
6. { Philippa Fletcher
Grace E. McKinnell
Olive Marshall

After these I have selected 6, whom I would be happy to go on with, if they are willing to go over some of the old work again, before trying anything harder; their names I will give in alphabetical order:—

Florence M. Gillespy
Mildred M. Jotcham
Winifred M. C. Pickard
Winifred E. L. Stevens
Freda Stevenson
Adelaide E. L. Whigham

The others I would *advise* (but I do not *insist* on it) not to attend more lectures at present, as I am sure they can spend their time more profitably in other ways.

Charles L. Dodgson

16.36 Tristan d'Acunha

Source: St. James's Gazette, April 16, 1888

To the EDITOR *of the* ST. JAMES'S GAZETTE

SIR,—Will you kindly grant me space, in your columns, to ask if any clergyman, who takes in the *Guardian*, would bestow his copy, when done with, on my brother, the Rev. E. H. Dodgson, who is "Priest in Charge" in the lonely island of Tristan d'Acunha, 1,200 miles from the nearest land—S. Helena. Communications between S. Helena and Tristan are "few and far between," and my brother lives almost as if in another planet, so little does he hear of what goes on in the busy world he has left in order to devote himself to the spiritual needs of these poor islanders. When any vessel does go, it of course takes whatever letters etc. have accumulated for him at S. Helena: and a batch of old *Guardians* would be very welcome to him, even if months old when they reach him.

If any brother-priest will do him this service, I shall be grateful for a line, addressed to me at Oxford, that I may arrange with him as to where, and when, the papers should be sent.—I am, Sir, your obedient servant, *Charles L. Dodgson.*

Christ Church, Oxford, April 14.

16.37 Authors of Epigrams Wanted

Source: Notes and Queries, July 27, 1889

Answered September 7, 1889,

<https://academic.oup.com/nq/article/s7-VIII/193/193/4441108>

Can any of your readers give me the names of the authors of the following epigrams?—

Si placeat brevitās, hoc breve carmen habe.

“Femina dux facti: facti dux femina—” “Quid tum?” “Quid tum?
Tum facti femina dux fuit.” “O!”

C. L. Dodgson

16.38 “Life on a Lonely Isle of the Sea.”

Source: St. James's Gazette, November 13, 1889

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—In case any of your readers should feel any interest in the paragraph, with the above heading, which appears in your columns this evening, it may be worth while to correct a few inaccuracies in Captain Fearon's account of the people, and of my brother, the Rev. E. H. Dodgson, who is “priest in charge,” of the island of Tristan d'Acunha.

So far from having to “eke out an existence,” they have plenty of meat and vegetables; and some of them may even be called “wealthy.” The chief drawback is that wheat will not grow there; and, as there are sometimes long intervals without vessels touching there, they are liable to exhaust their supply of flour. My brother has been there for three years, not eight; and, so far from its being “without fee or reward,” he has received, during those three years, two handsome donations from the S.P.G.; from whom also he received, during a previous sojourn at the island, a regular annual stipend.

It is true that the Government send a man-of-war once a year, to report on the condition of the people, but this is anything but “their only communication with the outer world;” many ships touch there in the course of the year.

One sufficient objection to their being removed “to a more favoured region,” is that they would have to go as *paupers*, as their wealth consists almost entirely of live stock, whose conveyance to any other country would cost more than the value of the stock.—I am, Sir, your obedient servant,

*Charles L. Dodgson,
Christ Church, Oxford.
November 12.*

16.39 The Fasting Man

Source: St. James's Gazette, April 10, 1890

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—In connection with the question, naturally raised by the performance now going on, as to how far abstinence from solid Food, but not from Water, deserves the name of "Fasting," the following quotations may be of interest to your readers.

"Our classification of Food falls under two main divisions—Inorganic and Organic Substances; and, doubtless to the reader's surprise, the Inorganic turns out to be the *more* important of the two. We are not, indeed, accustomed to consider minerals as food, or Water as highly nutritious; but that is because we are not accustomed to consider the subject with the needful accuracy. Tell the first man you meet that Water is on the whole more nutritious than roast-beef, and it is probable that he will throw anxious glances across the street to assure himself that your keeper is at hand. Make the same statement to the first man of science you meet, and the chances are that he will think you very ignorant of organic chemistry, or that you are playing with a paradox. Nevertheless, it is demonstrably true, and never would have worn the air of a paradox, if men had steadily conceived the nature of an alimentary substance. *That* is an aliment which nourishes; whatever we find in the organism, as a constant and integral element, either forming part of its structure, or one of the conditions of vital processes, that, and that only, deserves the name of aliment. If 'to nourish the body' means to *sustain its force* and *repair its waste*—if food enters into the living structure—and if all the integral constituents of that structure are derived from food—there can be nothing improper in designating, as nutritious, substances which have an enormous preponderance among the integral constituents. People who think it paradoxical to call Water 'Food,' will cease their surprise on learning that water forms two-thirds of the living body."—Lewes's "Physiology of Common Life," Vol. I., p. 96.

"Surely the only real test of the alimentary character of any substance, is its power to support life for a longer period than it could subsist if deprived of all external help. Let us see how this principle would work. The most important food would then be Oxygen. Next to Oxygen we should rank Water, without which large mammalian animals perish within three or four days, but with a supply of which, in addition to the atmosphere, the want of other food may be sustained for many days, without the occurrence of fatal inanition."—Anstie's "Stimulants and Narcotics," p. 268.

I am, Sir, your obedient servant,

Lewis Carroll.

April 9.

16.40 Eight Hours Movement

Source: The Standard, August 19, 1890

To the Editor of the Standard

SIR,—Supposing it were the custom, in a certain town, to sell eggs in paper bags at so much per bag, and that a fierce dispute had arisen between the egg vendors and the public as to how many eggs each bag should be understood to contain, the vendors wishing to be allowed to make up smaller bags; and supposing the public were to say, “In future we will pay you so much per egg, and you can make up bags as you please,” would any ground remain for further dispute?

Supposing that employers of labour, when threatened with a “strike” in case they should decline to reduce the number of hours in a working day, were to reply, “In future we will pay you so much per hour, and you can make up days as you please,” it does appear to me—being, as I confess, an ignorant outsider—that the dispute would die out for want of a *raison d’être*, and that these disastrous strikes, inflicting such heavy loss on employers and employed alike, would become things of the past.

I am, Sir, your obedient servant,

Lewis Carroll.
August 18.

16.41 The Cab-Runner Nuisance

Source: The Standard, September 4, 1890

To the Editor of The Standard

SIR,—A letter on this subject signed “C. C.,” in *The Standard* of to-day, contains these words:—“In a case like this the police are of no assistance. They cannot be got at in time.” May I take this opportunity for making public a remedy which has occurred to me for this “intolerable nuisance,” as “C. C.” rightly calls it?

If the police themselves would take up the matter, my “plan of campaign” would, I feel sure, work splendidly, and would afford, to any ardent lover of sport, all the excitement of duck-hunting with “decoys.” The *modus operandi* would be as follows:—Having chosen a convenient house in a quiet neighbourhood, conceal therein a couple (say) of stalwart policemen, so posted as to be able, themselves unseen, to see and hear all that goes on outside. Meanwhile, a cab, with a tempting amount of luggage on the roof, and containing, as “decoy-ducks,” a couple of seemingly feeble old ladies, is slowly driving along a neighbouring thorough-fare, the cabman having instructions to keep to the main streets till he finds that he has one or two “cab-runners” in pursuit, and then to go at once to the house indicated. A respectable man emerges, takes charge of the boxes, and politely declines the assistance of the cab-runners. The rest of the scene needs no description.

But, even without the assistance of the authorities, much good may be done, and much fine sport obtained, by private enterprise. When a couple of genuine “feeble old ladies” are coming to town with a quantity of luggage, let them previously arrange to have two men awaiting their arrival; one, the “decoy,” to emerge from the house and take charge of the luggage: the other, a man of strength and courage, concealed (to avoid all appearance of collusion) in the next house, who is not to appear until the fun has become “fast and furious,” and is then to lounge out with the casual inquiry, “What’s all this about?” “Mind yer own business!” growls the angry cab-runner. “Mind yours!” retorts the man of nerve and muscle. “And just let go o’ that there box!” Here, again, the rest of the scene may be left to the reader’s imagination. As a point of law, I believe, it would only be necessary for the strong man to exercise forbearance till he had received one blow from the cab-runner. He would then be legally free to return it, with interest at the rate of ten, or even twenty per cent., should he feel so disposed.

I am, Sir, your obedient servant,

Lewis Carroll.
September 3.

Quoted from *Tam o’
Shanter* by Robert
Burns

16.42 Nyctograph

Source: *The Lady*, October 29, 1891 (as part of the *Syzygy* column)

I cannot give any Lists of Marks or Answers to Correspondents this week, so will take this opportunity for describing my recent invention for writing in the dark, which arose from the need of recording *Syzygy-Chains* invented when lying awake at night, but which will, I hope, serve a far more important purpose, by enabling blind people to write letters, &c., without having to dictate them to others.

I think of calling the mechanical appliance which my system requires, in addition to an ordinary "indelible" memorandum-book, the "Nyctograph." I invented it September 24th, 1891, but I do not intend to patent it. Any one who chooses is welcome to make and sell the article.

Any one who has tried, as I have often done, the process of getting out of bed at 2 a. m. in a winter night, lighting a candle, and recording some happy thought which would probably be otherwise forgotten, will agree with me that it entails much discomfort. All I have now to do, if I wake and think of something I wish to record, is to draw from under the pillow a small memorandum book, containing my Nyctograph, write a few lines, or even a few pages, without even putting the hands outside the bed-clothes, replace the book, and go to sleep again.

There is an ingenious machine already made and sold (I bought mine from Messrs. Elliott, 101, St. Martin's Lane), where you write a line of MS. inside a narrow oblong opening, then turn a handle till you hear a click; this shifts the paper upwards and gives a fresh surface for another line of MS. I tried to put this into a more portable shape, by cutting a series of oblong apertures in a piece of pasteboard the size of a page of a small memorandum book; but the writing is apt to be illegible, as it is difficult to know where you are, and you constantly come against the edge of the aperture when you wish to go further in order to make the loop of an "h" or the tail of a "y." Then I tried rows of square holes, each to hold one letter (quarter of an inch square I found a very convenient size), and this proved a much better plan than the former; but the letters were still apt to be illegible. Then I said to myself "Why not invent a square alphabet, using only dots at the corners, and lines along the sides?" I soon found that, to make the writing easy to read, it was necessary to know where each square began. This I secured by the rule that every square-letter should contain a large black dot in the N. W. corner. Also I found that it would cause confusion to have any symbol which used only the W. side of the square. These limitations reduced the number of available symbols to 31, of which I selected 26 for the letters of the alphabet, and succeeded in getting 23 of them to have a distinct resemblance to the letters they were to represent.

Think of the number of lonely hours a blind man often spends doing nothing, when he would gladly record his thoughts, and you will realise what a blessing you can confer on him by giving him a small "indelible" memorandum-book, with a piece of paste-board containing rows of square holes, and teaching him the square-alphabet. The crowning blessing would be that, instead of having to dictate letters to his attendant, he could write them himself, and no one need see them except those to whom they were written. In the following list, I call the N. E. corner "2," the S. W. corner "3" and the S. E. corner "4." Also I have

bracketed letters whose symbols run in pairs, each being the reverse of the other.
Every symbol is assumed to have a large dot in its N. W. corner.

	Corners	Sides	Resemblance to letters, &c.
A	4	none	right-hand side of "A"
B	2, 4	W	vertical line of "B," with dots to stand for the semicircles.
{ C	none	N, W, S	obvious
{ D	"	N, E, S	obvious; also reversal of preceding symbol
E	"	N	top of "E"; taken as simplest symbol for commonest letter
{ F	4	N, W	obvious; dot stands for cross-piece which has fallen off
{ G	2	W, S	analogous to symbol for "C"; also reverse of preceding symbol
H	none	W, E	obvious
I	"	S	like "i," vertical line having fallen down
J	"	E, S	like "j," dot having slipped to one side
K	4	W	vertical line, and foot, of "K"
L	none	W, S	obvious
{ M	"	N, W, E	like "m," with centre vertical erased
{ N	"	W, E, S	reverse of preceding symbol
O	"	N, W, E, S	obvious
{ P	2	W	vertical line of "p," with dot to stand for semicircle
{ Q	none	E	vertical line of "q," with dot to stand for semicircle; also reverse of preceding
R	3	N, E	lower part of "R"
{ S	none	N, W	like old-fashioned "S"
{ T	"	N, E	left-hand part of "T"; also reverse of preceding symbol
U	2	none	tops of "U"
V	2, 4	"	corners of "V"
W	2	S	like two "V" symbols, with lower corners connected by a line
{ X	3	N	no likeness claimed
{ Y	4	N	ditto, but is reverse of preceding symbol
Z	none	N, S	upper and lower lines of "Z"
"figures"	2, 3	none	corners of "F"; means "symbols will now represent figures"
"date"	2, 3, 4	"	corners of a square "D"; means "next 6 symbols will represent date, 2 stand
"letters"	3, 4	"	corners of "L"; means "symbols will now represent letters again"
"and"	3	E	symbol for A put upright; and right-hand portions of symbols for "N" and "E"
"the"	3, 4	N	upper portion of symbol for "T"; feet of symbol for "H," and symbol for "E"

When the symbols are to represent figures, they should be the symbols for
10 of the letters, as follows:—

Number	Letters	Reasons for Selection
1	B	first consonant
2	D	initial of "duo" and "deux"
3	T	initial of "three"
4	F	initial of "four"
5	L	means "50" [in Roman numerals]
6	S	initial of "six"
7	M	final of "septem"
8	H	initial of "huit" [French for "eight"] also resembles "8"
9	N	initial of "nine"
0	Z	initial of "zero"

These 10 letters are a portion of my “Memoria Technica,”¹ in which (by assigning 2 consonants to each digit, and assigning no meaning to vowels and “Y”) I can always represent any date, or other number, by a *real* word: the other 10 consonants being as follows:—“1, C; 2, W; 3, J; 4, Q; 5, V; 6, X; 7, P; 8, K; 9, G; 0, R.” There are reasons for selection in all these pairs, except “3, J,” which had to pair off as the sole survivors.

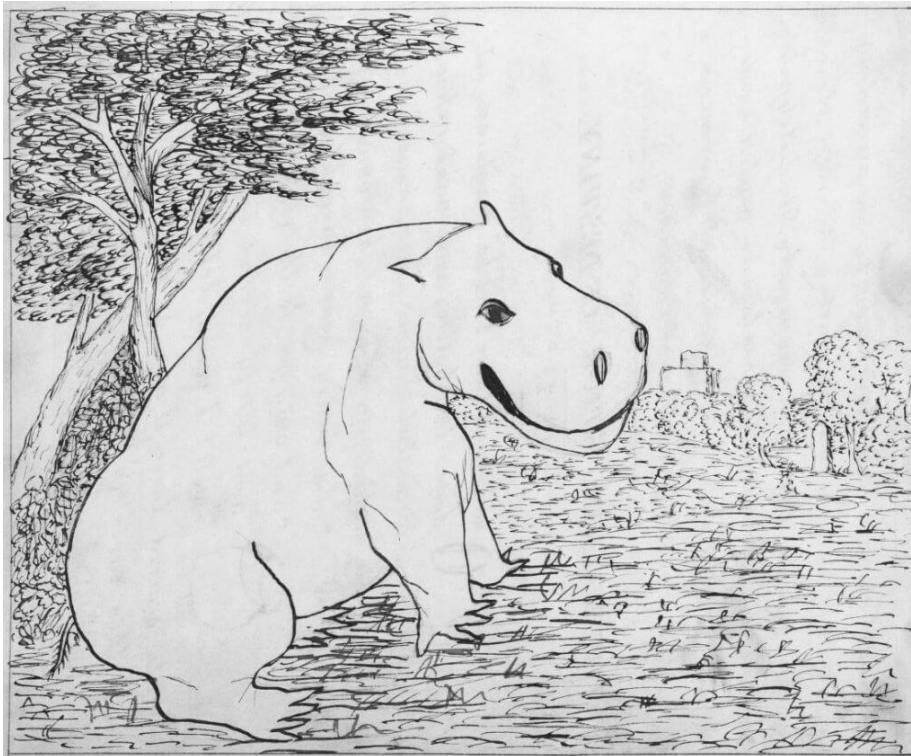
¹Remark: → 16.18, p. 1960

Part 17

Images

17.1 The Vernon Gallery

Source: The Rectory Umbrella
Parodies on real images



Sir J. Reynolds. Painter.

P. Joupeat. Engraver.

The Age of Innocence.
from the picture in the Vernom Gallery.

that elaborate care for which M^r Herring is so famed, and the picture on the whole is one of his best.

“The Woodland Gait”



W. Colling. Painter.

C. Cousen. Engraver.

The Woodland Gait.
from the picture in the Vernom Gallery.

This charming picture represents a country dance: the intention of the painter is to portray rustic manners, untaught and unpolished; in this aim he has succeeded admirably, for surely no one would suppose either of the couple in the foreground had ever figured at a London ball.

The little man, bounding up at least a foot from the ground, evidently prides himself a good deal on his agility, but his partner, if one may judge by the smirk on her face, considers her own style of dancing more elegant and graceful. There is an expression of energy in the fiddler's face as though he threw his whole life into the fiddle bow, and the languishing flute-player is evidently some would-be Mozart,⁴ whom the bad taste and bad ear of his unmusical neighbours has hitherto prevented from rising into celebrity. The rustic gait of all the four figures is, in our opinion, admirably depicted.

Quoted from *Elegy
Written in a Country
Churchyard* by
Thomas Gray

4

“Some mute inglorious Milton here may rest,
“Some Cromwell, guiltless of his country's blood.”

Gray's *Elegy*.

“The First Earring”



Sir D. Wilkie. Painter.

W. Greatbach. Engraver.

The First Earring.
from the picture in the Vernom Gallery.

The scene from which this excellent picture is painted is taken from a passage in the autobiography⁵ of the celebrated Sir William Smith⁶ of his life when a schoolboy: we transcribe the passage: “One day Bill Tomkins⁷ and I were left alone in the house, the old doctor being out: after playing a number of pranks Bill laid me a bet of sixpence that I wouldn’t pour a bottle of ink over the Doctor’s cat. *I did it*, but at that moment old Muggles came home, and caught me by the ear as I attempted to run away. My sensation at the moment I shall never forget: *on that occasion I received my first earring*.⁸ The only remark Bill made to me, as he paid me the money afterwards was, “I say, didn’t you just howl jolly!”” The engraving is an excellent copy of the picture.

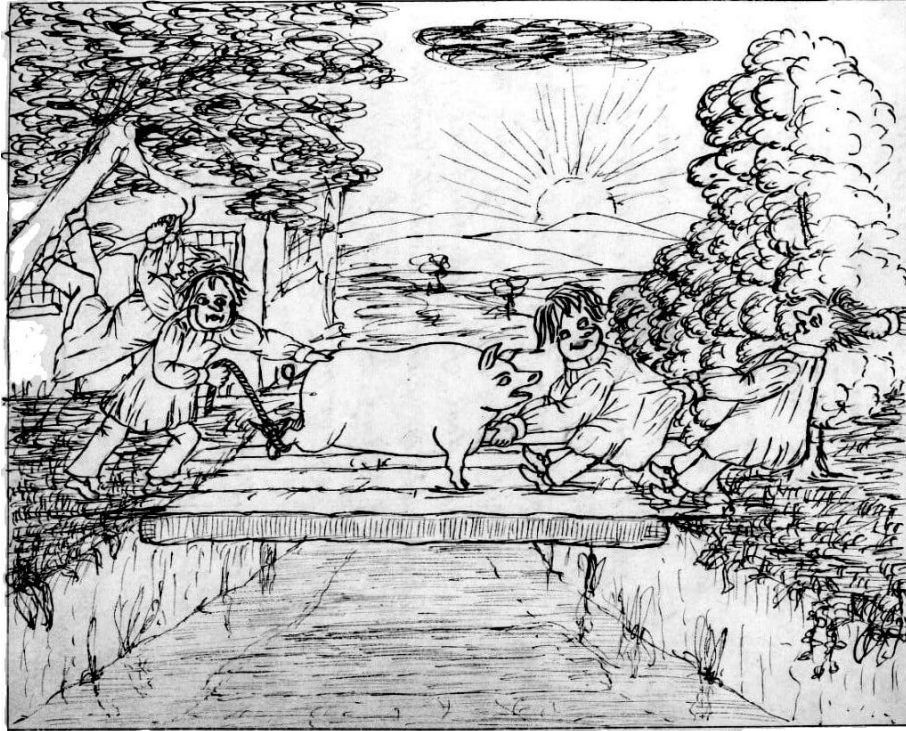
⁵a man’s history of his own life.

⁶the author of “the Bandy-legged Butterfly.”

⁷afterwards President of the Society for the prevention of Cruelty to Animals.

⁸or a pulling by the ear.

“The Wooden Bridge”



Sir A. W. Calcott. Painter.

J. C. Sentley. Engraver.

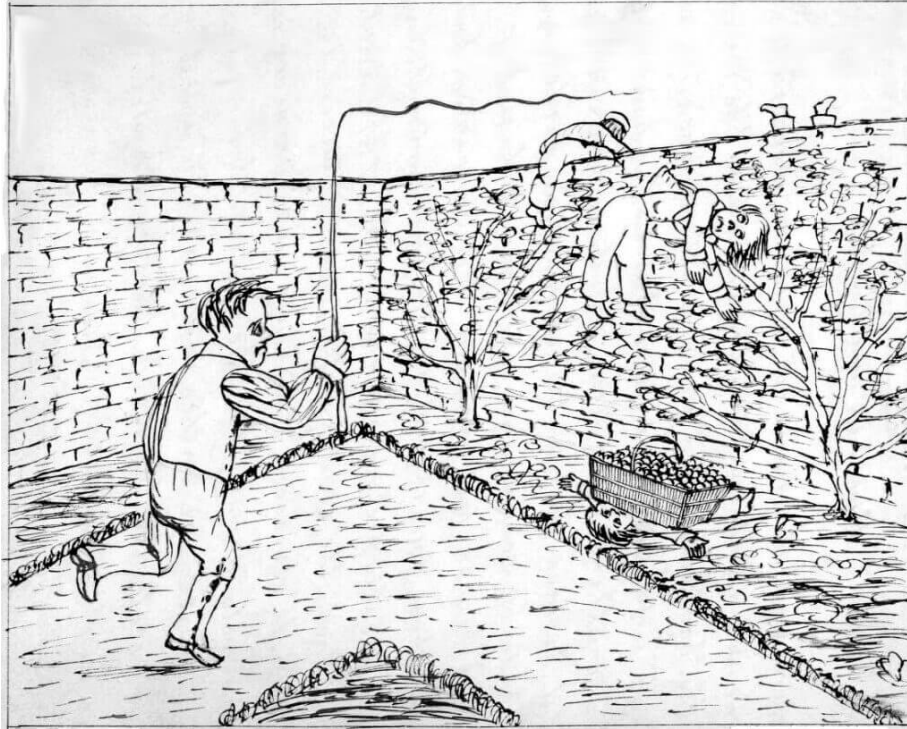
The Wooden Bridge.
from the picture in the Vernom Gallery.

A very few words will suffice to explain the meaning of this charming picture. Four ploughboys are trying to force an obstinate pig across a wooden bridge: the hands of a fifth are just visible at the edge of the picture. It appears either the height of cruelty or insanity to expect it to walk⁹ across on one leg. This however they do not seem to have sufficiently considered, and the consequence is they are taking a great deal of trouble with scarcely a hope of success. It is scarcely possible for the unhappy creature to stand, much less to progress a single inch, until one or more of its legs are released. The fourth figure appears as if he would prefer no help at all in pulling to the help he is receiving.¹⁰ The one who is pushing is evidently much of the same opinion. The trees, the cottage, and the setting sun in the background produce a fine effect.

⁹the word “walk” implies the use of more legs than one. The only way it could possibly advance would be hopping.

¹⁰viz. by the hair.

“High Life and Low Life”



E. Landser. Painter.

H. Beckwith. Engraver.

High Life and Low Life.
from the picture in the Vernom Gallery.

Never was the name of a picture more fully borne out in the picture than in this. The face of the boy suspended on the wall, representing “High Life,” is positively exquisite¹¹: we have rarely seen anything more true to nature. One can trace in it, besides fear of the approaching gardener, a shade of sorrow and regret for the basket of apples¹² he has just dropped. His companion however, whose face is just visible from under the basket, probably feels more *real* sorrow for that event. This last, the reader will of course perceive, is meant to represent “Low Life.” The gardener is admirably drawn, but the potatoe beds and gravel walk are rather inferior to the artist’s usual style. On the whole, however, the picture does him great credit.

¹¹i. e. expressing exquisite pain.

¹²probably Lemon Pippins.

“The Duett”



W. ETTY. R.A. Painter.

A. BELL. Engraver.

The Duett.
from the picture in the Vernom Gallery.

This charming picture is intended to represent three true lovers of music; for though the boy on the left is taking no part in the performance, yet there is a fire in his eye which forbids us to think him an inattentive or unadmiring listener. The most casual observer cannot fail to remark what a tendency the love of music has to make the hair grow in full luxuriance, nay, he may safely conclude, if he finds no such effect produced in *him*, that he has no ear for melody. A further proof of the lady's great musical taste is that she is producing the most mellow strains from a pair of common kitchen bellows¹³: the song they are singing my readers have no doubt often heard.

¹³this, in point of fact, is the only instrument by means of which a brisk air can be produced. It's use requires a strict attention to the bars.

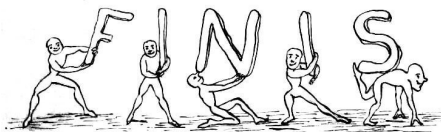
17.2 Other Images in *The Rectory Umbrella*

Source: *The Rectory Umbrella*

The image at the back is partially torn and here slightly amended.



(Frontispiece)

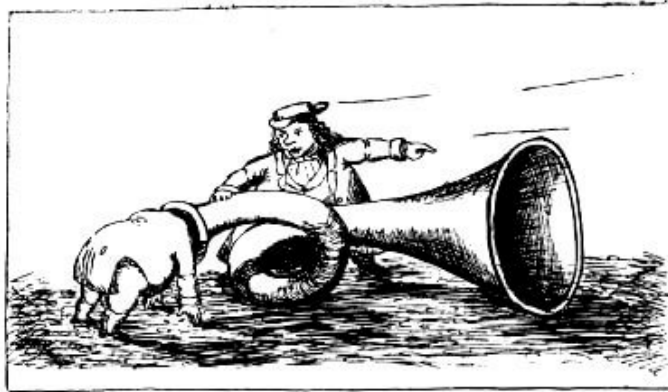




17.3 Studies from English Poets

Source: Mischmasch

No. I



“Be rather in the trumpet’s mouth.” F. Tennyson.

Quoted from
Endymion by John
Keats

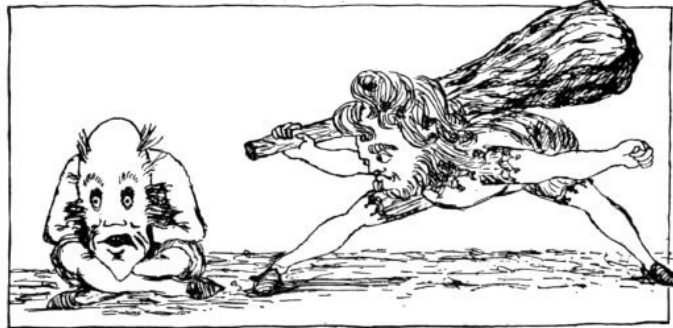
No. II



“Alas! what boots—” Milton’s *Lycidas*. line 64

Quoted from *Lycidas*
by John Milton

No. III



“He gave it to his father.” Ossian.

Quoted from *The Poems of Ossian* by James Macpherson

No. VI



“She did so; but 'tis doubtful how or whence—” Keats.

Quoted from *Lamia* by John Keats

17.4 From Our Own Correspondent

Source: Mischmasch



“The first idea that struck us on entrance was, the *extremely select* nature of the assembly.



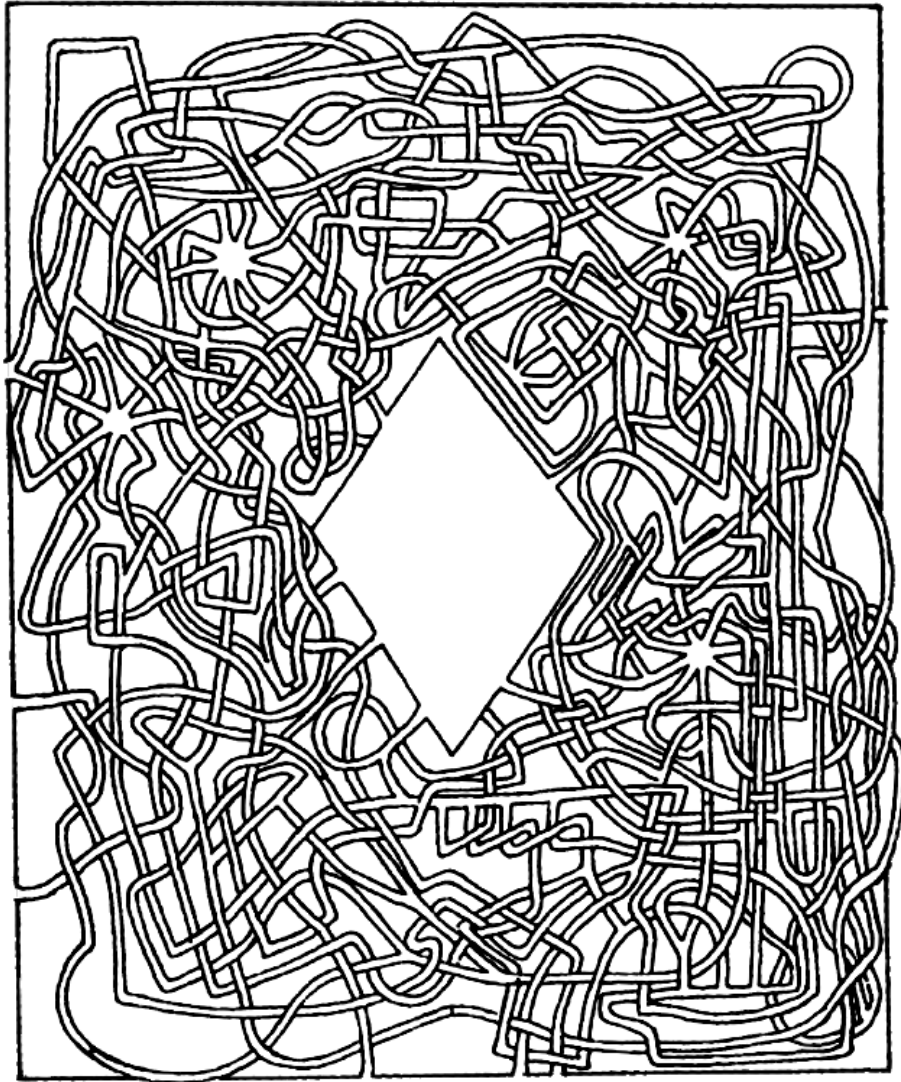
“One of the earliest arrivals was a gentleman of unquestionable ‘ton’: the lady who accompanied him excited considerable attention, on entering the room, by her exquisite muslin skirt and slip.”

17.5 Other Images in *Mischmasch*

Source: Mischmasch

Mischmasch





Part 18

Poems

This part contains all poems by Lewis Carroll I could find. It also includes poems extracted from his stories (except those poems that he only quotes, and are not by him; and except for very short verses, especially Memoria Technica verses like *Specific Gravities of Metals* (→ 16.19, p. 1961). When there is more than one version (not counting just differences in punctuation etc.), all versions are collected here. The titles for poems without original title are derived from the surrounding text, or just the incipit. The poems are in alphabetical order of their first words (ignoring any introductions, even the introduction of *Hiawatha's Photographing*), so you can find a poem when you know how it starts, with one exception: The poem starting with “I watch the drowsy night expire” is found among “T”, because the later version starts with “The night creeps onward, sad and slow” (*Faces in the Fire*, → 18.159, p. 2351).

18.1 A boat, beneath a sunny sky

Source: Through the Looking Glass (dedication)

A boat, beneath a sunny sky,
Lingering onward dreamily
In an evening of July—

Children three that nestle near,
Eager eye and willing ear,
Pleased a simple tale to hear—

Long has faded that sunny sky:
Echoes fade and memories die.
Autumn frosts have slain July.

Still she haunts me, phantomwise,
Alice moving under skies
Never seen by waking eyes.

Children yet, the tale to hear,
Eager eye and willing ear,
Lovingly shall nestle near.

In a Wonderland they lie,
Dreaming as the days go by,
Dreaming as the summers die:

Ever drifting down the stream—
Lingering in the golden gleam—
Life, what is it but a dream?

Other version:
→ 18.89, p. 2174

Acrostic: Alice Pleasance Liddell

18.2 Examination Statute

Source: printed 1864

A list of those who might, could, would, or should have voted thereon in Congregation Feb. 2, 4681, arranged alphabetically:—

A is for, who'd physic the Masses,
B is for, who swears by the gases:
C is for, constant to Horace,
D is for, who integrates for us.
E is for, with rifle well steadied,
F is for, Examiner dreaded!
G's, by the "Saturday" quoted,
H is for, to "Margaret" devoted.
I am the Author, a rhymers erratic—
J is for, who lectures in Attic:
K is for, than attic much warmer,
L is for, relentless reformer!
M is for, our Logic-provider,
And is **N**, once a famous rough-rider.
. 's **O**, Orthodoxy's Mendoza!
And is **P**, the amendment-proposer.
Q is the Quad, where the Dons are collecting,
R is for, who lives for dissecting:
S is for, sworn foe to formality,
T's, full of Civil Legality.
U's, factiously splitting,
V's the, ceaselessly sitting.
W's, by Museum made frantic,
X the **X**penditure, grown quite gigantic.
Y are the Young men, whom nobody thought about—
Z is the Zeal that this victory brought about.

Solutions: Acland, Brodie, Conington, Donkin, Evans, Freeman, Goldwin Smith, Heurtley, Jowett, Kitchin, Liddell, Mansel, Norris, Ogilvie, Parker, Rolleston, Stanley, Travers Twiss, University, Vice-Chancellor, Wall

18.3 A Monument

Source: Mischmasch

A monument—men all agree—
Am I in all sincerity,
 Half cat, half hindrance made.
If head and tail removed should be,
Then most of all you strengthen me;
Replace my head, the stand you see
 On which my tail is laid.

Solution: tablet [tab-let; able; table + t(ea)]

18.4 A Nursery Darling

Source: The Nursery "Alice" (dedication)

A Mother's breast:

Safe refuge from her childish fears,
From childish troubles, childish tears,
Mists that enshroud her dawning years!
See how in sleep she seems to sing
A voiceless psalm—an offering
Raised, to the glory of her King,
In Love: for Love is Best.

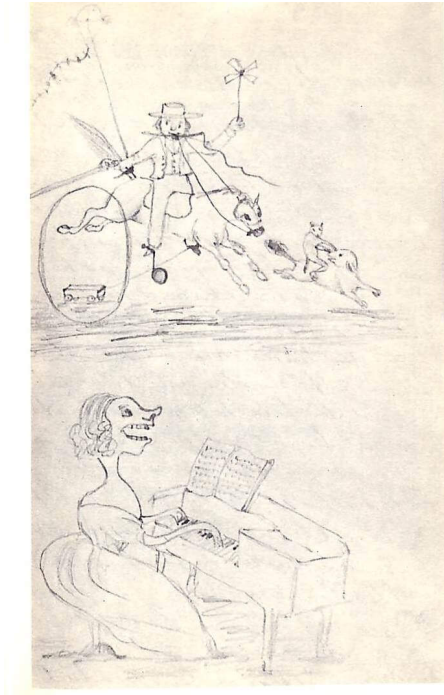
A Darling's kiss:

Dearest of all the signs that fleet
From lips that lovingly repeat
Again, again, their message sweet!
Full to the brim with girlish glee,
A child, a very child is she,
Whose dream of Heaven is still to be
At Home: for Home is Bliss.

Acrostic: Marie van der Gucht (second letters)

18.5 Rules and Regulations

Source: Useful and Instructive Poetry



A short direction
To avoid dejection,
By variations
In occupations,
And prolongation
Of relaxation,
And combinations
Of recreations,
And disputation
On the state of the nation
In adaptation
To your station,
By invitations
To friends and relations,
By evitation
Of amputation,
By permutation
In conversation,
And deep reflection
You'll avoid dejection.
Learn well your grammar,

And never stammer,
Write well and neatly,
And sing most sweetly,
Be enterprising,
Love early rising,
Go walkes of six miles,
Have ready quick smiles,
With lightsome laughter,
Soft flowing after.
Drink tea, not coffee;
Never eat toffy.
Eat bread with butter.
Once more, don't stutter.
Don't waste your money,
Abstain from honey.
Shut doors behind you,
(Don't slam them, mind you.)
Drink beer, not porter.
Don't enter the water
Till to swim you are able.
Sit close to the table.
Take care of a candle.
Shut a door by the handle,
Don't push with your shoulder
Until you are older.
Lose not a button.
Refuse cold mutton.
Starve your canaries.
Believe in fairies.
If you are able,
Don't have a stable
With any mangers.
Be rude to strangers.
Moral: Behave.

18.6 Alas! she would not hear my prayer!

Source: Photography Extraordinary (extracted, connected)

Alas! she would not hear my prayer!
Yet it were rash to tear my hair;
Disfigured, I should be less fair.
She was unwise, I may say blind;
Once she was lovingly inclined;
Some circumstance has changed her mind.

Well! so my offer was no go!
She might do worse, I told her so;
She was a fool to answer "No."
However, things are as they stood;
Nor would I have her if I could,
For there are plenty more as good.

Firebrands and daggers! hope hath fled!
To atoms dash the doubly dead!
My brain is fire—my heart is lead!
Her soul is flint, and what am I?
Scorch'd by her fierce, relentless eye.
Nothingness is my destiny!

18.7 Alice dear, will you join me in hunting the Snark?

Source: sent to Alice Crompton, April 7, 1876

Alice dear, will you join me in hunting the Snark?
Let us go to the chase hand-in-hand:
If we only can find one before it gets dark,
Could anything happen more grand?
Ever ready to share in the Beaver's despair,
Count your poor little fingers and thumbs;
Recollecting with tears all the smudges and smears
On the page where you work at your sums!
May I help you to seek it with thimbles and care?
Pursuing with forks and hope?
To threaten its life with a railway-share?
Or to charm it with smiles—but a maiden so fair
Need not trouble herself about soap!

Acrostic: Alice Crompton

18.8 Alice dreamed one night

Source: sent to Alice Pratt, April 7, 1876

Alice dreamed one night that she
Left her home in Wonderland:
In a house called “Number Three
Carleton Road” she seemed to be,
Empress of a Bellman’s band.

Patiently the chase she led,
Running over Tufnell Park—
All because a book she read,
That was running in her head;
'Twas “The Hunting of the Snark”!

Acrostic: Alice Pratt

18.9 The Poet's Farewell

Source: The Rectory Umbrella

All day he had sat without a hat,
The comical old feller,
Shading his form from the driving storm
With the Rectory Umbrella.
When the storm had passed by, & the ground was dry,
And the sun shon bright on the plain,
He arose from his seat, and he stood on his feet,
And sang a melting strain:
All is o'er! the sun is setting,
Soon will sound the dinner bell;
Thou hast saved me from a wetting,
Here I'll take my last farewell!
Far dost thou eclipse the Maga-
zines which came before thy day,
And thy coming made them stagger,
Like the stars at morning ray.
Let me call again their phantoms,
And their voices long gone by,
Like the crow of distant bantams,
Or the buzzing of a fly.
First in age, but not in merit,
Stands the Rectr'y Magazine;
All it's wit thou dost inherit,
Though the Comet came between.
Novelty was in it's favour,
And mellifluous it's lays,
All, with eager plaudits, gave a
Vote of honour in it's praise.
Next in order comes the Comet,
Like some vague and feverish dream,
Gladly, gladly turn I from it,
To behold thy rising beam!
When I first began to edit,
In the Rect'ry Magazine,
Each one wrote therein who read it,
Each one read who wrote therein.
When the Comet next I started,
They grew lazy as a drone:
Gradually all departed,
Leaving me to write alone.
But in thee—let future ages
Mark the fact which I record,
No one helped me in *thy* pages,
Even with a single word!

But the wine has left the cellar,
And I hear the dinner bell,
So fare thee well, my old Umbrella,
Dear Umbrella, fare thee well!

18.10 All in the Golden Afternoon

Source: Alice's Adventures in Wonderland (dedication, earlier versions with minor differences as noted)

All in the golden afternoon
Full leisurely we glide;
For both our oars, with little skill,
By little arms are plied,
While little hands make vain pretence
Our wanderings to guide.

Ah, cruel Three! In such an hour,
Beneath such dreamy weather,
To beg a tale of breath too weak
To stir the tiniest feather!
Yet what can one poor voice avail
Against three tongues together?

Imperious Prima flashes forth
Her edict to "begin it":
In gentler tones¹ Secunda hopes
"There will be nonsense in it!"
While Tertia interrupts the tale
Not *more* than once a minute.

Anon, to sudden silence won,
In fancy they pursue
The dream-child moving through a land
Of wonders wild and new,
In friendly chat with bird or beast—
And half believe it true.

And ever, as the story drained
The wells of fancy dry,
And faintly strove that weary one
To put the subject by,
"The rest next time—" "It *is* next time!"
The happy voices cry.

Thus grew the tale of Wonderland:
Thus slowly, one by one,
Its quaint events were hammered out
And now the tale is done,
And home we steer, a merry crew,
Beneath the setting sun.

Alice! A childish story take,
And, with a gentle hand,
Lay it where Childhood's dreams are twined
In Memory's mystic band,

¹tone

Like pilgrim's wither'd wreath of flowers
Pluck'd in a far-off land.

18.11 A Tale of a Tail

Source: Useful and Instructive Poetry



An aged gardener gooseberries picked,
From off a gooseberry tree;
The thorns they oft his fingers pricked
Yet never a word said he.

A dog sat by him with a tail,
Oh! *such* a tail! I ween,
That never such in hill or dale,
Hath hitherto been seen.

It was a tail of desperate length,
A tail of grizzly fur,
A tail of muscle, bone, and strength
Unmeet for such a cur.

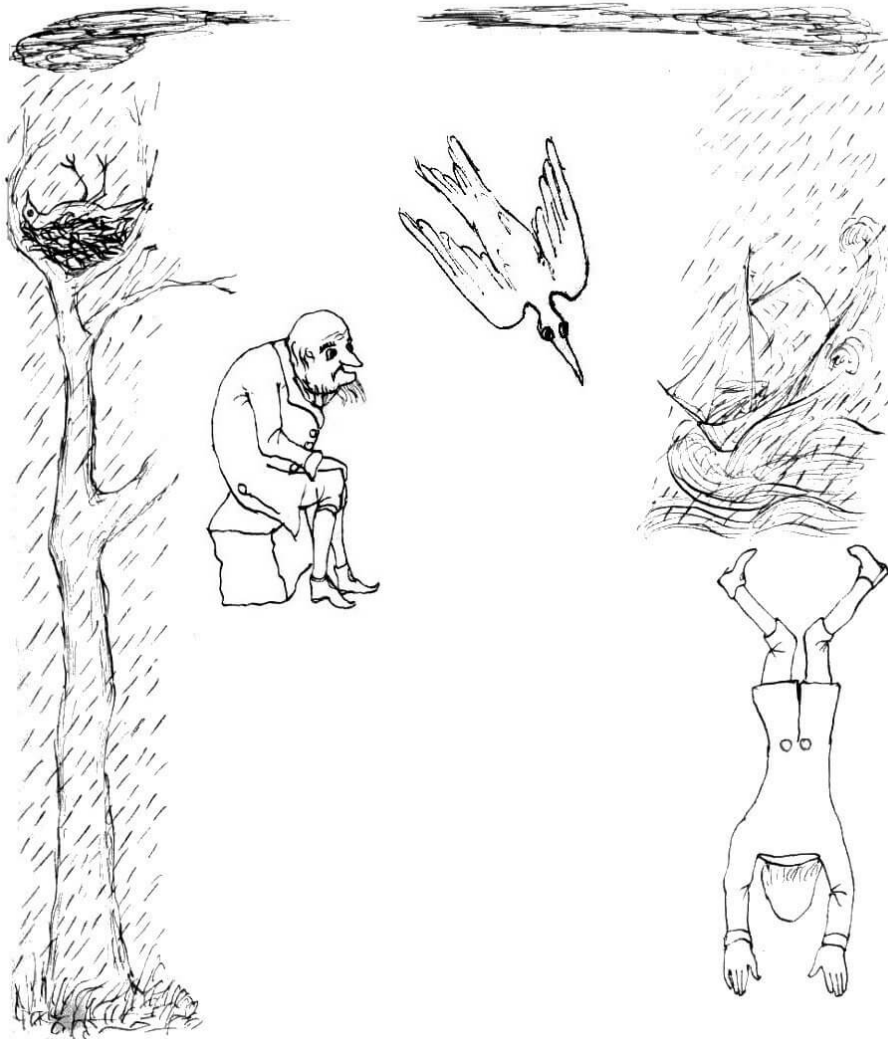
Yet of this tail the dog seemed proud
And ever and anon,
He raised his head, and barked so loud,
That tho' the man seemed *something* cowed,
Yet still his work went on.

At length in lashing out its tail,
It twisted it so tight,

Around his legs, 'twas no avail,
To pull with all its might.
The gardener scarce could make a guess,
What round his legs had got,
Yet he worked on in weariness,
Although his wrath was hot.
“Why, what’s the matter?” he did say,
“I can’t keep on my feet,
Yet not a glass I’ve had this day
Save one, of brandy neat.
“Two quarts of ale, and one good sup,
Of whiskey sweet and strong,
And yet I scarce can now stand up,
I fear that something’s wrong.”
His work reluctantly he stopped,
The cause of this to view,
Then quickly seized an axe and chopped
The guilty tail in two.
When this was done, with mirth he bowed,
Till he was black and blue,
The dog it barked both long and loud,
And with good reason too.
Moral: “Don’t get drunk.”

18.12 The Storm

Source: The Rectory Umbrella



An old man sat anent a clough,¹
A grizzled² old man an' weird,³
Deep were the wrinkles in his aged brow,
An' hoar his snowy beard,
All tremmed⁴ before his glance, I trow,⁵

¹probably a bank.

²grizzled.

³wizard-like.

⁴trembled.

⁵= I wot, I ween, meaning nearly the same as "I know."

Sae savagely he leared.
 The rain cloud cam frae out the west,
 An' spread athwart⁶ the sky,
 The crow has cowered⁷ in her nest,
 She kens the storm is nigh,
 He folds his arms across his breast,
 Thunder an' lightning do your best!
 "I will not finch nor fly!"
 Draggles⁸ with wet the tall oak tree,
 Beneath the dashing rain,
 The old man sat, an' gloomily
 He gazed athwart the plain,
 Down on the wild and heaving sea,
 Where heavily an' toilsomely
 Yon vessel ploughs the main.
 Above the thunder cloud frowns black,
 The dark waves howl below,
 Scarce can she hold along her track,
 Fast rocking to an' fro,
 And oft the billow drives her back,
 And oft her straining timbers crack,
 Yet onward she doth go.
 The old man gazed without a wink,
 An' with a deadly⁹ grin:
 "I laid a wager she would sink,
 "Strong hopes had I to win;
 "'Twas ten to one, but now I think,
 "That Bob will sack the tin."¹⁰
 Then from the precipice's brink
 He plunged headforemost in.¹¹

⁶across.

⁷crouched.

⁸hangs heavily.

⁹or, murderous.

¹⁰pocket the money.

¹¹imitated from the conclusion of Gray's "Bard," only finer.

18.13 A Valentine

Source: Mischmasch (as “Lines”, with signature “Ch: Ch: Feb: 1860.” and minor differences as noted); Phantasmagoria (with signature “Feb. 13, 1860.” and minor differences as noted); Rhyme? and Reason?

[Sent to a friend who had complained that I was glad enough to see him when he came, but didn't seem to miss him if he stayed away.]¹

And cannot pleasures, while they last,
Be actual unless, when past,
They leave us shuddering and aghast,
With anguish smarting?
And cannot friends be ^{firm}² and fast,
And yet bear parting?

And must I then, at Friendship's call,
Calmly resign the little all
(Trifling, I grant, it is and small)
I have of gladness,
And lend my being to the thrall
Of gloom and sadness?

And think you that I should be dumb,
And full *dolorum omnium*,
Excepting when you choose to come
And share my dinner?
At other times be sour and glum
And daily thinner?

[Must he then only live to weep,
Who'd prove his friendship true and deep?
By day a lonely shadow creep,
At night-time languish,
Oft raising in his broken sleep
The moan of anguish?³

¹*Mischmasch*: To a friend at Radley College, who had complained “that I was glad enough to see him when he came, but didn't seem to care about it if I stayed away.”

Phantasmagoria: To a friend at Radley College, who had complained ‘that I was glad enough to see him when he came, but did not seem to miss him if he stayed away.’

²fond

³Mischmasch:

Must he then live in groans and screams,
Who'd prove himself the friend he seems,
And haunt, by day, all silent streams,
At night sleep badly,
Oft muttering in his broken dreams
The name of Radley?

Phantasmagoria:

Must he then only live to weep,
Who'd prove his friendship true and deep,
By day a lonely shadow creep,
At night rest badly,
Oft muttering in his broken sleep

The lover, if for certain days
His fair one be denied his gaze,
Sinks not in grief and wild amaze,
 But, wiser wooer,
He spends the time in writing lays,
 And posts them to her.

 And if the verse flow free and fast,
Till even the poet is aghast,
A touching Valentine at last
 The post shall carry,
When thirteen days are gone and past
 Of February.⁴

Farewell, dear friend, and when we meet,
 In desert waste or crowded street,⁵
Perhaps before this week shall fleet,
 Perhaps to-morrow,
I trust to find *your* heart the seat
 Of wasting sorrow.

The name of Radley?

4

And if he be an Oxford Don,
Or 'Jonson's learned sock be on,'
A touching Valentine anon
 The post shall carry,
When thirteen days are come and gone
 Of February.

⁵"Here in my room, or in the street," in Mischmasch

18.14 Are you deaf, Father William?

Source: inscribed into a copy of *The Hunting of the Snark* sent to Miss Paine, 1876

“Are you deaf, Father William?” the young man said,
“Did you hear what I told you just now?
“Excuse me for shouting! Don’t waggle your head
“Like a blundering, sleepy old cow!
“A little maid dwelling in Wallington Town,
“Is my friend, so I beg to remark:
“Do you think she’d be pleased if a book were sent down
“Entitled ‘The Hunt of the Snark?’”
“Pack it up in brown paper!” the old man cried,
“And seal it with olive-and-dove.
“I command you to do it!” he added with pride,
“Nor forget, my good fellow, to send her beside
“Easter Greetings, and give her my love.”

May 27, 1876.

Acrostic: Adelaide Paine

18.15 Around my lonely hearth, to-night

Source: for Agnes Georgina Hull, 1878

Around my lonely hearth, to-night,
Ghostlike the shadows wander:
Now here, now there, a childish sprite,
Earthborn and yet as angel bright,
Seems near me as I ponder.

Gaily she shouts: the laughing air
Echoes her note of gladness—
Or bends herself with earnest care
Round fairy-fortress to prepare
Grim battlement or turret-stair—
In childhood's merry madness!

New raptures still hath youth in store.
Age may but fondly cherish
Half-faded memories of yore—
Up, craven heart! repine no more!
Love stretches hands from shore to shore:
Love is, and shall not perish!

Acrostic: Agnes Georgina Hull

18.16 The Angler's Adventure

Source: Useful and Instructive Poetry

As I was ling'ring by the river's stream
Striving to lure the shoals of glitt'ring fish
With hook and line, methought I had a dream,
That what I caught was placed upon a dish.
No tail it had, it could not be a beast,
No wings, it could by no means be a bird.
Its flesh, when tasted, proved a luscious feast,
And yet, methought, its name I'd never heard.
Speckles it had of most enchanting hue,
An unknown foreign creature it appeared;
It might be anything, perhaps a Jew,
I almost wondered it had not a beard.
While thus I slept and dreamed, I felt a twitch
Which almost pulled my fishing rod away,
I started to my feet. Oh! what a rich
Vision of splendour in the water lay!
The creature of my dreams! most wonderful,
Struggling most violently on the hook,
I landed it with one most desperate pull,
Ere that I ventured on its form to look.
In every item it did correspond
Exactly with what I in sleep had seen,
It seemed in fact almost to go beyond
The former in the grandeur of its mean.
I scarce could fancy that there did exist
A creature which in beauty so surpassed.
I pondered o'er each fish and bird and beast,
And puzzled out its name, I thought, at last.
By thinking over Buffon's history,
And Bewick's Birds, and Isaak Walton's book,
I seemed to penetrate the mystery,
The name of that which hung upon my hook.
Remembering Isaak Walton's own instructions
And other anglers' who have gone before us,
By algebra, and eke the help of fluxions,
I made it out, it was a Plesiosaurus!
"Is it not so?" I said unto my maid,
She wrung her hands as through the room she strode,
"Take it away! Oh master mine," she said,
"It is, it is, it is, it is a toad!!!!!!!!!"
Moral: "Don't dream."

18.17 As It Fell upon a Day

Source: Rectory Magazine

As I was sitting on the hearth
(And o! but a hog is fat!)
A man came hurrying up the path,
(And what care I for that?)
When he came the house unto,
His breath both quick and short he drew.
When he came before the door,
His face grew paler than before.
When he turned the handle round,
The man fell fainting to the ground.
When he crossed the lofty hall,
Once and again I heard him fall.
When he came up the turret stair,
He shrieked and tore his raven hair.
When he came my chamber in,
(And o! but a hog is fat!)
I ran him through with a golden pin,
(And what care I for that?)

J. V.

18.18 Anagrammatic Sonnet

Source: sent to Maud Standen, December 18, 1877

[M]y “Anagrammatic Sonnet” will be new to you. Each line has 4 feet, and each foot is an anagram, i. e., the letters of it can be re-arranged so as to make one word. Thus there are 24 anagrams, which will occupy your leisure moments for some time, I hope. Remember, I don’t limit myself to substantives, as some do. I should consider “we dish = wished” a fair anagram.

As to the war, try elm. I tried.
The wig cast in, I went to ride.
“Ring? Yes.” We rang. “Let’s rap.” We don’t.
“O shew her wit!” As yet she won’t.
Saw eel in Rome. Dry one: he’s wet.
I am dry. O forge! Th’rogue! Why a net?

To these you may add “abcdefgi,” which makes a compound word—as good a word as “summer-house.”

Solutions:

oats, wreath, myrtle, tidier
weight, antics, twine, editor
syringe, gnawer, plaster, wonted
whose, wither, yeast, snoweth
weasel, merino, yonder, hewest
myriad, forego, tougher, yawmeth

(Some other variants are also possible.)

abcdefgi: big-faced

18.19 Prologue (1862)

Source: College Rhymes, November 1862

As when an anthem in full chorus-swell
Hath swept away, one solitary note,
Dreamy and low as chime of far-off bell,
Through the deep silence tremblingly doth float—
As when the sun, in crimson clouds of even,
Hath sunk from sight, and all the hills are gray,
A feeble ray yet lingers in the heaven,
A smile upon the face of dying Day—
So, when the voices of the sons of song
Have rolled in thunder o'er a trancèd nation,
When silence falls upon that glorious throng,
And men are hushed in awful expectation,
Let Cam and Isis, with attunèd flow,
Through the dumb aching void prolong their strain,
Lest the vast music, that enchains us so,
With sudden pause the listening ear should pain.

18.20 Atalanta in Camden-Town

Source: Punch, July 27, 1867 (without image, with minor differences as noted);
Phantasmagoria (without image, with minor differences as noted); Rhyme? and
Reason? (earlier editions with minor differences as noted)

Parody on *Atalanta in Calydon* by A. C. Swinburne

Ay, 'twas here, on this spot,
In that summer of yore,
Atalanta did not
Vote my presence a bore,
Nor reply to my tenderest talk "She had heard all that nonsense
before."
She'd the brooch I had bought
And the necklace and sash on,
And her heart, as I thought,
Was alive to my passion;
And she'd done up her hair in the style that the Empress had brought
into fashion.



I had been to the play
With my pearl of a Peri—
But, for all I could say,
She declared she was weary,
That "the place was so crowded and hot, and she couldn't abide that
Dundreary."
Then I thought "Lucky boy!"¹

¹'Tis for me

'Tis for *you* that she whimpers!²
 And I noted with joy³
 Those sensational simpers:
 And I said “This is scrumptious!”—a phrase I had learned from the
 Devonshire shrimpers.
 And I vowed “Twill be said
 I’m a fortunate fellow,
 When the breakfast is spread,
 When the toppers are mellow,
 When the foam of the bride-cake is white, and the fierce orange-
 blossoms are yellow⁴!”
 O that languishing yawn!
 O those eloquent⁵ eyes!
 I was drunk with the dawn
 Of a splendid surmise—
 I was stung by a look, I was slain by a tear, by a tempest of sighs.⁶
 variant Then I whispered “I see
 The sweet secret thou keepest,
 And the yearning for *ME*
 That thou wistfully weepst!
 And the question is ‘License or Banns?’, though undoubtedly Banns
 are the cheapest.” In the early editions of *Rhyme? and Reason?*
 this verse is:

And I whispered “’Tis time!
 Is not Love at its deepest?
 Shall we squander Life’s prime,
 While thou waitest and weepst?
 Let us settle it, License or Banns?—though undoubt-
 edly Banns are the cheapest.”

In *Punch* and *Phantasmagoria* is is:

And I whispered “I guess
 The sweet secret thou keepest,
 And the dainty distress
 That thou wistfully weepst;
 And the question is ‘License or banns?’ though un-
 doubtedly banns are the cheapest.”

In *Punch* the first line starts with “And I murmured . . .”.

“Be my Hero,” said I,
 “And let *me* be Leander!”
 But I lost her reply—

²That she whines and she whimpers!

³“it soothed me to see” in all earlier variants, but with “thrilled” instead of “soothed” in *Punch*

⁴“mellow” in *Punch*

⁵“Those emotional” in *Punch*

⁶“serpentine smile, and tossed on a tempest of sighs.” in *Punch*

Something ending with “gander”—
For the omnibus rattled so loud that no mortal could quite understand her.⁷

⁷In the early editions of *Rhyme? and Reason?* this verse starts:

“Ah, my Hero,” said I,
“Let me be thy Leander!”

In *Punch* and *Phantasmagoria* is is:

Then her white hand I clasped,
And with kisses I crowned it:
But she glared and she gasped,
And she muttered “Confound it!”—

Or at least it was something like that, but the noise of the omnibus drowned it.

18.21 Turtle Soup

Source: Alice's Adventures under Ground (extracted, only first verse, with slightly different punctuation); Alice's Adventures in Wonderland (extracted)

Parody on *Star of the Evening* by James M. Sayles

Beautiful Soup, so rich and green,
Waiting in a hot tureen!
Who for such dainties would not stoop?
Soup of the evening, beautiful Soup!
Soup of the evening, beautiful Soup!
 Beau—ootiful Soo—oop!
 Beau—ootiful Soo—oop!
Soo—oop of the e—e—evening,
 Beautiful, beautiful Soup!

Beautiful Soup! Who cares for fish,
Game, or any other dish?
Who would not give all else for two p
ennyworth only of beautiful Soup?
Pennyworth only of beautiful Soup?
 Beau—ootiful Soo—oop!
 Beau—ootiful Soo—oop!
Soo—oop of the e—e—evening,
 Beautiful, beauti—FUL SOUP!

Soo—oop of the e—e—evening,
 Beautiful, beautiful Soup!

18.22 To My Pupil

Source: A Tangled Tale (dedication)

Beloved Pupil! Named by thee,
Addition, Subtraction, Multiplication,
Division, Fractions, Rule of Three,
Attest thy deft manipulation!

Then onward! Let the voice of Fame
From Age to Age repeat thy story,
Till thou hast won thyself a name
Exceeding even Euclid's glory!

Acrostic: Edith Rix (second letters)

18.23 Beneath the Waters of the Sea

Source: Alice's Adventures under Ground (extracted)

Parody on Negro minstrel song *Sally Come Up*

Beneath the waters *of* the sea
Are lobsters thick as thick can be—
They love to dance with you and me,
My own, my gentle Salmon!

Salmon come up! Salmon go down!
Salmon come twist your tail around!
Of all the fishes *of* the sea
There's none so good as Salmon!

18.24 Fame's Penny-Trumpet

Source: printed 1876 (without image, with the remark “not published”, with minor differences as noted); Rhyme? and Reason?

[Affectionately dedicated to all “original researchers” who pant for “endowment.”]

Blow, blow your trumpets till they crack,
Ye little men of little souls!
And bid them huddle at your back—
Gold-sucking leeches, shoals on shoals!
Fill all the air with hungry wails—
“Reward us, ere we think or write!
Without your Gold mere Knowledge fails
To _lsate¹ the _lswinish² appetite!”
And, where great Plato paced serene,
Or Newton paused with wistful eye,
Rush to the chace with hoofs unclean
And _lBabel-clamour³ of the sty!
Be yours the pay: be theirs the praise:
We will not rob them of their due,
Nor vex the ghosts of other days
By naming them along with you.
They sought and found undying fame:
They toiled not for reward nor thanks:
Their cheeks are hot with honest shame
For you, the modern mountebanks!
Who preach of _lJustice⁴—plead with tears
That Love and Mercy should abound—
While marking with complacent ears
The moaning of some tortured hound:
_lWho prate of Wisdom—nay, forbear,
Lest Wisdom turn on you in wrath,
Trampling, with heel that will not spare,
The vermin that beset her path!⁵
Go, throng each other's drawing-rooms,
Ye idols of a petty clique:
Strut your brief hour in borrowed plumes,
And make your penny-trumpets squeak:

¹whet

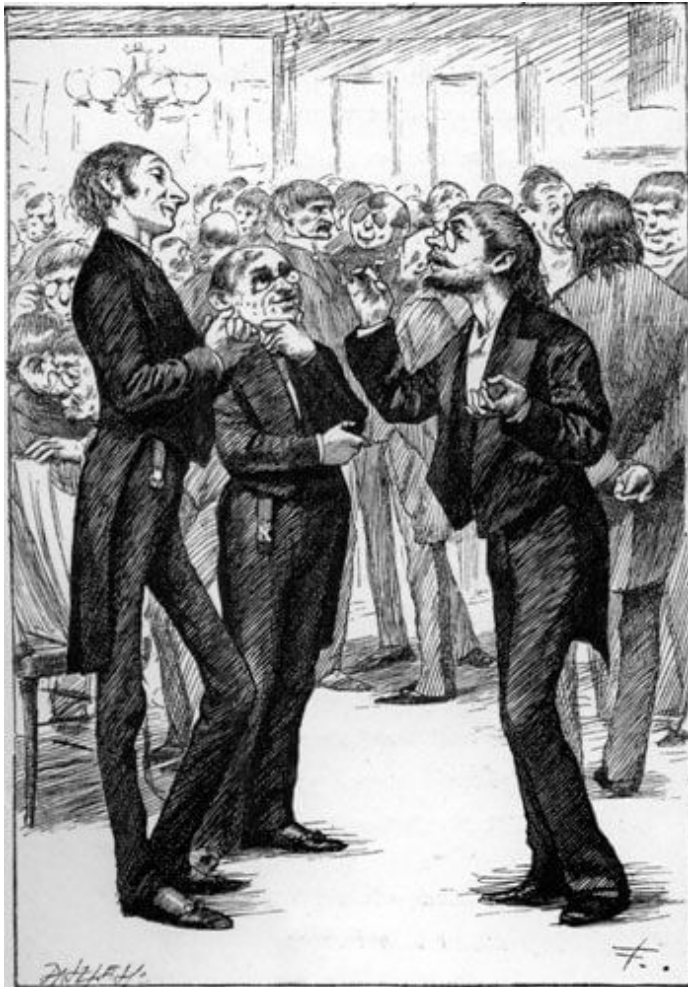
²noble

³Babel-mutterings

⁴Virtue

⁵

Who seek your God in self-made germs—
In close-shut flasks of sodden hay—
Yet find Him not, poor blinded worms,
In Heaven or Earth, in Night or Day.



“Go, through each other’s drawing-rooms”

Deck your dull talk with pilfered shreds⁶
 Of learning from a nobler time,
 And oil each other's little heads
 With mutual Flattery's golden slime:⁷
 And when the topmost height ye gain,
 And stand in Glory's ether clear,
 And grasp⁸ the prize of all your pain—
 So many hundred pounds a year—
 Then let Fame's banner be unfurled!
 Sing Pæans for a victory won!
 Ye tapers, that would light the world,
 And cast a shadow on the Sun—
 Who still shall pour His rays sublime,
 One crystal flood⁹, from East to West,
 When ye have burned your little time
 And feebly flickered into rest!¹⁰

⁶Spout to each other little shreds

⁷Additional stanza similar to replaced stanza above, but with first line "But name not Wisdom—oh beware".

⁸Grasping

⁹One flood of light

¹⁰separate edition signed "An Unendowed Researcher. July, 1876."

18.25 Sequel to “The Shepherd of Salisbury Plain”

Source: written 1862 (authorship not entirely certain)

But supposing this sheep, when he entered the fold,
Had solemnly taken a vow
To shape all his bleats to one definite mould,
Pray what can be said for him now?
Must the rules we hold binding in business and trade
Be ignored in the Church’s domain?
And need promises never be kept that are made
To the Shepherd of Salisbury Plain?
Though freedom of bleat is withholden from none
Of the flock, be his wool black or white,
Yet the freedom of breaking your promise is one
To which few would insist on their right.
So, my friend, without wishing to charge upon you
The quibble your verses maintain,
I but say, would that all were as honest and true
As the Shepherd of Salisbury Plain!

Audi alteram partem.

18.26 Child of the pure unclouded brow

Source: Through the Looking Glass (dedication)

Child of the pure unclouded brow
And dreaming eyes of wonder!
Though time be fleet, and I and thou
Are half a life asunder,
Thy loving smile will surely hail
The love-gift of a fairy-tale.

I have not seen thy sunny face,
Nor heard thy silver laughter;
No thought of me shall find a place
In thy young life's hereafter—
Enough that now thou wilt not fail
To listen to my fairy-tale.

A tale begun in other days,
When summer suns were glowing—
A simple chime, that served to time
The rhythm of our rowing—
Whose echoes live in memory yet,
Though envious years would say 'forget.'

Come, hearken then, ere voice of dread,
With bitter tidings laden,
Shall summon to unwelcome bed
A melancholy maiden!
We are but older children, dear,
Who fret to find our bedtime near.

Without, the frost, the blinding snow,
The storm-wind's moody madness—
Within, the firelight's ruddy glow,
And childhood's nest of gladness.
The magic words shall hold thee fast:
Thou shalt not heed the raving blast.

And though the shadow of a sigh
May tremble through the story,
For 'happy summer days' gone by,
And vanish'd summer glory—
It shall not touch with breath of bale
The pleasance of our fairy-tale.

18.27 Dear Dolly, since I do not know

Source: letter to Dolly Draper, May 20, 1876

Dear Dolly, Since I do not know
Of any grander name than 'Dolly',
Let me for once address you so,
Leaving 'Miss Draper' out, although
You *may* be startled at my folly!
Day, 'twenty-seventh'; month, 'the first';
Rejoice that now you know the worst!
And, though you *may* be tall and stately,
Putting your pride in a moment by,
Excuse my telling you that I
Remain yours most affectionately,
Lewis Carroll

Acrostic: Dolly Draper

18.28 Dear Maggie,—I found that the friend

Source: letter written to Margaret Cunnyngame, January 30, 1868; original written in prose, here formatted into verses

Dear Maggie,—I found that the *friend*,
that the little girl asked me to write to,
lived at Ripon, and not at Land's End—
a nice sort of place to invite to!
It looked rather suspicious to me—
and soon after, by dint of incessant
inquiries, I found out that *she*
was called Maggie, and lived in a Crescent!
Of course I declared, "After that"
(the language I used doesn't matter),
"I will *not* address her, that's flat!
So do not expect me to flatter."

Well, I hope you will soon see
your beloved Pa come back—
for consider, should you be
quite content with only Jack?
Just suppose they made a blunder!
(Such things happen now and then.)
Really, now, I shouldn't wonder
if your "John" came home again,
and your father stayed at school!
A most awkward thing, no doubt.
How would you receive him? You'll
say, perhaps, "you'd turn him out."
That would answer well, so far
as concerns the boy, you know—
but consider your Papa,
learning lessons in a row
of great inky schoolboys! This
(though unlikely) might occur:
"Haly" would be grieved to miss
him (don't mention it to *her*).

No *carte* has yet been done of me,
that does real justice to my *smile*;
and so I hardly like, you see,
to send you one. However, I'll
consider if I will or not—
meanwhile, I send a little thing
to give you an idea of what
I look like when I'm lecturing.
The merest sketch, you will allow—
yet still I think there's something grand
in the expression of the brow



and in the action of the hand.

Have you read my fairy tale
in *Aunt Judy's Magazine*?¹
If you have you will not fail
to discover what I mean
when I say "Bruno yesterday came
to remind me that *he* was my god-son!"—
on the ground that I "gave him a name"!

Your affectionate friend, C. L. Dodgson.

P.S.—I would send, if I were not too shy,
the same message to "Haly" that she
(though I do not deserve it, not I!)
has sent through her sister to me.
My best love to yourself—to your Mother
my kindest regards—to your small,
fat, impertinent, ignorant brother
my hatred. I think that is all.

¹Remark: → 3.11, p. 667

18.29 Dear Violet,—I'm glad to hear

Source: letter written to Violet Dodgson, May 6, 1889; original written in prose, here formatted into verses

Dear Violet,—I'm glad to hear
you children like the Magazine
I ordered for you for a year:
and if you happen to have seen
the book about "Lord Fauntleroy,"
you'll find an interesting bit
about the child that acts the Boy
(now they have made a Play of it)
in Number Six. She seems to be
a child without one bit of pride:
a pretty name too, hasn't she?
the little "Elsie Leslie Lyde."

I grieve to hear your bantam-hen
is fond of rolling eggs away.
You should remind it, now and then,
of "Waste not, want not." You should say
"a bantam-hen, that wastes an egg,
is sure to get extremely poor,
and to be forced at last to beg
for hard-boiled eggs, from door to door.
How would you like it, Bantam-hen,"
you should go on, "if all your brood
were hard-boiled chickens? You would then
be sorry you had been so rude!"
Tell it all this, and don't forget!
And now I think it's time for me
to sign myself, dear Violet,
Your loving Uncle, C. L. D.

18.30 Puzzles from Wonderland

Source: Aunt Judy's Magazine, December 1870

By the Author of "Alice's Adventures in Wonderland."

I.

Dreaming of apples on a wall,
And dreaming often, dear,
I dreamed that, if I counted all,
How many would appear?

II.

A stick I found, that weighed two pound:
I sawed it up one day
In pieces eight, of equal weight.
How much did each piece weigh?

[Everybody says "a quarter of a pound," which is wrong.]

III.

John gave his brother James a box:
About it there were many locks.
James woke, and said it gave him pain;
So gave it back to John again.
The box was not with lid supplied,
Yet caused two lids to open wide:
And all these locks had never a key—
What kind of a box, then, could it be?

IV.

What is most like a bee in May?
"Well, let me think: perhaps—" you say.
Bravo! You're guessing well to-day!

V.

Three sisters at breakfast were feeding the cat.
The first gave it sole—Puss was grateful for that:
The next gave it salmon—which Puss thought a treat:
The third gave it herring—which Puss wouldn't eat.

[Explain the conduct of the cat.]

VI.

Said the Moon to the Sun,
“Is the daylight begun?”
Said the Sun to the Moon,
“Not a minute too soon.”
“You’re a Full Moon,” said he.
She replied, with a frown,
“Well! I never *did* see
So uncivil a clown!”

[*Query.* Why was the moon so angry?]

VII.

When the King found that his money was nearly all gone, and that he really *must* live more economically, he decided on sending away most of his Wise Men. There were some hundreds of them—very fine old men, and magnificently dressed in green velvet gowns with gold buttons: if they *had* a fault, it was that they always contradicted one another when he asked for their advice—and they certainly ate and drank *enormously*. So, on the whole, he was rather glad to get rid of them. But there was an old law, which he did not dare to disobey, which said that there must always be

“Seven blind of both eyes:
Ten blind of one eye:
Five that see with both eyes:
Nine that see with one eye.”

[*Query.* How many did he keep?]

Solutions (by “Eadgyth”, Carroll might have seen, approved, and perhaps improved them):

I.

If ten the number dreamed of, why ’tis clear
That in the dream ten apples would appear.

II.

In Shylock’s bargain for the flesh, was found
No mention of the blood that flowed around;
So when the stick was sawed in pieces eight,
The sawdust lost diminished from the weight.

III.

As curly-wigg’d Jemmy was sleeping in bed
His brother John gave him a blow on the head;
James opened his eyelids, and spying his brother,
Doubled his fist, and gave him another.
This kind of box then is not so rare;
The lids are the eyelids, the locks are the hair;
And as every schoolboy can tell to his cost,
The key to the tangles is constantly lost.

IV.

'Twixt "Perhaps" and "May be"
Little difference we see:
Let the question go round,
The answer is found.

V.

That salmon and sole Puss should think very grand
Is no such remarkable thing,
For more of these dainties Puss took up her stand:
But when the third sister stretched out her fair hand
Pray why should Puss swallow her ring?

VI.

"In these degenerate days," we oft hear said,
"Manners are lost, and chivalry is dead!"
No wonder, since in high exalted spheres
The same degeneracy, in fact, appears.
The Moon in social matters interfering,
Scolded the Sun, when early in appearing;
And the rude Sun, her gentle sex ignoring,
Called her a fool, thus her pretensions flooring.

VII.

Five seeing, and seven blind,
Give us twelve in all, we find;
But all of these, 'tis very plain,
Come into account again.
For take notice, it may be true,
That those blind of one eye are blind for two;
And consider contrariwise,
That to see with your eye you may have your eyes;
So setting one against the other—
For a mathematician no great bother—
And working the sum, you will understand
That sixteen wise men still trouble the land.

18.31 Dreams, that elude the Waker's frenzied grasp

Source: Sylvie and Bruno Concluded (dedication)

Even though many if not most of the reprints have "Maker", "Waker" is correct.

Dreams, that elude the Waker's frenzied grasp—
Hands, stark and still, on a dead Mother's breast,
Which nevermore shall render clasp for clasp,
Or softly soothe a weeping Child to rest—
In suchlike forms me listeth to portray
My Tale, here ended. Thou delicious Fay—
The guardian of a Sprite that lives to tease thee—
Loving in earnest, hiding but in play
The merry mocking Bruno! Who, that sees thee,
Can fail to love thee, Darling, even as I?—
My sweetest Sylvie, we must say 'Good-bye!'

Acrostic: Enid Stevens (third letters)

18.32 Four Riddles. No. II

Source: Rhyme? and Reason?

The introduction has been moved here.

No. II. was written after seeing Miss Ellen Terry perform in the play of "Hamlet." In this case the first stanza describes the two main words.

Empress of Art, for thee I twine
This wreath with all too slender skill.
Forgive my Muse each halting line,
And for the deed accept the will!

O day of tears! Whence comes this spectre grim,
Parting, like Death's cold river, souls that love?
Is not he bound to thee, as thou to him,
By vows, unwhispered here, yet heard above?

And still it lives, that keen and heavenward flame,
Lives in his eye, and trembles in his tone:
And these wild words of fury but proclaim
A heart that beats for thee, for thee alone!

But all is lost: that mighty mind o'erthrown,
Like sweet bells jangled, piteous sight to see!
"Doubt that the stars are fire," so runs his moan,
"Doubt Truth herself, but not my love for thee!"

A sadder vision yet: thine aged sire
Shaming his hoary locks with treacherous wile!
And dost thou now doubt Truth to be a liar?
And wilt thou die, that hast forgot to smile?

Nay, get thee hence! Leave all thy winsome ways
And the faint _{fragrance}¹ of thy scattered flowers:
In holy silence wait the appointed days,
And weep away the leaden-footed hours.

Solution: Ellen Terry; engagement, love, letter/liar,
eavesdropper/equivocator/encounter, nunnery

¹accidentally "fragrance"

18.33 Even while the blinding bandage lies

Source: inscribed into a copy of *The Hunting of the Snark* for Edith Denman,
September 2, 1876

Even while the blinding bandage lies,
Daughter of a Judge, upon thine eyes,
If the scales thou wield with care
Truth and Justice will declare
Hunting Snarks is innocent and wise!

Acrostic: Edith

18.34 Lays of Sorrow. No. 2

Source: The Rectory Umbrella

Parody on *Horatius (Lays of Ancient Rome)* by Thomas Babington Macaulay

Fair stands the ancient¹ Rectory,
The Rectory of Croft,
The sun shines bright upon it,
The breezes whisper soft.
From all the house and garden
It's inhabitants come forth,
And muster in the road without,
And pace in twos and threes about,
The children of the North.

Some are waiting in the garden,
Some are waiting at the door,
And some are following behind,
And some have gone before.
But wherefore all this mustering?
Wherefore this vast array?
A gallant feat of horsemanship
Will be performed today.

To eastward and to westward,
The crowd divides amain,
Two youths are leading on the steed,
Both tugging at the rein:
And sorely do they labour,
For the steed² is very strong,
And backward moves it's stubborn feet,
And backward ever doth retreat,
And drags it's guides along.

And now the knight hath mounted,
Before the admiring band,
Hath got the stirrups on his feet,
The bridle in his hand.
Yet, oh! beware, sir horseman!
And tempt thy fate no more,
For such a steed as thou hast got,
Was never rid before!

The rabbits³ bow before thee,
And cower in the straw;



¹this Rectory has been supposed to have been built in the times of Edward the sixth, but recent discoveries clearly assign its origin to a much earlier period. A stone has been found in an island formed by the river Tees, on which is inscribed the letter "A," which is justly conjectured to stand for the name of the great king Alfred, in whose reign this house was probably built.

²the poet entreats pardon for having represented a donkey under this dignified name.

³with reference to these remarkable animals see "Moans from the Miserable" page 1927.

The chickens⁴ are submissive,
And own thy will for law;
Bullfinches and canary
Thy bidding do obey;
And e'en the tortoise in it's shell
Doth never say thee nay.

But thy steed will hear no master,
Thy steed will bear no stick,
And woe to those that beat her,
And woe to those that kick⁵!
For though her rider smite her,
As hard as he can hit,
And strive to turn her from the yard,
She stands in silence, pulling hard
Against the pulling bit.

And now the road to Dalton
Hath felt their coming tread,
The crowd are speeding on before,
And all have gone ahead.
Yet often look they backward,
And cheer him on, and bawl,
For slower still and still more slow,
That horseman and that charger go,
And scarce advance at all.

And now two roads to choose from
Are in that rider's sight:
In front, the road to Dalton,
And New Croft upon the right.
"I ca'n't get by!" he bellows,
"I really am not able!"
"Though I pull my shoulder out of joint,
"I cannot get him past this point,
"For it leads unto his stable!"

Then out spake Ulfrid Longbow,⁶
A valiant youth was he
"Lo! I will stand on thy right hand,
"And guard the pass for thee."
And out spake fair Flureeza,⁷
His sister eke was she,
"I will abide on thy other side,
"And turn thy steed for thee."

And now commenced a struggle
Between that steed and rider,



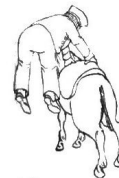
⁴a full account of the history and misfortune of these interesting creatures may be found in the first "Lay of Sorrow." page 2333.

⁵it is a singular fact that a donkey makes a point of returning any kicks offered to it.

⁶this valiant knight besides having a heart of steel, and nerves of iron, has been lately in the habit of carrying a brick in his eye.

⁷she was sister to both.

For all the strength that he hath left,
 Doth not suffice to guide her.
 Though Ulfrid and his sister
 Have kindly stopped the way,
 And all the crowd have cried aloud,
 "We ca'n't wait here all day!"
 Round turned he, as not deigning
 Their words to understand,
 But he slipped the stirrups from his feet,
 The bridle from his hand
 And grasped the mane full lightly,
 And vaulted from his seat,
 And gained the road in triumph,⁸
 And stood upon his feet.
 All firmly till that moment
 Had Ulfrid Longbow stood,
 And faced the foe right valiantly,
 As every warrior should.
 But when safe on terra firma
 His brother he did spy,
 "What *did* you do that for?" he cried,
 Then unconcerned he stepped aside
 And let it canter by.
 They gave him bread and butter,⁹
 That was of public right,
 As much as four strong rabbits,
 Could munch from morn to night.
 For he'd done a deed of daring,
 And faced that savage steed,
 And therefore cups of coffee sweet,
 And everything that was a treat,
 Were but his right and meed.
 And often in the evenings,
 When the fire is blazing bright,
 When books bestrew the table,
 And moths obscure the light,
 When crying children go to bed,
 A struggling, kicking load,
 We'll talk of Ulfrid Longbow's deed,
 How, in his brother's utmost need,
 Back to his aid he flew with speed,
 And how he faced the fiery steed,
 And kept the New Croft Road.



⁸the reader will probably be at a loss to discover the nature of this triumph, as no object was gained, and the donkey was obviously the victor, on this point however, we are sorry to say, we can offer no good explanation.

⁹much more acceptable to a true knight than "cornland" which the Roman people were so foolish as to give to their daring champion, Horatius.



18.35 First, the fish must be caught

Source: Through the Looking Glass (extracted)

“First, the fish must be caught.”
That is easy: a baby, I think, could have caught it.
“Next, the fish must be bought.”
That is easy: a penny, I think, would have bought it.
“Now cook me the fish!”
That is easy, and will not take more than a minute.
“Let it lie in a dish!”
That is easy, because it already is in it.
“Bring it here! Let me sup!”
It is easy to set such a dish on the table.
“Take the dish-cover up!”
Ah, *that* is so hard that I fear I’m unable!
For it holds it like glue—
Holds the lid to the dish, while it lies in the middle:
Which is easiest to do,
Un-dish-cover the fish, or dishcover the riddle?

Solution:

Get an oyster-knife strong,
Insert it 'twixt cover and dish, in the middle;
Then you shall before long
Un-dish-cover the OYSTERS—dishcover the riddle!

(From: *Fun*, October 30, 1878, <https://ufdc.ufl.edu/UF00078627/00033/161j>,
written with some help by Lewis Carroll)

18.36 Five Fathom Square the Belfry Frowns

Source: The New Belfry (extracted)

Parody on *The Tempest* by William Shakespeare

Five fathom square the Belfry frowns;
All its sides of timber made;
Painted all in greys and browns;
Nothing of it that will fade.
Christ Church may admire the change—
Oxford thinks it sad and strange.
Beauty's dead! Let's ring her knell.
Hark! now I hear them—ding-dong, bell.

18.37 A Game of Fives

Source: Rhyme? and Reason?

The text of the original manuscript with subtitle “being a panoramic view of life, by a once careless bachelor” and other minor differences (“from five years old to one”, “Five showy girls” instead of “winsome”, “I ask ‘Now which of them d’you mean?’”, “but if the men will *not* propose, whatever can be done?”, “Five dressy girls” instead of “showy”, next lines missing, “to feel he knows”) can be found in *Letters*



Five little girls, of Five, Four, Three, Two, One:
Rolling on the hearthrug, full of tricks and fun.
Five rosy girls, in years from Ten to Six:
Sitting down to lessons—no more time for tricks.
Five growing girls, from Fifteen to Eleven:
Music, Drawing, Languages, and food enough for seven!
Five winsome girls, from Twenty to Sixteen:
Each young man that calls, I say “Now tell me which you *mean!*”
Five dashing girls, the youngest Twenty-one:
But, if nobody proposes, what is there to be done?
Five showy girls—but Thirty is an age
When girls may be *engaging*, but they somehow don’t *engage*.
Five dressy girls, of Thirty-one or more:
So gracious to the shy young men they snubbed so much before!

* * * * *

Five *passé* girls—Their age? Well, never mind!
We jog along together, like the rest of human kind:
But the quondam “careless bachelor” begins to think he knows
The answer to that ancient problem “how the money goes”!



“Now tell me which you *mean!*”

18.38 Verses for Christmas Cards

Source: manuscript written 1879 for three Christmas cards with drawings by E. Gertrude Thomson, but not published as such

Fly swiftly, gentle Monster! Bear me hence.
Grim Caliban shall work thee no offence.

I bring thee tales of other Hours—of Minutes rolled away—
And long-forgotten legends of a far-off Yesterday.

No budding beaks have they, no downy vest:
Then let us pity them, and guard their rest.

July 1/79

18.39 Tears

Source: Rectory Magazine

For more than sixty years,
Less than a hunderd,
I lived in sighs and tears
And often wondered,
If I should ever be
An indiwiddle,
Brim-full of jollity,
Playing a fiddle.
I played a broken fife,
And sung in a dull key.
Thus I remained for life,
Wretched and sulky.

B. B.

18.40 Four frantic Members

Source: Twelve Months in a Curatorship (extracted)
Parody on *Ten Little Niggers*

Four frantic Members of a chosen *Committee*!
One of them resigned—then there were Three.
Three thoughtful Members: they may pull us through!
One was invalided—then there were Two.
Two tranquil Members: much may yet be done!
But they never came together, so I had to work with One.

18.41 The Spell

Source: The Walking-Stick of Destiny (extracted, from image)

From a window thrown,
To the ground he fell,
Yet he broke no bone,
He's alive and well!
And the poisoned sip
Of the offered cup,
Hath missed his lip,
He hath ta'en no sup!
Yet, Signor, beware,
Or thou shalt rue!
There is much to dare,
There is much to do!
The time comes quick,
When thou shall see
The Walk...

18.42 Hiawatha's Photographing (early version)

Source: The Train, December 1857 (with minor differences as noted);
Phantasmagoria
Parody on *The Song of Hiawatha* by Henry Wadsworth Longfellow

Other version:
→ 18.43, p. 2074

[In¹ these days of imitation, I can claim no sort of merit for this slight attempt at doing what is known to be so easy. Any one who² knows what verse is, with the slightest³ ear for rhythm, can throw off a composition in the⁴ easy running metre of⁵ 'The Song of Hiawatha.' Having, then, distinctly stated that I challenge no attention, in the following little poem, to its merely verbal jingle, I must beg the candid reader, to confine his criticism, to its treatment of the subject.]

From his shoulder Hiawatha
Took the camera of rosewood,
Made of sliding, folding rosewood;
Neatly put it all together.
In its case it lay compactly,
Folded into nearly nothing;
But he opened out the hinges,
Pushed and pulled the joints and hinges,
Till it looked all squares and oblongs,
Like a complicated figure
In the second book of Euclid.

This he perched upon a tripod,
And the family in order
Sat before him for their pictures.
Mystic, awful was the process.

First, a piece of glass he coated
With Collodion, and plunged it
In a bath of Lunar Caustic
Carefully dissolved in water:
There he left it certain minutes.

Secondly, my Hiawatha
Made with cunning hand a mixture
Of the acid Pyro-gallic.
And of Glacial Acetic,
And of Alcohol and water:
This developed all the picture.

Finally, he fixed each picture
With a saturate solution
Of a certain salt of Soda—⁶

¹Introduction by the Author:—In

²that

³smallest

⁴an

⁵like

⁶Which was made of hyposulphite,

⌊Chemists call it Hyposulphite.⁷

(Very difficult the name is
For a metre like the present,
But periphrasis has done it.)

All the family in order
Sat before him for their pictures.
Each in turn, as he was taken,
Volunteered his own suggestions,
His invaluable suggestions.

First the Governor, the Father:
He suggested velvet curtains
Looped about a massy pillar;
And the corner of a table,
Of a rosewood dining-table.
He would hold a scroll of something,
Hold it firmly in his left-hand;
He would keep his right-hand buried
(Like Napoleon) in his waistcoat;
He would ⌊contemplate⁸ the ⌊distance⁹
With a look of pensive meaning,
As of ducks that die in tempests.

Grand, heroic was the notion:
Yet the picture failed entirely:
Failed, because he moved a little,
Moved, because he couldn't help it.

Next, his better half took courage;
She would have her picture taken;
She came dressed beyond description,
Dressed in jewels and in satin
Far too gorgeous for an empress.
Gracefully she sat down sideways,
With a simper scarcely human,
Holding in her hand a nosegay
Rather larger than a cabbage.
All the while that she was taking,
Still the lady chattered, chattered,
Like a monkey in the forest.
"Am I sitting still?" she asked him.
"Is my face enough in profile?
Shall I hold the nosegay higher?
Will it come into the picture?"

⁷Which, again, was made of soda.

⁸gaze upon

⁹Additional lines:

(Like a poet seeing visions,
Like a man that plots a poem,
In a dressing-gown of damask,
At 12:30 in the morning,
Ere the servants bring in luncheon)—

And the picture failed completely.

Next the Son, the Stunning-Cantab:
He suggested curves of beauty,
Curves pervading all his figure,
Which the eye might follow onward,
Till they centered in the breast-pin,
Centered in the golden breast-pin.
He had learnt it all from Ruskin
(Author of 'The Stones of Venice,
'Seven Lamps of Architecture,
Modern Painters,' and some others);
And perhaps he had not fully
Understood his author's meaning;
But, whatever was the reason,
All was fruitless, as the picture
Ended in an utter failure.

Next to him¹⁰ the eldest daughter:
She suggested very little;
Only asked if he would take her¹¹
With her look of 'passive beauty.'

Her idea of passive beauty
Was a squinting of the left-eye,
Was a drooping of the right-eye,
Was a smile that went up sideways
To the corner of the nostrils.

Hiawatha, when she asked him,
Took no notice of the question,
Looked as if he hadn't heard it;
But, when pointedly appealed to,
Smiled in his¹² peculiar manner,
Coughed and said it 'didn't matter,'
Bit his lip¹³ and changed the subject.

Nor in this was he mistaken,
As the picture failed completely.
So in turn the other sisters.¹⁴

¹⁰After him

¹¹begged she might be taken

¹²a

¹³lips

¹⁴daughters

Additional lines:

All of them agreed in one thing,
That their pictures came to nothing,
Though they differed in their causes,
From the eldest, Grinny-haha,
Who, throughout her time of taking,
Shook with sudden, causeless laughter,
With a fit of silent laughter,
To the youngest, Dinny-wawa,
Who, throughout her time of taking,
Shook with sudden, causeless weeping—
Anything but silent weeping;

Last, the youngest son was taken:¹⁵
Very rough and thick his hair was,
Very round and red his face was,
Very dusty was his jacket,
Very fidgetty his manner.
And¹⁶ his overbearing sisters
Called him names he disapproved of:
Called him Johnny, 'Daddy's Darling,'
Called him Jacky, 'Scrubby School-boy.'
And, so awful¹⁷ was the picture,
In comparison the others
Might be thought to have succeeded,
To have partially succeeded.

Finally my Hiawatha
Tumbled all the tribe together,
('Grouped' is not the right expression,)
And, as happy chance would have it,
Did at last obtain a picture
Where the faces all succeeded:
Each came out a perfect likeness.

Then they joined and all abused it,
Unrestrainedly abused it,
As 'the worst and ugliest picture
They could possibly have dreamed of.¹⁸
Giving one such strange expressions!
Sulkiness, conceit, and meanness!
Really any one would take us
(Any one that did not know us)
For the most unpleasant people?
(Hiawatha seemed to think so,
Seemed to think it not unlikely.)
All together rang their voices,
Angry, loud, discordant voices,
As of dogs that howl in concert,
As of cats that wail in chorus.

But my Hiawatha's patience,
His politeness, and his patience¹⁹,
Unaccountably had vanished,
And he left that happy party.²⁰

And their pictures failed completely.

¹⁵Additional verse:

"John" his Christian name had once been;

The next four lines are swapped with the four lines after them.

¹⁶But

¹⁷fearful

¹⁸That could possibly be taken.

¹⁹manners

²⁰Verses instead of this:

Not a minute more he waited,

Neither did he leave them slowly,
With the calm deliberation,
That intense deliberation
Which photographers aspire to:
But he left them in a hurry,
Left them in a mighty hurry²¹,
Vowing²² that he would not stand it.
Hurriedly he packed his boxes,²³
Hurriedly the porter trundled
On a barrow all his boxes;
Hurriedly he took his ticket,
Hurriedly the train received him:
Thus departed Hiawatha.

But, to use his own expression,
His American expression,
Packed his traps, and "sloped for Texas."

²¹passion

²²Stating

²³Verses instead of this and all the following:

Stating, in emphatic language,
What he'd be before he'd stand it.

18.43 Hiawatha's Photographing (later version)

Source: Rhyme? and Reason?

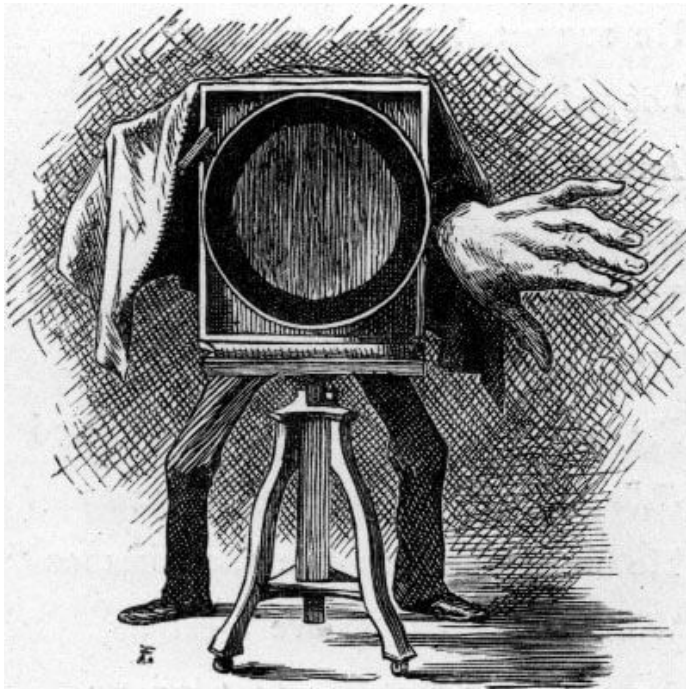
Parody on *The Song of Hiawatha* by Henry Wadsworth Longfellow

Other version:

→ 18.42, p. 2069

[In an age of imitation, I can claim no special merit for this slight attempt at doing what is known to be so easy. Any fairly practised writer, with the slightest ear for rhythm, could compose, for hours together, in the easy running metre of 'The Song of Hiawatha.' Having, then, distinctly stated that I challenge no attention in the following little poem to its merely verbal jingle, I must beg the candid reader to confine his criticism to its treatment of the subject.]

From his shoulder Hiawatha
Took the camera of rosewood,
Made of sliding, folding rosewood;
Neatly put it all together.
In its case it lay compactly,
Folded into nearly nothing;
But he opened out the hinges,
Pushed and pulled the joints and hinges,
Till it looked all squares and oblongs,
Like a complicated figure
In the Second Book of Euclid.



This he perched upon a tripod—
Crouched beneath its dusky cover—
Stretched his hand, enforcing silence—

Said "Be motionless, I beg you!"
Mystic, awful was the process.

All the family in order
Sat before him for their pictures:
Each in turn, as he was taken,
Volunteered his own suggestions,
His ingenious suggestions.

First the Governor, the Father:
He suggested velvet curtains
Looped about a massy pillar;
And the corner of a table,
Of a rosewood dining-table.
He would hold a scroll of something,
Hold it firmly in his left-hand;
He would keep his right-hand buried
(Like Napoleon) in his waistcoat;
He would contemplate the distance
With a look of pensive meaning,
As of ducks that die in tempests.

Grand, heroic was the notion:
Yet the picture failed entirely:
Failed, because he moved a little,
Moved, because he couldn't help it.

Next, his better half took courage;
She would have her picture taken.
She came dressed beyond description,
Dressed in jewels and in satin
Far too gorgeous for an empress.
Gracefully she sat down sideways,
With a simper scarcely human,
Holding in her hand a bouquet
Rather larger than a cabbage.
All the while that she was sitting,
Still the lady chattered, chattered,
Like a monkey in the forest.
"Am I sitting still?" she asked him.
"Is my face enough in profile?
Shall I hold the bouquet higher?
Will it come into the picture?"
And the picture failed completely.

Next the Son, the Stunning-Cantab:
He suggested curves of beauty,
Curves pervading all his figure,
Which the eye might follow onward,
Till they centered in the breast-pin,
Centered in the golden breast-pin.
He had learnt it all from Ruskin
(Author of 'The Stones of Venice,'
'Seven Lamps of Architecture,'
'Modern Painters,' and some others);



“First the Governor, the Father”

And perhaps he had not fully
 Understood his author's meaning;
 But, whatever was the reason,
 All was fruitless, as the picture
 Ended in an utter failure.



“Next the Son, the Stunning-Cantab”

Next to him the eldest daughter:
 She suggested very little,
 Only asked if he would take her
 With her look of ‘passive beauty.’
 Her idea of passive beauty
 Was a squinting of the left-eye,
 Was a drooping of the right-eye,
 Was a smile that went up sideways
 To the corner of the nostrils.
 Hiawatha, when she asked him,
 Took no notice of the question,

Looked as if he hadn't heard it;
But, when pointedly appealed to,
Smiled in his peculiar manner,
Coughed and said it 'didn't matter,'
Bit his lip and changed the subject.
Nor in this was he mistaken,
As the picture failed completely.
So in turn the other sisters.



"Next to him the eldest daughter"

Last, the youngest son was taken:
Very rough and thick his hair was,
Very round and red his face was,
Very dusty was his jacket,
Very fidgety his manner.
And his overbearing sisters
Called him names he disapproved of:
Called him Johnny, 'Daddy's Darling,'

Called him Jacky, 'Scrubby School-boy.'
And, so awful was the picture,
In comparison the others
Seemed, to one's bewildered fancy,
To have partially succeeded.



"Last, the youngest son was taken"

Finally my Hiawatha
Tumbled all the tribe together,
(‘Grouped’ is not the right expression),
And, as happy chance would have it,
Did at last obtain a picture
Where the faces all succeeded:
Each came out a perfect likeness.

Then they joined and all abused it,
Unrestrainedly abused it,
As the worst and ugliest picture
They could possibly have dreamed of.

Giving one such strange expressions—
Sullen, stupid, pert expressions.
Really any one would take us
(Any one that did not know us)
For the most unpleasant people!
(Hiawatha seemed to think so,
Seemed to think it not unlikely).
All together rang their voices,
Angry, loud, discordant voices,
As of dogs that howl in concert,
As of cats that wail in chorus.
But my Hiawatha's patience,
His politeness and his patience,
Unaccountably had vanished,
And he left that happy party.
Neither did he leave them slowly,
With the calm deliberation,
The intense deliberation
Of a photographic artist:
But he left them in a hurry,
Left them in a mighty hurry,
Stating that he would not stand it,
Stating in emphatic language
What he'd be before he'd stand it.
Hurriedly he packed his boxes:
Hurriedly the porter trundled
On a barrow all his boxes:
Hurriedly he took his ticket:
Hurriedly the train received him:
Thus departed Hiawatha.



18.44 From the air do they come?

Source: written for Florence Louise Beaton, 1876

From the air do they come?
Little voices that tell
Of "boo" and of "jum,"
Ringing clear like a bell—
"Even here," they repeat,
Now and then, when it's dark,
Chance will aid you to meet,
Even here, with a Snark!

Sep. 2, 1876

Acrostic: Florence

18.45 Fury said to a mouse

Source: Alice's Adventures in Wonderland (extracted, formatted)

Fury said to a mouse,
That he met in the house,
“Let us both go to law:
I will prosecute *you*.—

Come, I'll take no denial;
We must have ¹the trial;
For really this morning
I've nothing to do.”

Said the mouse to the cur,
“Such a trial, dear sir,
With no jury or judge,
would be wasting our breath.”

“I'll be judge, I'll be jury,”
Said cunning old Fury:
“I'll try the whole cause,
and condemn you to death”.

¹“a” in first version

18.46 Girlie to whom in perennial bloom

Source: inscribed into a book for Gladys Baly, perhaps 1895

Girlie to whom in perennial bloom
Life is all "Os" and no crosses:
Artists may take other themes for their skill,
Dreaming of fairyland just as they will;
You desire nothing but horses.

Sunbeams may glance, happy midges may dance,
Brooks prattle on in their courses;
Artists may paint just whatever they please,
Landscapes and Seascapes and Mountains and Trees;
You are content with your horses.

Acrostic: Gladys Baly

18.47 Girt with a Boyish Garb

Source: *The Hunting of the Snark* (dedication, with minor differences as noted);
Rhyme? and Reason? (dedication)

The text of the original manuscript with one more difference (“the tale to ask / That he delights to tell”) and signature “Lewis Carroll. Christ Church. October 25, 1875” can be found in *Letters*

Inscribed to a dear Child: in memory of golden summer hours and whispers of a summer sea.

Girt with a boyish garb for boyish task,
Eager she wields her spade: yet loves as well
Rest on a friendly knee, intent to ask
The tale _{one}¹ loves to tell.

Rude _{scoffer}² of the seething outer strife,
Unmeet to read her pure and simple spright,
Deem, if _{thou wilt}³, such hours a waste of life,
Empty of all delight!

Chat on, sweet Maid, and rescue from annoy
Hearts that by wiser talk are unbeguiled;
Ah, happy he who owns that tenderest joy,
The heart-love of a child!

Away, fond thoughts, and vex my soul no more!
Work claims my wakeful nights, my busy days,
Albeit bright memories of that sunlit shore
Yet haunt my dreaming gaze!

Acrostic: Gertrude Chataway (also first words)

¹he
²spirits
³you list

18.48 Dedicated to a tea-tea. Why? Oh, when?

Source: written for Atty Owen, March 16, 1880

“Te veniente die, te decedente canemus.”

“From dawn to decline of day, of tea we will utter the praises.”

Quoted from
Georgics by Virgil
(slightly modified and
with fake translation)

Give tea to my First: 'tis as round as a ball:
And, when stunted & small,
I ca'n't spare it at all.

Give tea to my Second: 'tis quite the best way
For concluding delay
When you don't want to stay.

Give tea to my Third: 'tis a name I assign
To plate, pictures, or wine,
Which is yours and not mine.

Give no tea to my Whole: it will keep her awake,
And her small head will ache,
And a riot she'll make,
Till, for quietness' sake,
You supply her with cake.

Lewis Carroll. Mar. 16, 1880

18.49 Screams

Source: Rectory Magazine

Grim was the scowl of his face that day,
As he led me by the wrist:
Ever and anon he paused on the way,
And beat me with his fist.

Dread was the sneer of his evil leer,
Dread was the glance of his eye,
My heart within me shrunk for fear,
And my parched mouth was dry.

With massive club he beat me down,
He kicked me as I lay,
And cried, "get up you lazy clown,
'Don't keep me here all day!'"

A rascal by me chanced to rove,
I would I could have shot him!
He asked another, "Who's that cove?
'And why's the Peeler¹ got him?"

His friend replied, as on they went,
"He's rather gone in liquor,
'He prigged the shiners² off a gent,
'And neatly nabbed his ticker."³

B. B.

¹Policeman.

²money.

³watch.

18.50 The Valley of the Shadow of Death

Source: Phantasmagoria (with minor differences as noted); Three Sunsets

Hark, *said the dying man, and sighed,*
To that complaining tone—
Like sprite condemned, each eventide,
To walk the world alone.
At sunset, when the air is still,
I hear it creep from yonder hill:
It breathes upon me, dead and chill,
A moment, and is gone.

My son, it minds me of a day
Left half a life behind,
That I have prayed to put away
For ever from my mind.
But bitter memory will not die:
It haunts my soul when none is nigh:
I hear its whisper in the sigh
Of that complaining wind.

And now in death my soul is fain
To tell the tale of fear
That ¹hidden in my breast hath lain
Through many a weary year:
Yet time would fail to utter all—
The evil spells that held me thrall,
And thrust my life from fall to fall,
Thou needest not to hear.

The spells that bound me with a chain,
Sin's stern behests to do,
Till Pleasure's self, invoked in vain,
A heavy burden grew—
Till from my spirit's fevered eye,
A hunted thing, I seemed to fly
Through the dark woods that underlie
Yon mountain-range of blue.

Deep in those woods I found a vale
No sunlight visiteth,
Nor star, nor wandering moonbeam pale;
Where never comes the breath
Of summer-breeze—there in mine ear,
Even as I lingered half in fear,
I heard a whisper, cold and clear,
“This is the gate of Death.

“O bitter is it to abide
In weariness alway:

¹secret

At dawn to sigh for eventide,
 At eventide for day.
 Thy noon hath fled²: thy sun hath shone.
 The brightness of thy day is gone:
 What need to lag and linger on
 Till life be cold and gray?
 "O well," it said, "beneath yon pool,
 In some still cavern deep,
 The fevered brain might slumber cool,
 The eyes forget to weep:
 Within that goblet's mystic rim
 Are draughts of healing, stored for him
 Whose heart is sick, whose sight is dim,
 Who prayeth but to sleep!"
 The evening-breeze went moaning by,
 Like mourner for the dead,
 And stirred, with shrill complaining sigh,
 The tree-tops overhead:
 My guardian-angel seemed to stand
 And mutely wave a warning hand—
 With sudden terror all unmanned,
 I turned myself and fled!
 A cottage-gate stood open wide:
 Soft fell the dying ray
 On two fair children, side by side,
 That rested from their play—
 Together bent the earnest head,
 As ever and anon they read
 From one dear Book: the words they said
 Come back to me to-day.
 Like twin cascades on mountain-stair
 Together wandered down
 The ripples of the golden hair,
 The ripples of the brown:
 While, through the tangled silken haze,
 Blue eyes looked forth in eager gaze,
 More starlike than the gems that blaze
 About a monarch's crown.
 My son, there comes to each an hour
 When sinks the spirit's pride—
 When weary hands forget their power
 The strokes of death to guide:
 In such a moment, warriors say,
 A word the panic-rout may stay,
 A sudden charge redeem the day
 And turn the living tide.

²is passed

I could not see, for blinding tears,
 The glories of the west:
 A heavenly music filled mine ears,
 A heavenly peace my breast.
 "Come unto Me, come unto Me—
 All ye that labour, unto Me—
 Ye heavy-laden, come to Me—
 And I will give you rest."

The night drew onward: thin and blue
 The evening mists arise
 To bathe the thirsty land in dew,
 As erst in Paradise—
 While, over silent field and town,
 The deep blue vault of heaven looked down;
 Not, as of old, in angry frown,
 But bright with angels' eyes.

Blest day! Then first I heard the voice
 That since hath oft beguiled
 These eyes from tears, and bid rejoice
 This heart with anguish wild—
 Thy mother, boy, thou hast not known;
 So soon she left me here to moan—
 Left me to weep and watch, alone,
 Our one beloved child.

Though, parted from my aching sight,
 Like homeward-speeding dove,
 She passed into the perfect light
 That floods the world above;
 Yet our twin spirits, well I know—
 Though one abide in pain below—
 Love, as in summers long ago,
 And evermore shall love.

So with a glad and patient heart
 I move toward mine end:
 The streams, that flow awhile apart,
 Shall both in ocean blend.
 I dare not weep: I can but bless
 The Love that pitied my distress,
 And lent me, in Life's wilderness,
 So sweet and true a friend.

But if there be—O if there be
 A truth in what they say,
 That angel-forms we cannot see
 Go with us on our way;
 Then surely she is with me here,
 I dimly feel her spirit near—
 The morning-mists grow thin and clear,
 And Death brings in the Day.

April, 1868³

³Only in *Three Sunsets*

18.51 Three Sunsets

Source: The College Rhymes, November 1861 (as “The Dream of Fame”, with minor differences as noted); Phantasmagoria (with minor differences as noted); Three Sunsets

He saw her once, and in the glance,
A moment's glance of meeting eyes,
His heart stood still in sudden trance:
He trembled with a sweet surprise—
All in the waning light she stood,¹
The star of perfect womanhood.²
That summer-eve his heart³ was light:
With lighter step he trod⁴ the ground:
And life was fairer in his sight,
And music was in every sound:
He blessed the world where there could be
So beautiful a thing as she.
There once again, as evening fell⁵
And stars were peering overhead,
Two lovers met to bid farewell:
The western sun gleamed faint and red,
Lost in a drift of purple cloud
That wrapped him like a funeral-shroud.
Long time the memory of that night—
The hand that clasped, the lips that kissed,
The form that faded from his sight
Slow sinking through the tearful mist—
In dreamy music seemed to roll
Through the dark chambers of his soul.
So after many years he came
A wanderer from a distant shore:

¹“As one that caught, through opening skies,” in *College Rhymes*

²“A distant gleam of Paradise.” in *College Rhymes*

³“soul” in *College Rhymes*

⁴“pressed” in *College Rhymes*

⁵In *College Rhymes* this and the next verse is

But days went by—he found her not:
And years rolled on—she never came:
Though ever, round the fatal spot,
A mocking whisper of her name
In hollow echoes seemed to roll
Through the dark chambers of his soul.
From land to land he sought her face:
To him were neither night nor day:
The phantom he was doomed to chase
Still glided from his touch away:
And life, that once had been so bright,
Seemed but a dream of yesternight.

The street, the house, were still⁶ the same,
 But those he sought⁷ were there no more:
 His burning words, his hopes and fears,
 Unheeded fell on alien ears.

Only the children from their play
 Would pause the mournful tale to hear,
 Shrinking in half-alarm away,
 Or, step by step, would venture near
 To touch with timid curious hands
 That strange wild man from other lands.

He sat beside the busy street,
 There, where he last had seen her face:
 And thronging memories, bitter-sweet,
 Seemed yet to haunt the ancient place:
 Her footfall ever floated near:
 Her voice was ever in his ear.

He sometimes, as the daylight waned
 And evening mists began to roll,
 In half-soliloquy complained
 Of that black shadow on his soul,
 And blindly fanned, with cruel care,
 The ashes of a vain despair.

The summer fled: the lonely man
 Still lingered out the lessening days;
 Still, as the night drew on, would scan
 Each passing face with closer gaze—
 Till, sick at heart, he turned away,
 And sighed “she will not come to-day.”

So by degrees his spirit bent
 To mock its own despairing cry,
 In stern⁸ self-torture to invent
 New luxuries of agony,
 And people⁹ all the vacant space
 With visions of her perfect face.¹⁰

Then for a moment¹¹ she was nigh,
 He heard no step, but she was there;¹²

⁶“yet” in *College Rhymes*

⁷“knew” in *College Rhymes*

⁸strange

⁹“peopled” in *College Rhymes*

¹⁰Additional verse in *College Rhymes*:

That perfect face, whose smile to own
 Men dare to live, and fools to die:
 Dearer than wealth, or power, or throne;
 Sweeter than sweetest harmony:
 That oftenest cheers their lonely lot
 Who live their life and heed it not.

¹¹“Till for a moment” in *Phantasmagoria*, “Sometimes he felt that” in *College Rhymes*

¹²“Won for an instant to his prayer—” in *College Rhymes*

As if an angel suddenly
 Were bodied from the viewless air,
 And all her fine ethereal frame
 Should fade as _lswiftly¹³ as it came.
 So, half in fancy's sunny trance,
 And half in misery's aching void
 With set and stony countenance
 His bitter being he enjoyed,
 And _lthrust¹⁴ for ever from his mind
 The happiness he could not find.
 As when the wretch, in lonely room,
 To selfish death is madly hurled,
 The glamour of that fatal _lfume¹⁵
 Shuts out the wholesome living world—
 So all his _lmanhood's¹⁶ strength and pride
 One sickly dream had swept aside.
_lYea, brother, and we passed him there,¹⁷
 But yesterday, in merry mood,
 And marveled at the lordly air
 That shamed his beggar's attitude,
 Nor heeded that ourselves might be
 Wretches as desperate as he;
 Who let the _lthought¹⁸ of bliss denied
 Make havoc of our life and powers,
 And pine, in solitary pride,
 For peace that never shall be ours,
 Because we will not work and wait
 In trustful patience for our fate.
 And so it chanced once more _lthat¹⁹ she
 Came by the old familiar spot:
 The face he would have died to see
 Bent o'er him, and he knew it not;
 Too rapt in _lselfish²⁰ grief to hear,
 Even when happiness was near.
 And pity filled her gentle breast
 For him that _lwould²¹ not stir nor speak
 The dying crimson of the west,
 That faintly tinged his haggard cheek,
 Fell on her as she stood, and shed
 A glory round the patient head.

¹³“strangely” in *College Rhymes*

¹⁴“shut” in *College Rhymes*

¹⁵mistakenly “fame” in *College Rhymes*

¹⁶“manly” in *College Rhymes*

¹⁷This and the next verse are missing in *College Rhymes*

¹⁸“dream” in *Phantasmagoria*

¹⁹mistakenly “than” in *College Rhymes*

²⁰“brooding” in *College Rhymes*

²¹“could” in *College Rhymes*

„Ah, let him wake!“²² The moments fly:
This awful tryst may be the last.
And see, the tear, that dimmed her eye,
Had fallen on him ere she passed—
She passed: the crimson paled to gray:
And hope departed with the day.
The heavy hours of night went by,
And silence quickened into sound,
And light slid up the eastern sky,
And life began its daily round—
But „light and life“²³ for him were fled:
His name was numbered with the dead.

„Nov., 1861.“²⁴

²²„Awake! Awake!“ in *Phantasmagoria*

²³„life and light“ in *College Rhymes*

²⁴Only in *Three Sunsets*, „Ch. Ch. C. L. D.“ in *College Rhymes*

18.52 Madrigal

Source: sent to Miss May Forshall, 1877

He shouts amain, he shouts again,
 (Her brother, fierce, as bluff King Hal),
“I tell you flat, I shall do that!”
 She softly whispers “‘*May*’ for ‘*shall*’!”
He wistful sighed one eventide
 (Her friend, that made this Madrigal),
“And shall I kiss you, pretty Miss!”
 Smiling she answered “‘*May*’ for ‘*shall*’!”
With eager eyes my reader cries,
 “Your friend must be indeed a val-
-uable child, so sweet, so mild!
 What do you call her?” “May For shall.”

Dec. 24, 1877.

18.53 Far Away

Source: Sylvie and Bruno (extracted, with minor differences as noted); Three Sunsets

He stept so lightly to the land,
All in his manly pride:
He kissed her cheek, he clasped¹ her hand;
Yet still she glanced aside.
“Too gay he seems,” she darkly dreams,
“Too gallant and too gay,
To think of me—poor simple me—
When he is far away!”

“I bring my Love this goodly pearl
Across the seas,” he said:
“A gem to deck the dearest girl
That ever sailor wed!”
She holds² it tight: her eyes are bright:
Her throbbing heart would say
“He thought of me—he thought of me—
When he was far away!”

The ship has sailed into the West:
Her ocean-bird is flown:
A dull dead pain is in her breast,
And she is weak and lone:
Bt³ there’s a smile upon her face,
A smile that seems to say
“He’ll think of me—he’ll think of me—
When he is far away!”

“Though waters wide between us glide,
Our lives are warm and near:
No distance parts two faithful hearts—
Two hearts that love so dear:
And I will trust my sailor-lad,
For ever and a day,
To think of me—to think of me—
When he is far away!”

¹pressed

²clasps

³Yet

18.54 Mad Gardener's Song

Source: Sylvie and Bruno, Sylvie and Bruno Concluded (extracted, connected)

He thought he saw an Elephant,
That practised on a fife:
He looked again, and found it was
A letter from his wife.

"At length I realise," he said,
"The bitterness of Life!"

He thought he saw a Buffalo
Upon the chimney-piece:
He looked again, and found it was
His Sister's Husband's Niece.
"Unless you leave this house," he said,
"I'll send for the Police!"

He thought he saw a Rattlesnake
That questioned him in Greek:
He looked again, and found it was
The Middle of Next Week.
"The one thing I regret," he said,
"Is that it cannot speak!"

He thought he saw a Banker's Clerk
Descending from the bus:
He looked again, and found it was
A Hippopotamus:
"If this should stay to dine," he said,
"There won't be much for us!"

He thought he saw a Kangaroo
That worked a coffee-mill:
He looked again, and found it was
A Vegetable-Pill.
"Were I to swallow this," he said,
"I should be very ill!"

He thought he saw a Coach-and-Four
That stood beside his bed:
He looked again, and found it was
A Bear without a Head.
"Poor thing," he said, "poor silly thing!
It's waiting to be fed!"

He thought he saw an Albatross
That fluttered round the lamp:
He looked again, and found it was
A Penny-Postage-Stamp.
"You'd best be getting home," he said:
"The nights are very damp!"

He thought he saw a Garden-Door¹
That opened with a key:
He looked again, and found it was
A Double Rule of Three:
“And all its mystery,” he said,
“Is clear as day to me!”
He thought he saw an Argument
That proved he was the Pope:
He looked again, and found it was
A Bar of Mottled Soap.
“A fact so dread,” he faintly said,
“Extinguishes all hope!”

¹Alternative given in preface (→ 19.14, p. 2480): “a Cormorant / that nestled in a tree.”

18.55 The Three Voices (later version)

Source: Rhyme? and Reason?

Parody on *The Two Voices* by Alfred Lord Tennyson

Other version:

→ 18.205, p. 2434

The First Voice



He trilled a carol fresh and free:
He laughed aloud for very glee:
There came a breeze from off the sea:
It passed athwart the glooming flat—
It fanned his forehead as he sat—
It lightly bore away his hat,
All to the feet of one who stood
Like maid enchanted in a wood,
Frowning as darkly as she could.
With huge umbrella, lank and brown,
Unerringly she pinned it down,
Right through the centre of the crown.
Then, with an aspect cold and grim,
Regardless of its battered rim,
She took it up and gave it him.
A while like one in dreams he stood,
Then faltered forth his gratitude
In words just short of being rude:
For it had lost its shape and shine,
And it had cost him four-and-nine,
And he was going out to dine.
“To dine!” she sneered in acid tone.



“Unerringly she pinned it down”

“To bend thy being to a bone
 Clothed in a radiance not its own!”
 The tear-drop trickled to his chin:
 There was a meaning in her grin
 That made him feel on fire within.
 “Term it not ‘radiance,’” said he:
 “’Tis solid nutriment to me.
 Dinner is Dinner: Tea is Tea.”
 And she “Yea so? Yet wherefore cease?
 Let thy scant knowledge find increase.
 Say ‘Men are Men, and Geese are Geese.’”
 He moaned: he knew not what to say.
 The thought “That I could get away!”
 Stroved with the thought “But I must stay.”
 “To dine!” she shrieked in dragon-wrath.
 “To swallow wines all foam and froth!
 To simper at a table-cloth!
 “Say, can thy noble spirit stoop
 To join the gormandising troop
 Who find a solace in the soup?
 “Canst thou desire or pie or puff?
 Thy well-bred manners were enough,
 Without such gross material stuff.”
 “Yet well-bred men,” he faintly said,
 “Are not unwilling to be fed:
 Nor are they well without the bread.”
 Her visage scorched him ere she spoke:
 “There are,” she said, “a kind of folk
 Who have no horror of a joke.
 “Such wretches live: they take their share
 Of common earth and common air:
 We come across them here and there:
 “We grant them—there is no escape—
 A sort of semi-human shape
 Suggestive of the man-like Ape.”
 “In all such theories,” said he,
 “One fixed exception there must be.
 That is, the Present Company.”
 Baffled, she gave a wolfish bark:
 He, aiming blindly in the dark,
 With random shaft had pierced the mark.
 She felt that her defeat was plain,
 Yet madly strove with might and main
 To get the upper hand again.
 Fixing her eyes upon the beach,

As though unconscious of his speech,
She said "Each gives to more than each."

He could not answer yea or nay:
He faltered "Gifts may pass away."
Yet knew not what he meant to say.

"If that be so," she straight replied,
"Each heart with each doth coincide.
What boots it? For the world is wide."



"He faltered 'Gifts may pass away.'"

"The world is but a Thought," said he:
"The vast unfathomable sea
Is but a Notion—unto me."

And darkly fell her answer dread
Upon his unresisting head,
Like half a hundredweight of lead.

“The Good and Great must ever shun
That reckless and abandoned one
Who stoops to perpetrate a pun.

“The man that smokes—that reads the *Times*—
That goes to Christmas Pantomimes—
Is capable of *any* crimes!”

He felt it was his turn to speak,
And, with a shamed and crimson cheek,
Moaned “This is harder than Bezique!”

But when she asked him “Wherefore so?”
He felt his very whiskers glow,
And frankly owned “I do not know.”



“This is harder than Bezique!”

While, like broad waves of golden grain,
Or sunlit hues on cloistered pane,
His colour came and went again.

Pitying his obvious distress,
Yet with a tinge of bitterness,
She said "The More exceeds the Less."
"A truth of such undoubted weight,"
He urged, "and so extreme in date,
It were superfluous to state."
Roused into sudden passion, she
In tone of cold malignity:
"To others, yea: but not to thee."
But when she saw him quail and quake,
And when he urged "For pity's sake!"
Once more in gentle tone she spake.
"Thought in the mind doth still abide:
That is by Intellect supplied,
And within that Idea doth hide:
"And he, that yearns the truth to know,
Still further inwardly may go,
And find Idea from Notion flow:
"And thus the chain, that sages sought,
Is to a glorious circle wrought,
For Notion hath its source in Thought."
So passed they on with even pace:
Yet gradually one might trace
A shadow growing on his face.

The Second Voice

They walked beside the wave-worn beach;
Her tongue was very apt to teach,
And now and then he did beseech
She would abate her dulcet tone,
Because the talk was all her own,
And he was dull as any drone.
She urged "No cheese is made of chalk":
And ceaseless flowed her dreary talk,
Tuned to the footfall of a walk.
Her voice was very full and rich,
And, when at length she asked him "Which?"
It mounted to its highest pitch.
He a bewildered answer gave,
Drowned in the sullen moaning wave,
Lost in the echoes of the cave.
He answered her he knew not what:
Like shaft from bow at random shot,
He spoke, but she regarded not.
She waited not for his reply,



But with a downward leaden eye
Went on as if he were not by:
Sound argument and grave defence,
Strange questions raised on "Why?" and "Whence?"
And wildly tangled evidence.

When he, with racked and whirling brain,
Feebly implored her to explain,
She simply said it all again.

Wrenched with an agony intense,
He spake, neglecting Sound and Sense,
And careless of all consequence:

"Mind—I believe—is Essence—Ent—
Abstract—that is—an Accident—
Which we—that is to say—I meant—"

When, with quick breath and cheeks all flushed,
At length his speech was somewhat hushed,
She looked at him, and he was crushed.

It needed not her calm reply:
She fixed him with a stony eye,
And he could neither fight nor fly,

While she dissected, word by word,
His speech, half guessed at and half heard,
As might a cat a little bird.

Then, having wholly overthrown
His views, and stripped them to the bone,
Proceeded to unfold her own.

"Shall Man be Man? And shall he miss
Of other thoughts no thought but this,
Harmonious dews of sober bliss?"

"What boots it? Shall his fevered eye
Through towering nothingness descry
The grisly phantom hurry by?"

"And hear dumb shrieks that fill the air;
See mouths that gape, and eyes that stare
And redden in the dusky glare?"

"The meadows breathing amber light,
The darkness toppling from the height,
The feathery train of granite Night?"

"Shall he, grown gray among his peers,
Through the thick curtain of his tears
Catch glimpses of his earlier years,

"And hear the sounds he knew of yore,
Old shufflings on the sanded floor,
Old knuckles tapping at the door?"

"Yet still before him as he flies



“He spake, neglecting Sound and Sense”



"Shall Man be Man?"

One pallid form shall ever rise,
And, bodying forth in glassy eyes
“The vision of a vanished good,
Low peering through the tangled wood,
Shall freeze the current of his blood.”

Still from each fact, with skill uncouth
And savage rapture, like a tooth
She wrenched some slow reluctant truth.

Till, like a silent water-mill,
When summer suns have dried the rill,
She reached a full stop, and was still.

Dead calm succeeded to the fuss,
As when the loaded omnibus
Has reached the railway terminus:

When, for the tumult of the street,
Is heard the engine’s stifled beat,
The velvet tread of porters’ feet.

With glance that ever sought the ground,
She moved her lips without a sound,
And every now and then she frowned.

He gazed upon the sleeping sea,
And joyed in its tranquillity,
And in that silence dead, but she

To muse a little space did seem,
Then, like the echo of a dream,
Harped back upon her threadbare theme.

Still an attentive ear he lent
But could not fathom what she meant:
She was not deep, nor eloquent.

He marked the ripple on the sand:
The even swaying of her hand
Was all that he could understand.

He saw in dreams a drawing-room,
Where thirteen wretches sat in gloom,
Waiting—he thought he knew for whom:

He saw them drooping here and there,
Each feebly huddled on a chair,
In attitudes of blank despair:

Oysters were not more mute than they,
For all their brains were pumped away,
And they had nothing more to say—

Save one, who groaned “Three hours are gone!”
Who shrieked “We’ll wait no longer, John!
Tell them to set the dinner on!”

The vision passed: the ghosts were fled:

He saw once more that woman dread:
He heard once more the words she said.
He left her, and he turned aside:
He sat and watched the coming tide
Across the shores so newly dried.

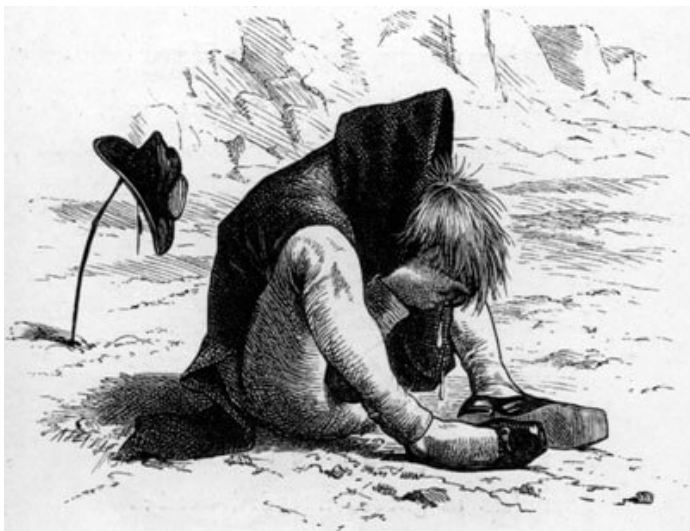


“He sat and watched the coming tide”

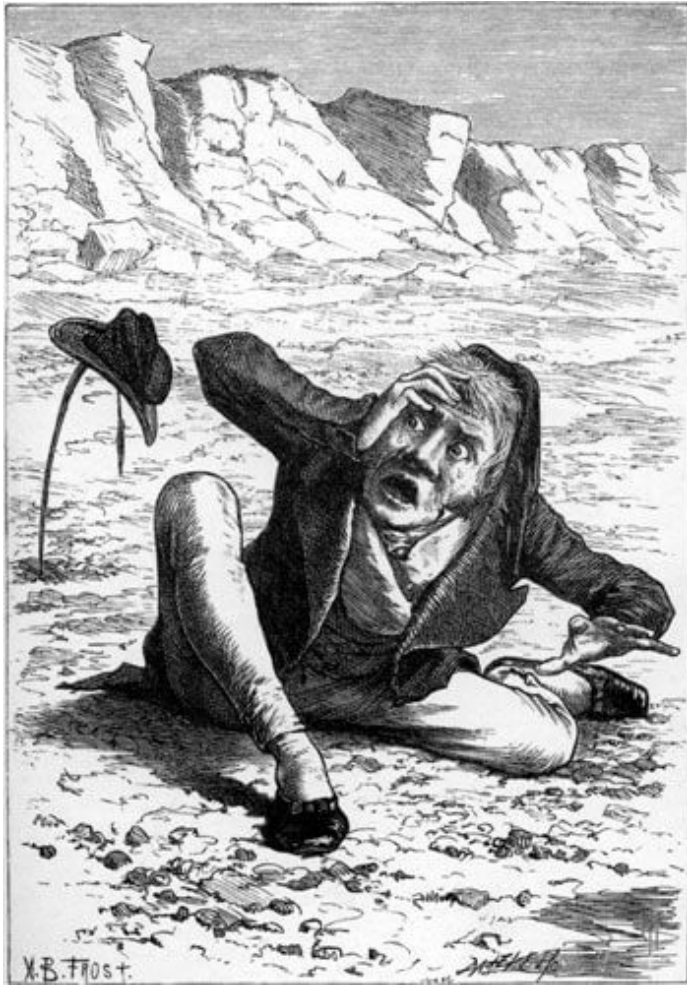
He wondered at the waters clear,
The breeze that whispered in his ear,
The billows heaving far and near,
And why he had so long preferred
To hang upon her every word:
“In truth,” he said, “it was absurd.”

The Third Voice

Not long this transport held its place:
Within a little moment's space

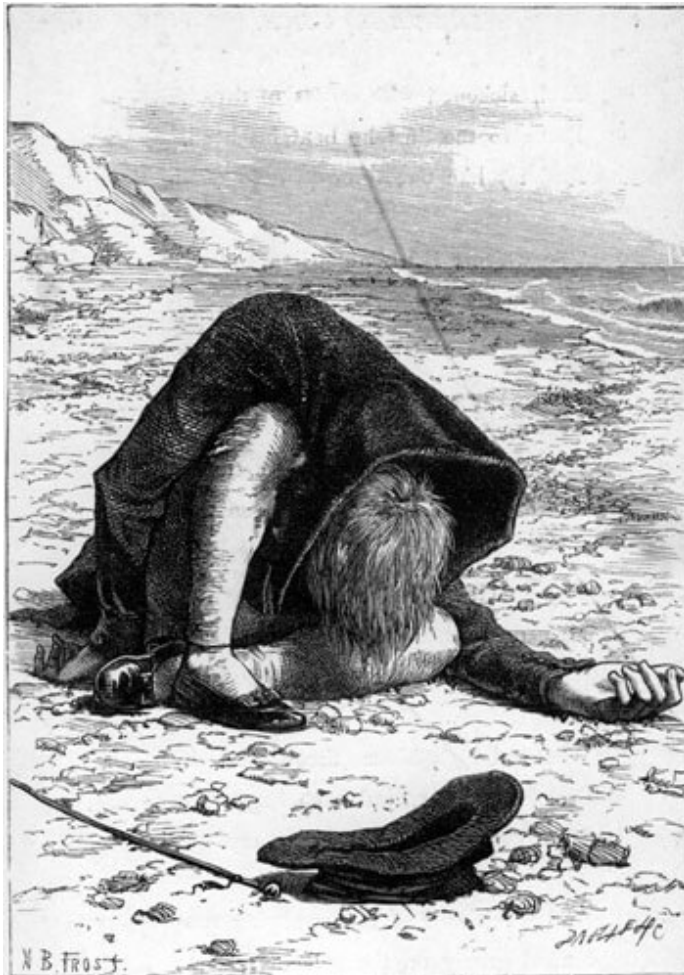


Quick tears were raining down his face.
 His heart stood still, aghast with fear;
 A wordless voice, nor far nor near,
 He seemed to hear and not to hear.
 "Tears kindle not the doubtful spark.
 If so, why not? Of this remark
 The bearings are profoundly dark."
 "Her speech," he said, "hath caused this pain.
 Easier I count it to explain
 The jargon of the howling main,
 "Or, stretched beside some babbling brook,
 To con, with inexpressive look,
 An unintelligible book."
 Low spake the voice within his head,
 In words imagined more than said,
 Soundless as ghost's intended tread:
 "If thou art duller than before,
 Why quittedst thou the voice of lore?
 Why not endure, expecting more?"
 "Rather than that," he groaned aghast,
 "I'd writhe in depths of cavern vast,
 Some loathly vampire's rich repast."
 "Twere hard," it answered, "themes immense
 To coop within the narrow fence
 That rings *thy* scant intelligence."
 "Not so," he urged, "nor once alone:
 But there was something in her tone
 That chilled me to the very bone.
 "Her style was anything but clear,
 And most unpleasantly severe;
 Her epithets were very queer.
 "And yet, so grand were her replies,
 I could not choose but deem her wise;
 I did not dare to criticise;
 "Nor did I leave her, till she went
 So deep in tangled argument
 That all my powers of thought were spent."
 A little whisper inly slid,
 "Yet truth is truth: you know you did."
 A little wink beneath the lid.
 And, sickened with excess of dread,
 Prone to the dust he bent his head,
 And lay like one three-quarters dead.
 The whisper left him—like a breeze
 Lost in the depths of leafy trees—



"He groaned aghast"

Left him by no means at his ease.
Once more he weltered in despair,
With hands, through denser-matted hair,
More tightly clenched than then they were.
When, bathed in Dawn of living red,
Majestic frowned the mountain head,
"Tell me my fault," was all he said.
When, at high Noon, the blazing sky
Scorched in his head each haggard eye,
Then keenest rose his weary cry.
And when at Eve the unpitying sun
Smiled grimly on the solemn fun,
"Alack," he sighed, "what *have* I done?"



"Tortured, unaided, and alone"

But saddest, darkest was the sight,
When the cold grasp of leaden Night

Dashed him to earth, and held him tight.

Tortured, unaided, and alone,
Thunders were silence to his groan,
Bagpipes sweet music to its tone:

“What? Ever thus, in dismal round,
Shall Pain and Mystery profound
Pursue me like a sleepless hound,

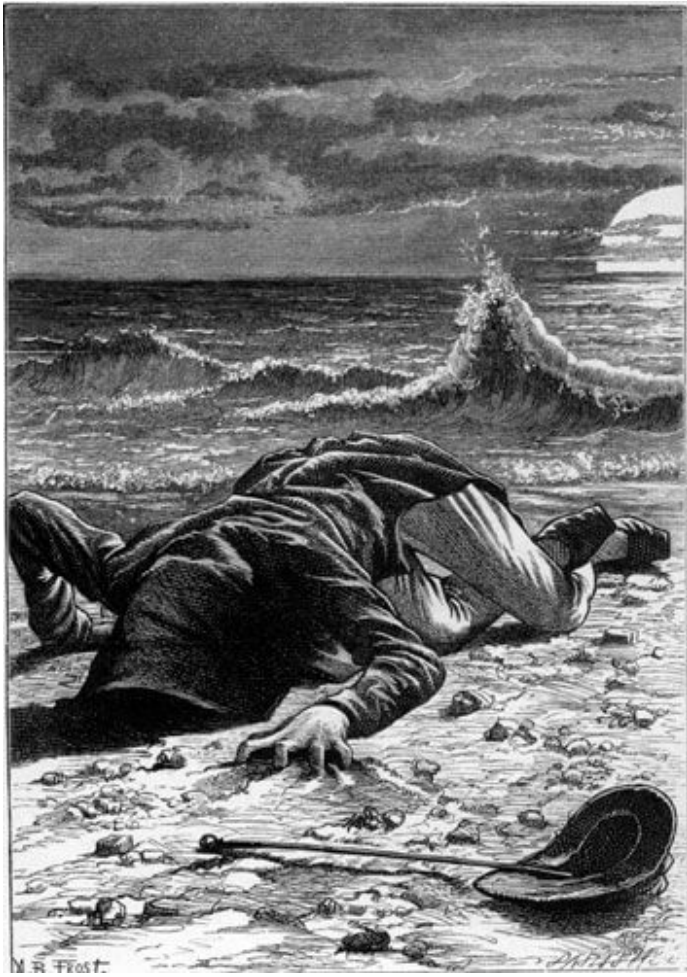
“With crimson-dashed and eager jaws,
Me, still in ignorance of the cause,
Unknowing what I broke of laws?”

The whisper to his ear did seem
Like echoed flow of silent stream,
Or shadow of forgotten dream,

The whisper trembling in the wind:
“Her fate with thine was intertwined,”
So spake it in his inner mind:

“Each orbed on each a baleful star:
Each proved the other’s blight and bar:
Each unto each were best, most far:

“Yea, each to each was worse than foe:
Thou, a scared dullard, gibbering low,
AND SHE, AN AVALANCHE OF WOE!”



“Scared dullard, gibbering low”

18.56 The Elections to the Hebdomadal Council

Source: The Elections to the Hebdomadal Council (with introduction missing and other minor differences as noted); Notes by an Oxford Chiel (with minor differences as noted); Phantasmagoria

[In the year 1866, a Letter with the above title was published in Oxford, addressed by Mr. Goldwin Smith¹ to the Senior Censor of Christ Church, with the twofold object of revealing to the University a vast political misfortune which it had unwittingly encountered, and of suggesting a remedy which should at once alleviate the bitterness of the calamity and secure the sufferers from its recurrence. The misfortune thus revealed was no less than the fact that, at a recent election of Members to the Hebdomadal Council, *two* Conservatives had been chosen, thus giving a Conservative majority in the Council; and the remedy suggested was a sufficiently sweeping one, embracing, as it did, the following details:—

1. ‘The exclusion’ (from Congregation) ‘of the non-academical elements which form a main part of the strength of this party domination.’ These ‘elements’ are afterwards enumerated as ‘the parish clergy and the professional men of the city, and chaplains who are without any academical occupation.’
2. The abolition of the Hebdomadal Council.
3. The abolition of the legislative functions of Convocation.

These are all the main features of this remarkable scheme of Reform, unless it be necessary to add

4. ‘To preside over a Congregation with full legislative powers, the Vice-Chancellor ought no doubt to be a man of real capacity.’

But it would be invidious to suppose that there was any intention of suggesting this as a novelty.

The following rhythmical version of the Letter develops its principles to an extent which possibly the writer had never contemplated.]

‘Now is the Winter of our discontent².’

‘Heard ye the arrow hurtle in the sky?
Heard ye the dragon-monster’s deathful cry?’—
Excuse this sudden burst of the Heroic;
The present state of things would vex a Stoic!
And just as Sairey Gamp, for pains within,
Administered a modicum of gin,
So does my mind, when vexed and ill at ease,
Console itself with soothing similes.
The ‘dragon-monster’ (pestilential schism!)
I need not tell you is Conservatism;
The ‘hurtling arrow’ (till we find a better)
Is represented by the present Letter.
’Twas, I remember, but the other day,
Dear Senior Censor, that you chanced to say

¹only in *Phantasmagoria*

²Dr. Wynter, President of St. John’s, one of the recently elected Conservative members of Council.

You thought these party-combinations would
 Be found, "though needful, no unmingled good."
 Unmingled good? They are unmingled ill³!
 I never took to them, and never will⁴—
 What am I saying? Heed it not, my friend:
 On the next page I mean to recommend
 The very dodges that I now condemn
 In the Conservatives! Don't hint to them
 A word of this! (In confidence. Ahem!) }
 Need I rehearse the history of Jowett?
 I need not, Senior Censor, for you know it⁵⁶.
That was the Board Hebdomadal, and oh!
 Who would be free, themselves must strike the blow!
 Let each that wears a beard, and each that shaves.
 Join in the cry 'We never will be slaves!'
 "But can the University afford
 To be a slave to any kind of board?
 A *slave*?" you shuddering ask. "Think you it can, Sir?"
 "*Not at the present moment*," is my answer⁷.
 I've thought the matter o'er and o'er again,
 And given to it all my powers of brain;
 I've thought it out, and this is what I make it,
 (And I don't care a Tory how you take it:)
It may be right to go ahead, I guess:
It may be right to stop, I do confess:
*Also, it may be right to retrogress*⁸. }
 So says the oracle, and, for myself, I
 Must say it beats to fits the one at Delphi!
 To save beloved Oxford from the yoke,
 (For this majority's beyond a joke,)
 We must combine⁹, aye! hold a *caucus*-meeting¹⁰,
 Unless we want to get another beating.
 That they should 'bottle' us is nothing new—
 But shall they bottle us and *caucus* too?
 See the 'fell unity of purpose' now
 With which Obstructives plunge into the row¹¹!

³In a letter on a point connected with the late elections to the Hebdomadal Council you incidentally remarked to me that our combinations for these elections, "though necessary, were not an unmixed good." They are an unmixed evil.'

⁴I never go to a *caucus* without reluctance: I never write a canvassing letter without a feeling of repugnance to my task.'

⁵I need not rehearse the history of the Regius Professorship of Greek.'

⁶"Regius Professor" in the footnote in the original publication and *Notes by an Oxford Chiel*

⁷'The University cannot afford at the present moment to be delivered over as a slave to any non-academical interest whatever.'

⁸'It may be right to go on, it may be right to stand still, or it may be right to go back.'

⁹'To save the University from going completely under the yoke . . . we shall still be obliged to combine.'

¹⁰'Caucus-holding and wire-pulling would still be almost inevitably carried on to some extent.'

¹¹'But what are we to do? Here is a great political and theological party . . . labouring

'Factious Minorities,' we used to sigh—
 'Factious Majorities!' is now the cry.
 'Votes—ninety-two'—no combination here:
 'Votes—ninety-three'—conspiracy, 'tis clear¹²!
 You urge "'Tis but a unit." I reply
 That in that unit lurks their 'unity.'
Our voters often bolt, and often baulk us,
 But then they never, never go to *caucus*!
Our voters can't forget the maxim famous
 '*Semel electum semper eligamus*;
They never can be worked into a ferment
 By visionary promise of preferment,
 Nor taught, by hints of 'Paradise'¹³ beguiled,
 To whisper 'C for Chairman' like a *child*¹⁴¹⁵!
 And thus the friends that we have tempted down
 Oft take the two-o'clock Express for town¹⁶.

This is our danger: this the secret foe
 That aims at Oxford such a deadly blow.
 What champion can we find to save the State,
 To crush the plot? We darkly whisper 'Wait'¹⁷!

My scheme is this: remove the votes of all
 The residents that are not Liberal¹⁸—
 Leave the young Tutors uncontrolled and free,
 And Oxford then shall see—what it shall see.
 What next? Why then, I say, let Convocation
 Be shorn of all her powers of legislation¹⁹.
 But why stop there? Let us go boldly on—
 Sweep everything beginning with a 'Con'
 Into oblivion! Convocation first,
 Conservatism next, and, last and worst,
 '*Concilium Hebdomadale*' must,
 Consumed and conquered, be consigned to dust²⁰!

under perfect discipline and with fell unity of purpose, to hold the University in subjection, and fill her government with its nominees.'

¹²At a recent election to Council, the Liberals mustered ninety-two votes, and the Conservatives ninety-three; whereupon the latter were charged with having obtained their victory by a conspiracy.

¹³Not to mention that, as we cannot promise Paradise to our supporters, they are very apt to take the train for London just before the election.'

¹⁴It is not known to what the word 'Paradise' was intended to allude, and therefore the hint, here thrown out, that the writer meant to recall the case of the late Chairman of Mr. Gathorne Hardy's committee, who had been recently collated to the See of Chester, is wholly wanton and gratuitous.

¹⁵'Mr. Gladstone's' in the footnote in the original publication and *Notes by an Oxford Chiel*

¹⁶A case of this kind had actually occurred on the occasion of the division just alluded to.

¹⁷Mr. Wayte, now President of Trinity, then put forward as the Liberal candidate for election to Council.

¹⁸You and others suggest, as the only effective remedy, that the Constituency should be reformed, by the exclusion of the non-academical elements which form a main part of the strength of this party domination.'

¹⁹I confess that, having included all the really academical elements in Congregation, I would go boldly on, and put an end to the legislative functions of Convocation.'

²⁰This conviction, that while we have Elections to Council we shall not entirely get rid of

And here I must relate a little fable
 I heard last Saturday at our high table:—
 The cats, it seems, were masters of the house,
 And held their own against the rat and mouse:
 Of course the others couldn't stand it long,
 So held a *caucus*, (not, in their case, wrong!)
 And, when they were assembled to a man,
 Uprose an aged rat, and thus began:—
 'Brothers in bondage! Shall we bear to be
 For ever left in a minority?
 With what "fell unity of purpose" cats
 Oppress the trusting innocence of rats!
 So unsuspecting are we of disguise,
 Their machinations take us by surprise²¹—
 Insulting and tyrannical absurdities²²!
 It is too bad by half—upon my word it is!
 For, now that these Con—, cats, I should say, (frizzle 'em!)
 Are masters, they exterminate like Islam²³!
 How shall we deal with them? I'll tell you how:—
 Let none but kittens be allowed to miaow!
 The Liberal kittens seize us but in play,
 And, while they frolic, we can run away:
 But older cats are not so generous,
 Their claws are too Conservative for us!
 Then let *them* keep the stable and the oats,
 While kittens, rats, and mice have all the votes.²⁴

party organization and its evils, leads me to venture a step further, and to raise the question whether it is really necessary that we should have an Elective Council for legislative purposes at all.'

²¹'Sometimes, indeed, not being informed that the wires are at work, we are completely taken by surprise.'

²²'We are without protection against this most insulting and tyrannical absurdity.'

²³'It is as exterminating as Islam.'

²⁴Additional lines in the original publication:

Now, having thus included in the house,
 All real elements of cat and mouse,
 I would go on, and (though with some compunction)
 Deprive them of their legislative function.
 "'Twas but the other day that Pussy bounced
 Into the Kitchen—wholly unannounced—
 Upset the Poker, and (alas my friends!)
 Brought several Beedles to untimely ends!
 "Now, theoretically, Pussy's got
 So large a body, clearly she could not
 A tenth of it into a mouse-hole stuff:
 But, place her in a building large enough—
 Let the most eminent among the rats
 Address that cunningest of cunning cats—
 She scarce could fail (this is no idle vision)
 To reach at last a rational decision.

The last line has the footnote: 'Theoretically Convocation is a body so large that scarcely a tenth part of it could get into the Convocation House . . . which, if it could be brought together in a building large enough to hold it, and addressed by its most eminent members, might possibly come to a reasonable decision.'

‘Yes; banish cats! The kittens would not use
Their powers for blind obstruction²⁵, nor refuse
To let us sip the cream and gnaw the cheese—
How glorious then would be our destinies²⁶!
Kittens and rats would occupy the throne,
And rule the larder for itself alone²⁷!’

So rhymed my friend, and asked me what I thought of it.
I told him that so much as I had caught of it
Appeared to me (as I need hardly mention)
Entirely undeserving of attention.

But now, to guide the Congregation, when
It numbers none but really ‘able’ men,
A ‘*Vice-Cancellarius*’ will be needed
Of every kind of human weakness weeded!
Is such the president that we have got?
He ought no doubt to be; why should he not²⁸?

I do not hint that Liberals should dare
To oust the present holder of the chair—
But surely he would not object to be
Gently examined by a Board of three?
Their duty being just to ascertain
That he’s ‘all there’ (I mean, of course, in brain),
And that his mind, from ‘petty details’ clear,
Is fitted for the duties of his sphere.

All this is merely moonshine, till we get
The seal of Parliament upon it set.
A word then, Senior Censor, in your ear:
The Government is in a state of fear—
Like some old gentleman, abroad at night,
Seized with a sudden shiver of affright,
Who offers money, on his bended knees,
To the first skulking vagabond he sees—
Now is the lucky moment for our task;
They daren’t refuse us anything we ask²⁹!

And then our Fellowships shall open be
To Intellect, no meaner quality!
No moral excellence, no social fitness
Shall ever be admissible as witness.

²⁵‘Their powers would scarcely be exercised for the purposes of fanaticism, or in a spirit of blind obstruction.’

²⁶‘These narrow local bounds, within which our thoughts and schemes have hitherto been pent, will begin to disappear, and a far wider sphere of action will open on the view.’

²⁷‘Those councils must be freely opened to all who can serve her well and who will serve her for herself.’

²⁸‘To preside over a Congregation with full legislative powers, the Vice-Chancellor ought no doubt to be a man of real capacity; but why should he not? His mind ought also, for this as well as for his other high functions, to be clear of petty details, and devoted to the great matters of University business; but why should not this condition also be fulfilled?’

²⁹‘If you apply now to Parliament for this or any other University reform, you will find the House of Commons in a propitious mood. . . . Even the Conservative Government, as it looks for the support of moderate Liberals on the one great subject, is very unwilling to present itself in such an aspect that these men may not be able decently to give it their support.’

'Avaunt, dull Virtue!' is Oxonia's cry:
 'Come to my arms, ingenious Villainy!'

For Classic Fellowships, an honour high,
 Simonides and Co. will then apply—
 Our Mathematics will to Oxford bring
 The 'cutest members of the betting-ring—
 Law Fellowships will start upon their journeys
 A myriad of unscrupulous attorneys—
 While poisoners, doomed till now to toil unknown,
 Shall mount the Physical Professor's throne!
 To what a varied feast of learning then
 Should we invite our intellectual men!
 Professor Caseley should instruct our flock
 To analyse the mysteries of Locke—
 Barnum should lecture them on Rhetoric—
 The Davenports upon the cupboard-trick—
 Robson and Redpath, Strahan and Paul and Bates
 Should store the minds of undergraduates—
 From Fagin's lecture-room a class should come
 Versed in all arts of finger and of thumb,
 To illustrate in practice (though by stealth)
 The transitory character of wealth.³⁰
 And thus would Oxford educate, indeed,
 Men far beyond a merely local need—
 With no career before them, I may say³¹,
 Unless they're wise enough to go away,
 And seek, far West, or in the distant East,
 Another flock of pigeons to be fleeced.

I might go on, and trace the destiny
 Of Oxford in an age which, though it be
 Thus breaking with tradition, owns a new
 Allegiance to the intellectual few—
 (I mean, of course, the—pshaw! no matter who!)
 But, were I to pursue the boundless theme,
 I fear that I should seem to you to dream³².

This to fulfil, or even—humbler far—
 To shun Conservatism's noxious star
 And all the evils that it brings behind,
 These pestilential coils must be untwined—
 These party-coils, that clog the march of Mind—
 Choked in whose meshes Oxford, slowly wise,
 Has lain for three disastrous centuries³³.

³⁰missing in *Notes by an Oxford Chiel*

³¹'With open Fellowships, Oxford will soon produce a supply of men fit for the work of high education far beyond her own local demands, and in fact with no career before them unless a career can be opened elsewhere.'

³²'I should seem to you to dream if I were to say what I think the destiny of the University may be in an age which, though it is breaking with tradition, is, from the same causes, owning a new allegiance to intellectual authority.'

³³'But to fulfil this, or even a far humbler destiny—to escape the opposite lot—the pestilential coils of party, in which the University has lain for three disastrous centuries choked,

Away with them! (It is for this I yearn.)
Each twist untwist, each Turner overturn!
Disfranchise each Conservative, and cancel
The votes of Michell, Liddon, Wall, and Mansel!
Then, then shall Oxford be herself again,
Neglect the heart, and cultivate the brain—
Then this shall be the burden of our song,
'All change is good—whatever is, is wrong'—
Then Intellect's proud flag shall be unfurled,
And Brain, and Brain alone, shall rule the world!

must be untwined.'

18.57 Here I bee, and here I byde

Source: The Legend of "Scotland" (extracted)

Here I bee, and here I byde,
Till such tyme as yt betyde
That a Ladye of thys place,
Lyke to mee yn name and face,
(Though my name bee never known,
My initials shall bee shown,
Shall be fotograffed aright—
Hedde and Feet bee both yn sight—
Then my face shall disappear,
Nor agayn affrite you heer.

18.58 A Bachanalian Ode

Source: The Vision of Three T's (extracted)

Parody on *Here's to the Maiden of Bashful fifteen* by Richard Brinsley Sheridan

Here's to the Freshman of bashful eighteen!
Here's to the Senior of twenty!
Here's to the youth whose moustache can't be seen!
And here's to the man who has plenty!
Let the men Pass!
Out of the mass
I'll warrant we'll find you some fit for a Class!
Here's to the Censors, who symbolise Sense,
Just as Mitres incorporate Might, Sir!
To the Bursar, who never expands the expense!
And the Readers, who always do right, Sir!
Tutor and Don,
Let them jog on!
I warrant they'll rival the centuries gone!
Here's to the Chapter, melodious crew!
Whose harmony surely *intends* well:
For, though it commences with 'harm,' it is true,
Yet its motto is 'All's well that ends well'!
'Tis love, I'll be bound.
That makes it go round!
For 'In for a penny is in for a pound'!
Here's to the Governing Body, whose Art
(For they're Masters of Arts to a man. Sir!)
Seeks to beautify Christ Church in every part,
Though the method seems hardly to answer!
With three T's it is graced—
Which letters are placed
To stand for the names of Tact, Talent, and Taste!

18.59 His barque hath perished in the storm

Source: Wilhelm von Schmitz (extracted)

His barque hath perished in the storm,
Whirled by its fiery breath
On sunken rocks, his stalwart form
Was doomed to watery death.

18.60 Yang-ki-ling

Source: Rectory Magazine

His highness Yang-ki-ling,
Great China's mighty king,
Upon his throne was sitting,
Around him courtiers all,
Lay prostrate in the hall,
In attitude most fitting.

“Approach, Feefifum!
‘Great western traveller, come!
‘Of science learned lover!
‘Among my cooks not one,”
Thus spake the crownèd one,
“Can a new dish discover!

‘Of bind-nest soup I'm tired,
‘A dish, though much admired,
‘Which yet well bears omission:
‘Baked puppies and stewed snails,
‘Like oft-related tales,
‘Disgust on repetition!”

He spoke: “Sire,” Fum replied,
“I've travelled far and wide,”
His robe with terror crumpling,
“But in all the world combined
‘No better dish could find,
‘Than an English apple-dumpling!”

F. X.

18.61 How Doth the Little Crocodile

Source: Alice's Adventures under Ground (extracted, with minor differences as noted); Alice's Adventures in Wonderland (extracted)

Parody on *How Doth the Little Busy Bee* by Isaac Watts

How doth the little crocodile

Improve _{his}¹ shining tail,

And pour the waters of the Nile

On every golden scale!

How cheerfully _{he}² seems to grin,

How neatly spreads his claws,

And welcome little fishes in,

With gently smiling jaws!

¹its
²it

18.62 Poeta Fit, Non Nascitur

Source: The College Rhymes, June 1862 (without images, with signature "Oxford. K." and minor differences as noted); Phantasmagoria (without images, with minor differences as noted); Rhyme? and Reason?



“How shall I be a poet?
How shall I write in rhyme?
You told me once ‘the very wish
Partook of the sublime.’
Then tell me how! Don’t put me off
With your ‘another time’!”
The old man smiled to see him,

To hear his sudden sally;
 He liked the lad¹ to speak his mind
 Enthusiastically;
 And thought "There's no hum-drum in him,
 Nor any shilly-shally."
 "And would you be a poet
 Before you've been to school?
 Ah, well! I hardly thought you
 So absolute a fool.
 First learn to be spasmodic—
 A very simple rule.
 "For first you write a sentence,
 And then you chop it small;
 Then mix the bits, and sort them out
 Just as they chance to fall:
 The order of the phrases makes²
 No difference³ at all.
 "Then, if you'd be impressive,
 Remember what I say,
 That abstract qualities begin
 With capitals alway:
 The True, the Good, the Beautiful—
 Those are the things that pay!
 "Next, when you are describing
 A shape, or sound, or tint;
 Don't state the matter plainly,
 But put it in a hint;
 And learn to look at all things
 With a sort of mental squint."
 "For instance, if I wished, Sir,
 Of mutton-pies to tell,
 Should I say 'dreams of fleecy flocks
 Pent in a wheaten cell'?"
 "Why, yes," the old man said: "that phrase
 Would answer very well.
 "Then fourthly, there are epithets
 That suit with any word—
 As well as Harvey's Reading Sauce
 With fish, or flesh, or bird—
 Of these, 'wild,' 'lonely,' 'weary,' 'strange,'
 Are much to be preferred."
 "And will it do, O will it do
 To take them in a lump—
 As 'the wild man went his weary way

¹"boy" in *College Rhymes*

²"that they come in" in *College Rhymes*

³"Don't signify" in *College Rhymes*

To a strange and lonely pump'?"
"Nay, nay! You must not hastily
To such conclusions jump.
"Such epithets, like pepper,
Give zest to what you write;
And, if you strew them sparely,
They whet the appetite:
But if you lay them on too thick,
You spoil the matter quite!



"The wild man went his weary way"

"Last, as to the arrangement:
Your reader, you should show him,
Must take what information he
Can get, and look for no im-
mature disclosure of the drift
And purpose of your poem.

“Therefore, to test his patience—
How much he can endure—
Mention no places, names, or dates,
And evermore be sure
Throughout the poem to be found
Consistently obscure.

“First fix upon the limit
To which it shall extend:
Then fill it up with ‘Padding’
(Beg some of any friend):
Your great SENSATION-STANZA
You place towards the end.”

“And what is a Sensation,
Grandfather, tell me, pray?
I think I never heard the word
So used before to-day:
Be kind enough to mention one
‘*Exempli gratiâ.*’”

And the old man, looking sadly
Across the garden-lawn,
Where here and there a dew-drop
Yet glittered in the dawn,
Said “Go to the Adelphi,
And see the ‘Colleen Bawn.’”

“The word is due to Boucicault—
The theory is his,
Where Life becomes a Spasm,
And History a Whiz:
If that is not Sensation,
I don’t know what it is.

“Now try your hand, ere Fancy
_Have⁴ lost its present glow—”
“And then,” his grandson added,
“We’ll publish it, you know:
Green cloth—gold-lettered at the back—
In duodecimo!”

Then proudly smiled that old man
To see the eager lad
Rush madly for his pen and ink
And for his blotting-pad—
But, when he thought of *publishing*,
His face grew stern and sad.

⁴Has



18.63 Hush-a-by Lady, in Alice's Lap!

Source: Through the Looking Glass (extracted)

Parody on nursery rhyme *Rock-a-bye Baby*

Hush-a-by lady, in Alice's lap!
Till the feast's ready, we've time for a nap:
When the feast's over, we'll go to the ball—
Red Queen, and White Queen, and Alice, and all!

18.64 To my Child-Friend

Source: The Game of Logic (dedication); also printed separately 1888 (with different capitalization)

I harm in vain; for never again,
All keenly of my glance I bend,
 Will Memory, goddess coy,
 Embody for my joy
Departed days, nor let me gaze
 On thee, my Fairy Friend!

Yet could thy face, in mystic grace,
A moment smile on me, 'twould send
 Far-darting rays of light
 From Heaven athwart the night,
By which to read in very deed
 Thy spirit, sweetest Friend!

So may the stream of Life's long dream
Flow gently onward to its end,
 With many a floweret gay,
 Adown its willowy way:
May no sigh vex, no care perplex,
 My loving little Friend!

Acrostic: Climene Mary Holiday (second letters)

18.65 The Palace of Humbug

Source: The Oxford Critic, June 1857 (with minor differences as noted); Mischmasch
Parody on *The Gipsy Girl's Dream (The Bohemian Girl)* by Alfred Bunn

*for the end of 1855.*¹

I dreamt I dwelt in marble halls,
And each damp thing that creeps and crawls
Went wobble-wobble on the walls.

Faint odours of departed cheese,
Blown² on the dank, unwholesome breeze,
Awoke the never-ending sneeze.

Strange pictures decked the arras drear,
Strange characters of woe and fear,
The humbugs of the social sphere.

One showed a vain and noisy prig,
That shouted³ empty words and big
At him that nodded in a wig.

And one, a dotard grim and gray,
Who wasteth childhood's happy day
In work more profitless than play.

Whose icy breast no pity warms,
Whose little victims sit⁴ in swarms,
And slowly sob on lower forms.

And one, a green thyme-honoured Bank,
Where flowers are growing wild and rank,
Like weeds that fringe a poisoned tank.

All birds of evil omen there
Flood with rich Notes⁵ the tainted air,
The witless wanderer to snare.

The fatal Notes neglected fall,
No creature heeds the treacherous call,
For all those goodly Strawn Baits Pall.

The wandering phantom broke and fled,
Straightway I saw within my head
A Vision of a ghostly bed,

Where lay two worn decrepit men,
The fictions of a lawyer's pen,
Who never more might breathe again.

The serving-man of Richard Roe
Wept, inarticulate with woe:

¹only in *Mischmasch*

²Born

³thundered

⁴cower

⁵song

She wept, that waiting on John Doe.
 "Oh rouse," I urged, "the waning sense
 With tales of tangled evidence,
 Of suit, demurrer, and defence."
 "Vain," she replied, "such mockeries:
 For morbid fancies, such as these,
 No suits can suit, no plea can please."
 And bending o'er that man of straw,
 She cried in grief and sudden awe,
 Not inappropriately, "Law!"
 The well-remembered⁶ voice he knew,
 He smiled, he faintly muttered "Sue!"
 (Her very name was legal too.)
 The night was fled, the dawn was nigh:
 A hurricane went raving by,
 And swept the Vision from mine eye.
 Vanished that dim⁷ and ghostly bed,
 (The hangings, tape; the tape was red:)
 'Tis o'er⁸, and Doe and Roe are dead!
 Oh yet my spirit inly crawls,
 What time it shudderingly recalls
 That horrid dream of marble halls!

*Oxford. 1855.*⁹

⁶old familiar

⁷drear

⁸past

⁹B. B., Ch. Ch.

18.66 I give thee all

Source: Proportionate Representation (extracted) and Syzygies (extracted and formatted)

Parody on *My Heart and Lute* by Thomas Moore

Proportionate Representation

I give thee all, I can no more,
Though small thy share may be:
Two halves, three thirds, and quarters four,
Is all I bring to thee!

Syzygies

I give thee all, I can no more,
Though poor the offering be.
A round duck's egg is all the score
That I can offer thee!

18.67 My Fairy

Source: Useful and Instructive Poetry

I have a fairy by my side
Which says I must not sleep,
When once in pain I loudly cried
It said "You must not weep."
If, full of mirth, I smile and grin,
It says "You must not laugh;"
When once I wished to drink some gin
It said "You must not quaff."
When once a meal I wished to taste
It said "You must not bite;"
When to the wars I went in haste
It said "You must not fight."
"What may I do?" at length I cried,
Tired of the painful task.
The fairy quietly replied,
And said "You must not ask."
Moral: "You mustn't."

18.68 Ye Carpette Knyghte

Source: The Train, March 1856 (without image, with different spelling and punctuation); Phantasmagoria (without image, with different spelling and punctuation); Rhyme? and Reason?

I have a horſe—a ryghte goode horſe—
He doe I envye thoſe
Who ſcoure h^e playne yn headye courſe
Thyl ſoddayne on theyre noſe
They lyghte wyth unexpected force—
It ys—a horſe of clothes.

I have a ſaddel—“Say’ſt thou ſoe?
Wyth ſtyrrippes, Knyghte, to boote?”
I ſayde not that—I anſwere “Noe”—
It lacketh ſuch, I woote:
It ys a mutton-ſaddel, loe!
Parte of h^e fleecye brute.

I have a bytte—a ryghte good bytte—
It ſhall bee ſeene yn tyme.
Y^e jawe of horſe yt wyll not fyte;
Yt uſe ys more ſublyme.
Sayre Syr, how deemeſt thou of yt?
It ys—thys bytte of rhyme.



"I have a horse"

18.69 Solitude

Source: The Train, March 1856 (with illustration by William M'Connell and minor differences as noted); Phantasmagoria (with different punctuation); Three Sunsets



I love the stillness of the wood:
I love the music of the rill:
I love to couch in pensive mood
Upon some silent hill.

Scarce heard¹, beneath yon arching trees,
The silver-crested ripples pass;
And, like a mimic brook, the breeze
Whispers among the grass.

Here from the world I win release,
Nor scorn of men, nor footstep rude,
Break in to mar the holy peace
Of this great solitude.²

¹Far off

²Additional verse:

Kind nature to the aching heart

Here³ may the silent tears I⁴ weep
 Lull the vexed spirit into rest,
 As infants sob themselves to sleep
 Upon a mother's breast.
 But when the bitter hour is gone,
 And the keen throbbing pangs are still,
 Oh sweetest then to couch alone
 Upon some silent hill!
 To live in joys that once have been,
 To put the cold world out of sight,
 And deck life's drear and barren scene
 With hues of rainbow-light.
 For what to man the gift of breath,
 If sorrow be his lot below;
 If all the day that ends in death
 Be dark with clouds of woe?
 Shall the poor transport of an hour
 Repay long years of sore distress—
 The fragrance of a lonely flower
 Make glad the wilderness?
 Ye golden hours of Life's young spring,
 Of innocence, of love and truth!
 Bright, beyond all imagining,
 Thou fairy-dream of youth!
 I'd give all wealth that years have piled,⁵
 The slow result⁶ of Life's decay,
 To be once more a little child
 For one bright summer-day.⁷

*March 16, 1853.*⁸

Brings sympathies of large relief:
 Full gladly would she bear her part
 In our dull load of grief.

³So

⁴we

⁵toil hath piled,

⁶The bitter fruit

⁷short sunny day.

⁸Only in *Three Sunsets*

18.70 Upon the Lonely Moor

Source: The Train, October 1856

Other version:
→ 18.82, p. 2161

[It is always interesting to ascertain the sources from which our great poets obtained their ideas: this motive has dictated the publication of the following: painful as its appearance must be to the admirers of Wordsworth and his poem of "Resolution and Independence."]

I met an aged, aged man
 Upon the lonely moor:
I knew I was a gentleman,
 And he was but a boor.
So I stopped and roughly questioned him,
 "Come, tell me how you live!"
But his words impressed my ear no more
 Than if it were a sieve.
He said, "I look for soap-bubbles,
 That lie among the wheat,
And bake them into mutton-pies,
 And sell them in the street.
I sell them unto men," he said,
 "Who sail on stormy seas;
And that's the way I get my bread.
 A trifle, if you please."
But I was thinking of a way
 To multiply by ten,
And always, in the answer, get
 The question back again.
I did not hear a word he said,
 But kicked that old man calm,
And said, "Come, tell me how you live!"
 And pinched him in the arm.
His accents mild took up the tale:
 He said, "I go my ways,
And when I find a mountain-rill,
 I set it in a blaze.
And thence they make a stuff they call
 Rowland's Macassar Oil;
But fourpence-halfpenny is all
 They give me for my toil."
But I was thinking of a plan
 To paint one's gaiters green,
So much the colour of the grass
 That they could not be seen.
I gave his ear a sudden box,
 And questioned him again,
And tweaked his grey and reverend locks,

And put him into pain.
He said, "I hunt for haddock's eyes
Among the heather bright,
And work them into waistcoat-buttons
In the silent night.
And these I do not sell for gold,
Or coin from silver-mine,
But for a copper halfpenny,
And that will purchase nine.
"I sometimes dig for buttered rolls,
Or set limed twigs for crabs;
I sometimes search the flowery knolls
For wheels of Hansom-cabs.
And that's the way" (he gave a wink),
"I get my living here.
And very gladly will I drink
Your honour's health in beer."
I heard him then, for I had just
Completed my design
To keep the Menai bridge from rust
By boiling it in wine.
I duly thanked him, ere I went,
For all his stories queer,
But chiefly for his kind intent
To drink my health in beer.
And now if e'er by chance I put
My fingers into glue,
Or madly squeeze a right-hand foot
Into a left-hand shoe;
Or if a statement I aver
Of which I am not sure,
I think of that strange wanderer
Upon the lonely moor.

18.71 Poetry for the Million

Source: The Comic Times, August 18, 1855 (might have unknown differences);
 Mischmasch
 Parody on *Lalla Rookh* by Thomas Moor

The nineteenth century has produced a new school of music, bearing about the same relation to the genuine article, which the hash or stew of Monday does to the joint of Sunday.

We allude of course to the prevalent practice of diluting the works of earlier composers with washy modern variations, so as to suit the weakened and depraved taste of this generation: this invention is termed “setting” by some, who, scorning the handsome offer of Alexander Smith, to “set this age to music,” have determined to set music to this age.

Sadly we admit the stern necessity that exists for such a change: with stern prophetic eye we see looming in the shadowy Future the downfall of the sister Fine Arts. The National Gallery have already subjected some of their finest pictures to this painful operation: Poetry must follow.

That we may not be behind others in forwarding the progress of Civilization, we boldly discard all personal and private feelings, and with quivering pen and tear-dimmed eye, we dedicate the following composition to the Spirit of the Age, and to that noble band of gallant adventurers, who aspire to lead the Van in the great March of Reform.

Other version:
 → 18.72, p. 2148

Quoted from
Life-Drama by
 Alexander Smith

The Dear Gazelle. Arranged with Variations.



espressivo
 “I never loved a dear gazelle,”
 Nor aught beside that cost me much;
 High prices profit those who sell,
 But why should *I* be fond of such?

p. p. *cres:*
 “To glad me with his soft black eyes,”
 My infant son, from Tooting School,
 Thrashed by his bigger playmate, flies,
 And serve him right, the little fool!
con spirite



A Tempo
 “But when he came to know me well,”
 He kicked me out, her testy sire;
 And when I stained my hair, that Bell
 Might note the change, and thus admire
D. C.

dim *cadenza*
 “And love me, it was sure to die”
 A muddy green, or staring blue,
 While one might trace, with half an eye,
 The still triumphant carrot through.
con dolera

Ch: Ch: 1855.

18.72 Tèma con Variazióni

Source: Rhyme? and Reason?

Parody on *Lalla Rookh* by Thomas Moor

Other version:

→ 18.71, p. 2147

[Why is it that Poetry has never yet been subjected to that process of Dilution which has proved so advantageous to her sister-art Music? The Diluter gives us first a few notes of some well-known Air, then a dozen bars of his own, then a few more notes of the Air, and so on alternately: thus saving the listener, if not from all risk of recognising the melody at all, at least from the too-exciting transports which it might produce in a more concentrated form. The process is termed “setting” by Composers, and any one, that has ever experienced the emotion of being unexpectedly set down in a heap of mortar, will recognise the truthfulness of this happy phrase.

For truly, just as the genuine Epicure lingers lovingly over a morsel of supreme Venison—whose every fibre seems to murmur “Excelsior!”—yet swallows, ere returning to the toothsome dainty, great mouthfuls of oatmeal-porridge and winkles: and just as the perfect Connoisseur in Claret permits himself but one delicate sip, and then tosses off a pint or more of boarding-school beer: so also—

I never loved a dear Gazelle—
 Nor anything that cost me much:
High prices profit those who sell,
 But why should I be fond of such?

To glad me with his soft black eye
 My son comes trotting home from school;
He’s had a fight, but can’t tell why—
 He always was a little fool!

But, when he came to know me well,
 He kicked me out, her testy Sire:
And when I stained my hair, that Belle,
 Might note the change, and thus admire

And love me, it was sure to dye
 A muddy green or staring blue:
Whilst one might trace, with half an eye,
 The still triumphant carrot through.

18.73 Square Poem

Source: written for the brother of Lady Ure; authorship not certain

I often wondered when I cursed,
Often feared where I would be—
Wondered where she'd yield her love,
When I yield, so will she.
I would her will be pitied!
Cursed be love! She pitied me . . .

18.74 Disillusionized

Source: The College Rhymes, June 1862

A different version (often titled “My Fancy”) can be found in *Life and Letters*, pp. 66–67; with the following differences: “With years” instead of “Her years”, “find they were” instead of “find them”, “a dozen” instead of “two dozen”, “curly” instead of “curling”, “turned” instead “grown”, second verse missing, “And if you were to ask me how”, “believe me” instead of “believe it”.

Parody on *Alice Gray* by William Mee

I painted her a gushing thing—
Her years perhaps a score;
I little thought to find them
At least two dozen more!
My fancy gave her eyes of blue,
A curling auburn head;
I came to find the blue a green,
The auburn grown to red!

I painted her a lip and cheek
In colour like the rose;
I little thought the selfsame hue
Extended to her nose!
I dreamed of rounded features—
A smile of ready glee—
But it was not *fat* I wanted,
Nor a *grin* I hoped to see!

She boxed my ears this morning—
They tingled very much—
I own that I could wish her
A somewhat lighter touch:
And if I were to settle how
Her charms might be improved,
I would not have them added to,
But just a few removed!

She has the bear’s ethereal grace,
The bland hyena’s laugh,
The footstep of the elephant,
The neck of the giraffe:
I love her still—believe it—
Though my heart its passion hides;
She’s all my fancy painted her,
But oh! how much besides!

March 15th, 1862.

18.75 I saw a child: even if blind

Source: sent to Edith Argles, about 1868

I saw a child: even if blind,
I could have seen she was not kind.
“My child,” said I, “don’t make that noise!
Here, choose among this heap of toys.”

She said “I’ve tumbled in the river:
And that’s what makes me shake and shiver.”
“And what’s your name, my child?” said I.
“It’s Juliet, sir,” she made reply.
“You know,” said she, “I hates my pa—
Never says nothing to my ma”—
“My child,” I cried, “you make me sad.
How can you be so very bad?”
At which she laughed in such a way,
I lost my hearing from that day.

Solution: cruel, Dolly; cold, Romeo, unfilial, evil, loadly

18.76 Double Acrostic (Argles)

Source: sent to Miss E. M. Argles, 1869

I sing a place wherein agree
All things on land that fairest be,
All that is sweetest of the sea.
Nor can I break the silken knot
That binds my memory to the spot
And friends too dear to be forgot.

On rocky brow we loved to stand
And watch in silence, hand in hand,
The shadows veiling sea and land.
Then dropped the breeze; no vessel passed:
So silent stood each taper mast,
You would have deemed it chained and fast.

Above the blue and fleecy sky:
Below, the waves that quivering lie,
Like crispèd curls of greenery.
“A sail!” resounds from every lip.
Mizen, no, square-sail—ah, you trip!
Edith, it cannot be a ship!

So home again from sea and beach,
One nameless feeling thrilling each.
A sense of beauty, passing speech.
Let lens and tripod be unslung!
“Dolly!” ’s the word on every tongue;
Dolly must sit, for she is young!
Photography shall change her face,
Distort it with uncouth grimace—
Make her bloodthirsty, fierce, and base.

I end my song while scarce begun;
For I should want, ere all was done,
Four weeks to tell the tale of one:
And I should need as large a hand,
To paint a scene so wild and grand,
As he who traversed Egypt’s land.
What say you, Edith? Will it suit ye?
Reject it, if it fails in beauty:
You know your literary duty!

On the rail between Torquay and Guildford, Sep. 28, 1869.

Solution: Babbacombe, Friendship; Bluff, Anchor, Broccoli, Barque, Appreciation,
Child, Odious, Month, Belzoni, Editorship

18.77 After Three Days

Source: The Temple Bar, July 1861 (with minor differences as noted);
Phantasmagoria (with minor differences as noted); Three Sunsets

[Written after visiting Holman Hunt's picture of 'Christ in the Temple.']*¹

I stood within the gate
Of a great temple, 'mid² the living stream
Of worshipers that thronged its regal state
Fair-pictured in my dream.
Jewels and gold were there;
And floors of marble lent a³ crystal sheen
To body forth, as in a lower air,
The wonders of the scene.
Such wild and lavish grace
Had whispers in it of a coming doom;
As richest flowers lie strown⁴ about the face
Of her that waits the tomb.
The wisest⁵ of the land
Had gathered there, three solemn trysting-days,
For high debate: men stood on either hand
To listen and to gaze.
The aged brows were bent,
Bent to⁶ a frown, half thought, and half annoy,
That all their stores of subtlest argument
Were baffled by a boy.
In each averted face
I marked⁷ but scorn and loathing, till mine eyes
Fell upon one that stirred not in his place,
Tranced in a dumb surprise.
Surely within his mind
Strange thoughts are born, until he doubts the lore
Of those old men, blind leaders of the blind,
Whose kingdom is no more.
Surely he sees afar
A day of death the stormy future brings;
The crimson setting of the herald-star
That led the Eastern kings.
Thus, as a sunless deep

¹only in *Phantasmagoria*, in *Temple Bar*: "On Mr. Holman Hunt's Picture, "Christ in the Temple."

²'midst

³"their" in *Temple Bar*

⁴"strewn" in *Temple Bar*

⁵"sages" in *Temple Bar*

⁶"with" in *Temple Bar*

⁷"read" in *Temple Bar*

Mirrors the shining heights that crown the bay,
 So did my soul create anew in sleep
 The picture seen by day.
 Gazers came and went—
 A restless⁸ hum of voices marked the spot—
 In varying shades of critic discontent
 Prating they knew not what.
 “Where is the comely limb,
 The form attuned in every perfect part,
 The beauty that we should desire in him?”
 Ah! Fools and slow of heart!
 Look into those deep eyes,
 Deep as the grave, and strong with love divine;
 Those tender, pure, and fathomless mysteries,
 That seem to pierce through thine.
 Look into those deep eyes,
 Stirred to unrest by breath of coming strife,
 Until a longing in thy soul arise
 That this indeed were life:
 That thou couldst find Him there,
 Bend at His sacred feet thy willing knee,
 And from thy heart pour out the passionate prayer
 “Lord, let me follow Thee!”
 But see the crowd⁹ divide:
 Mother and sire have found their lost one now:¹⁰
 The gentle voice, that fain would seem to chide
 Whispers “Son, why hast thou”—¹¹
 In tone of sad amaze—¹²
 “Thus dealt with us, that art our dearest thing?
 Behold, thy sire and I, three weary days,
 Have sought thee sorrowing.”
 And I had stayed to hear
 The loving words “How is it that ye sought?”—
 But that the sudden lark, with matins clear,
 Severed the links of thought.
 Then over all there fell
 Shadow and silence; and my dream was fled,
 As fade the phantoms of a wizard’s cell

⁸“busy” in *Temple Bar*

⁹“crowds” in *Temple Bar*

¹⁰“The lost is found; glad parents clasp their boy;” in *Temple Bar*

¹¹“All trembling in its joy,” in *Temple Bar*

¹²In *Temple Bar*, this verse is:

Thrills in the silence: “Son,
 How couldst Thou leave us thus? Our hungry gaze
 Hath yearned to rest on Thee, beloved One,
 Through all these weary days.”

When the dark charm is said.
Yet, in the gathering light,
I lay with half-shut eyes that would not wake,
Lovingly clinging to the skirts of night
For that sweet vision's sake.

*Feb. 16, 1861.*¹³

¹³Not in *Temple Bar*

18.78 Charade (Amy Hughes)

written for Amy Hughes, about 1871

[Addressed to a child, & made on her name.]

If grass should grow in Pimlico,
With many a flaunting lily;
And crows were mowed from Gloucester Road
Along to Piccadilly—

And down the Strand, with fork in hand,
The cockneys blithe should stream,
To sit in flocks among the cocks,
And feast on curds and cream—

Enquire of me, “What *is* the fun?”
My First he’ll surely name,
And when perplexed, you ask the next,
He’ll answer just the same.

Far other lives the cockney-wives
Enjoy than those who roam:
At eve they sit, when lamps are lit,
Each in her quiet home:

Low purrs the cat upon the mat:
The busy needle flies—
While ragged sock, or tattered frock,
Grows whole before your eyes.

Enquire of me, “What *have* you done?”
My second she will name,
And when, perplexed, you ask the next,
She’ll answer just the same.

With picture planned, with brush in hand,
The Artist sits in trance;
While forms of air, bewitching fair,
Before his vision dance.

“Which English stream doth fairest seem,
Artist?” My Third he’ll name.
And when, perplexed, you ask “Which next?”
He’ll answer just the same.

My whole is—well! I scarce can tell:
’Tis something dear to me.
Yet not alone its claims, I own,
For it is one of three.

If you should meet her, please to greet her
And kiss her in my name;
And when, perplexed, you meet the next,
Pray treat her just the same!

Lewis Carroll

Solution: hay: A, hem: M, Wye or Wey: Y; Amy

18.79 If Ruth & you

Source: letter written to Effie Mayhew, probably May 1879 (Effie and Ruth Mayhew were photographed on Saturday, May 24, 1879)

If Ruth & you
Come at two,
(Or soon after)
In a state of laughter,
Next Saturday,
You might stay
An hour or so:
And, before you go,
Ruth may sit once more,
As she did before,
For a photograph:
But she mustn't laugh
While it's being done—
That would spoil the fun.
They needn't come
To fetch you home,
If you'll only agree
To walk with me.

18.80 Misunderstandings

Source: Rectory Magazine

If such a thing had been my thought,
I should have told you so before,
But as I didn't, then you ought
To ask for such a thing no more,
For to teach one who has been taught
Is always thought an awful bore.

Now to commence my argument,
I shall premise an observation,
On which the greatest kings have leant
When striving to subdue a nation,
And e'en the wretch who pays no rent
By it can solve a hard equation.

Its truth is such, the force of reason
Can not avail to shake its power,
Yet e'en the sun in summer season
Doth not dispel so mild a shower
As this, and he who sees it, sees on
Beyond it to a sunny bower—
No more, when ignorance is treason,
Let wisdom's brows be cold and sour.

Q. G.

18.81 If thou wouldst view the Belfry aright

Source: The New Belfry (extracted)

Parody on *The Lay of the Last Minstrel* by Walter Scott

If thou wouldst view the Belfry aright,
Go visit it at the mirk midnight—
For the least hint of open day
Scares the beholder quite away.
When wall and window are black as pitch.
And there's no deciding which is which;
When the dark Hall's uncertain roof
In horror seems to stand aloof;
When corner and corner, alternately
Is wrought to an odious symmetry;
When distant Thames is heard to sigh
And shudder as he hurries by;
Then go, if it be worth the while.
Then view the Belfry's monstrous pile.
And, home returning, soothly swear
"Tis more than Job himself could bear!"

18.82 A-sitting on A Gate

Source: Through the Looking Glass (extracted)
Parody on *Resolution and Independence* by William Wordsworth

Other version:
→ 18.70, p. 2145

I'll tell thee everything I can:
 There's little to relate.
I saw an aged aged man,
 A-sitting on a gate.
"Who are you, aged man?" I said.
 "And how is it you live?"
And his answer trickled through my head,
 Like water through a sieve.
He said "I look for butterflies
 That sleep among the wheat:
I make them into mutton-pies,
 And sell them in the street.
I sell them unto men," he said,
 "Who sail on stormy seas;
And that's the way I get my bread—
 A trifle, if you please."
But I was thinking of a plan
 To dye one's whiskers green,
And always use so large a fan
 That they could not be seen.
So, having no reply to give
 To what the old man said,
I cried, "Come, tell me how you live!"
 And thumped him on the head.
His accents mild took up the tale:
 He said "I go my ways,
And when I find a mountain-rill,
 I set it in a blaze;
And thence they make a stuff they call
 Rolands' Macassar-Oil—
Yet twopence-halfpenny is all
 They give me for my toil."
But I was thinking of a way
 To feed oneself on batter,
And so go on from day to day
 Getting a little fatter.
I shook him well from side to side,
 Until his face was blue:
"Come, tell me how you live," I cried,
 "And what it is you do!"
He said "I hunt for haddocks' eyes
 Among the heather bright,

And work them into waistcoat-buttons
 In the silent night.
 And these I do not sell for gold
 Or coin of silvery shine,
 But for a copper halfpenny,
 And that will purchase nine.
 "I sometimes dig for buttered rolls,
 Or set limed twigs for crabs;
 I sometimes search the grassy knolls
 For wheels of Hansom-cabs.
 And that's the way" (he gave a wink)
 "By which I get my wealth—
 And very gladly will I drink
 Your Honour's noble health."
 I heard him then, for I had just
 Completed my design
 To keep the Menai bridge from rust
 By boiling it in wine.
 I thanked him much for telling me
 The way he got his wealth,
 But chiefly for his wish that he
 Might drink my noble health.
 And now, if e'er by chance I put
 My fingers into glue
 Or madly squeeze a right-hand foot
 Into a left-hand shoe,
 Or if I drop upon my toe
 A very heavy weight,
 I weep, for it reminds me so,
 Of that old man I used to know—
 Whose look was mild, whose speech was slow,
 Whose hair was whiter than the snow,
 Whose face was very like a crow,
 With eyes, like cinders, all aglow,
 Who seemed distracted with his woe,
 Who rocked his body to and fro,
 And muttered mumblingly and low,
 As if his mouth were full of dough,
 Who snorted like a buffalo—
 That summer evening, long ago,
 A-sitting on a gate.

18.83 Rhyme? and Reason?

Source: inscribed into a copy of *Rhyme? and Reason?* for Miss Emmie Drury, 1883

“I’m EMInent in RHYME!” she said.

“I make WRY Mouths of RYE-Meal gruel!”

The Poet smiled, and shook his head:

“Is REASON, then, the missing jewel?”

18.84 Beatrice

Source: The College Rhymes, November 1862 (with minor differences as noted);
Phantasmagoria (with different punctuation); Three Sunsets

In her eyes is the living light
Of a wanderer to earth
From a far celestial height:
Summers five are all the span—
Summers five since Time began
To veil in¹ mists of human night
A shining angel-birth.

Does an angel look from her eyes?
Will she suddenly spring away,
And soar to her home in the skies?
Beatrice! Blessing and blessed to be!
Beatrice! Still, as I gaze on thee,
Visions of two sweet maids arise,
Whose life was of yesterday:

Of a Beatrice pale and stern,
With the lips of a dumb despair,
With the innocent eyes that yearn—
Yearn for the young sweet hours of life,
Far from sorrow and far from strife,
For the happy summers, that never return,
When the world seemed good and fair:

Of a Beatrice glorious, bright—
Of a sainted, ethereal maid,
Whose blue eyes are deep fountains of light,
Cheering the poet that broodeth apart,
Filling with gladness his desolate heart,
Like the moon when she shines thro' a cloudless night
On a world of silence and shade.

And the visions waver and faint,
And the visions vanish away
That my fancy delighted to paint—
She is here at my side, a living child,
With the glowing cheek and the tresses wild,
Nor death-pale martyr, nor radiant saint,
Yet stainless and bright as they.

For I think, if a grim wild beast
Were to come from his charnel-cave,
From his jungle-home in the East—
Stealthily creeping with bated breath,
Stealthily creeping with eyes of death—
He would all forget his dream of the feast,

¹dim with

And ²crouch at her feet a slave.
 She would twine her hand in his mane:
 She would prattle in silvery tone,
 Like the tinkle of summer-rain—
 Questioning him with her laughing eyes,
 Questioning him with a glad surprise,
 Till she caught from those fierce eyes again
 The love that lit her own.

 And be sure, if a savage heart,
 In a mask of human guise,
 Were to come on her here apart—
 Bound for a dark and a deadly deed,
 Hurrying past with pitiless speed—
 He would suddenly falter and guiltily start
 At the glance of her pure blue eyes.

 Nay, be sure, if an angel fair,
 A bright seraph undefiled,
 Were to stoop from the trackless air,
 Fain would she linger in glad amaze—
 Lovingly linger to ponder and gaze,
 With a sister's love and a sister's care,
 On the happy, innocent child.

*Dec. 4, 1862.*³

²couch

³only in *Three Sunsets*, "Ch. Ch., Oxford. C. L. D." in *College Rhymes*

18.85 In stature the Manlet was dwarfish

Source: Sylvie and Bruno Concluded (extracted)

In stature the Manlet was dwarfish—
No burly big Blunderbore he:
And he wearily gazed on the crawfish
His Wifelet had dressed for his tea.
“Now reach me, sweet Atom, my gunlet,
And hurl the old shoelet for luck:
Let me hie to the bank of the runlet,
And shoot thee a Duck!”

She has reached him his minikin gunlet:
She has hurled the old shoelet for luck:
She is busily baking a bunlet,
To welcome him home with his Duck.
On he speeds, never wasting a wordlet,
Though thoughtlets cling, closely as wax,
To the spot where the beautiful birdlet
So quietly quacks.

Where the Lobsterlet lurks, and the Crablet
So slowly and sleepily crawls:
Where the Dolphin’s at home, and the Dablet
Pays long ceremonious calls:
Where the Grublet is sought by the Froglet:
Where the Frog is pursued by the Duck:
Where the Ducklet is chased by the Doglet—
So runs the world’s luck!

He has loaded with bullet and powder:
His footfall is noiseless as air:
But the Voices grow louder and louder,
And bellow, and bluster, and blare.
They bristle before him and after,
They flutter above and below,
Shrill shriekings of lubberly laughter,
Weird wailings of woe!

They echo without him, within him:
They thrill through his whiskers and beard:
Like a teetotum seeming to spin him,
With sneers never hitherto sneered.
“Avengement,” they cry, “on our Foelet!
Let the Manikin weep for our wrongs!
Let us drench him, from toplet to toelet,
With Nursery-Songs!

“He shall muse upon ‘Hey! Diddle! Diddle!’
On the Cow that surmounted the Moon:
He shall rave of the Cat and the Fiddle,

And the Dish that eloped with the Spoon:
And his soul shall be sad for the Spider,
When Miss Muffet was sipping her whey,
That so tenderly sat down beside her,
And scared her away!

“The music of Midsummer-madness
Shall sting him with many a bite,
Till, in rapture of rollicking sadness,
He shall groan with a gloomy delight:
He shall swathe him, like mists of the morning,
In platitudes luscious and limp,
Such as deck, with a deathless adorning,
The Song of the Shrimp!

“When the Ducklet’s dark doom is decided,
We will trundle him home in a trice:
And the banquet, so plainly provided,
Shall round into rose-buds and rice:
In a blaze of pragmatic invention
He shall wrestle with Fate, and shall reign:
But he has not a friend fit to mention,
So hit him again!”

He has shot it, the delicate darling!
And the Voices have ceased from their strife:
Not a whisper of sneering or snarling;
As he carries it home to his wife:
Then, cheerily champing the bunlet
His spouse was so skilful to bake,
He hies him once more to the runlet,
To fetch her the Drake!

18.86 The Path of Roses

Source: The Train, May 1856 (with illustration by C. H. Bennet and minor differences as noted); Phantasmagoria (with minor differences as noted); Three Sunsets

[Written soon after the Crimean War, when the name of Florence Nightingale had already become a household word, dear to all true British hearts.]¹

In the dark silence of an ancient room,
Whose one tall window fronted to the West,
Where, through laced tendrils of a hanging vine,
The sunset-glow was fading into night,
Sat a pale Lady, resting weary hands
Upon a great clasped volume, and her face
Within her hands. Not as in rest she bowed,
But large hot tears were coursing down her cheek,
And her low-panted sobs broke awefully
Upon the sleeping echoes of the night.

Soon she unclasp'd² the volume once again,
And read the words in tone of agony,
As in self-torture, weeping as she read:—

*“He crowns the glory of his race:
He prayeth but in some fit³ place
To meet his foeman face to face:*

*“And, battling for the True, the Right,
From ruddy dawn to purple night,
To perish in the midmost fight:*

*“Where hearts are fierce and hands are strong,⁴
Where peals the bugle loud and long,⁵
Where blood is dropping in the throng:*

*“Still, with a dim and glazing eye,
To watch the tide of victory,
To hear in death the battle-cry:*

*“Then, gathered grandly to his grave,
To rest among the true and brave,
In holy ground, where yew-trees wave:*

*“Where, from church-windows sculptured⁶ fair,
Float out upon the evening air
The note of praise, the voice of prayer:*

*“Where no vain marble mockery
Insults with loud and boastful lie*

¹Only in *Phantasmagoria*

²unclasped

³fair

⁴Where foes are fierce and weapons strong,

⁵Where roars the battle loud and long,

⁶“carven” in *Phantasmagoria*

The simple soldier's memory:

*"Where sometimes little children go,
And read, in whisper'd⁷ accent slow,
The name of him who sleeps below."*

Her voice died out: like one in dreams she sat.
"Alas!" she sighed. "For what can Woman do?
Her life is aimless, and her death unknown:
Hemmed in by social forms she pines in vain.
Man has his work, but what can Woman do?"

And answer came there from the creeping gloom,
The creeping gloom that settled into night:
"Peace! For thy lot is other than a man's:
His is a path of thorns: he beats them down:
He faces death: he wrestles with despair.
Thine is of roses, to adorn and cheer
His lonely life⁸, and hide the thorns in flowers."

She spake again: in bitter tone she spake:
"Aye, as a toy, the puppet of an hour,



Or a fair posy, newly plucked at morn,
But flung aside and withered ere the night."

And answer came there from the creeping gloom,
The creeping gloom that blackened into night:

⁷whispered

⁸barren lot

“So shalt thou be the lamp to light his path,
What time the shades of sorrow close around.”

And, so it seemed to her, an awful light
Pierced slowly through the darkness, orbed, and grew,
Until all passed away—the ancient room—
The sunlight dying through the trellised vine—
The one tall window—all had passed away,
And she was standing on the mighty hills.

Beneath, around, and far as eye could see,
Squadron on squadron, stretched opposing hosts,
Ranked as for battle, mute and motionless.
Anon a distant thunder shook the ground,
The tramp of horses, and a troop shot by—
Plunged headlong in that living sea of men—
Plunged to their death: back from that fatal field
A scattered handful, fighting hard for life,
Broke through the serried lines; but, as she gazed,
They shrank and melted, and their forms grew thin—
Grew pale as ghosts when the first morning ray
Dawns from the East—the trumpet’s brazen blare
Died into silence—and the vision passed—
Passed to a room where sick and dying lay
In long, sad line—there brooded Fear and Pain—
Darkness was there, the shade of Azrael’s wing.
But there was one that ever, to and fro,
Moved with light footfall: purely calm her face,
And those deep steadfast eyes that starred the gloom:
Still, as she went, she ministered to each
Comfort and counsel; cooled the fevered brow
With softest touch, and in the listening ear
Of the pale sufferer whispered words of peace.
The dying warrior, gazing as she passed,
Clasped his thin hands and blessed her. Bless her too,
Thou, who didst bless the merciful of old!

So prayed the Lady, _{watching} tearfully⁷⁹
_{Her gentle moving onward, till the night}¹⁰
Had veiled her wholly, and the vision passed.

Then once again the _{solemn}¹¹ whisper came:
“So in the darkest path of man’s despair,
Where War and Terror shake the troubled earth,
Lies woman’s mission; with unblenching brow
To pass through scenes of _{horror}¹² and affright
Where men grow sick and tremble: unto her
All things are sanctified, for all are good.
Nothing so mean, but shall deserve her care:
Nothing so great, but she may bear her part.

⁹“as with tearful eyes” in *The Train*

¹⁰“She watched her footsteps, till returning night” in *The Train*

¹¹awful

¹²“anguish” in *Phantasmagoria*

No life is vain: each hath his place assigned:
Do thou thy task, and leave the rest to God¹³.”
And there was silence, but the Lady made
No answer, save one deeply-breathed “Amen.”
And she arose, and in that darkening room
Stood lonely as a spirit of the night—
Stood calm and fearless in the gathered night—
And raised her eyes to heaven. There were tears
Upon her face, but in her heart was peace,
Peace that the world nor gives nor takes away!

*April 10, 1856.*¹⁴

¹³heaven

¹⁴not in *The Train*

18.87 In Winter, When the Fields are White

Source: Through the Looking Glass (extracted, connected)

In winter, when the fields are white,
I sing this song for your delight—
In spring, when woods are getting green,
I'll try and tell you what I mean:
In summer, when the days are long,
Perhaps you'll understand the song:
In autumn, when the leaves are brown,
Take pen and ink, and write it down.
I sent a message to the fish:
I told them "This is what I wish."
The little fishes of the sea,
They sent an answer back to me.
The little fishes' answer was
"We cannot do it, Sir, because——"
I sent to them again to say
"It will be better to obey."
The fishes answered with a grin,
"Why, what a temper you are in!"
I told them once, I told them twice:
They would not listen to advice.
I took a kettle large and new,
Fit for the deed I had to do.
My heart went hop, my heart went thump:
I filled the kettle at the pump.
Then some one came to me and said,
"The little fishes are in bed."
I said to him, I said it plain,
"Then you must wake them up again."
I said it very loud and clear:
I went and shouted in his ear.
But he was very stiff and proud:
He said "You needn't shout so loud!"
And he was very proud and stiff:
He said "I'd go and wake them, if——"
I took a corkscrew from the shelf:
I went to wake them up myself.
And when I found the door was locked,
I pulled and pushed and kicked and knocked.
And when I found the door was shut,
I tried to turn the handle, but——

18.88 Little Red Riding Hood

Source: written next to a photograph of Agnes Grace Weld as Little Red Riding Hood, January 6, 1858



Into the wood—the dark, dark wood—
Forth went the happy Child;
And, in it's stillest solitude,
Talked to herself, and smiled:
And closer drew the scarlet Hood
About her ringlets wild.
And now at last she threads the maze,
And now she need not fear;
Frowning, she meets the sudden blaze
Of moonlight falling clear;
Nor trembles she, nor turns, nor stays,
Although the Wolf be near.

18.89 Is All Our Life

Source: Sylvie and Bruno (dedication)

The dream-gleam-stream rhyme which reappears here again Carroll probably borrowed from a poem he read about 1850, see the published diaries for a letter from March 15, 1886 to Mr. Watson.

If all our Life, then, but a dream
Seen faintly in the golden gleam
Athwart Time's dark resistless stream?

Bowed to the earth with bitter woe,
Or laughing at some rare-show,
We flutter idly to and fro.

Man's little Day in haste we spend,
And, from its merry noontide, send
No glance to meet the silent end.

Other version:

→ 18.1, p. 2011

Acrostic: Isa Bowman (also first three letters of each stanza)

18.90 Is it the glow of conscious pride

Source: The New Belfry (extracted)

Is it the glow of conscious pride—
Of pure ambition gratified—
That seeks to read in other eye
Something of its own ecstasy?
Or wrath, that worldlings should make fun
Of anything 'the House' has done?
Or puzzlement, that seeks in vain
The rigid mystery to explain?
Or is it shame that, knowing not
How to defend or cloak the blot—
The foulest blot on fairest face
That ever marred a noble place—
Burns with the pangs it will not own,
Pangs felt by loyal sons alone?

18.91 Tommy's Dead

Source: Mischmasch

Parody on *Tommy's Dead* by Sydney Thompson Dobell

[Written Dec. 31, 1857. There is a poem by Sydney Dobell with the same name, and something like this—but not very.]

It's the last night of the year, boys,
You may bring out the bread and beer, boys,
We've nought else to do to-night, boys,
This crust is too hard to bite, boys,
Is the donkey all right in the stable, boys?
Set two or three chairs round the table, boys,
We must have some'at to eat afore we go, boys,
Stick another coal on the fire or so, boys,
For the night's very cold,
And I'm very old,
And Tommy's dead.

Will somebody go and call t'owd wife, boys?
And just, while you're about it, fetch another knife, boys,
Get the loaf and cut me a slice, boys,
And how about the cheese, is it nice, boys?
I asked just now for a slice of bread, boys,
I say—*did you hear what I said, boys?*
There's no end of crumb, seep up the floor, boys,
Mind you don't forget to bar the door, boys,
For the night's very cold, boys,
And I'm very old, boys,
And Tommy's dead.

Is there any more beer in the jug, boys?
You may as well fill up my mug, boys,
Is there any left still? no, I drank it, boys,
I shall want an extra blanket, boys,
I'm an early body, you mun wake me in t'morning, boys,
Not that I can get up without warning, boys,
I'm not the sort that wakes all of a minute, boys,
When I'm once in my bed I likes to stop in it, boys,
For the night's very cold,
And I'm very old,
And Tommy's dead.

Come, cheer up your old daddy like men, boys,
Why, I declare it's nigh upon half-past ten, boys!
Bread's not much, I'd rather have had some tripe, boys,
D'ye think there's time for a quiet pipe, boys?
There'd be beer enough, if it hadn't been spilt, boys,
I wish I were snug under my quilt, boys,
I does so like having a talk o' nights, boys!
Ah! boys, you're young, *I've* seen a pack o' sights, boys,

When you've lived as long as I, you'll know what it is, boys,
Lads like you think it's all to be done in a whiz, boys,
Well, you may carry me upstairs, it's so late, boys,
If it wasn't for the beer, I'm not much weight, boys,
My gout's not so well, so mind how you go, boys,
Some of you'll catch it, if you tread upon my toe, boys,
Gently now, don't trip up on the mat, boys,
There, I told you so, you stupid you, take *that*, boys!
It's good for you, and keeps my hands warm, boys,
I shan't apologize—quite an unnecessary form, boys,
For the night's very cold,
And I'm very old,
And Tommy's dead.

[*Additional Note.*—The last three lines of each paragraph, and the second line of the poem, (perhaps the first as well,) are by Sydney Dobell. For the rest the Editor is responsible: he has taken a less melancholy view of the subject than the original writer did, in support of which theory he begs to record his firm conviction that “Tommy” was a cat. Recollections of its death cause a periodical gloom to come over the father's mind, accompanied always by the other two grounds of complaint which appear to have continually weighed upon him, cold and age: this gloom, we find, was only to be dispelled by one of three things, supper, the prospect of bed, and ill-temper.

There is something very instructive in the fact that the boys are never rude enough to interrupt, and probably never attend till he suggests going to bed, when they carry out his wishes with affectionate, almost unseemly, haste.]

18.92 The Lyceum

Source: verses on a torn paper for Agnes Hull to commemorate a visit to the Lyceum, March 25, 1881

Parody on *The Miller's Daughter* by Alfred Lord Tennyson

It is the lawyer's daugh. . .
And she is grown so dear, so d. . .
She costs me, in one evening,
The income of a year!
"You ca'n't have *children's* love," she cr. . .
"Unless you choose to fee 'em!"
"And what's *your* fee, Child?" I replied.
She simply said ". . .
We saw The Cup. I *hoped* she'd say,
"I'm grateful to you—very."
She murmured, as she turned aw. . .
"That lovely . . .
"Compared with *her*, the rest," she cri. . .
"Are just like two or three um-
-berellas standing side by side!
Oh, gem of th. . .
We saw Two Brothers: I confess
To *me* they seemed one man.
"Now which is which, Child? Can you . . .
She cried, "A-course I can!"
Bad puns like this I *always* dread,
And am resolved to flee 'em:
And so I left her there, & fl. . .
She *lives* at . . .

In the same letter there are also the following short verses:

How an Elderly Person took a Young Person to the Play,
but could not get her away again

Two went one day
To visit the play.
One came away:
The other would stay.

Solution to cut/missing words: daughter, dear, cried, Lyceum; away, Ellen Terry, cried, the Lyceum; guess, fled, the Lyceum

18.93 The Hunting of the Snark. An Agony in Eight Fits.

Source: The Hunting of the Snark (without most image captions and with minor differences as noted); Rhyme? and Reason? (editions differ in punctuation, here the version that makes most sense)

Fit the First. The Landing

“Just the place for a Snark!” the Bellman cried,
As he landed his crew with care;
Supporting each man on the top of the tide
By a finger entwined in his hair.

“Just the place for a Snark! I have said it twice:
That alone should encourage the crew.
Just the place for a Snark! I have said it thrice:
What I tell you three times is true.”

The crew was complete: it included a Boots—
A maker of Bonnets and Hoods—
A Barrister, brought to arrange their disputes—
And a Broker, to value their goods.

A Billiard-marker, whose skill was immense,
Might perhaps have won more than his share—
But a Banker, engaged at enormous expense,
Had the whole of their cash in his care.

There was also a Beaver, that paced on the deck,
Or would sit making lace in the bow:
And had often (the Bellman said) saved them from wreck,
Though none of the sailors knew how.

There was one who was famed for the number of things
He forgot when he entered the ship:
His umbrella, his watch, all his jewels and rings,
And the clothes he had bought for the trip.

He had forty-two boxes, all carefully packed,
With his name painted clearly on each:
But since he omitted to mention the fact,
They were all left behind on the beach.

The loss of his clothes hardly mattered, because
He had seven coats on when he came,
With three pair of boots—but the worst of it was
He had wholly forgotten his name.

He would answer to “Hi!” or to any loud cry,
Such as “Fry me!” or “Fritter my wig!”
To “What-you-may-call-um!” or “What-was-his-name!”
But especially “Thing-um-a-jig!”



“Supporting each man on the top of the tide”
(Frontispiece)



“He had wholly forgotten his name”

While, for those who preferred a more forcible word,
 He had different names from these:
 His intimate friends called him "Candle-ends,"
 And his enemies "Toasted-cheese."
 "His form is ungainly—his intellect small—"
 (So the Bellman would often remark)—
 "But his courage is perfect! And that, after all,
 Is the thing that one needs with a Snark."
 He would joke with hyænas, returning their stare
 With an impudent wag of the head:
 And he once went a walk, paw-in-paw, with a bear,
 "Just to keep up its spirits," he said.
 He came as a Baker: but owned, when too late—
 And it drove the poor Bellman half-mad—
 He could only bake Bride-cake—for which, I may state,
 No materials were to be had.
 The last of the crew needs especial remark,
 Though he looked an incredible dunce:
 He had just one idea—but, that one being "Snark,"
 The good Bellman engaged him at once.
 He came as a Butcher: but gravely declared,
 When the ship had been sailing a week,
 He could only kill Beavers. The Bellman looked scared,
 And was almost too frightened to speak:
 But at length he explained, in a tremulous tone,
 There was only one Beaver on board;
 And that was a tame one he had of his own,
 Whose death would be deeply deplored.
 The Beaver, who happened to hear the remark,
 Protested, with tears in its eyes,
 That not even the rapture of hunting the Snark
 Could atone for that dismal surprise!
 It strongly advised that the Butcher should be
 Conveyed in a separate ship:
 But the Bellman declared that would never agree
 With the plans he had made for the trip:
 Navigation was always a difficult art,
 Though with only one ship and one bell:
 And he feared he must really decline, for his part,
 Undertaking another as well.
 The Beaver's best course was, no doubt, to procure
 A second-hand dagger-proof coat—
 So the Baker advised it—and next, to insure
 Its life in some Office of note:
 This the Banker suggested, and offered for hire
 (On moderate terms), or for sale,

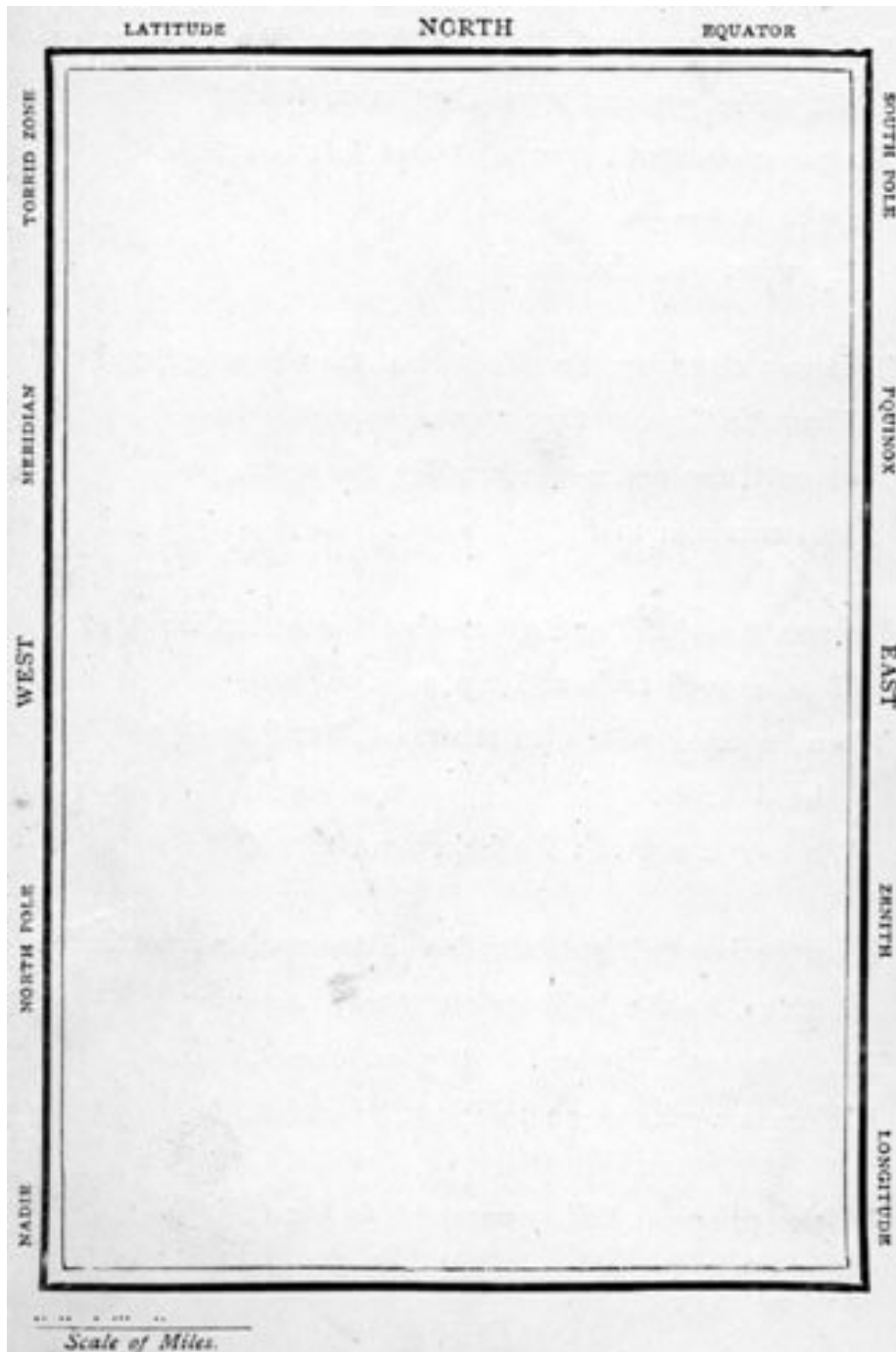


“The Beaver kept looking the opposite way”

Two excellent Policies, one Against Fire,
 And one Against Damage From Hail.
 Yet still, ever after that sorrowful day,
 Whenever the Butcher was by,
 The Beaver kept looking the opposite way,
 And appeared unaccountably shy.

Fit the **Second. The Bellman’s Speech.**

The Bellman himself they all praised to the skies—
 Such a carriage, such ease and such grace!
 Such solemnity, too! One could see he was wise,
 The moment one looked in his face!
 He had bought a large map representing the sea,
 Without the least vestige of land:
 And the crew were much pleased when they found it to be
 A map they could all understand.
 “What’s the good of Mercator’s North Poles and Equators,
 Tropics, Zones, and Meridian Lines?”
 So the Bellman would cry: and the crew would reply
 “They are merely conventional signs!
 “Other maps are such shapes, with their islands and capes!
 But we’ve got our brave Captain to thank”
 (So the crew would protest) “that he’s bought *us* the best—
 A perfect and absolute blank!”
 This was charming, no doubt: but they shortly found out



Ocean-Chart

That the Captain they trusted so well
 Had only one notion for crossing the ocean,
 And that was to tingle his bell.
 He was thoughtful and grave—but the orders he gave
 Were enough to bewilder a crew.
 When he cried “Steer to starboard, but keep her head larboard!”
 What on earth was the helmsman to do?
 Then the bowsprit got mixed with the rudder sometimes:
 A thing, as the Bellman remarked,
 That frequently happens in tropical climes,
 When a vessel is, so to speak, “snarked.”
 But the principal failing occurred in the sailing,
 And the Bellman, perplexed and distressed,
 Said he *had* hoped, at least, when the wind blew due East,
 That the ship would *not* travel due West!
 But the danger was past—they had landed at last,
 With their boxes, portmanteaus, and bags:
 Yet at first sight the crew were not pleased with the view,
 Which consisted of chasms and crags.
 The Bellman perceived that their spirits were low,
 And repeated in musical tone
 Some jokes he had kept for a season of woe—
 But the crew would do nothing but groan.
 He served out some grog with a liberal hand,
 And bade them sit down on the beach:
 And they could not but own that their Captain looked grand,
 As he stood and delivered his speech.
 “Friends, Romans, and countrymen, lend me your ears!”
 (They were all of them fond of quotations:
 So they drank to his health, and they gave him three cheers,
 While he served out additional rations).
 “We have sailed many months, we have sailed many weeks,
 (Four weeks to the month you may mark),
 But never as yet (*’tis* your Captain who speaks)
 Have we caught the least glimpse of a Snark!
 “We have sailed many weeks, we have sailed many days,
 (Seven days to the week I allow),
 But a Snark, on the which we might lovingly gaze,
 We have never beheld till now!
 “Come, listen, my men, while I tell you again
 The five unmistakable marks
 By which you may know, wheresoever you go,
 The warranted genuine Snarks.
 “Let us take them in order. The first is the taste,
 Which is meagre and hollow, but crisp:
 Like a coat that is rather too tight in the waist,

With a flavour of Will-o-the-wisp.
 "Its habit of getting up late you'll agree
 That it carries too far, when I say
 That it frequently breakfasts at five-o'clock tea,
 And dines on the following day.
 "The third is its slowness in taking a jest.
 Should you happen to venture on one,
 It will sigh like a thing that is deeply distressed:
 And it always looks grave at a pun.
 "The fourth is its fondness for bathing-machines,
 Which it constantly carries about,
 And believes that they add to the beauty of scenes—
 A sentiment open to doubt.
 "The fifth is ambition. It next will be right
 To describe each particular batch:
 Distinguishing those that have feathers, and bite,
 From those that have whiskers, and scratch.
 "For, although common Snarks do no manner of harm,
 Yet I feel it my duty to say
 Some are Boojums—" The Bellman broke off in alarm,
 For the Baker had fainted away.

Fit the *Æ*bird. **The Baker's Tale.**

They roused him with muffins—they roused him with ice—
 They roused him with mustard and cress—
 They roused him with jam and judicious advice—
 They set him conundrums to guess.
 When at length he sat up and was able to speak,
 His sad story he offered to tell;
 And the Bellman cried "Silence! Not even a shriek!"
 And excitedly tingled his bell.
 There was silence supreme! Not a shriek, not a scream,
 Scarcely even a howl or a groan,
 As the man they called "Ho!" told his story of woe
 In an antediluvian tone.
 "My father and mother were honest, though poor—"
 "Skip all that!" cried the Bellman in haste.
 "If it once becomes dark, there's no chance of a Snark—
 We have hardly a minute to waste!"
 "I skip forty years," said the Baker, in tears,
 "And proceed without further remark
 To the day when you took me aboard of your ship
 To help you in hunting the Snark.
 "A dear uncle of mine (after whom I was named)
 Remarked, when I bade him farewell—"
 "Oh, skip your dear uncle!" the Bellman exclaimed,

As he angrily tingled his bell.
 “He remarked to me then,” said that mildest of men,
 “If your Snark be a Snark, that is right:
 Fetch it home by all means—you may serve it with greens
 And it’s handy for striking a light.
 “You may seek it with thimbles—and seek it with care;
 You may hunt it with forks and hope;
 You may threaten its life with a railway-share;
 You may charm it with smiles and soap—”
 (“That’s exactly the method,” the Bellman bold
 In a hasty parenthesis cried,
 “That’s exactly the way I have always been told
 That the capture of Snarks should be tried!”)
 “But oh, beamish nephew, beware of the day,
 If your Snark be a Boojum! For then
 You will softly and suddenly vanish away,
 And never be met with again!”
 “It is this, it is this that oppresses my soul,
 When I think of my uncle’s last words:
 And my heart is like nothing so much as a bowl
 Brimming over with quivering curds!
 “It is this, it is this—” “We have had that before!”
 The Bellman indignantly said.
 And the Baker replied “Let me say it once more.
 It is this, it is this that I dread!
 “I engage with the Snark—every night after dark—
 In a dreamy delirious fight:
 I serve it with greens in those shadowy scenes,
 And I use it for striking a light:
 “But if ever I meet with a Boojum, that day,
 In a moment (of this I am sure),
 I shall softly and suddenly vanish away—
 And the notion I cannot endure!”

Sit the Fourth. **The Hunting.**

The Bellman looked uffish, and wrinkled his brow.
 “If only you’d spoken before!
 It’s excessively awkward to mention it now,
 With the Snark, so to speak, at the door!
 “We should all of us grieve, as you well may believe,
 If you never were met with again—
 But surely, my man, when the voyage began,
 You might have suggested it then?
 “It’s excessively awkward to mention it now—
 As I think I’ve already remarked.”
 And the man they called “Hi!” replied, with a sigh,



“But oh, beamish nephew, beware of the day”

"I informed you the day we embarked.
 "You may charge me with murder—or want of sense—
 (We are all of us weak at times):
 But the slightest approach to a false pretence
 Was never among my crimes!
 "I said it in Hebrew—I said it in Dutch—
 I said it in German and Greek:
 But I wholly forgot (and it vexes me much)
 That English is what you speak!"
 "'Tis a pitiful tale," said the Bellman, whose face
 Had grown longer at every word:
 "But, now that you've stated the whole of your case,
 More debate would be simply absurd.
 "The rest of my speech" (he explained to his men)
 "You shall hear when I've leisure to speak it.
 But the Snark is at hand, let me tell you again!
 'Tis your glorious duty to seek it!
 "To seek it with thimbles, to seek it with care;
 To pursue it with forks and hope;
 To threaten its life with a railway-share;
 To charm it with smiles and soap!
 "For the Snark's a peculiar creature, that won't
 Be caught in a commonplace way.
 Do all that you know, and try all that you don't:
 Not a chance must be wasted to-day!
 "For England expects—I forbear to proceed:
 'Tis a maxim tremendous, but trite:
 And you'd best be unpacking the things that you need
 To rig yourselves out for the fight."
 Then the Banker endorsed a blank cheque (which he crossed),
 And changed his loose silver for notes:
 The Baker with care combed his whiskers and hair,
 And shook the dust out of his coats:
 The Boots and the Broker were sharpening a spade—
 Each working the grindstone in turn:
 But the Beaver went on making lace, and displayed
 No interest in the concern:
 Though the Barrister tried to appeal to its pride,
 And vainly proceeded to cite
 A number of cases, in which making laces
 Had been proved an infringement of right.
 The maker of Bonnets ferociously planned
 A novel arrangement of bows:
 While the Billiard-marker with quivering hand
 Was chalking the tip of his nose.
 But the Butcher turned nervous, and dressed himself fine,



"To pursue it with forks and hope"

With yellow kid gloves and a ruff—
 Said he felt it exactly like going to dine,
 Which the Bellman declared was all “stuff.”
 “Introduce me, now there’s a good fellow,” he said,
 “If we happen to meet it together!”
 And the Bellman, sagaciously nodding his head,
 Said “That must depend on the weather.”
 The Beaver went simply galumphing about,
 At seeing the Butcher so shy:
 And even the Baker, though stupid and stout,
 Made an effort to wink with one eye.
 “Be a man!” ̀cried¹ the Bellman in wrath, as he heard
 The Butcher beginning to sob.
 “Should we meet with a Jubjub, that desperate bird,
 We shall need all our strength for the job!”

Fit the Fifth. The Beaver’s Lesson.

They sought it with thimbles, they sought it with care;
 They pursued it with forks and hope;
 They threatened its life with a railway-share;
 They charmed it with smiles and soap.
 Then the Butcher contrived an ingenious plan
 For making a separate sally;
 And had fixed on a spot unfrequented by man,
 A dismal and desolate valley.
 But the very same plan to the Beaver occurred:
 It had chosen the very same place:
 Yet neither betrayed, by a sign or a word,
 The disgust that appeared in his face.
 Each thought he was thinking of nothing but “Snark”
 And the glorious work of the day;
 And each tried to pretend that he did not remark
 That the other was going that way.
 But the valley grew narrow and narrower still,
 And the evening got darker and colder,
 Till (merely from nervousness, not from good will)
 They marched along shoulder to shoulder.
 Then a scream, shrill and high, rent the shuddering sky,
 And they knew that some danger was near:
 The Beaver turned pale to the tip of its tail,
 And even the Butcher felt queer.
 He thought of his childhood, left far far behind—
 That blissful and innocent state—
 The sound so exactly recalled to his mind

¹said

A pencil that squeaks on a slate!

“’Tis the voice of the Jubjub!” he suddenly cried.
 (This man, that they used to call “Dunce.”)
 “As the Bellman would tell you,” he added with pride,
 “I have uttered that sentiment once.”

“’Tis the note of the Jubjub! Keep count, I entreat;
 You will find I have told it you twice.
 ’Tis the song of the Jubjub! The proof is complete,
 If only I’ve stated it thrice.”

The Beaver had counted with scrupulous care,
 Attending to every word:
 But it fairly lost heart, and outgrabe in despair,
 When the third repetition occurred.

It felt that, in spite of all possible pains,
 It had somehow contrived to lose count,
 And the only thing now was to rack its poor brains
 By reckoning up the amount.

“Two added to one—if that could but be done,”
 It said, “with one’s fingers and thumbs!”
 Recollecting with tears how, in earlier years,
 It had taken no pains with its sums.

“The thing can be done,” said the Butcher, “I think.
 The thing must be done, I am sure.
 The thing shall be done! Bring me paper and ink,
 The best there is time to procure.”

The Beaver brought paper, portfolio, pens,
 And ink in unfailing supplies:
 While strange creepy creatures came out of their dens,
 And watched them with wondering eyes.

So engrossed was the Butcher, he heeded them not,
 As he wrote with a pen in each hand,
 And explained all the while in a popular style
 Which the Beaver could well understand.

“Taking Three as the subject to reason about—
 A convenient number to state—
 We add Seven, and Ten, and then multiply out
 By One Thousand diminished by Eight.

“The result we proceed to divide, as you see,
 By Nine-Hundred-and-Ninety-and-Two:
 Then subtract Seventeen, and the answer must be
 Exactly and perfectly true.

“The method employed I would gladly explain,
 While I have it so clear in my head,
 If I had but the time and you had but the brain—
 But much yet remains to be said.

“In one moment I’ve seen what has hitherto been



“The Beaver brought paper, portfolio, pens”

Enveloped in absolute mystery,
 And without extra charge I will give you at large
 A Lesson in Natural History.”
 In his genial way he proceeded to say
 (Forgetting all laws of propriety,
 And that giving instruction, without introduction,
 Would have caused quite a thrill in Society),
 “As to temper the Jubjub’s a desperate bird,
 Since it lives in perpetual passion:
 Its taste in costume is entirely absurd—
 It is ages ahead of the fashion:
 “But it knows any friend it has met once before:
 It never will look at a bribe:
 And in charity-meetings it stands at the door,
 And collects—though it does not subscribe.
 “Its flavour when cooked is more exquisite far
 Than mutton, or oysters, or eggs:
 (Some think it keeps best in an ivory jar,
 And some, in mahogany kegs:)
 “You boil it in sawdust: you salt it in glue:
 You condense it with locusts and tape:
 Still keeping one principal object in view—
 To preserve its symmetrical shape.”
 The Butcher would gladly have talked till next day,
 But he felt that the Lesson must end,
 And he wept with delight in attempting to say
 He considered the Beaver his friend:
 While the Beaver confessed, with affectionate looks
 More eloquent even than tears,
 It had learned in ten minutes far more than all books
 Would have taught it in seventy years.
 They returned hand-in-hand, and the Bellman, unmanned
 (For a moment) with noble emotion,
 Said “This amply repays all the wearisome days
 We have spent on the billowy ocean!”
 Such friends, as the Beaver and Butcher became,
 Have seldom if ever been known;
 In winter or summer, ’twas always the same—
 You could never meet either alone.
 And when quarrels arose—as one frequently finds
 Quarrels will, spite of every endeavour—
 The song of the Jubjub recurred to their minds,
 And cemented their friendship for ever!

Fit the Sixth. **The Barrister’s Dream.**

They sought it with thimbles, they sought it with care;

They pursued it with forks and hope;
 They threatened its life with a railway-share;
 They charmed it with smiles and soap.

But the Barrister, weary of proving in vain
 That the Beaver's lace-making was wrong,
 Fell asleep, and in dreams saw the creature quite plain
 That his fancy had dwelt on so long.

He dreamed that he stood in a shadowy Court,
 Where the Snark, with a glass in its eye,
 Dressed in gown, bands, and wig, was defending a pig
 On the charge of deserting its sty.



“‘You must know—’ said the Judge: but the Snark exclaimed ‘Fudge!’”

The Witnesses proved, without error or flaw,
 That the sty was deserted when found:
 And the Judge kept explaining the state of the law
 In a soft under-current of sound.

The indictment had never been clearly expressed,
 And it seemed that the Snark had begun,
 And had spoken three hours, before any one guessed
 What the pig was supposed to have done.

The Jury had each formed a different view
 (Long before the indictment was read),
 And they all spoke at once, so that none of them knew
 One word that the others had said.

“‘You must know—’ said the Judge: but the Snark exclaimed “‘Fudge!
 That statute is obsolete quite!
 Let me tell you, my friends, the whole question depends

On an ancient manorial right.

“In the matter of Treason the pig would appear
 To have aided, but scarcely abetted:
 While the charge of Insolvency fails, it is clear,
 If you grant the plea ‘never indebted.’

“The fact of Desertion I will not dispute:
 But its guilt, as I trust, is removed
 (So far as relates to the costs of this suit)
 By the Alibi which has been proved.

“My poor client’s fate now depends on your votes.”
 Here the speaker sat down in his place,
 And directed the Judge to refer to his notes
 And briefly to sum up the case.

But the Judge said he never had summed up before;
 So the Snark undertook it instead,
 And summed it so well that it came to far more
 Than the Witnesses ever had said!

When the verdict was called for, the Jury declined,
 As the word was so puzzling to spell;
 But they ventured to hope that the Snark wouldn’t mind
 Undertaking that duty as well.

So the Snark found the verdict, although, as it owned,
 It was spent with the toils of the day:
 When it said the word “GUILTY!” the Jury all groaned
 And some of them fainted away.

Then the Snark pronounced sentence, the Judge being quite
 Too nervous to utter a word:
 When it rose to its feet, there was silence like night,
 And the fall of a pin might be heard.

“Transportation for life” was the sentence it gave,
 “And *then* to be fined forty pound.”
 The Jury all cheered, though the Judge said he feared
 That the phrase was not legally sound.

But their wild exultation was suddenly checked
 When the jailer informed them, with tears,
 Such a sentence would have not the slightest effect,
 As the pig had been dead for some years.

The Judge left the Court, looking deeply disgusted:
 But the Snark, though a little aghast,
 As the lawyer to whom the defence was intrusted,
 Went bellowing on to the last.

Thus the Barrister dreamed, while the bellowing seemed
 To grow every moment more clear:
 Till he woke to the knell of a furious bell,
 Which the Bellman rang close at his ear.

Fit the Seventh. **The Banker's Fate.**

They sought it with thimbles, they sought it with care;
They pursued it with forks and hope;
They threatened its life with a railway-share;
They charmed it with smiles and soap.

And the Banker, inspired with a courage so new
It was matter for general remark,
Rushed madly ahead and was lost to their view
In his zeal to discover the Snark.

But while he was seeking with thimbles and care,
A Bandersnatch swiftly drew nigh
And grabbed at the Banker, who shrieked in despair,
For he knew it was useless to fly.

He offered large discount—he offered a cheque
(Drawn “to bearer”) for seven-pounds-ten:
But the Bandersnatch merely extended its neck
And grabbed at the Banker again.

Without rest or pause—while those frumious jaws
Went savagely snapping around—
He skipped and he hopped, and he floundered and flopped,
Till fainting he fell to the ground.

The Bandersnatch fled as the others appeared
Led on by that fear-stricken yell:
And the Bellman remarked “It is just as I feared!”
And solemnly tolled on his bell.

He was black in the face, and they scarcely could trace
The least likeness to what he had been:
While so great was his fright that his waistcoat turned white—
A wonderful thing to be seen!

To the horror of all who were present that day,
He uprose in full evening dress,
And with senseless grimaces endeavoured to say
What his tongue could no longer express.

Down he sank in a chair—ran his hands through his hair—
And chanted in mimsiest tones
Words whose utter inanity proved his insanity,
While he rattled a couple of bones.

“Leave him here to his fate—it is getting so late!”
The Bellman exclaimed in a fright.
“We have lost half the day. Any further delay,
And we sha’n’t catch a Snark before night!”

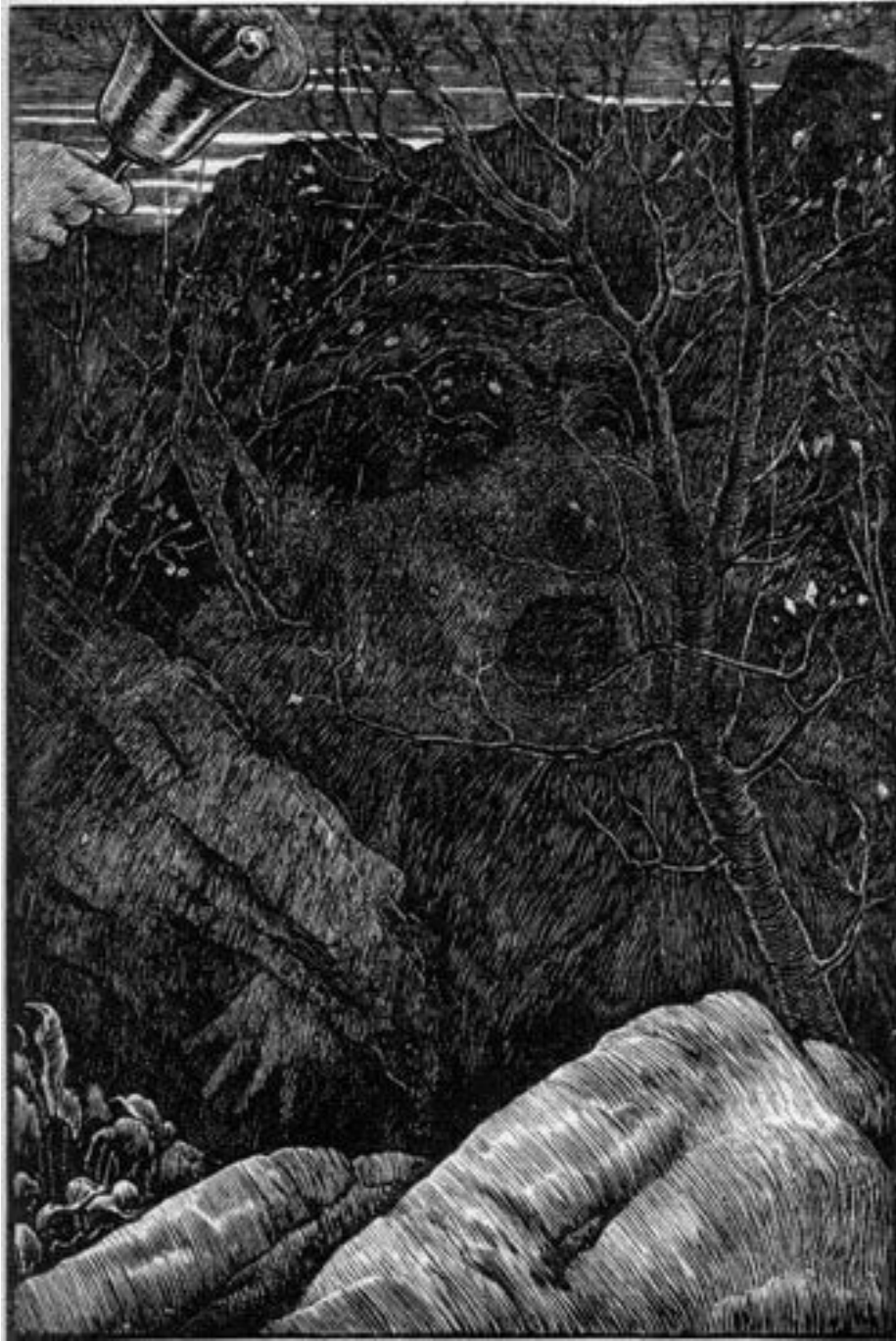
Fit the Eighth. **The Vanishing.**

They sought it with thimbles, they sought it with care;
They pursued it with forks and hope;



“So great was his fright that his waistcoat turned white.”

They threatened its life with a railway-share;
 They charmed it with smiles and soap.
 They shuddered to think that the chase might fail,
 And the Beaver, excited at last,
 Went bounding along on the tip of its tail,
 For the daylight was nearly past.
 “There is Thingumbob shouting!” the Bellman said.
 “He is shouting like mad, only hark!
 He is waving his hands, he is wagging his head,
 He has certainly found a Snark!”
 They gazed in delight, while the Butcher exclaimed
 “He was always a desperate wag!”
 They beheld him—their Baker—their hero unnamed—
 On the top of a neighbouring crag,
 Erect and sublime, for one moment of time.
 In the next, that wild figure they saw
 (As if stung by a spasm) plunge into a chasm,
 While they waited and listened in awe.
 “It’s a Snark!” was the sound that first came to their ears,
 And seemed almost too good to be true.
 Then followed a torrent of laughter and cheers:
 Then the ominous words “It’s a Boo—”
 Then, silence. Some fancied they heard in the air
 A weary and wandering sigh
 That sounded like “—jum!” but the others declare
 It was only a breeze that went by.



“Then, silence”

They hunted till darkness came on, but they found
Not a button, or feather, or mark,
By which they could tell that they stood on the ground
Where the Baker had met with the Snark.
In the midst of the word he was trying to say,
In the midst of his laughter and glee,
He had softly and suddenly vanished away—
For the Snark *was* a Boojum, you see.

18.94 King-fisher Song

Source: Sylvie and Bruno Concluded (extracted)

King Fisher courted Lady Bird—
Sing Beans, sing Bones, sing Butterflies!
“Find me my match,” he said,
“With such a noble head—
With such a beard, as white as curd—
With such expressive eyes!”
“Yet pins have heads,” said Lady Bird—
Sing Prunes, sing Prawns, sing Primrose-Hill!
“And, where you stick them in,
They stay, and thus a pin
Is very much to be preferred
To one that’s never still!”
“Oysters have beards,” said Lady Bird—
Sing Flies, sing Frogs, sing Fiddle-strings!
“I love them, for I know
They never chatter so:
They would not say one single word—
Not if you crowned them Kings!”
“Needles have eyes,” said Lady Bird—
Sing Cats, sing Corks, sing Cowslip-tea!
“And they are sharp—just what
Your Majesty is *not*:
So get you gone—’tis too absurd
To come a-courting *me!*”

18.95 Prologue (1871)

Source: written for an amateur performance at the house of Dr. Edwin Hatch,
Nov. 2, 1871

Curtain rises and discovers the Speaker, who comes forward, thinking aloud,

“Ladies and Gentlemen” seems stiff and cold.
There’s something personal in “Young and Old”;
I’ll try “Dear Friends” (*addresses audience*) Oh! let me call you so.
Dear friends, look kindly on our little show.
Contrast us not with giants in the Art,
Nor say “You should see Sothern in that part”;
Nor yet, unkindest cut of all, in fact,
Condemn the actors, while you praise the Act.
Having by coming proved you find a charm in it,
Don’t go away, and hint there may be harm in it.

Quoted from *Julius Caesar* by William Shakespeare

* * * * *

Miss Crabb: My dear Miss Verjuice, can it really be?
You’re just in time, love, for a cup of tea;
And so, you went to see those people play.

Miss Verjuice: Well! yes, Miss Crabb, and I may truly say
You showed your wisdom when you stayed *away*.

Miss C.: Doubtless! Theatricals in *our* quiet town!
I’ve always said, “The law should put them down,”
They mean no harm, tho’ I begin to doubt it—
But now sit down and tell me all about it.

Miss V.: Well then, Miss Crabb, I won’t deceive you, dear;
I heard some things I—didn’t like to hear:

Miss C.: But don’t omit them now.

Miss V.: Well! No! I’ll try
To tell you *all* the painful history.

(*They whisper alternately behind a small fan.*)

Miss V.: And then, my dear, Miss Asterisk and he
Pretended they were lovers!!

Miss C.: Gracious me!!

(*More whispering behind fan.*)

* * * * *

Speaker: What! *Acting* love!! And has that ne’er been seen
Save with a row of footlights placed between?
My gentle censors, let me roundly ask,

Do none but actors ever wear a mask?
Or have we reached at last that golden age
That finds deception only on the Stage?
Come, let's confess all round before we budge,
When all are guilty, none should play the Judge.
We're actors all, a motley company,
Some on the Stage, and others—on the sly—
And guiltiest he who paints so well his phiz
His brother actors scarce know what he is.
A truce to moralizing; we invite
The goodly company we see to-night
To have the little banquet we have got,
Well dressed, we hope, and served up *hot & hot*.
"Loan of a Lover" is the leading dish,
Concluding with a dainty course of fish;
"Whitebait at Greenwich" in the best condition
(By Mr. Gladstone's very kind permission).
Before the courses will be handed round
An *Entrée* made of Children, nicely browned.

Bell rings.

But hark! The bell to summon me away;
They're anxious to begin their little Play.
One word before I go—We'll do our best,
And crave your kind indulgence for the rest;
Own that at least we've striven to succeed,
And take the good intention for the deed.

Nov. 1871.

18.96 Echoes

Source: Rhyme? and Reason?

Lady Clara Vere de Vere
Was eight years old, she said:
Every ringlet, lightly shaken, ran itself in golden thread.
She took her little porringer:
Of me she shall not win renown:
For the baseness of its nature shall have strength to drag her down.
“Sisters and brothers, little Maid?
There stands the Inspector at thy door:
Like a dog, he hunts for boys who know not two and two are four.”
“Kind words are more than coronets,”
She said, and wondering looked at me:
“It is the dead unhappy night, and I must hurry home to tea.”

18.97 Christmas-Greetings

Source: Phantasmagoria (as “Christmas Greetings” and with minor differences as noted); Alice’s Adventures in Wonderland etc.; also separately printed 1884 (again as “Christmas Greetings”, with differences in punctuation and signature “Lewis Carroll”)

[From a Fairy to a Child]

Lady dear, if Fairies may
For a moment lay aside
Cunning tricks and elfish play,
’Tis at happy Christmas-tide.
We have heard the children say—
Gentle children, whom we love—
Long ago, on Christmas Day,
Came a message from above.
Still, as ¹Christmas-tide comes round,
They remember it again—
Echo still the joyful sound
“Peace on earth, good-will to men!”
Yet the hearts must childlike be
Where such heavenly guests abide:
Unto children, in their glee,
All the year is Christmas-tide!
²Thus, forgetting tricks and play
For a moment, Lady dear,
We would wish you, if we may,
Merry Christmas, glad New Year!

³Christmas, 1867.

¹Christmas time

²So

³not in *Phantasmagoria*

18.98 Let craft, ambition, spite

Source: Sylvie and Bruno (extracted)

Let craft, ambition, spite,
Be quenched in Reason's night,
Till weakness turn to might,
Till what is dark be light,
Till what is wrong be right!

18.99 Little Birds

Source: Sylvie and Bruno Concluded (extracted, connected)

Little Birds are dining
Warily and well,
Hid in mossy cell:
Hid, I say, by waiters
Gorgeous in their gaiters—
I've a Tale to tell.¹

Little Birds are feeding
Justices with jam,
Rich in frizzled ham:
Rich, I say, in oysters
Haunting shady cloisters—
That is what I am.

Little Birds are teaching
Tigresses to smile,
Innocent of guile:
Smile, I say, not smirkle—
Mouth a semicircle,
That's the proper style.

Little Birds are sleeping
All among the pins,
Where the loser wins:
Where, I say, he sneezes
When and how he pleases—
So the Tale begins.

Little Birds are writing
Interesting books,
To be read by cooks:
Read, I say, not roasted—
Letterpress, when toasted,
Loses its good looks.

Little Birds are playing
Bagpipes on the shore,
Where the tourists snore:
"Thanks!" they cry. "'Tis thrilling!
Take, oh take this shilling!

¹Additional stanza (here from *Diaries*, p. 453f/*Lewis Carroll & His Illustrators*) that was removed to fit with the illustrations:

Little Birds are seeking
Hecatombs of haws,
Dressed in snowy gauze:
Dressed, I say, in fringes
Half-alive with hinges—
Thus they break the laws.

Let us have no more!"

Little Birds are bathing
Crocodiles in cream,
Like a happy dream:
Like, but not so lasting—
Crocodiles, when fasting,
Are not all they seem!

Little Birds are choking
Baronets with bun,
Taught to fire a gun:
Taught, I say, to splinter
Salmon in the winter—
Merely for the fun.

Little Birds are hiding
Crimes in carpet-bags,
Blessed by happy stags:
Blessed, I say, though beaten—
Since our friends are eaten
When the memory flags.

Little Birds are tasting
Gratitude and gold,
Pale with sudden cold
Pale, I say, and wrinkled—
When the bells have tinkled
And the Tale is told.

18.100 Lines

Source: Phantasmagoria; original (dedication in a book (*Holiday House* by Catherine Sinclair) for the Liddell sisters, Christmas 1861) with minor differences as noted

[Addressed to three little girls, with a copy of 'Holiday House.']*¹

Little maidens, when you look
On this little story-book,
Reading with attentive eye
Its enticing history;
Never think that hours of play
Are your only *holiday*²,
And that, in a *time*³ of joy,
Lessons serve but to annoy.
If in any HOUSE you find
Children of a gentle mind,
Each the others *helping*⁴ ever,
Each the others vexing never,
Daily *task*⁵ and pastime daily
In their order taking gaily—
Then be very sure that they
Have a *life* of HOLIDAY.

Acrostic: Lorina, Alice, Edith

¹missing in the original

²HOLIDAY

³HOUSE

⁴pleasing

⁵work

18.101 Lorenzo dwelt at Heighington

Source: The Legend of "Scotland" (extracted)

Lorenzo dwelt at Heighington,
 (Hys cote was made of Dimity,)
Least-ways yf not exactly there,
 Yet yn yt's close proximity.
Hee called on mee—hee stayed to tee—
 Yet not a word he ut-tered,
Untyl I sayd, "D'ye lyke your bread
Dry?" and hee answered "But-tered."
 Noodle dumb
 Has a noodle-head,
I hate such noodles, *I* do.

18.102 Love-lighted eyes

Source: inscribed into a copy of *The Hunting of the Snark* for Miss Laura Plomer, 1876

Love-lighted eyes, that will not start
At frown of rage or malice!
Uplifted brow, undaunted heart
Ready to dine on raspberry-tart
Along with fairy Alice!

In scenes as wonderful as if
She'd flitted in a magic skiff
Across the sea to Calais:
Be sure this night, in Fancy's feast,
Even till Morning gilds the east,
Laura will dream of Alice!

Perchance, as long years onward haste,
Laura will weary of the taste
Of Life's embittered chalice:
May she, in such a woeful hour,
Endued with Memory's mystic power,
Recall the dreams of Alice!

June 17, 1876.

Acrostic: Laura Isabel Plomer

18.103 A Russian's Day in England

Source: written for Lady Gwendolen Cecil, November 13, 1874; from a draft version (only final variant of the corrections given here)

Lunch at one (that's "adîn")
As there's lots to be seen.
At two (which is "dvâ")
We set out on the car.
Three o'clock (that is "trî")
Found me tired as could be
And by four (that's "chetîr")
I felt terribly dreary:
So when five struck (that's "pyât")
I was quite out of heart.
At six (that is "shaist")
I sighed "Oh for the *far* East!"
At seven (called "sêm")
Home to dinner we came.
At eight (that is "vosem")
Called the children, to dose 'em.
Supped at nine (that is "dyasat")
Which I made a long face at.

Finis.

Now, if it's any
Advantage to Lady Gwendolen Cecil
To remember how Russ
Is accented by *us*,
Let her read, at odd times,
These Russ-Anglican rhymes.

Nov. 13/74 CLD

18.104 Maiden, though thy heart may quail

Source: inscribed into a copy of *The Hunting of the Snark* for Miss Marion Terry, 1876

Maiden, though thy heart may quail
And thy quivering lip grow pale,
Read the Bellman's tragic tale!

Is it life of which it tells?
Of a pulse that sinks and swells
Never lacking chime of bells?

Bells of sorrow, bells of cheer,
Easter, Christmas, glad New Year,
Still they sound, afar, anear.

So may Life's sweet bells for thee,
In the summers yet to be,
Evermore make melody!

Aug. 15, 1876.

Acrostic: Marion Bessie

18.105 Maidens, if a maid you meet

Source: inscribed into a book for Miss Margaret Dymes, 1877

Maidens, if a maid you meet
Always free from pout and pet,
Ready smile and temper sweet,
Greet my little Margaret.
And if loved by all she be
Rightly, not a pampered pet,
Easily you then may see
'Tis my little Margaret.

Acrostic: Margaret

18.106 Maidens! If you love the tale

Source: inscribed into a copy of *The Hunting of the Snark* for the three Misses Drury, 1876

“Maidens! If you love the tale,
If you love the Snark,
Need I urge you, spread the sail,
Now, while freshly blows the gale,
In your ocean-barque!

“English Maidens love renown,
Enterprise, and fuss!”
Laughingly those Maidens frown;
Laughingly, with eyes cast down;
And they answer thus:

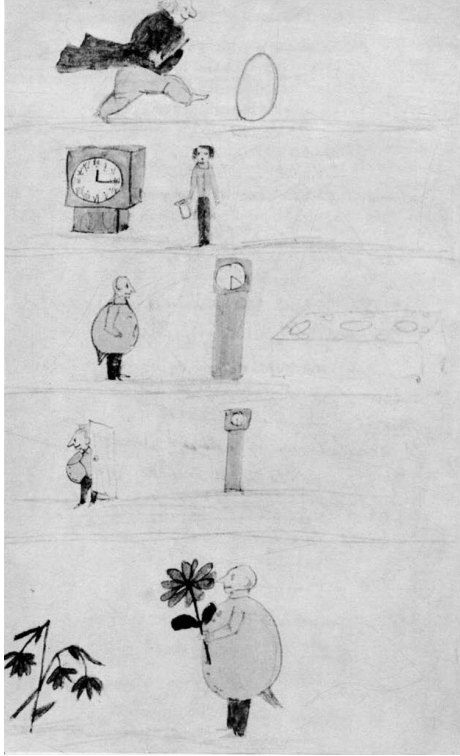
“English Maidens fear to roam.
Much we dread the dark;
Much we dread what ills might come,
If we left our English home,
Even for a Snark!”

Lewis Carroll.
Ap. 6. 1876.

Acrostic: Minnie, Ella, Emmie

18.107 Punctuality

Source: Useful and Instructive Poetry



Man naturally loves delay,
And to procrastinate;
Business put off from day to day
Is always done too late.

Let every hour be in it's place
Firm fixed, nor loosely shift,
And well enjoy the vacant space,
As though a birthday gift.

And when the hour arrives, be *there*,
Where'er that "there" may be;
Uncleanly hands or ruffled hair
Let no one ever see.

If dinner at "half past" be placed,
At "half past" then be dressed.
If at a "quarter past" make haste
To be down with the rest.

Better to be before your time,
Than e'er to be behind;

To ope the door while strikes the chime,
 That shews a punctual mind.

Moral:

“Let punctuality and care
 Seize every flitting hour,
So shalt thou cull a floweret fair,
 E’en from a fading flower.”

18.108 Matilda Jane

Source: Sylvie and Bruno Concluded (extracted)

The text of the original manuscript with minor differences (“I fear you’re blind”, “*all* my conversation”, “You never say a word again”, “For you are dumb”) can be found in *Letters*.

Matilda Jane, you never look
At any toy or picture-book:
I show you pretty things in vain—
You must be blind, Matilda Jane!

I ask you riddles, tell you tales,
But *all* our conversation fails:
You *never* answer me again—
I fear you’re dumb, Matilda Jane!

Matilda, darling, when I call,
You never seem to hear at all:
I shout with all my might and main—
But you’re *so* deaf, Matilda Jane!

Matilda Jane, you needn’t mind;
For, though you’re deaf, and dumb, and blind,
There’s *some one* loves you, it is plain—
And that is *me*, Matilda Jane!

18.109 Horrors

Source: Rectory Magazine

Methought I walked a dismal place
Dim horrors all around
The air was thick with many a face,
And black as night the ground.
I saw a monster come with speed,
It's face of grimmiest green,
On human beings used to feed,
Most dreadful to be seen.
I could not speak, I could not fly,
I fell down in that place,
I saw the monster's horrid eye,
Come leering in my face!
Amidst my scarcely-stifled groans
Amidst my moanings deep,
I heard a voice, "Wake! M^r Jones,
You're screaming in your sleep!"

B. B.

18.110 The Deserted Parks

Source: The Deserted Parks (with minor differences as noted); Notes by an Oxford Chiel

Parody on *The Deserted Village* by Oliver Goldsmith

The proposal to convert the Parks into Cricket-grounds

Notice from the Vice-Chancellor.

“A form of Decree to the following effect will be proposed:—”¹

1. That the Curators of the Parks be authorised to receive applications from Members of the University for Cricket-grounds in the Parks, and that public notice be issued to that effect, a time being fixed within which applications are to be sent in.

2. That at the expiration of such time the Curators be authorised to make Cricket-grounds, and allot them to Cricket-clubs or Colleges from which applications have been received, according to priority of application.

F. K. Leighton,
Vice-Chancellor.
April 29, 1867.

‘Solitudinem faciunt: Parcum appellat.’

Quoted from *Agricola*
by Tacitus (modified)

Museum! loveliest building of the plain
Where Cherwell winds towards the distant main;
How often have I loitered o’er thy green,
Where humble happiness endeared the scene!
How often have I paused on every charm,
The rustic couple walking arm in arm—
The groups² of trees, with seats beneath the shade
For prattling babes and whisp’ring lovers made—
The never-failing brawl, the busy mill
Where tiny urchins vied in fistic skill—
(Two phrases only have that dusky race
Caught from the learned influence of the place;
Phrases in their simplicity sublime,
‘Scramble a copper!’ ‘Please, Sir, what’s the time?’)
These round thy walks their cheerful influence shed;
These were thy charms—but all these charms are fled.
Amidst thy bowers the tyrant’s hand is seen,
And rude pavilions sadden all thy green;
One selfish pastime grasps the whole domain,
And half a faction swallows up the plain;
Adown thy glades, all sacrificed to cricket,
The hollow-sounding bat now guards the wicket;
Sunk are thy mounds in shapeless level all,

¹The whole introduction is missing in the original publication.

²group

Lest aught impede the swiftly rolling ball;
And trembling, shrinking from the fatal blow,
Far, far away thy hapless children go.

Ill fares the place, to luxury a prey.
Where wealth accumulates, and minds decay;
Athletic sports may flourish or may fade.
Fashion may make them, even as it has made;
But the broad Parks, the city's joy and pride,
When once destroyed can never be supplied!

Ye friends to truth, ye statesmen, who survey
The rich man's joys increase, the poor's decay,
'Tis yours to judge, how wide the limits stand
Between a splendid and a happy land.
Proud swells go by with laugh of hollow joy.
And shouting Folly hails them with 'Ahoy!'
Funds even beyond the miser's wish abound,
And rich men flock from all the world around.
Yet count our gains. This wealth is but a name,
That leaves our useful products still the same.
Not so the loss. The man of wealth and pride
Takes up a space that many poor supplied;
Space for the game, and all its instruments,
Space for pavilions and for scorers' tents;
The ball, that raps his shins in padding cased,
Has worn the verdure to an arid waste;
His Park, where these exclusive sports are seen,
Indignant spurns the rustic from the green;
While through the plain, consigned to silence all,
In barren splendour flits the russet ball.

In peaceful converse with his brother Don,
Here oft the calm Professor wandered on;
Strange words he used—men drank with wondering ears
The languages called 'dead,' the tongues of other years.
(Enough of Heber! Let me once again
Attune my verse to Goldsmith's liquid strain.)
A man he was to undergraduates dear.
And passing rich with forty pounds a year.
And so, I ween, he would have been till now,
Had not his friends ('twere long to tell you how)
Prevailed on him, Jack-Horner-like, to try
Some method to evaluate his pie,
And win from those dark depths, with skilful thumb,
Five times a hundredweight of luscious plum—
Yet for no thirst of wealth, no love of praise,
In learned labour he consumed his days!

O luxury! thou cursed by Heaven's decree.
How ill exchanged are things like these for thee!
How do thy potions, with insidious joy,
Diffuse their pleasures only to destroy;
Iced cobbler, Badminton, and shandy-gaff,

Rouse the loud jest and idiotic laugh;
 Inspired by them, to tipsy greatness grown.
 Men boast a florid vigour not their own;
 At every draught more wild and wild they grow;
 While pitying friends observe 'I told you so!'
 Till, summoned to their post, at the first ball,
 A feeble under-hand, their wickets fall.
 Even now the devastation is begun.
 And half the business of destruction done;
 Even now, methinks while pondering here in pity,
 I see the rural Virtues leave the city.
 Contented Toil, and calm scholastic Care,
 And frugal Moderation, all are there;
 Resolute Industry that scorns the lure
 Of careless mirth—that dwells apart secure—
 To science gives her days, her midnight oil,
 Cheered by the sympathy of others' toil—
 Courtly Refinement, and that Taste in dress
 That brooks no meanness, yet avoids excess—
 All these I see, with slow reluctant pace
 Desert the long-beloved and honoured place!
 While yet 'tis time, Oxonia, rise and fling
 The spoiler from thee: grant no parleying!
 Teach him that eloquence, against the wrong,
 Though very poor, may still be very strong;
 That party-interests we must forego,
 When hostile to 'pro bono publico';
 That faction's empire hastens to its end,
 When once mankind to common sense attend;
 While independent votes may win the day
 Even against the potent spell of 'Play!'

May, 1867.

18.111 My dear Christie

Source: sent to Sophia Christina “Christie” Taylor, October 1869?

My dear Christie,
I greatly fear
I'm wanted here,
Which makes it clear
I can't appear
At your “pour rire”—
Would I were freer!
So, with a tear
(At which don't sneer),
I am, my dear,
Your most sincere
C. L. Dodgson

18.112 My First has no beard

Source: written for Alexandra Kitchin, perhaps around 1880

My First has no beard—but its whiskers abound:
My Next has a beard—but no eyes:
My whole has two eyes—and a nourishing sound
That reminds one of puddings & pies.

Lewis Carroll (written for Xie)

Solution: A kit, chin: A. Kitchin

18.113 My First heads all atrocity heartrending

Source: sent to Alice Maud Kitchin, February 24, 1880

My First heads all atrocity heartrending:
My Next to finish it is ever tending:
My Third in Town its merry life is spending:
My Fourth is the beginning of an ending.
My Whole is one of those perplexing misses,
Where looks of Youth encourage friendly kisses,
And yet where Age is sober fact, & this is
Destruction to such transitory blisses!

Solution: AT(rocitY), (atrocitY), (t)OW(n), EN(ding): Atty Owen

18.114 My First is a berry

Source: letter to Olive, Ruth, and Violet Butler, December 29, 1892

My First is a berry:
My Second is sorrow:
My Third from the cherry
Its sweetness doth borrow:
My Whole is too merry
To care for the morrow!

There is another verse-riddle in this letter:

VIOLET
VIOLET
VIOLET
VIOLET
VIOLET

To find the eldest of the pets.
Go search among the violets!

Solution to first verse-riddle: olive, ruth, violet: Olive, Ruth, Violet

18.115 Four Riddles. No. IV

Source: cyclostyled 1878 (as “A Charade”, with minor differences as noted and illustrations); Rhyme? and Reason?

⌈NB Five Pounds will be given to any one who succeeds in writing an original poetical Charade, introducing the line “My First is followed by a bird,” but making no use of the answer to this Charade.

*Ap. 8, 1878 (signed) Lewis Carroll*¹

My First is singular at best:
More plural is my Second:
My Third is far the pluralest—
So plural-plural, I protest
It scarcely can be reckoned!

My First is followed by a bird:
My Second by believers
In magic art: my simple Third
Follows, too often, hopes absurd
And plausible deceivers.

My First to get at wisdom tries—
A failure melancholy!
My Second men ⌈revered² as wise:
My Third from heights of wisdom flies
To depths of frantic folly.

My First is ageing day by day:
My Second's age is ended:
My Third enjoys an age, they say,
That never seems to fade away,
Through centuries extended.

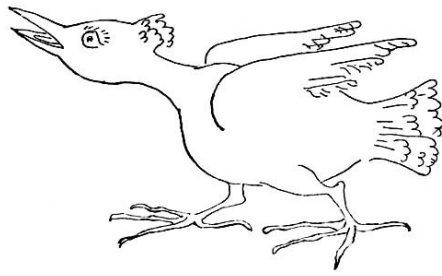
My Whole? I need a poet's pen
To paint her myriad phases:
The monarch, and the slave, of men—
A mountain-summit, and a den
Of dark and deadly mazes—
A flashing light—a fleeting shade—
Beginning, end, and middle
Of all that human art hath made
Or wit devised! Go, seek *her* aid,
If you would ⌈read³ my riddle!



¹only in original

²revere

³guess



Solution: I-Magi-Nation, Imagination [“I” is followed by “J”, and “jay” is a bird]

18.116 A Riddle

Source: sent to Miss Gaynor Simpson, 1880

My first lends his aid when I plunge into trade:
My second in jollifications:
My whole, laid on thinnish, imparts a neat finish
To pictorial representations.

Solution: Co, pal: copal. Alternative solutions given by Carroll: gain, Or: Gaynor;
sea, weed: seaweed

18.117 My First we call her when her belt is on

Source: written for Gertrude Chataway, perhaps about 1875

My First we call her when her belt is on
My Next she is to every Oxford don:
O happy Sandown when my Whole is gone!

Solution: girt, rude: Gertrude

18.118 My First's a drink resembling wine

Source: written for Alexandra Kitchin, February 23, 1880

My First's a drink resembling wine:
My Second closely follows nine:
My Third doth sentences combine:
My Fourth is hung upon "the Line":
My Whole's a victim I design
To photograph when days are fine.

Feb. 23. 1880

Solution: ale, X, and, R.A.: Alexandra

18.119 Those Horrid Hurdy-Gurdies!

Source: The College Rhymes, November 1861

Parody on *My mother bids me bind my hair* by Anne Hunter, *My lodging is on the cold, cold ground* (*The Rivals*) by William Davenant, *Ever of thee* by George Linley

A Monody, by A Victim

“My mother bids me bind my hair,”
And not go about such a figure;
It’s a bother, of course, but what do I care?
I shall do as I please when I’m bigger.
“My lodging is on the cold, cold ground,”
As the first-floor and attics were taken.
I tried the garret but once, and found
That my wish for a change was mistaken.
“Ever of thee!” yes, “Ever of thee!”
They chatter more and more,
Till I groan aloud, “Oh! let me be!
“I have heard it all before!”
“Please remember the organ, sir;”
What? hasn’t he left me yet?
I promise, good man; for its tedious burr
I never can forget.

Ch. Ch. B. B.

18.120 My Sukie! He hath bought, yea, Muggle's self

Source: Wilhelm von Schmitz (extracted, with differences in printed version as noted)

My Sukie! he hath bought, yea, Muggle's self,
Convinced at last of deeds unjust and foul,
The licence of a vacant public-house,
Which, with it's chattels, site, and tenement,¹
He hands us over,—we are licensed here,
Even in this document, to sell to all
Snuff, pepper, vinegar, to sell to all
Ale, porter, spirits, but—observe you well—
“*Not* to be drunk upon the premises!”
Oh, Sukie! heed it well! in other places,
Even as thou listest, be intoxicate:
Drink without limit whiles thou art abroad,
But never, never, in thy husband's house!

¹This line and all the following are in the short version replaced by:

We are licensed here to sell to all,
Spirits, porter, snuff, and ale!

18.121 Near Albury, so runs my lay

Source: written for Alice Pares, September 4, 1871 and inscribed into a copy of *Through the Looking-Glass*, Christmas 1871

Near Albury, so runs my lay,
All in a meadow green,
One desperately sultry day,
A weeping MAID was seen.
“Oh for a parasol!” she cried,
“Or a balloon, to go
And dwell on some far MOUNTAIN-side,
Whose peak is crowned with snow!
“I roam this FIELD with weary tread,
Heavy as roly-poly—
This field where (as some Poet said)
‘The lowing herd winds slowly.’”
Just then a BOY runs up to beg—
An orphan (so he pleads)
Who, deaf and dumb, with but one leg,
Two aged parents feeds.
“Little have I to give or lend,”
Quoth she: “my wealth is small—
ONE SHILLING’S WORTH OF HALFPENCE, friend.
Please do not take it all!”
The orphan snatched the purse and fled,
Not at the pace of snails,
But like a TRAIN that goes ahead
And skims along the rails!

Solution: Alice Pares; alp, lea, imposter, change, express

18.122 “No mind!” the little maiden cried

Source: sent to Janet Merriman, December 17, 1870

“No mind!” the little maiden cried
 In half-indignant tone,
“To think that I should be denied
 A mind to call my own!”
And echo heard, and softly sighed (or seemed to sigh) “My own!”
“No mind!” the little maiden said,
 “You’d think it, I suppose!
And yet you know I’ve got a head
 With chin, cheek, mouth, eye, nose—”
And echo heard, and sweetly said (or seemed to say) “I knows!”
“You have no mind to be unkind,”
 Said echo in her ear:
“No mind to bring a living thing
 To suffering or fear.
For all that’s bad, or mean, or sad, you have no mind, my dear.”
Then if the friend whom you deride,
 To all your merits blind,
Should say that, though he’s tried and tried,
 Your mind he *cannot* find . . .
’Tis but a jest for Christmas-tide, so, Janet, *never mind!*

18.123 No, no! I cannot write a line

Source: sent to Margaret Cunnyngame, April 10, 1871

No, no! I cannot write a line,
I cannot write a word:
The thoughts I think appear in ink
So shockingly absurd.

To wander in an empty cave
Is fruitless work, 'tis said:
What must it be for one like me
To *wander in his head*?

You say that I'm "to write a verse"—
O Maggie, put it quite
The other way, and kindly say
That I'm "averse to write"!

C. L. D.

18.124 Now what's the most appropriate thing

Source: The Guildford Gazette Extraordinary (extracted, connected; authorship not entirely certain)

Parody on *Hoop de dooden doo* by A. Nish

Now what's the most appropriate thing
To do whilst waiting at the wing?
Of course you guess the answer?—Synge.
And I hope the tune will do!

I sing the joys of married life,
Which Pillicoddy finds so rife.
In fact, good folk, you'll find a wife
is—Hoop de dooden doo!

Her bills! Ten pounds for boots, I see:
And six for gloves, and—oh dear me!
Here's just one hundred ninety-three
for—Hoop de dooden doos!

Commissions. 'Twenty yards of stuff
To pattern—try and match this cuff—
And—just bring home—another Muff!
That's Hoop de dooden doo!

The little kids! It seemed a treat
At first to see them frisk and bleat—
But now I find that they—*can—eat—*
like—Hoop de dooden doo!

So, gin a body meet a body
And make a match, some day you'll modi-
fy your views like Pillicoddy,
Hoop de dooden doo!

Sir, are you married? Yes, you sigh!
Well, 'Happy man!' I make reply.
What, single? 'Lucky dog!' say I,
Hoop de dooden doo!

Quoted from *Comin thro' the Rye* by Robert Burns

18.125 O come to me at two today

Source: letter to August Harcourt, March 5, 1872

O come to me at two today,
Harcourt, come to me!
And show me how my dark room may
Illuminated be.
Though gondolas may lightly glide,
For me, unless you come,
No friend remains but cyanide
Of pale potassium!
Though maidens sing sweet barcaroles
(Whatever they may be)
To captivate Lee's-Readers' souls,
Yet, Harcourt, come to me!
Yes, come to me at two today,
Or else at two tomorrow,
Nor leave thy friend to pine away
In photographic sorrow!

18.126 The Ligniad, in two Books

Source: written 1853 for George Girdlestone Woodhouse

Book I

Of man in stature small yet deeds sublime,
Who, even from his tender toothless years,
Boldly essayed to swallow and digest
Whole tomes of massive learning, ostrich-like,
Sing, classic Muse! and speed my daring quill,
Whiles that in language all too poor and weak
For such high themes, I tremblingly recount
To listening world's an hero's history.

Nursed in a cradle framed of Doric reeds,
In a fly-leaf of Scapula enwrapped,
Fed on black-broth (oh classic privilege!)
Seasoned with Attic salt, the infant throve.
Small taste had he for toys of infancy;
The coral and the bells he put aside;
But in his cradle would soliloquise,
And hold high commune with his inner man
In Greek Iambics, aptly modified.
A smile sardonic wore he in his joy;
And in his sorrow shed no mawkish tear;
ὄμοι πεπληγμαι was his only cry,
And with much "smiting of the breast," he wrestled,
And would have rent his hair, but that he had none.

A merry boy the infant hath become;
He leaps and dances in the light of life,
With his shrill laughter rings the ancient house,
The stairs reecho to his tread, as light
As when beneath the solemn oaks at eve
The tricky fairies in their revelry
Wheel in wild dance, nor mark the dewy grass.
Yet even now upon that chiselled brow,
Lately so bright and fair, a Shadow dwells;
It is the Ghost of Latin yet unlearnt,
And dark forebodings of the Greek-to-come!
What can his grief be? he has all he loves,
A Scapula, an "Ainsworth's Dictionary,"
And "all the Greek, and all the Latin authors—"
Then wherefore, moody boy, that crystal tear?
"It is the thought," methinks I hear him moan,
Clasping with quivering hands his aching brow,
"That certain Plays Euripides hath written
Are lost, are lost, and *I* shall never see them!"

"Homer may come, and Homer may go,

Quoted from
Agamemnon by
Aeschylus

“And be shifted, like lumber, from shelf to shelf,
“But I will read no Greek, no Greek,
“Until the Lost Dramas I’ve found for myself!”
Thus, all unconscious, rhymed his agony,
Adapting to the anguish of the hour
A fragment from our Poet Laureate.

Book II

Sing ye, who list, the deeds of ancient might,
In tournament, or deadlier battle-fray:
Sing ye the havoc and the din of war,
A nobler and a gentler theme be mine!
Through twice nine years eventless passed his life,
Save that each day some large addition brought
To that vast mass of learning stored within.
But now bright Fancy thrilled his raptured mind,
And poised her wings for flight, yet ere she rose,
With ponderous Sense he loaded her to Earth;
And the full flood of Poesy within
He primly tortured into wooden verse:

“Glory of the ancient time,
Classic fount of other days!
How shall I, in modern rhyme
Fitly sing thy praise?
It chanced, the other day,
A tattered beggar asked an alms of me:
“Bestow a trifle, sir, in charity!”

I turned and said
“Good man,
I have but sixpence in my purse
Yet rather than
In hunger you should pine,
And so your misery grow worse,
It shall be thine,
If you’ll be only good enough to say
That, in
Latin.”

Was this encouragement to classic lore?
Say rather, more!
So may my course for ever smoothly run,
And onward swell
In that smooth channel where it hath begun:
Still climbing, climbing up the classic heights
Where Fame doth dwell
And still
I will
From month to month, from week to week,
Devote my drowsy days and wakeful nights

To Greek.”

Such were the fancies of his lighter mood—
His lighter mood, which very seldom came:
But now my Muse, approaching higher themes,
Shrinks from the task in trembling, for the field,
Green & smooth-shaven, spreads before her sight;
The wickets pitched, the players ranged around;
And he, the hero, in his glory there;
A sight to dream of, not to write about!
Then fare thee well, greatest of little men,
In Greek, in Latin, in the cricket-field:
Great as a bowler, greater as a bat,
But as a “short slip” greater yet than that!

CLD. May 23. 1853

18.127 To "Hallie"

Source: sent to Clara Halyburton Cunnyngame, January 1868

Oh Caledonian Maiden!
Oh Hallie shy and still!
When'ere I hear sweet music,
Of you my thoughts will fill.
I shall think of those "half hours"
In Ripon spent with you,
I shall dream of great Beethoven
And of Mendelssohn so true.
If "sleepless nights" assail me,
And I toss about in vain,
The memory of Heller
Will make me rest again.
A chord of "Caller Herrin;"
A note of "Home sweet Home,"
A bar of Scotland's "Blue Bells,"
Will make my spirit roam
To a Drawing-room in the Crescent
Where those sweet sounds I heard,
And where I fain would follow
If I were *but* a bird.
Then Hallie! dear Childe Hallie!
Be to your "talent" *true*,
And sometimes when you're playing
Think *I* am watching you.—
Think how I *loved* your Music,
Not for itself *alone*,
But for the *hands* that played it
The *mind* that felt its tone.
And now farewell "Childe Hallie!"
Though *I* am growing old,
Fond mem'ry still will charm me,
To *you* I'll ne'er grow cold.

18.128 Ode to Damon

Source: Mischmasch (with different punctuation); The College Rhymes, November 1861

(From Chloë, who Understands His Meaning.)

Oh, do not forget the day when we met
At the fruiterer's shop in the city:
When you *said* I was plain and *excessively* vain,
But I knew that you *meant* I was pretty.
Recollect, too, the hour when I purchased the flour
(For the dumplings, you know) and the suet;
Whilst the apples I told my dear Damon to hold,
(Just to see if you knew how to do it.)
Then recall to your mind how you left *me* behind,
And went off in a 'bus with the pippins;
When you *said* you'd forgot, but I knew you had *not*;
(It was merely to save the odd threepence!)
Don't forget your delight in the dumplings that night,
Though you *said* they were tasteless and doughy:
But you winked as you spoke, and I saw that the joke
(*If it was one*) was meant for your Chloë!
Then remember the day when Joe offered to pay
For us all at the Great Exhibition;
You proposed a short cut, and we found the thing shut,
(We were two hours too late for admission.)
Your "short cut," dear, we found took us *seven miles round*,
(And Joe said *exactly* what we did:)
Well, *I* helped you out then—it was just like you men—
Not an atom of sense when it's needed!
You said "What's to be done?" and *I* thought you in fun,
(Never *dreaming* you were such a ninny,)
"*Home* directly!" said I, and *you* paid for the fly,
(And I *think* that you gave him a guinea.)
Well, *that* notion, you said, had not entered your head:
You proposed, "The best thing, as we're come, is
(Since it opens again in the morning at ten)
To wait"—*Oh, you prince of all dummies!*
And when Joe asked you "Why, if a man were to die,
Just as you ran a sword through his middle,
You'd be hung for the crime?" and you said "Give me time!"
And brought to your Chloë the riddle—
Why, remember, you dunce, how I solved it at once—
(The question which Joe had referred to you,)
Why, I told you the cause was "the force of the laws,"

And you said "*It had never occurred to you!*"
This instance will show that your brain is too slow,
And (though your exterior is showy),
Yet so arrant a goose can be no sort of use
To society—*come to your Chloë!*
You'll find *no one*, like me, who can manage to see
Your meaning, you talk so obscurely:
Why, if once *I* were gone, how *would* you get on?
Come, you know what I mean, Damon, surely?

⌊*Ch. Ch., Oxford. B. B.*¹

¹Only in *College Rhymes*

18.129 Oh pudgy podgy pup

Source: sent to C. H. O. Daniel, November 23, 1880; also set up as proof by Daniel

Oh pudgy podgy pup!
Why *did* they wake you up?
Those crude nocturnal yells
Are *not* like silver bells:
Nor ever would recall
Sweet Music's 'dying fall.'
They rather bring to mind
The bitter winter wind
Through keyholes shrieking shrilly
When nights are dark & chilly:
Or like some dire duett,
Or quarrelsome quartette,
Of cats who chant their joys
With execrable noise,
And murder Time & Tune
To vex the patient Moon!

Quoted from *Twelfth
Night* by William
Shakespeare

18.130 Oh ye whose hearts have nerves

Source: Moans from the Miserable (extracted)

Oh ye whose hearts have nerves,
Oh ye whose eyes have tears,
It is not your love you are wearing out,
But living victim's ears!

18.131 Tottles

Source: Sylvie and Bruno Concluded (extracted, connected)

“One thousand pounds per annum
Is not so bad a figure, come!”
Cried Tottles. “And I tell you, flat,
A man may marry well on that!
To say ‘the Husband needs the Wife’
Is *not* the way to represent it.
The crowning joy of Woman’s life
Is *Man!*” said Tottles (and he meant it).

The blissful Honey-moon is past:
The Pair have settled down at last:
Mamma-in-law their home will share,
And make their happiness her care.
“Your income is an ample one;
Go it, my children!” (And they went it).
“I *rayther* think this kind of fun
Won’t last!” said Tottles (and he meant it).

They took a little country-box—
A box at Covent Garden also:
They lived a life of double-knocks,
Acquaintances began to call so:
Their London house was much the same
(It took three hundred, clear, to rent it):
“Life is a very jolly game!”
Cried happy Tottles (and he meant it).

‘Contented with a frugal lot’
(He always used that phrase at Gunter’s),
He bought a handy little yacht—
A dozen serviceable hunters—
The fishing of a Highland Loch—
A sailing-boat to circumvent it—
“The sounding of that Gaelic ‘och’
Beats *me!*” said Tottles (and he meant it).

But oh, the worst of human ills
(Poor Tottles found) are ‘little bills’!
And, with no balance in the Bank,
What wonder that his spirits sank?
Still, as the money flowed away,
He wondered how on earth she spent it.
“You cost me twenty pounds a day,
At least!” cried Tottles (and he meant it).

She sighed. “Those Drawing Rooms, you know!
I really never thought about it:
Mamma declared we ought to go—

We should be Nobodies without it.
 That diamond-circlet for my brow—
 I quite believed that *she* had sent it,
 Until the Bill came in just now——”
 “*Viper!*” cried Tottles (and he meant it).
 Poor Mrs. T. could bear no more,
 But fainted flat upon the floor.
 Mamma-in-law, with anguish wild,
 Seeks, all in vain, to rouse her child.
 “Quick! Take this box of smelling-salts!
 Don’t scold her, James, or you’ll repent it,
 She’s a *dear* girl, with all her faults——”
 “She *is!*” groaned Tottles (and he meant it).
 “I was a donkey,” Tottles cried,
 “To choose your daughter for my bride!
 ’Twas *you* that bid us cut a dash!
 ’Tis *you* have brought us to this smash!
 You don’t suggest one single thing
 That can in any way prevent it——
 Then what’s the use of arguing?
Shut up!” cried Tottles (and he meant it).
 “And, now the mischief’s done, perhaps
 You’ll kindly go and pack your traps?
 Since *two* (your daughter and your son)
 Are Company, but *three* are none.
 A course of saving we’ll begin:
 When change is needed, *I’ll* invent it:
 Don’t think to put *your* finger in
This pie!” cried Tottles (and he meant it).
 See now this couple settled down
 In quiet lodgings, out of town:
 Submissively the tearful wife
 Accepts a plain and humble life:
 Yet begs one boon on bended knee:
 ‘My ducky-darling, don’t resent it!
 Mamma might come for two or three——’
 ‘NEVER!’ yelled Tottles. And he meant it.

18.132 Phantasmagoria

Source: Phantasmagoria (without images, with minor differences as noted); Rhyme? and Reason? (different editions differ in punctuation)

Canto I. *The Dryfynq.*

One ¹winter night, at half-past nine,
Cold, tired, and cross, and muddy
I had come home, too late to dine,
And supper, with cigars and wine,
Was waiting in the study.

There was a strangeness in the room,
And Something ²white and wavy
Was standing near me in the gloom—
I took it for the carpet-broom
Left by that careless slavey.

But presently the Thing began
To ³shiver and to sneeze:
On which I said “Come, come, my man!
That’s a most inconsiderate plan.
Less noise there, if you please!”

“I’ve caught a cold,” the Thing replies,
“Out there upon the landing.”
I turned to look in some surprise,
And there, before my very eyes,
A little Ghost was standing!

He trembled when he caught my eye,
And got behind a chair.
“How came you here,” I said, “and why?
I never saw a thing so shy.
Come out! Don’t shiver there!”

He said “I’d gladly tell you how,
And also tell you why;
But” (here he gave a little bow)
“You’re in so bad a temper now,
You’d think it all a lie.

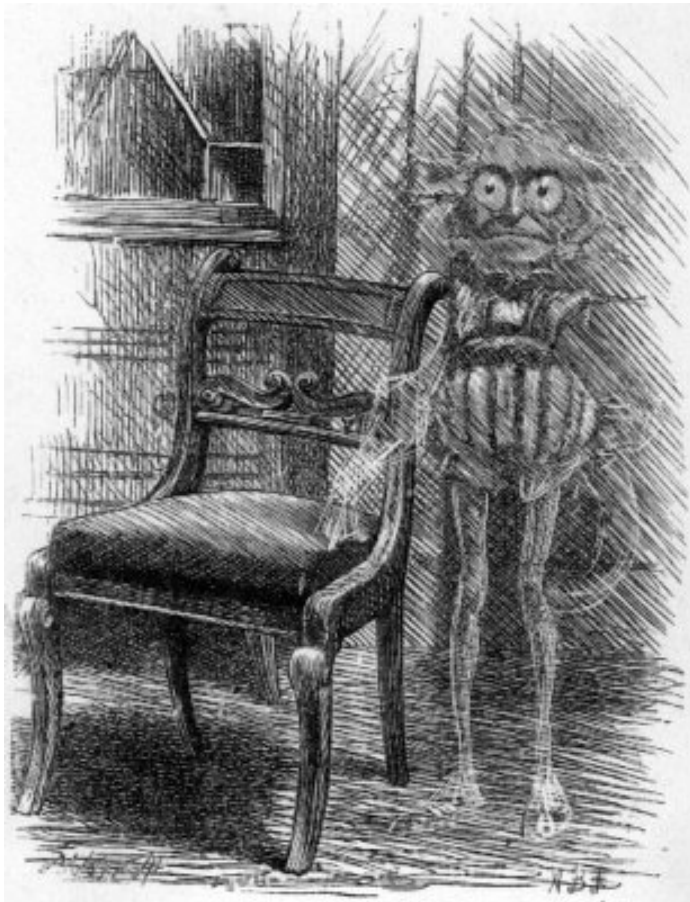
“And as to being in a fright,
Allow me to remark
That Ghosts have just as good a right,
In every way, to fear the light,
As Men to fear the dark.”

“No plea,” said I, “can well excuse

¹wintry

²thin

³shudder



Such cowardice in you:
For Ghosts can visit when they choose,
Whereas we Humans ca'n't refuse
To grant the interview."

He said "A flutter of alarm
Is not unnatural, is it?
I really feared you meant some harm:
But, now I see that you are calm,
Let me explain my visit.

⌊ "Houses are classed, I beg to state,⁴
According to the number
Of Ghosts that they accommodate:
(The Tenant merely counts as *weight*,
With Coals and other lumber).

"This is a 'one-ghost' house, and you
When you arrived last summer,
May have remarked a Spectre who
Was doing all that Ghosts can do
To welcome the new-comer.

"In Villas this is always done—
However cheaply rented:
For, though of course there's less of fun
When there is only room for one,
Ghosts have to be contented.

⌊ That Spectre⁵ left you on the Third—
Since then you've not been haunted:
⌊ For⁶, as he never sent us word,
'Twas quite by accident we heard
That any one was wanted.

"A Spectre has first choice, by right,
In filling up a vacancy;
Then Phantom, Goblin, Elf, and Sprite—
If all these fail them, they invite
The nicest Ghoul that they can see.

"The Spectres said the place was low,
And that you kept bad wine:
So, as a Phantom had to go,
And I was first, of course, you know,
I couldn't well decline."

"No doubt," said I, "they settled who
Was fittest to be sent:
Yet still to choose a brat like you,
To haunt a man of forty-two,
Was no great compliment!"

⁴This and the following two verses only appears in *Rhyme? and Reason?*

⁵The last ghost

⁶But

“I’m not so young, Sir,” he replied,
“As you might think. The fact is,
In caverns by the water-side,
And other places that I’ve tried,
I’ve had a lot of practice:

“But I have never taken yet
A strict domestic part,
And in my flurry I forget
The Five Good Rules of Etiquette
We have to know by heart.”

My sympathies were warming fast
Towards the little fellow:
He was so utterly⁷ aghast
At having found a Man at last,
And looked so scared and yellow.

“At least,” I said, “I’m glad to find
A Ghost is not a *dumb* thing!
But pray sit down: you’ll feel inclined
(If, like myself, you have not dined)
To take a snack of something:

“Though, certainly, you don’t appear
A thing to offer *food* to!
And then I shall be glad to hear—
If you will say them loud and clear—
The Rules that you allude to.”

“Thanks! You shall hear them by and by
This *is* a piece of luck!”

“What may I offer you?” said I.
“Well, since you *are* so kind, I’ll try
A little bit of duck.

“*One* slice! And may I ask you for
Another drop of gravy⁸?”

I sat and looked at him in awe,
For certainly I never saw
A thing so white and wavy.

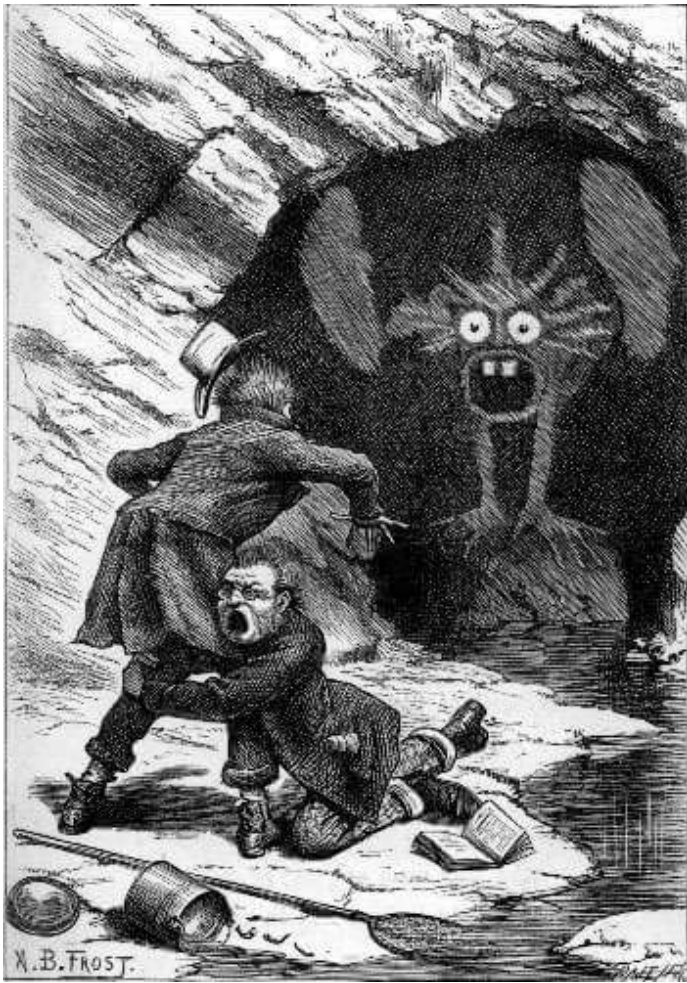
And still he seemed to grow more white,
More vapoury, and wavier—
Seen in the dim and flickering light,
As he proceeded to recite
His “Maxims of Behaviour.”

Canto II. *Of Five Rules.*

“My First—but don’t suppose,” he said,
“I’m setting you a riddle—

⁷very much

⁸A little drop more gravy



“In caverns by the water-side”



Is—if your Victim be in bed,
 Don't touch the \sphericalangle curtains⁹ at his head,
 But take \sphericalangle them¹⁰ in the middle,
 “And wave them slowly \sphericalangle in and out¹¹,
 \sphericalangle While drawing them asunder;¹²
 And in a minute's time, \sphericalangle no doubt,¹³
 \sphericalangle He'll raise his head and look about¹⁴
 \sphericalangle With eyes of wrath and wonder.¹⁵

“And here you must on no pretence
 Make the first observation.
 Wait for the Victim to commence:
 No Ghost of any common sense
 Begins a conversation.

“If he should say ‘*How came you here?*’
 (The way that *you* began, Sir,)
 In such a case your course is clear—
 ‘ \sphericalangle *On the bat's back,*¹⁶ *my little dear!*’
 \sphericalangle Is the appropriate¹⁷ answer.

“ \sphericalangle If after this he says no more,¹⁸

⁹curtain

¹⁰it

¹¹to and fro

¹²As if the wind was at it

¹³or so

¹⁴He'll be awaik—and this you'll know

¹⁵By hearing him say ‘*Drat it!*’

¹⁶Just as you please

¹⁷Or any other

¹⁸But if the wretch says nothing more



You'd best perhaps curtail your
Exertions—go and shake the door,
And then, if he begins to snore,
You'll know the thing's a failure.

“By day, if he should be alone—
At home or on a walk—
You merely give a hollow groan,
To indicate the kind of tone
In which you mean to talk.

“But if you find him with his friends,
The thing is rather harder.
In such a case success depends
On picking up some candle-ends,
Or butter, in the larder.

“With this you make a kind of slide
(It answers best with suet),
On which you must contrive to glide,
And swing yourself from side to side—
One soon learns how to do it.

“The Second tells us what is right
In ceremonious calls:—
'*First burn a blue or crimson light*'
(A thing I quite forgot to-night),
'*Then scratch the door or walls.*'”

I said “You'll visit *here* no more,
If you attempt the Guy.
I'll have no bonfires on *my* floor—
And, as for scratching at the door,
I'd like to see you try!”

“The Third was written to protect
The interests of the Victim,
And tells us, as I recollect,
To treat him with a grave respect,
And not to contradict him.”

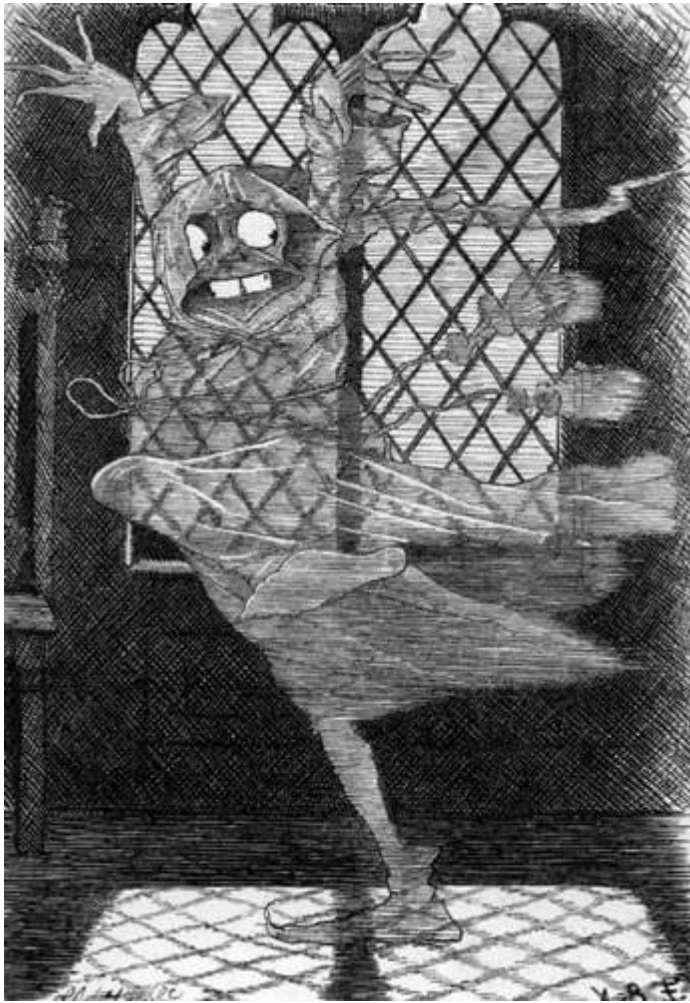
“That's plain,” said I, “as Tare and Tret,
To any comprehension:
I only wish *some* Ghosts I've met
Would not so *constantly* forget
The maxim that you mention!”

“Perhaps,” he said, “*you* first transgressed
The laws of hospitality:
⌊All Ghosts instinctively detest¹⁹
⌊The Man that fails to treat his guest²⁰
With proper cordiality.

“If you address a Ghost as ‘Thing!’

¹⁹You'll mostly come off second-best

²⁰When you omit to treat your guest



“And swing yourself from side to side”



Or strike him with a hatchet,
 He is permitted by the King
 To drop all *formal* parleying—
 And then you're *sure* to catch it!

"The Fourth prohibits trespassing
 Where other Ghosts are quartered:
 And those convicted of the thing
 (Unless when pardoned by the King)
 Must instantly be *slaughtered*.⁷²¹

"That simply means 'be cut up small':⁷²²
 Ghosts soon unite anew:
 The process scarcely hurts at all—
 Not more than when *you're* what you call
 'Cut up' by a Review.

"The Fifth is one you may prefer
 That I should quote entire:—
The King must be addressed as 'Sir.'
This, from a simple courtier,
Is all the Laws require:

"*But, should you wish to do the thing*
With out-and-out politeness,
Accost him as 'My Goblin King!'
And always use, in answering,
The phrase 'Your Royal Whiteness!'

"I'm getting rather hoarse, I fear,
 After so much reciting:
 So, if you don't object, my dear,
 We'll try a glass of bitter beer—
 I think it looks inviting."

Canto III. Scarmogef.

"And did you really walk," said I,
 "On such a wretched night?
 I always fancied Ghosts could fly—
 If not exactly in the sky,
 Yet at a fairish height."
 "It's very well," said he, "for Kings
 To *soar*⁷²³ above the earth:

⁷²¹Additional verse in *Phantasmagoria*:

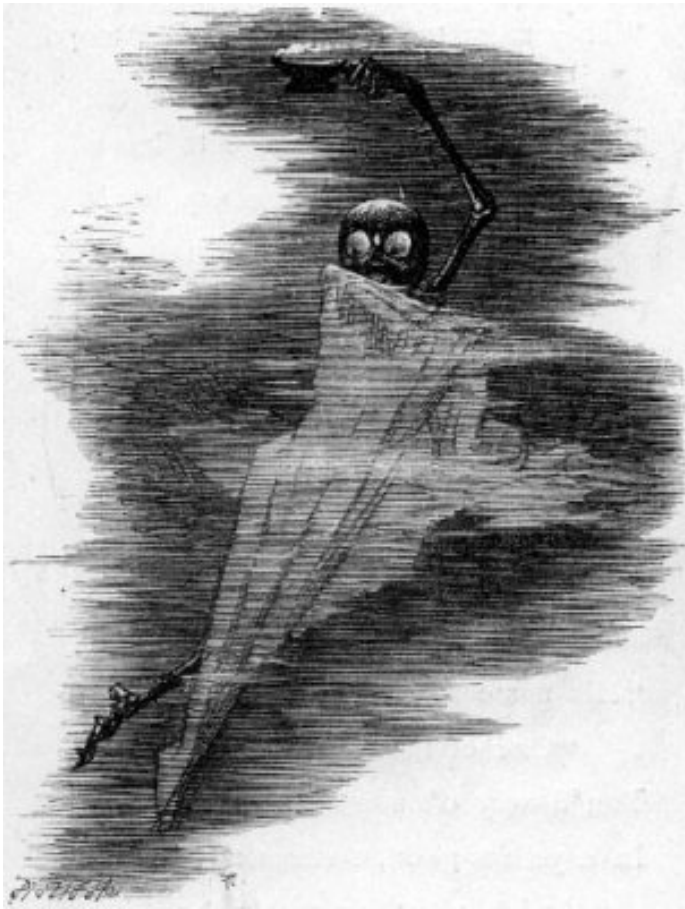
I said "That rule appears to me
 Wanting in common sense—"
 "'To slaughter' does not mean," said he,
 "'To kill' with us, and that, you see,
 Makes a *great* difference.

⁷²²In fact we're simply cut up small

⁷²³fly



But Phantoms often find that wings—
Like many other pleasant things—
Cost more than they are worth.
“Spectres of course are rich, and so
Can buy them from the Elves:
But *we* prefer to keep below—
They’re stupid company, you know.
For any but themselves:



“For, though they claim to be exempt
From pride, they treat a Phantom
As something quite beneath contempt—
Just as no Turkey ever dreamt
Of noticing a Bantam.”

“They seem too proud,” said I, “to go
To houses such as mine.
Pray, how did they contrive to know
So quickly that ‘the place was low,’
And that I ‘kept bad wine’?”

“Inspector Kobold _{came to}²⁴ you—”

The little Ghost began.
Here I broke in—“Inspector who?
Inspecting Ghosts is something new!
Explain yourself my man!”

“His name is Kobold,” said my guest:
“One of the Spectre order:
You’ll very often see him dressed
In a yellow gown, a crimson vest,
And a night-cap with a border.

“He tried the Brocken business first,
But caught a sort of chill;
So came to England to be nursed,
And here it took the form of *thirst*,
Which he complains of still.

_{Port-wine, he says, when rich and sound,}²⁵
Warms his old bones like nectar:
And as the inns, where it is found,
Are his especial hunting-ground,
We call him the *Inn-Spectre*.”

_{I bore it—bore it like a man—}²⁶
_{This agonizing witticism!}²⁷
And nothing could be sweeter than
My temper, till the Ghost began
Some most provoking _{criticism}²⁸.

“Cooks need not be indulged in waste;
Yet still you’d better teach them
Dishes should have *some sort* of taste.
Pray, why are all the cruets placed
Where nobody can reach them?

“That man of yours will never earn
His living as a waiter!
Is that queer *thing* supposed to burn?
(It’s far too dismal a concern
To call a Moderator).

“The duck was tender, but the peas
Were very much too old:
And just remember, if you please,

²⁴called on

²⁵In *Phantasmagoria*, this verse is:

“The remedy, *he says*, is port,
(Which he compares to nectar.)
And, as the inns where it is bought
Have always been his chief resort,
We call him the ‘*Inn-Spectre*.’”

²⁶I bear as well as any man

²⁷The washiest of witticisms

²⁸criticisms



“And here it took the form of *thirst*”

The *next* time you have toasted cheese,
 Don't let them send it cold.

"You'd find the bread improved, I think,
 By getting better flour:
 And have you anything to drink
 That looks a *little* less like ink,
 And isn't *quite* so sour?"

Then, peering round with curious eyes,
 He muttered "Goodness gracious!"
 And so went on to criticise—
 "Your room's an inconvenient size:
 It's neither snug nor spacious.

"That narrow window, I expect,
 Serves but to let the dusk in—"
 "But please," said I, "to recollect"²⁹
 'Twas fashioned by an architect
 Who pinned his faith on Ruskin!"

"I don't care who he was, Sir, or
 On whom he pinned his faith!
 Constructed by whatever law,
 So poor a job I never saw,
 As I'm a living Wraith!

"What a re-markable cigar!
 How much are they a dozen?"
 I growled "No matter what they are!
 You're getting as familiar
 As if you were my cousin!

"Now that's a thing *I will not stand*,
 And so I tell you flat."
 "Aha," said he, "we're getting grand!"
 (Taking a bottle in his hand)
 "I'll soon arrange for *that*!"

And here he took a careful aim,
 And gaily cried "Here goes!"
 I tried to dodge it as it came,
 But somehow caught it, all the same,
 Exactly on my nose.

And I remember nothing more
 That I can clearly fix,
 Till I was sitting on the floor,
 Repeating "Two and *five*"³⁰ are four,
 But *five*"³¹ and *two* are six."

What really passed I never learned,
 Nor guessed: I only know

²⁹I cried "But please to recollect

³⁰three

³¹three

That, when at last my sense returned,
The lamp, neglected, dimly burned—
The fire was getting low—
Through driving mists I seemed to see
 A Thing that smirked and smiled;⁷³²
And found that he was giving me
 A lesson in Biography,⁷³³
 As if I were a child.⁷³⁴

Canto IV. *His Nourture.*



“Oh, when I was a little Ghost,
A merry time had we!

³²A form of sheet and bone

³³The whole of his biography

³⁴In a familiar tone

Each seated on his favourite post,
 We chumped and chawed the buttered toast
 They gave us for our tea.”

“That story is in print!” I cried.
 “Don’t say it’s not, because
 It’s known as well as Bradshaw’s Guide!”
 (The Ghost uneasily replied
 He hardly thought it was).

“It’s not in Nursery Rhymes? And yet
 I almost think it is—
 ‘Three little Ghosteses’ were set
 ‘On posteses,’ you know, and ate
 Their ‘buttered toasteses.’

“I have the book; so, if you doubt it—”
 I turned to search the shelf.
 “Don’t stir!” he cried. “We’ll do without it;
 I now remember all about it;
 I wrote the thing myself.

“It came out in a ‘Monthly,’ or
 At least my agent said it did:
 Some literary swell, who saw
 It, thought it seemed adapted for
 The Magazine he edited.

“My father was a Brownie, Sir;
 My mother was a Fairy.
 The notion had occurred to her,
 The children would be happier,
 If they were taught to vary.

“The notion soon became a craze;
 And, when it once began, she
 Brought us all out in different ways—
 One was a Pixy, two were Fays,
 Another was a Banshee;

“The Fetch and Kelpie went to school,
 And gave a lot of trouble;
 Next came a Poltergeist and Ghoul,
 And then two Trolls (which broke the rule),
 A Goblin, and a Double—

“(If that’s a snuff-box on the shelf,”
 He added with a yawn,
 “I’ll take a pinch)—next came an Elf,
 And then a Phantom (that’s myself),
 And last, a Leprechaun.

“One day, some Spectres chanced to call,
 Dressed in the usual white:
 I stood and watched them in the hall,
 And couldn’t make them out at all,

They seemed so strange a sight.



“I wondered what on earth they were,
That looked all head and sack;
But Mother told me not to stare,
And then she twitched me by the hair,
And punched me in the back.

“Since then I’ve often wished that I
Had been a Spectre born.
But what’s the use?” (He heaved a sigh).

“*They* are the ghost-nobility,
And look on *us* with scorn.

“My phantom-life was soon begun:
When I was barely six,
I went out with an older one—
And just at first I thought it fun,
And learned a lot of tricks.”³⁵

“I’ve haunted dungeons, castles, towers—
Wherever I was sent:
I’ve often sat and howled for hours,
Drenched to the skin with driving showers,
Upon a battlement.

³⁵And went at it like bricks



“Upon a battlement.”
(Frontispiece)

“It’s quite old-fashioned now to groan
When you begin to speak:
This is the newest thing in tone—”
And here (it chilled me to the bone)
He gave an *awful* squeak.

“Perhaps,” he added, “to *your* ear
That sounds an easy thing?
Try it yourself, my little dear!
It took *me* something like a year,
With constant practising.

“And when you’ve learned to squeak, my man
And caught the double sob,
You’re pretty much where you began:
Just try and gibber if you can!
That’s something *like* a job!

“*I’ve* tried it, and can only say
I’m sure you couldn’t do it, e-
ven if you practised night and day,
Unless you have a turn that way,
And natural ingenuity.

“Shakspeare I think it is who treats
Of Ghosts, in days of old,
Who ‘gibbered in the Roman streets,’
Dressed, if you recollect, in sheets—
They must have found it cold.

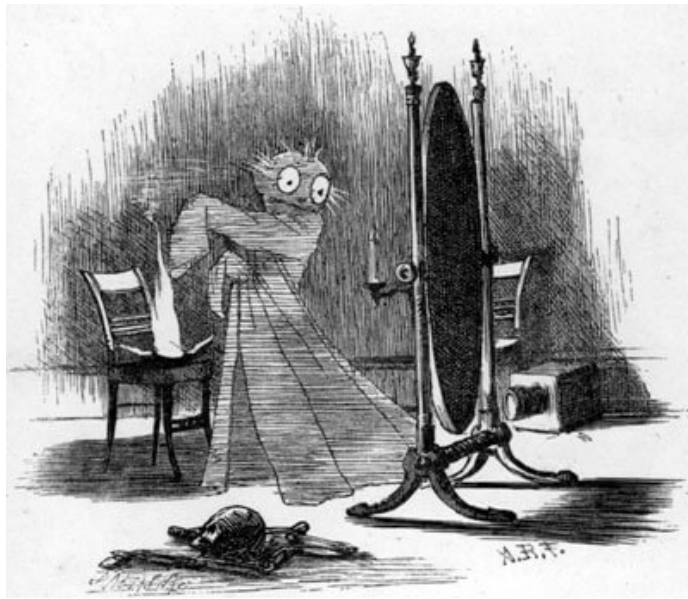
“I’ve often spent ten pounds on stuff,
In dressing as a Double;
But, though it answers as a puff,
It never has effect enough
To make it worth the trouble.

“Long bills soon quenched the little thirst
I had for being funny.
The setting-up is always worst:
Such heaps of things you want at first,
One must be made of money!

“For instance, take a Haunted Tower,
With skull, cross-bones, and sheet;
Blue lights to burn (say) two an hour,
Condensing lens of extra power,
And set of chains complete:

“What with the things you have to hire—
The fitting on the robe—
And testing all the coloured fire—
The outfit of itself would tire
The patience of a Job!

“And then they’re so fastidious,
The Haunted-House Committee:



I've often known them make a fuss
 Because a Ghost was French, or Russ,
 Or even from the City!

"Some dialects are objected to—
 For one, the *Irish* brogue is:
 And then, for all you have to do,
 One pound a week they offer you,
 And find yourself in Bogies!"

Canto V. *Hyperment.*

"Don't they consult the 'Victims,' though?"
 I said. "They should, by rights,
 Give them a chance—because, you know,
 The tastes of people differ so,
 Especially in Sprites."

The Phantom shook his head and smiled.
 "Consult them? Not a bit!
 'Twould be a job to drive one wild,
 To satisfy one single child—
 There'd be no end to it!"

"Of course you can't leave *children* free,"
 Said I, "to pick and choose:
 But, in the case of men like me,
 I think 'Mine Host' might fairly be
 Allowed to state his views."

He said "It really wouldn't pay—
 Folk are so full of fancies.

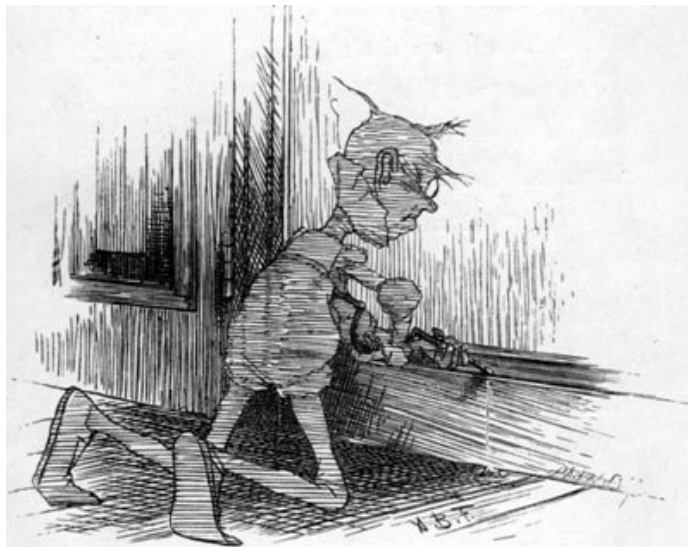
We visit for a single day,
 And whether then we go, or stay,
 Depends on circumstances.

“And, though we don’t consult ‘Mine Host’
 Before the thing’s arranged,
 Still, if he often³⁶ quits his post,
 Or is not a well-mannered Ghost,
 Then you can have him changed.

“But if the host’s a man like you—
 I mean a man of sense;
 And if the house is not too new—”
 “Why, what has *that*,” said I, “to do
 With Ghost’s convenience?”

“A new house does not suit, you know—
 It’s such a job to trim it:
 But, after twenty years or so,
 The wainscotings begin to go,
 So twenty is the limit.”

“To trim” was not a phrase I could
 Remember having heard:
 “Perhaps,” I said, “you’ll be so good
 As tell me what is understood
 Exactly by that word?”

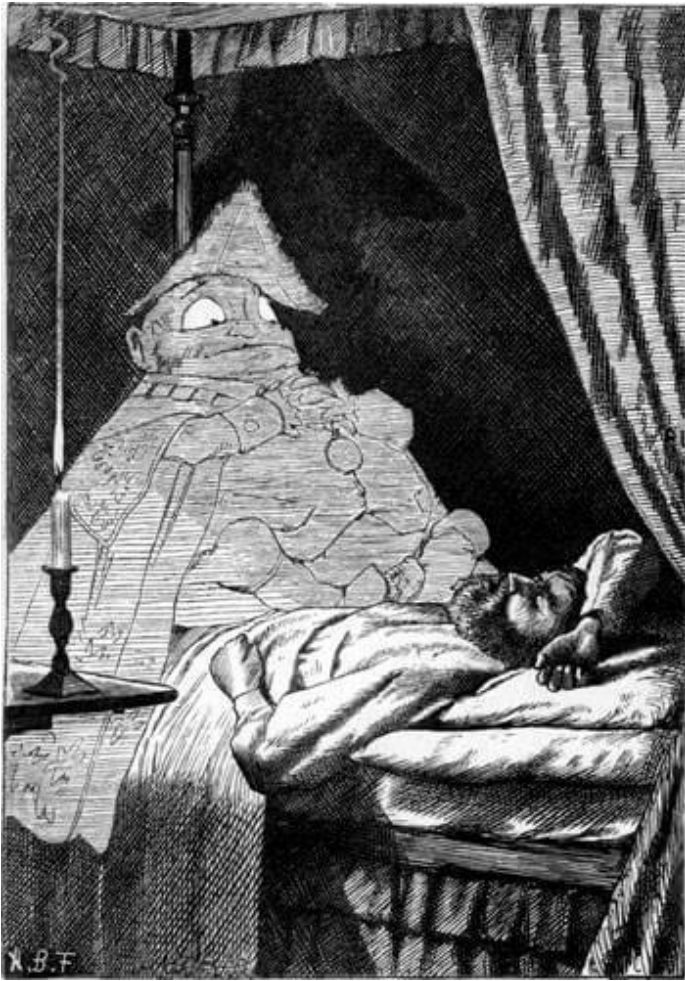


“It means the loosening all the doors,”
 The Ghost replied, and laughed:
 “It means the drilling holes by scores
 In all the skirting-boards and floors,
 To make a thorough draught.

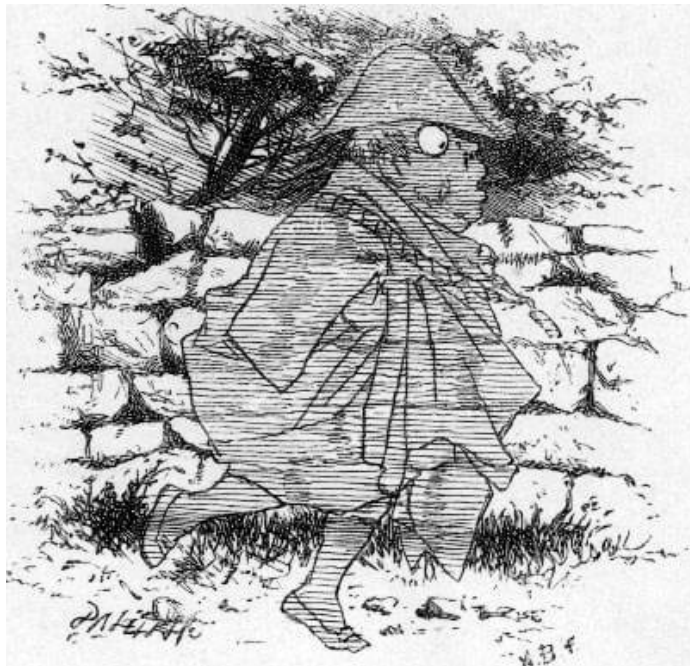
³⁶the tenant

“You’ll sometimes find that one or two
 Are all you really need
 To let the wind come whistling through—
 But *here* there’ll be a lot to do!”
 I faintly gasped “Indeed!”
 “If I’d been rather later, I’ll
 Be bound,” I added, trying
 (Most unsuccessfully) to smile,
 “You’d have been busy all this while,
 Trimming and beautifying?”
 “Why, no,” said he; “perhaps I should
 Have stayed another minute—
 But still no Ghost, that’s any good,
 Without an introduction would
 Have ventured to begin it.
 “The proper thing, as you were late,
 Was certainly to go:
 But, with the roads in such a state,
 I got the Knight-Mayor’s leave to wait
 For half an hour or so.”
 “Who’s the Knight-Mayor?” I cried. Instead
 Of answering my question,
 “Well! If you don’t know *that*,” he said,
 “Either you never go to bed,
 Or you’ve a grand digestion!
 “He goes about and sits on folk
 That eat too much at night:
 His duties are to pinch, and poke,
 And squeeze them till they nearly choke.”
 (I said “It serves them right!”)
 “And folk that ³⁷ on things like these—”
 He muttered, “eggs and bacon—
 Lobster—and duck—and toasted cheese—
 If they don’t get an awful squeeze,
 I’m very much mistaken!
 “He is immensely fat, and so
 Well suits the occupation:
 In point of fact, if you must know,
 We used to call him, years ago,
 The Mayor and Corporation!
 “The day he was elected Mayor
 I *know* that every Sprite meant
 To vote for *me*, but did not dare—
 He was so frantic with despair
 And furious with excitement.

³⁷stuff



“He goes about and sits on folk”



“When it was over, for a whim,
He ran to tell the King;
And being the reverse of slim,
A two-mile trot was not for him
A very easy thing.

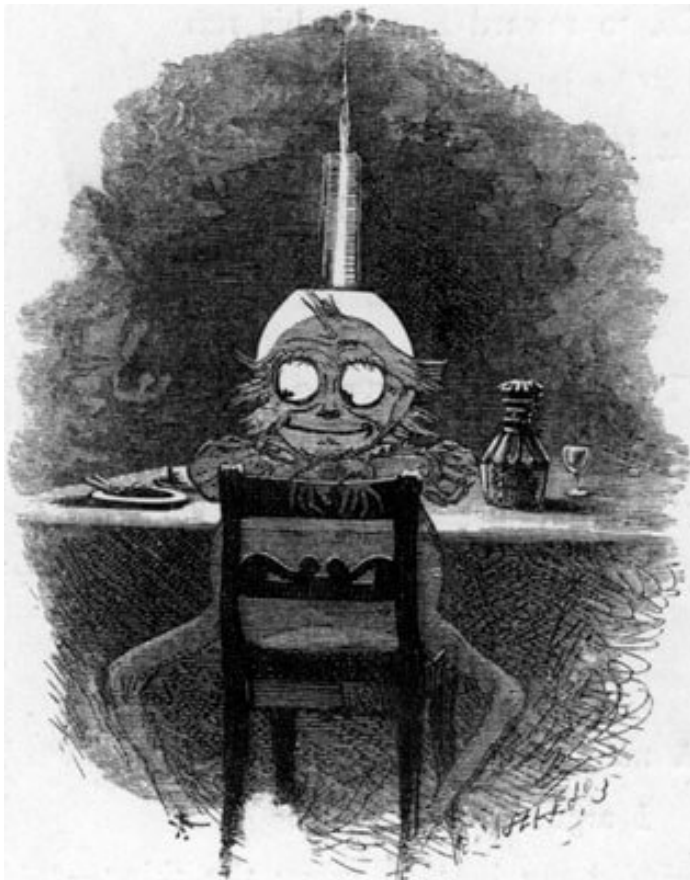
“So, to reward him for his run
(As it was baking hot,
And he was over twenty stone),
The King proceeded, half in fun,
To knight him on the spot.”

“’Twas a great liberty to take!”
(I fired up like a rocket).
“He did it just for punning’s sake:
‘The man,’ says Johnson, ‘that would make
A pun, would pick a pocket!’”

“A man,” said he, “is not a King.”
I argued for a while,
And did my best to prove the thing—
The Phantom merely listening
With a contemptuous smile.

At last, when, breath and patience spent,
I had recourse to smoking—
“Your *aim*,” he said, “is excellent:
But—when you call it *argument*—
Of course you’re only joking?”

Stung by his cold and snaky eye,



I roused myself at length
 To say "At least I do defy
 The veriest sceptic to deny
 That union is strength!"
 "That's true enough," said he, "yet stay—"
 I listened in all meekness—
 "*Union* is strength, I'm bound to say;
 In fact, the thing's as clear as day;
 But *onions*—are a weakness."

Canto VI. *Dyscomfyture.*

As one who strives a hill to climb,
 Who never climbed before:
 Who finds it, in a little time,
 Grow every moment less sublime,
 And votes the thing a bore:
 Yet, having once begun to try,
 Dares not desert his quest,
 But, climbing, ever keeps his eye
 On one small hut against the sky,
 Wherein he hopes to rest:
 Who climbs till nerve and force ^{are}³⁸ spent,
 With many a puff and pant:
 Who still, as rises the ascent,
 In language grows more violent,
 Although in breath more scant:
 Who, climbing, gains at length the place
 That crowns the upward track;
 And, entering with unsteady pace,
 Receives a buffet in the face
 That lands him on his back:
 And feels himself, like one in sleep,
 Glide swiftly down again,
 A helpless weight, from steep to steep,
 Till, with a headlong giddy sweep,
 He ^{drops upon}³⁹ the plain—
 So I, that had resolved to bring
 Conviction to a ghost,
 And found it quite a different thing
 From any human arguing,
 Yet dared not quit my post
 But, keeping still the end in view
 To which I hoped to come,
 I strove to prove the matter true

³⁸be

³⁹pitch into



By putting everything I knew
 Into an axiom:
 Commencing every single phrase
 With 'therefore' or 'because,'
 I blindly reeled, a hundred ways,
 About the syllogistic maze,
 Unconscious where I was.
 Quoth he "That's regular clap-trap:
 Don't bluster any more.
 Now *do* be cool and take a nap!
 ♪Such a ridiculous old chap⁴⁰
 ♪Was never seen before!⁴¹
 "You're like a man I used to meet,
 Who got one day so furious
 In arguing, the simple heat
 Scorched both his slippers off his feet!"
 I said "*That's very curious!*"
 "Well, it *is* curious, I agree,
 And sounds perhaps like fibs:
 But still it's true as true can be—
 As sure as your name's Tibbs," said he.
 I said "My name's *not* Tibbs."
 "*Not* Tibbs!" he cried—his tone became
 A shade or two less hearty—
 "Why, no," said I. "My proper name
 Is Tibbets—" "Tibbets?" "Aye, the same."
 "Why, then YOU'RE NOT THE PARTY!"
 With that he struck the board a blow
 That shivered half the glasses.
 "Why couldn't you have told me so
 Three quarters of an hour ago,
 You ♪prince⁴² of all the asses?
 "To walk four miles through mud and rain,
 To spend the night in smoking,
 And then to find that it's in vain—
 And I've to do it all again—
 It's really *too* provoking!
 "Don't talk!" he cried, as I began
 To mutter some excuse.
 "Who can have patience with a man
 That's got no more discretion than
 An idiotic goose?
 "To keep me waiting here, instead
 Of telling me at once

⁴⁰You're such a peppery old chap

⁴¹As never was before!

⁴²king



“Scorched both his slippers off his feet”



That this was not the house!" he said.
 "There, that'll do—be off to bed!
 Don't gape like that, you dunce!"

"It's very fine to throw the blame
 On *me* in such a fashion!
 Why didn't you enquire my name
 The very minute that you came?"
 I answered in a passion.

"Of course it worries you a bit
 To come so far on foot—
 But how was *I* to blame for it?"
 "Well, well!" said he. "I must admit
 That isn't badly put.

"And certainly you've given me
 The best of wine and victual—
 Excuse my violence," said he,
 "But accidents like this, you see,
 They put one out a little.

"Twas *my* fault after all, I find—
 Shake hands, old Turnip-top!"
 The name was hardly to my mind,
 But, as no doubt he meant it kind,
 I let the matter drop.

"Good-night, old Turnip-top, good-night!
 When I am gone, perhaps
 They'll send you some inferior Sprite,
 Who'll keep you in a constant fright
 And spoil your soundest naps.

"Tell him you'll stand no sort of trick;
 Then, if he leers and chuckles,
 You just be handy with a stick
 (Mind that it's pretty hard and thick)
 And rap him on the knuckles!

"Then carelessly remark 'Old coon!
 Perhaps you're not aware
 That, if you don't behave, you'll soon
 Be chuckling to another tune—
 And so you'd best take care!'

"That's the right way to cure a Sprite
 Of such-like goings-on—
 But gracious me! It's *getting*⁷⁴³ light!
 Good-night, old Turnip-top, good-night!"
 A nod, and he was gone.





Canto VII. Sad Souvenaunce.

“What’s this?” I pondered. “Have I slept?
Or can I have been drinking?”
But soon a gentler feeling crept
Upon me, and I sat and wept
An hour or so, like winking.

“No need for Bones to hurry so!”⁴⁴
I sobbed⁴⁵. “In fact, I doubt
If it was worth his while to go—
And who is Tibbs, I’d like to know,
To make such work about?”

“If Tibbs is anything like me,
It’s *possible*,” I said,
“He won’t be over-pleased to be
Dropped in upon at half-past three,
After he’s snug in bed.

“And if Bones plagues him anyhow—
Squeaking and all the rest of it,
As he was doing here just now—
I prophesy there’ll be a row,
And Tibbs will have the best of it!”

Then, as my tears could never bring

⁴³nearly

⁴⁴This and the next two verses come in *Phantasmagoria* after “To try it any farther”

⁴⁵Thought I

‘The friendly⁴⁶ Phantom back,
It seemed to me the proper thing
To mix another glass, and sing
The following ‘Coronach.’⁴⁷



“And Tibbs will have the best of it”

*‘And art thou gone, beloved Ghost?
Best of Familiars!
Nay then, farewell, my duckling roast,
Farewell, farewell, my tea and toast,
My meerschaum and cigars!
‘The hues of life are dull and gray,
The sweets of life insipid,
When thou, my charmer, art away—
Old Brick, or rather, let me say,
Old Parallelepiped!’*

⁴⁶My favourite

⁴⁷In *Phantasmagoria*, a headline “Coronach” follows

Instead of singing Verse the Third,
 I ceased—abruptly, rather:
 But, after such a splendid word,
 I felt that it would be absurd
 To try it any farther.

 So with a yawn I went my way
 To seek the welcome downy,
 And slept, and dreamed till break of day
 Of Poltergeist and Fetch and Fay
 And Leprechaun and „Brownie!”⁴⁸

 For years I’ve not been visited
 By any kind of Sprite;
 Yet still they echo in my head,
 Those parting words, so kindly said,
 “Old Turnip-top, good-night!”

⁴⁸Additional verses in *Phantasmagoria*:

And never since, by sea or land,
 On mountain or on plain,
 ’Mid Arctic snow, or Afric sand—
 Not even ‘in the Strand, the Strand!’
 Has Bones appeared again.
 A Quaker friend accosted me—
 Tall, stiff, as any column—
 “Thee’rt out of sorts, I fear,” said he;
 “Verily I am grieved to see
 Thee go’st so grave and solemn.”
 “*The ghost’s* not grave,” I said, “but gay;
 Not solemn, but convivial:
 I’m ‘*out of spirits,*’ you should say,
 Not ‘*out of sorts*’—” he turned away,
 Thinking the answer trivial.



18.133 Only a Woman's Hair

Source: The College Rhymes, March 1862 (with minor differences as noted);
Phantasmagoria (with minor differences as noted); Three Sunsets

[After the death of Dean Swift, there was found among his papers a small packet containing a single lock of hair and inscribed with the above words.]¹

'Only a woman's hair'! Fling it aside!
A bubble on Life's mighty stream:
Heed it not, man, but watch the broadening tide
Bright with the western beam.
Nay! In those words there rings from other years
The echo of a long low cry,
Where a proud spirit wrestles with its tears
In loneliest agony.
And, as I touch that lock, strange visions throng²
Upon my soul with dreamy grace—³
Of woman's hair, the theme of poet's song⁴
In every time and place.⁵
A child's bright tresses, by the breezes kissed⁶
To sweet disorder as she flies,
Veiling, beneath a cloud of golden mist,
Flushed cheek and laughing eyes—
Or fringing,⁷ like a shadow, raven-black,
The glory of a queen-like face—
Or from a gipsy's sunny brow⁸ tossed back
In wild and wanton grace—
Or crown-like on the hoary head of Age,⁹
Whose tale of life is well-nigh¹⁰ told—
Or, last, in dreams I make my pilgrimage
To Bethany of old.

¹Only in *Phantasmagoria*, in *College Rhymes*: "After Dean Swift's death, a small packet was found among his papers, containing . . ." In *College Rhymes* there is also a footnote on the title: "By a strange coincidence a poem bearing the same title appears in the current number of *London Society* (March 1862). The poem in *College Rhymes* was written and in type before that number of the magazine appeared."

²"rise" in *Phantasmagoria*

³"Before me in a shadowy throng—" in *Phantasmagoria*

⁴" . . . , the joy of lovers' eyes," in *Phantasmagoria*

⁵"The theme of poet's song" in *Phantasmagoria*

⁶In *College Rhymes* this verse is:

A child's bright tresses, in a tangled braid,
O'er circling arms that fondly roll,
Where full blue eyes, undimm'd by sinful shade,
Look straight from soul to soul:

⁷"girding" in *College Rhymes*

⁸"laughing eyes" in *College Rhymes*

⁹"Or grey and reverend on the brows of age" in *College Rhymes*

¹⁰"nearly" in *College Rhymes*

I see the feast—the purple and the gold—
 The gathering crowd of Pharisees,
 Whose scornful eyes are centred to behold
 Yon woman on her knees.

 The stifled sob rings strangely on mine ears,
 Wrung from the depth of sin's despair:
 And still she bathes the sacred feet with tears,
 And wipes them with her hair.

 He scorned not then the simple loving deed
 Of her, the lowest and the last;
 Then scorn not thou, but use with earnest heed
 This relic of the past.

 The eyes that loved it once no longer wake:
 So lay it by with reverent care—
 Touching¹¹ it tenderly for sorrow's sake—
 It is a woman's hair.

Feb. 17, 1862.¹²

¹¹“So touch” in *Phantasmagoria*

¹²Only in *Three Sunsets*, “Ch. Ch., Oxford. C. L. D.” in *College Rhymes*

18.134 A Lesson in Latin

Source: The Jabberwock, June 1888 (with minor differences as noted); Three Sunsets

Our Latin books, in motley row,
 Invite us to our¹ task—
Gay Horace, stately Cicero:
Yet there's one verb, when once we know,
 No higher skill we ask:
This ranks all other lore above—
We've learned "'Amare' means 'to love!'"
So, hour by hour, from flower to flower,
 We sip the sweets of Life:
Till, all² too soon, the clouds arise,
 And flaming cheeks and flashing eyes³
 Proclaim the dawn of strife:
With half a smile and half a sigh,
"Amare! Bitter One!" we cry.
Last night we owned, with looks forlorn,
 "Too well the scholar knows
There is no rose without a thorn"—
But peace is made! We sing, this morn,
 "No thorn without a rose!"
Our Latin lesson is complete:
We've learned that Love is Bitter-Sweet!

May, 1888.⁴

¹the

²ah!

³And knitted brows and angry eyes

⁴Lewis Carroll

18.135 The Wandering Burgess

Source: The Vision of the Three T's (extracted)

Our Willie had been sae lang awa'
Frae bonnie Oxford toon,
The townfolk they were greeting a'
As they went up and doon.

He hadna been gane a year, a year,
A year but barely ten,
When word cam unto Oxford toon.
Our Willie wad come agen.

Willie he stude at Thomas his Gate,
And made a lustie din;
And who so blithe as the gate-porter
To rise and let him in?

'Now enter Willie, now enter Willie,
And look around the place.
And see the pain that we have ta'en
Thomas his Quad to grace.'

The first look that our Willie cast,
He leuch loud laughters three,
The neist look that our Willie cast,
The tear blindit his e'e.

Sae square and stark the Tea-chest frowned
Athwart the upper air,
But when the Trench our Willie saw,
He thocht the Tea-chest fair.

Sae murderous-deep the Trench did gape
The parapet aboon.
But when the Tunnel Willie saw.
He loved the Trench eftsoon.

'Twas mirk beneath the tane archway,
'Twas mirk beneath the tither;
Ye wadna ken a man therein.
Though it were your ain dear brither.

He turned him round and round about.
And looked upon the Three;
And dismal grew his countenance.
And drumlie grew his e'e.

'What cheer, what cheer, my gallant knight?'
The gate-porter 'gan say.
'Saw ever ye sae fair a sight
As ye have seen this day?'

'Now haud your tongue of your prating, man:
Of your prating now let me be.

For, as I'm true knight, a fouler sight
I'll never live to see.

'Before I'd be the ruffian dark
Who planned this ghastly show,
I'd serve as secretary's clerk
To Ayrton or to Lowe.

'Before I'd own the loathly thing
That Christ Church Quad reveals,
I'd serve as shoeblack's underling
To Odger and to Beales!'

18.136 Peter and Paul

Source: Sylvie and Bruno (extracted)

“Peter is poor,” said noble Paul,
“And I have always been his friend:
And, though my means to *give* are small,
At least I can afford to *lend*.
How few, in this cold age of greed,
Do good, except on selfish grounds!
But I can feel for Peter’s need,
And I WILL LEND HIM FIFTY POUNDS!”

How great was Peter’s joy to find
His friend in such a genial vein!
How cheerfully the bond he signed,
To pay the money back again!
“We ca’n’t,” said Paul, “be too precise:
’Tis best to fix the very day:
So, by a learned friend’s advice,
I’ve made it Noon, the Fourth of May.”

“But this is April!” Peter said.
“The First of April, as I think.
Five little weeks will soon be fled:
One scarcely will have time to wink!
Give me a year to speculate—
To buy and sell—to drive a trade—”
Said Paul “I cannot change the date.
On May the Fourth it must be paid.”

“Well, well!” said Peter, with a sigh.
“Hand me the cash, and I will go.
I’ll form a Joint-Stock Company,
And turn an honest pound or so.”
“I’m grieved,” said Paul, “to seem unkind:
The money shall of course be lent:
But, for a week or two, I find
It will not be convenient.”

So, week by week, poor Peter came
And turned in heaviness away;
For still the answer was the same,
“I cannot manage it to-day.”
And now the April showers were dry—
The five short weeks were nearly spent—
Yet still he got the old reply,
“It is not quite convenient!”

The Fourth arrived, and punctual Paul
Came, with his legal friend, at noon.
“I thought it best,” said he, “to call:

One cannot settle things too soon.”
 Poor Peter shuddered in despair:
 His flowing locks he wildly tore:
 And very soon his yellow hair
 Was lying all about the floor.
 The legal friend was standing by,
 With sudden pity half unmanned:
 The tear-drop trembled in his eye,
 The signed agreement in his hand:
 But when at length the legal soul
 Resumed its customary force,
 “The Law,” he said, “we ca’n’t control:
 Pay, or the Law must take its course!”
 Said Paul, “How bitterly I rue
 That fatal morning when I called!
 Consider, Peter, what you do!
 You won’t be richer when you’re bald!
 Think you, by rending curls away,
 To make your difficulties less?
 Forbear this violence, I pray:
 You do but add to my distress!”
 “Not willingly would I inflict,”
 Said Peter, “on that noble heart
 One needless pang. Yet why so strict?
 Is *this* to act a friendly part?
 However legal it may be
 To pay what never has been lent,
 This style of business seems to me
 Extremely inconvenient!”
 “No Nobleness of soul have I,
 Like *some* that in this Age are found!”
 (Paul blushed in sheer humility,
 And cast his eyes upon the ground.)
 “This debt will simply swallow all,
 And make my life a life of woe!”
 “Nay, nay, my Peter!” answered Paul.
 “You must not rail on Fortune so!
 “You have enough to eat and drink:
 You are respected in the world:
 And at the barber’s, as I think,
 You often get your whiskers curled.
 Though Nobleness you ca’n’t attain—
 To any very great extent—
 The path of Honesty is plain,
 However inconvenient!”
 “Tis true,” said Peter, “I’m alive:
 I keep my station in the world:
 Once in the week I just contrive

To get my whiskers oiled and curled.
 But my assets are very low:
 My little income's overspent:
 To trench on capital, you know,
 Is always inconvenient!"

"But pay your debts!" cried honest Paul.
 "My gentle Peter, pay your debts!
 What matter if it swallows all
 That you describe as your 'assets'?
 Already you're an hour behind:
 Yet Generosity is best.
 It pinches me—but never mind!
 I WILL NOT CHARGE YOU INTEREST!"

"How good! How great!" poor Peter cried.
 "Yet I must sell my Sunday wig—
 The scarf-pin that has been my pride—
 My grand piano—and my pig!"
 Full soon his property took wings:
 And daily, as each treasure went,
 He sighed to find the state of things
 Grow less and less convenient.

Weeks grew to months, and months to years:
 Peter was worn to skin and bone:
 And once he even said, with tears,
 "Remember, Paul, that promised Loan!"
 Said Paul "I'll lend you, when I can,
 All the spare money I have got—
 Ah, Peter, you're a happy man!
 Yours is an enviable lot!

"I'm getting stout, as you may see:
 It is but seldom I am well:
 I cannot feel my ancient glee
 In listening to the dinner-bell:
 But you, you gambol like a boy,
 Your figure is so spare and light:
 The dinner-bell's a note of joy
 To such a healthy appetite!"

Said Peter "I am well aware
 Mine is a state of happiness:
 And yet how gladly could I spare
 Some of the comforts I possess!
 What *you* call healthy appetite
 I feel as Hunger's savage tooth:
 And, when no dinner is in sight,
 The dinner-bell's a sound of ruth!

"No scare-crow would accept this coat:
 Such boots as these you seldom see.
 Ah, Paul, a single five-pound-note

Would make another man of me!"
Said Paul "It fills me with surprise
To hear you talk in such a tone:
I fear you scarcely realise
The blessings that are all your own!
"You're safe from being overfed:
You're sweetly picturesque in rags:
You never know the aching head
That comes along with money-bags:
And you have time to cultivate
That best of qualities, Content—
For which you'll find your present state
Remarkably convenient!"

Said Peter "Though I cannot sound
The depths of such a man as you,
Yet in your character I've found
An inconsistency or two.
You seem to have long years to spare
When there's a promise to fulfil:
And yet how punctual you were
In calling with that little bill!"

"One can't be too deliberate,"
Said Paul, "in parting with one's pelf.
With bills, as you correctly state,
I'm punctuality itself.
A man may surely claim his dues:
But, when there's money to be *lent*,
A man must be allowed to choose
Such times as are convenient!"

It chanced one day, as Peter sat
Gnawing a crust—his usual meal—
Paul bustled in to have a chat,
And grasped his hand with friendly zeal.
"I knew," said he, "your frugal ways:
So, that I might not wound your pride
By bringing strangers in to gaze,
I've left my legal friend outside!

"You well remember, I am sure,
When first your wealth began to go,
And people sneered at one so poor,
I never used my Peter so!
And when you'd lost your little all,
And found yourself a thing despised,
I need not ask you to recall
How tenderly I sympathised!

"Then the advice I've poured on you,
So full of wisdom and of wit:
All given gratis, though 'tis true

I might have fairly charged for it!
But I refrain from mentioning
Full many a deed I might relate—
For boasting is a kind of thing
That I particularly hate.

“How vast the total sum appears
Of all the kindnesses I’ve done,
From Childhood’s half-forgotten years
Down to that Loan of April One!
That Fifty Pounds! You little guessed
How deep it drained my slender store:
But there’s a heart within this breast,
And I WILL LEND YOU FIFTY MORE!”

“Not so,” was Peter’s mild reply,
His cheeks all wet with grateful tears:
“No man recalls, so well as I,
Your services in bygone years:
And this new offer, I admit,
Is very very kindly meant—
Still, to avail myself of it
Would not be quite convenient!”

18.137 Puck Lost and Found

Source: Three Sunsets

The original manuscript of the first poem (with minor differences in punctuation and signature "Lewis Carroll. Nov. 16, 1891") can be found as scan at <https://www.aguttes.com/en/lot/101079/11064034>.

Puck has fled the haunts of men:
Ridicule has made him wary:
In the woods, and down the glen,
No one meets a Fairy!

"Cream!" the greedy Goblin cries—
Empties the deserted dairy—
Steals the spoons, and off he flies.
Still we seek our Fairy!

Ah! What form is entering?
Lovelit eyes and laughter airy!
Is not this a better thing,
Child, whose visit thus I sing,
Even than a Fairy?

Nov. 22, 1891.

Puck has ventured back agen:
Ridicule no more affrights him:
In the very haunts of men
Newer sport delights him.

Capering lightly to and fro,
Ever frolicking and funning—
"Crack!" the mimic pistols go!
Hark! The noise is stunning!

All too soon will Childhood gay
Realise Life's sober sadness.
Let's be merry while we may,
Innocent and happy Fay!
Elves were made for gladness!

Nov. 25, 1891.

Acrostic: Princess Alice, Prince Charlie

18.138 Ting, Ting, Ting

Source: Bruno's Revenge (extracted, connected, with different spelling and punctuation); Sylvie and Bruno (extracted, connected)

Rise, oh, rise! The daylight dies:
The owls are hooting, ting, ting, ting!
Wake, oh, wake! Beside the lake
The elves are fluting, ting, ting, ting!
Welcoming our Fairy King,
We sing, sing, sing.

Hear, oh, hear! From far and near
The music stealing, ting, ting, ting!
Fairy bells adown the dells
Are merrily pealing, ting, ting, ting!
Welcoming our Fairy King,
We ring, ring, ring.

See, oh, see! On every tree
What lamps are shining, ting, ting, ting!
They are eyes of fiery flies
To light our dining, ting, ting, ting!
Welcoming our Fairy King
They swing, swing, swing.

Haste, oh haste, to take and taste
The dainties waiting, ting, ting, ting!
Honey-dew is stored——

18.139 Round the wondrous globe

Source: inscribed into a copy of Miss Yonge's *Little Lucy's Wonderful Globe* for Miss Ruth Dymes, 1877

Round the wondrous globe I wander wild,
Up and down-hill—Age succeeds to youth—
Toiling all in vain to find a child
Half so loving, half so dear as Ruth.

Acrostic: Ruth

18.140 A Song of Love

Source: Sylvie and Bruno Concluded (extracted, connected, with different punctuation); Three Sunsets

Say, what is the spell, when her fledgelings are cheeping,
That lures the bird home to her nest?
Or wakes the tired mother, whose infant is weeping,
To cuddle and croon it to rest?
What's¹ the magic that charms the glad babe in her arms,
Till it cooes with the voice of the dove?
'Tis a secret, and so let us whisper it low—
And the name of the secret is Love!
For I think it is Love,
For I feel it is Love,
For I'm sure it is nothing but Love!

Say, whence is the voice that, when anger is burning,
Bids the whirl of the tempest to cease?
That stirs the vexed soul with an aching—a yearning
For the brotherly hand-grip of peace?
Whence the music that fills all our being—that thrills
Around us, beneath, and above?
'Tis a secret: none knows how it comes, how it goes—
But the name of the secret is Love!
For I think it is Love,
For I feel it is Love,
For I'm sure it is nothing but Love!

Say, whose is the skill that paints valley and hill,
Like a picture so fair to the sight?
That flecks the green meadow with sunshine and shadow,
Till the little lambs leap with delight?
'Tis a secret untold to hearts cruel and cold,
Though 'tis sung, by the angels above,
In notes that ring clear for the ears that can hear—
And the name of the secret is Love!
For I think it is Love,
For I feel it is Love,
For I'm sure it is nothing but Love!

Oct, 1886.⁷²

¹mistakenly "What" in *Three Sunsets*

²Only in *Three Sunsets*

18.141 Terrors

Source: Rectory Magazine

See the planets as they rise,
Each upon his starless way,
Look on us with angry eyes,
Do they not appear to say,
“Stupid fellow! hold your tongue!
‘Seek not thus to goad us on!
‘You in fact are much too young,
‘To offer your opinion!”

Seest thou not the mountains swell?
Seest thou not the trees draw near?
Ah me! I hear an angry bell!
Ah me! I see a waving spear!

Is not that an angry snake?
Lo! he twists his writhing tail!
Hear the hisses he doth make!
See his yellow coat of mail.

Distant howls still louder grown,
Angry mutterings sounding near,
All proclaim with solemn tone,
Something dreadful coming here!

Lo! it comes, a vision grim!
Puffing forth black coils of smoke!
While amid these terrors dim
I listened, thus the monster spoke,
“Clear the line there! clear the rails!
‘Stop the engine! hold there! steady!
‘Stoker! hand me up those pails!
‘Euston station! tickets ready!
‘Tickets ready! tickets! tick—”
Thus it spoke, and thus I acted;
Left these scenes of terrors quick,
And rushed home like one distracted.

B. B.

18.142 The Sailor's Wife

Source: *The Train*, April 1857 (with image and minor differences as noted);
Phantasmagoria (with minor differences as noted); *Three Sunsets*



See! There are tears upon her face—
Tears newly shed, and scarcely dried:
Close, in an agonised embrace,
She clasps the infant at her side.
Peace dwells in those soft-lidded eyes,
Those¹ parted lips that faintly smile—
Peace, the foretaste of Paradise,
In heart too young for care or guile.
No peace that mother's features wear;
But quivering lip, and knotted brow,
And broken mutterings, all declare
The fearful dream that haunts her now.
The storm-wind, rushing through the sky,
Wails from the depths of cloudy space;
Shrill, piercing as the seaman's cry
When death and he are face to face.

¹And

Familiar tones are in the gale:
 They ring upon her startled ear:
 And quick and low she pants the tale
 That tells of agony and fear:
 “Still that phantom-ship is nigh—
 With a vexed and life-like motion,
 All beneath an angry sky,
 Rocking on an angry ocean.
 “Round the straining mast and shrouds
 Throng the spirits of the storm:
 Darkly seen through driving clouds,
 Bends each gaunt and ghastly form.
 “See! The good ship yields at last!
 Dumbly yields, and fights no more;
 Driving, in the frantic blast,
 Headlong _{on}² the fatal shore.
 “Hark! I hear her battered side,
 With a low and sullen shock,
 Dashed, amid the foaming tide,
 Full upon a sunken rock.
 “His face shines out against the sky,
 Like a ghost, so cold and white;
 With a dead despairing eye
_{Gazing}³ through the gathered night.
 “Is he watching, through the dark
 Where a mocking ghostly hand
_{Points} a faint and feeble spark⁴
 Glimmering from the distant land?
 “Sees he, in _{this}⁵ hour of dread,
 Hearth and home and wife and child?
 Loved ones who, in summers fled,
 Clung to him and wept and smiled?
 “Reeling sinks the fated bark
 To her tomb beneath the wave:
 Must he perish in the dark—
 Not a hand stretched out to save?
 “See the spirits, how they crowd!
 Watching death with eyes that burn!
 Waves rush in——” she shrieks aloud,
 Ere her waking sense return.
 The storm is gone: the skies are clear:
 Hush’d is that bitter cry of pain:
 The only sound, that meets her ear,

²“to” in *The Train*

³“Peering” in *The Train*

⁴“Points to yonder feeble spark” in *Phantasmagoria*

⁵“that” in *The Train*

The heaving of the sullen main.
┌ Though heaviness endure the night,⁶
└ Yet⁷ joy shall come with break of day:
She shudders with a strange delight—
The fearful dream is pass'd away.
She wakes: the grey dawn streaks the dark:
With early song the copses ring:
Far off she hears the watch-dog bark
A joyful bark of welcoming!

┌ Feb. 23, 1857.⁸

⁶“For heaviness may 'dure a night,” in *The Train*

⁷“But” in *The Train*

⁸Only in *Three Sunsets*

18.143 Love among the Roses

Source: sent to Miss Sarah Sinclair, 1878

“Seek ye Love, ye fairy-sprites?
Ask where reddest roses blow.
Rosy fancies he invites,
And in roses he delights—
Have ye found him?” “No.”
“Seek again, and find the boy
In Childhood’s heart, so pure & clear.”
Now the fairies leap for joy,
Crying, “Love is here!”
“Love has found his proper nest,
And we guard him while he dozes
In a dream of peace & rest
Rosier than roses!”

Jan. 3, 1878.

Acrostic: Sarah Sinclair

18.144 La Guida di Bragia

Source: manuscript written for a Marionette Theatre, about 1850

Prologue

By Mr. B. Webster.

Scene: Green curtain at back—green floor—green paper sides.

Draw up P. curtain.

Shall soldiers tread the murderous path of war,
Without a notion what they do it for?
Shall pallid mercers drive a roaring trade,
And sell the stuffs their hands have never made?
And shall not we, in this our mimic scene,
Be all that better actors e'er have been?
Awake again a Kemble's tragic tone,
And make a Liston's humour all our own?
Or vie with Mrs. Siddons in the art
To rouse the feelings and to charm the heart?
While Shakespeare's self, with all his ancient fires,
Lights up the forms that tremble on our wires?
Why can't we have, in theatres ideal,
The good, without the evil, of the real?
Why may not Marionettes be just as good
As larger actors made of flesh and blood?
Presumptuous thought! to you and your applause
In humbler confidence we trust our cause.

Draw down P. curtain.

Act I, Scene 1

Scene: Black hangings—country scenery behind—green floor.

Present: Mooney and Spooney with lanterns.

Put out lights.

Draw up P. curtain, and change for W. light lamp.

MOONEY: Who's you?

SPOONEY: Why, me.

MOONEY: Nonsense, it can't be, what's your name?

SPOONEY: Oh, that's quite another question: I shan't tell.

MOONEY: Yet there is something familiar in those tones; something
which recalls to my memory visions of earlier and happier days.
Speak, speak! *have* you the mark of a grid-iron on the back of
your left wrist?

SPOONEY: No! certainly not; nothing of the sort!

MOONEY: Then you are my long-lost friend, my Spooney.

SPOONEY: My Mooney! (*They embrace.*)

SPOONEY: Ah! the joy of this meeting; this does indeed repay me for hours of 'owling, days of despair and nights of gnawing sorrow, for weeks of wailing and—I may add—for fortnights of frowning, and months of making faces; Mooney, I am happy! My friend!

MOONEY: My Spooney, there are moments—

SPOONEY: Yes, yes, Mooney! it's quite true! there are bolsters.

MOONEY: Nonsense, Spooney, how can you talk so? I said "moments"—let me proceed: there are moments, my dear friend, when I find it *impossible* to express my *'orrid feelings!*

SPOONEY: Yes, I feel it so, too! It's the same with me! There are moments when I find it *impossible* to press on my *orange peelings!*

MOONEY: Oh Spooney, Spooney, in the gravest and saddest moments, how can you thus intrude your absurd remarks? Be sensible, Spooney!

SPOONEY: Mooney, I will! Believe me, believe me, I will! Why do I meet you here? Have you left the king, that best and dearest of monarchs?

MOONEY: I have, my friend, yet not willingly. He dismissed me.

SPOONEY: And wherefore?

MOONEY: A mere pleasantry, an innocent joke, which a friend would have pardoned, and even he would have done so, if—Spooney, did you observe lately in our dear sovereign a marked, a decided alteration?

SPOONEY: I did, Mooney. I know what you allude to, his hair. Yes, Mooney, his hair became as white as—as—as white.

MOONEY: True, but I did not mean his hair: mark me.

SPOONEY: I will.

MOONEY: The king lost his luggage, as you are aware, Spooney.

SPOONEY: He did.

MOONEY: And with his luggage, Spooney, he lost—his temper!

SPOONEY: Woe's me! woe's me! are you *sure of it?*

MOONEY: Sartin; it happened thus: The king was sitting, surrounded by his courtiers, as usual, and was remarking in his own light way, "My clothes, my good friends, are not yet returned; they are all gone to the Wash." I, standing at a little distance, remarked in an undertone: "*And much they needed it.*" You know my habit, Spooney, of making amusing remarks?

SPOONEY: No, indeed, Mooney; you never made one yet in *my* recollection.

MOONEY: Well, sir, the king turned upon me and, in a voice a pig tied by the hind leg might have envied, said: "Traitor, begone! I renounce ye!"

SPOONEY: No! did he really? And did you go?

MOONEY: Didn't I just!

SPOONEY: Well I never! How very unfortunate! Do you know *I* was passing by the door at the moment and overheard your remark, and I thought it so good that I resolved to repeat it!

MOONEY: You weren't such an idiot as that, were you?

SPOONEY: I was, my dear Mooney, I assure you! I went in immedi-

ately after and said: "Your Majesty has lost your luggage, have you not?" "Yes," said the king, in accents of the deepest sadness, "I lost it all when—when I went to the Wash." "Did your Majesty go to the Wash?" I enquired. He answered, "I did." Whereupon I remarked with a smile, "*And much you needed it!*"

MOONEY: I never heard anything half as foolish! And what did the king say?

SPOONEY: Why, sir, he turned upon me and said in a voice—that a pig's hind leg might have envied, "Traitor, begone! I pronounce ye!"

MOONEY: Stuff! I don't believe a word of it!

SPOONEY: But I assure you he did, and I—went away immediately!

MOONEY: And since that day you have been, I suppose, adrift?

SPOONEY: Yes, my dear Mooney; but you, what have you been doing these many years?

MOONEY: Oh, I've been (*singing*)
Wandering through the wide world, seeking of my fortune;
But as I couldn't find it, I was forced to do without it.
And if you'll believe me, there was no one would receive me;
But as I never told you a lie, you've got no cause to doubt it.

SPOONEY: How particularly nicely you do sing, my dear Mooney! What kind of voice do you call yours?

MOONEY: Oh, don't you know, Spooney? Why it's an alto-soprano-mezzo-tinto-basso-relievo—

SPOONEY: No, but is it all that really?

MOONEY: As sure as you're standing there—

SPOONEY: Well, that's very curious, I shouldn't have thought it.

MOONEY: Well; but now, Mooney, we must devise some plan to make our living, and put an end to this "Wandering, *etc.*" (*As before*)

SPOONEY: Let me think awhile. (*Pause.*)

MOONEY: See, the morning breaks! (*Black scenes removed, lamp put behind; singing of birds.*)

SPOONEY: Mooney! I've an idea!

MOONEY: Have you really? In all the years, my Spooney, that we have been acquainted such an incident has *never* occurred before.

SPOONEY: The railway station near here has vacancies for station-master and for clerk. Let us apply for them. You'd better be station-master, as you're not so stupid as I am; you are more foolish than I, you know, my Mooney, but you're certainly not so stupid.

MOONEY: True, true, my dear friend. A very good idea, I'll go and apply at once. (*Exit.*)

SPOONEY (*soliloquises*): Poor Mooney! He's not much of a genius, but he means well! He is an honest fellow, and I'll do what I can for him! Yes, yes, he'll do best for station-master! He's more foolish than I am, but he's certainly not so stupid! Ha! here he comes! What success, my Mooney?

MOONEY: All right! we've got it. (*Singing.*)
Oh my eye, what jolly fun, only think what we've been and done.

They've made us railway horficers, and we've got a railway station!
 Day and night, and night and day, we'll do the work and call it play.
 When one's awake the other sleeps, in regular rotation!
 SPOONEY: Ebenezer Mooney-o, and Julius Caesar Spooney-o, they've made us railway horficers, and we've got a railway station.
 MOONEY: "Oh my eye, etc." (*As before.*)

Act I, Scene 2

Scene: Coloured paper carpet.

Present: Orlando and Sophonisba—the former with carpet bag.

Relight candles.

Draw up W. curtain, and change for G.

ORLANDO: My Sophonisba!

SOPHONISBA: My Orlando! (*Repeat.*)

ORLANDO: Time, my love, is flowing,

And I fear I must be going—

SOPHONISBA: Oh, no! You don't say so! (*Repeat three times, and vary.*)

ORLANDO: Yet surely we can't have been here so long?

SOPHONISBA: Oh, no, we can't! Your watch must be wrong!

ORLANDO: Our conversation has been so unimportant.

But my watch is right; it is going as it ought.

SOPHONISBA: Then it's not like you, for you're going as you oughtn't.

To go all the way to Birmingham for half-a-dozen of port!

ORLANDO: My beauty, it is my duty!

SOPHONISBA: But aren't you sorry to go?

ORLANDO: Oh, dear no!

Air: "There is no luck."

SOPHONISBA: What? Ain't you grieved to go, my dear!

My husband! Oh, for shame!

How can you go and leave me here?

You're very much to blame!

For I can't get on without you, love,

I can't get on at all!

That is, of course, you know, my love,

When you are out of call.

For puzzles come, and I've no skill,

I'm really such a dunce!

The butcher brings his little bill,

And must be paid at once!

For I can't get on, *etc.*

And visitors, too, come from town,

Whom *I've* got to receive.

With a patch of flour upon my gown

Parody on *Nae luck about the house* by William Julius Mickle or Jean Adams

And some treacle on my sleeve.
For I can't get on, *etc.*

'Twas but the other day a man,
When told to leave the door,
Went off—indeed, he almost ran.
I never saw him more.

I thought him a good riddance then,
But 'ere an hour was gone
I missed the forks—there should be ten—
And all the spoons but one!
For I can't get on, *etc.*

ORLANDO: Was I the only spoon you then possessed?

SOPHONISBA: No, dear! I missed you more than all the rest!
But now, my love, decide without delay,
What *will* you have for dinner, dear, to-day?

ORLANDO: Through feastings and banquetings though we should
hurry,

Be it ever so fiery, there's no dish like curry!
Curry! sweet curry! There's no dish like curry!

SOPHONISBA: Through larder and kitchen, I very much fear,
There is no curry-powder, though I search for a year.
Talk of curry-powder, there's nothing like it here!
What do you say to Irish stew?

Air: "Maidens of Zia."

ORLANDO: Not even Irish stew,
With salt and onions, too,
Will for your husband do
So well as mutton,
Roasted, roasted, roast leg of mutton!

Let it be nicely done.
I will be home at one.
Nothing is half such fun
As eating mutton,
Roasted, roasted, roast leg of mutton!

Let it be very hot,
Or else I'll eat it not,
All woes will be forgot
In eating mutton,
Roasted, roasted, roast leg of mutton!

You know, my love, I never wish
For any other dish,
So don't get any fish,
But only mutton,
Roasted, roasted, roast leg of mutton!

SOPHONISBA: Well, love, then roast mutton it shall be.

ORLANDO: So now, my love, good-bye.

Air: "Dulce Domum."

Parody on *Home,*
sweet home by Henry
Rowley Bishop

Parody on *Maidens*
of Zia from *Evenings*
in Greece by Thomas
Moore

Parody on *Dulce*
Domum by John
Reading

Fare thee well, and if for ever,
Then for ever fare thee well,
Sophonisba, Sophonisba!
Listen for the front door bell! (*Exit*)

Air: "Dih Conte."

SOPHONISBA: Fare thee well, my own Orlando,
My husband so blooming and fat,
And remember, oh, my dear one,
To take good care of your hat;
For it's new and tender,
And it cost you four bob and a bender.
Then don't sit down upon it, or
You'll squash it ever so flat!
Fare thee well, and if for ever,
Then for ever, fare thee well.
I'll expect you home to dinner, and
Be listening for the front-door bell.
Alas! how my duck will suffer
If he gets pitched into by the buffer,
Or if beneath the engine he
Gets squashed like a snail in its shell!

Draw down G. curtain.

Act II. Scene 1

Scene: Wall, and green paper sides. Two placards: "To Booking Office" and
"To Platform." Luggage.

Present: Mooney and Spooney, as before.

Draw up G. curtain, and change for W.

MOONEY: Here we are again.

SPOONEY: Here we are, Mooney.

MOONEY: Oh, that won't do at all; we must change our names, you
know.

SPOONEY: Well, then, *you* must think of new ones, for I'm sure I
can't; I—I—never was used to that kind of thing.

MOONEY: No more was I, my dear Spooney. What do you say to
Moggs and Spicer?

SPOONEY: Moggs and Spicer! Why, it's the very thing! That's a
singular coincidence! They're *exactly* the right names! So I'm to
call you Moggs?

MOONEY: Certainly, Spicer, you are.

SPOONEY: Ha, ha, to be sure, Moggs and Spicer!

MOONEY: But I say, Spicer!

SPOONEY: What!

MOONEY: Sich a norrid thing!

SPOONEY: Oh don't, don't, please! You frighten me! Are you in
joke?

MOONEY: In joke? Not I. Hark you, a word in your ear; sich a norrid thing!

SPOONEY: Oh, I say! Come, come! This is beyond a joke. Don't, there's a good fellow! I declare you have made me feel so bad!

MOONEY: Do you think I care what it makes you feel, I tell you, it's as true as day. One of the norridest things—

SPOONEY: Oh, what is it, Moggs, please! I shall faint if you don't tell me directly!

MOONEY: Why, we've got a duty here that I didn't know of!

SPOONEY: Oh, what is it, Moggs?

MOONEY: We've got to sing.

SPOONEY: Sing? When?

MOONEY: Why, always!

SPOONEY: What, always?

MOONEY: Yes, Spicer, all day long. We never ought to speak, we must sing all we have to say! (*A pause.*)

SPOONEY: Then I'll just tell you what it is, my dear Moggs. *I can't do it*, and that's all about it!

MOONEY: But you *must*, my dear Spicer, or else you'll lose your situation!

SPOONEY: Well if I must, I must.

MOONEY (*singing*): Now my dear Spicer,
 I'd have you to try, sir,
 To set all this platform to rights.
 Have the engine brought out,
 Push the luggage about,
 And see to the lanterns and lights.

SPOONEY: Yes, Mooney, I will, Mooney. Is that anything like singing?

MOONEY: Not the least atom, my dear Spicer; and remember, I'm Moggs, not Mooney!

SPOONEY: Oh, Moggs! To be sure, Moggs! Is that any better?

MOONEY: Rather worse, if anything, Spicer; but there's no difference worth speaking of.

SPOONEY: Oh dear, then I'm afraid I shall never do it!

Enter Kaffir.

MOONEY: Who are you, sir?

SPOONEY: Yes, sir, who are you, sir? It is Mr. Moggs that speaks to you, sir, and Mr. Moggs is a very talented man; you must answer him directly, sir. Is that more like singing, Mooney?

MOONEY: Moggs, Moggs, idiot!

SPOONEY: Oh, Moggs! Well I never shall remember—

MOONEY: But the man hasn't answered yet.

SPOONEY: No, more he has! Are you going to answer, sir?

KAFFIR: —

MOONEY: What's that, Spicer? I don't understand French.

SPOONEY: But it ain't French, it's German.

MOONEY: No, that I'll declare it isn't; it must be Dutch.

SPOONEY: I don't think it's that either; let's ask him. I say, old

feller, what language is that?
MOONEY: What a donkey you are, Spicer, he can't understand that, you must talk to him in his own language.
SPOONEY: How in the world am I to do that, Moggs, when I don't even know what it is?
MOONEY: Do as I tell you, sir, and don't be impertinent!
SPOONEY: Well, here goes, then:—
KAFFIR: —
MOONEY: Well, what did he say?
SPOONEY: Oh, he understood *me* well enough; the difficulty is, I can't understand *him*!
MOONEY: Stop a moment, I begin to recollect. It's our old friend Tamaha, etc. What a' stupid you are, Spicer, not to think of that before!
SPOONEY: No, no, Moggs, fair play if you please! You're the most stupid, you know.
MOONEY: *That* I'm not; you are, I'm sure!
SPOONEY: Oh, well, perhaps, but you're the most foolish at any rate, ain't you?
MOONEY: H'm! Don't you talk nonsense; leave me to deal with him, I understand the language.

Mooney and Kaffir converse. Exit Kaffir.

SPOONEY: What did he want?
MOONEY: He wanted the situation of stoker, *and I've given it him!*
SPOONEY: What? Without consulting me?
MOONEY: Without consulting you indeed! I should think so!
SPOONEY: Well, you know best, I suppose; but you certainly *are* the most foolish of the two.
MOONEY: No more of that! Spicer, why ain't you singing?
SPOONEY: Why should I?
MOONEY: It's so ordered by Bradshaw—
SPOONEY: Bother Bradshaw! You're not singing, either.
MOONEY: Why the fact is I don't choose, and I don't care for Bradshaw! (*Roar heard. Both start.*)
SPOONEY: What's that?
MOONEY: Don't know, I'm sure.
SPOONEY: Did you say you didn't care for Bradshaw?
MOONEY: I did.
SPOONEY: Why, no more do I! (*Roar.*) Oh, I say, don't let's talk any more about it, think of something else.
MOONEY: Well, what do you think of the weather?

Enter Mrs. Muddle.

MRS. MUDDLE: Which I never did see so ill-regulated a station. Railway horficers, indeed; I know what *I'd* do with sich horficers!
MOONEY: What do you want, my good woman?
MRS. MUDDLE: Why, here have I been waiting a good half-hour to get a docket, and there's no one to give it me!
SPOONEY: What *does* she mean, Moggs?

MOONEY: Oh, if it's a ticket you want, ma'am, I'll get you one in a moment—where to?

MRS. MUDDLE: Birmingham.

Exit Moggs.

MRS. MUDDLE: Now, young man, will you see to the luggridge and baggridge, if you please.

SPOONEY: Will you show me which is your luggage, ma'am?

MRS. MUDDLE: Why, it's all mine, himperence! What then?

SPOONEY: Oh, nothing, ma'am, it's all right here, the train won't be here yet.

Enter Moggs.

MOONEY: Here's your ticket, ma'am. Five and fourpence.

MRS. MUDDLE: There's your money, then. Now young man, attend. There's a little basket I left in the office, sir, which contains ... something imported.

MOONEY: *What*, ma'am?

MRS. MUDDLE: Never you mind *what* it is, himperence, it's something imported.

SPOONEY: Oh, Moggs, it's something smuggled! Don't have anything to do with it!

MOONEY: Nonsense, Spicer, she means important. Well, ma'am, do you wish to have it with you?

MRS. MUDDLE: No, himperence, I *don't* wish to have it with me. I wishes it to be sent.

(Pause.)

MOONEY: Sent how, ma'am?

MRS. MUDDLE: How dare you interrupt me, sir? I wishes it to be sent by the—by the Electric Diagrams—

MOONEY: Electric Telegraph, do you mean, ma'am?

MRS. MUDDLE: I should hope I did, sir!

SPOONEY: Oh, Moggs, she must be mad!

MOONEY: I'm sorry to say, ma'am, it can't go.

MRS. MUDDLE: Then I'll write to the nugepaper! As sure as my name's Muddle, I'll write to the nugepaper! *(Exit.)*

Draw down W. curtain.

Act II. Scene 2

Scene: Station.

Present: Mooney and Spooney.

Draw up W. curtain, and change for G.

MOONEY: Spicer, where's Mrs. Muddle?

SPOONEY: In the waiting room talking about Electric Diagrams.

MOONEY: Do you know, Spicer, what an awful thing I saw just now?

SPOONEY: No, what?

MOONEY: A Bradshaw's Railway Guide on legs stood visibly before me, and at the same moment heard a hollow voice.

SPOONEY: Oh, I say, how you terrify me!

MOONEY: Yes, sir, a hollow voice which said: “Mooney, why singst thou not. Spooney, why singst thou not? Spooney hath murdered singing. And, therefore, Mooney shall sing no more, Spooney shall sing no more.”

SPOONEY: Did it say any more?

MOONEY: Oh, ever such a lot more! It said:
 “Oh, I have passed a miserable day.
 Spooney sings worse than any man can say.”

SPOONEY: Any more?

MOONEY: Rather. It said:
 “Tunes, music, thorough—bass, lend me your ear,
 I came to see if Spooney sang: he didn’t!
 He doesn’t know a note or any tune,
 I never heard so shocking bad a singer!”

SPOONEY: Oh dear, this is past bearing! What impertinence!

MOONEY: Hush, don’t interrupt me.
 “When Spooney tried to sing, I really wept!
 I couldn’t bear it! It was agony!
 His listeners should be made of sterner stuff!
 Did this in Spooney look like knowing music?
 Yet Spooney thinks he knoweth how to sing.
 But Spooney he is very much mistaken!
 Each time he tried he always missed the note,
 Now sharp, now flat, but never natural,
 Yet Spooney thinks he knoweth how to sing,
 But Spooney he is very much mistaken!”

SPOONEY: But, Moggs, that’s not true! I *don’t* think I know how to sing, and I’d much rather not try!

MOONEY: The figure then said “Tell Spooney from me that he shall suffer for his doings and mis-doings.”

SPOONEY: Oh dear, oh dear! I never bargained for this when I took the situation; I’d rather be 100 miles off, a great deal!

MOONEY: Well, I can’t stay now, I hear somebody in the office.
(Exit.)

SPOONEY: Such an odd thing! To think of a book coming and talking Shakespeare like a human being—I never!
(Voice calling “Spicer! Spicer! come quick, I can’t manage him without help.”)

Exit Spooney.

Voices outside: “Oh I say—it’s no business of yourn!” “Hold your tongue!” “Hands off, villain!”

Enter Orlando, Mooney and Spooney.

Air “Come é Gentil—”

ORLANDO: He won’t give me the ticket, the brute, the brute.

MOONEY: I won’t give you the ticket, you cheat, you cheat!

SPOONEY: You see, sir, he considers it his duty, and therefore he won’t give you the ticket, because you won’t give him the money,

Parody on *Com’è
 Gentil* from *Don
 Pasquale* by Gaetano
 Donizetti

the money, the money!
ORLANDO: Then will you let me go as luggage, you brute, you brute!
MOONEY: I won't let you go as luggage, 'cos you ain't, 'cos you ain't!
SPOONEY: You see sir, you're a gentleman, and not a parcel, and so he won't let you go as luggage, because you ain't done up in brown paper, brown paper—
ORLANDO: Well then, I must go and get the money. See to my luggage—I'm going to Birmingham. (*Exit.*)

Whistle heard.

MOONEY: That's the Birmingham train: It's no use waiting for him:
Let it go.

Exit Spooney.

Whistle, etc., heard. Enter Spooney.

SPOONEY: Train's gone—

Enter Orlando.

SPOONEY: And all his luggage in it.
ORLANDO: Has the train gone, do you know?
MOONEY: Yes, sir, an hour ago.
ORLANDO: Bradshaw says half-past nine!
MOONEY: He has not rightly expressed it.
ORLANDO: Then I suppose I'm not in time?
MOONEY: Why you've exactly guessed it!
ORLANDO: That Bradshaw—
I only wish I had him here!
Just wouldn't I give it him? Oh no!
MOONEY: No, you wouldn't!
ORLANDO: And why not, I should like to know?
MOONEY: 'Cos you couldn't: He's half as big again as you,
You little feller!
He'd beat you black and brown and blue,
And green and yellor!
ORLANDO: Is my luggage gone, too?
SPOONEY: Just so, sir.
ORLANDO: Send a message by the Electric Telegraph directly; and I'll wait here.

Exit Mooney and Spooney.

Air: "Auld Lang Syne."

ORLANDO: Should all my luggage be forgot,
And never come to hand,
I'll never quit this fatal spot,
But perish where I stand.
But should it all come back again,
I'll say: "How glad I am!"
And I'll take a ticket by the train for Bir-ming-ham.
In every carriage there's a seat

Parody on *Auld Lang Syne* by Robert Burns

More cosy than the rest,
And when I've room to stretch my feet,
I always like it best.
Should such a lot be mine, I'll say:
"What a lucky dog I am!"
And joyfully I'll go my way to Bir-ming-ham.
Though wind be cold, and air be damp,
It cannot pierce my rug,
I'll read my book by the light of the lamp,
Wrapped up all tight and snug.
If I get there in time to sup,
I'll say: "How glad I am!"
And I'll proudly give my ticket up, at Bir-ming-ham.

Draw down G. curtain.

Act III. Scene 1

Scene: Station as before; no luggage.

Present: Moogs and Spicer.

Draw up G. curtain, and change for W.

SPOONEY: I quite agree with you, Moggs, we won't sing any more
in future.

MOONEY: That we won't! A fig for Bradshaw!

Roar heard.

SPOONEY: Oh, I say, Moggs, don't you mention his name again! I
am so frightened!

MOONEY: So am I, Spicer; my heart is troubled with fears of fu-
ture sorrow. Coming events, my dear Spicer, cast their shadows
before.

SPOONEY: Except at midday, you know, Moggs; shadows go the
other way after midday.

MOONEY: My poor Spicer! You have no soul for poetry, I see!

Enter Huntsman.

LOST: Where's the stationmaster? I want to go to London by the
9.45.

MOONEY: The 9:45, sir? That's gone rather more than half-an-hour
ago.

LOST: Oh dear, dear, how unlucky I am! When's the next train?

SPOONEY: The next train is 11.5.

LOST: Oh, that'll do! Give me a ticket for that!

MOONEY: But that train goes to Lincoln, sir.

LOST: Oh, never mind, never mind; I'm sure to miss it, so it don't
signify! Only give me a ticket.

MOONEY: Now, sir, just be advised by me: wait for the half-past
eleven train, which goes to London; there's a waiting room in
there. (*Exit Lost.*) (*Train heard approaching.*)

SPOONEY: What train is this, Mooney?

MOONEY: Moggs, if you please. This will be the Birmingham train.
(Whistle heard.) Where's that old woman, I wonder? She'll be late after all.

SPOONEY: I'll run and fetch her. *(Exit, and returns with Mrs. Muddle.)*

MOONEY: Now, mum, look sharp, if you please. Here's your train coming. Is all this your luggage?

MRS. MUDDLE: Yes, sir, it be; but it's not the luggridge I cares for, no, nor the baggridge neither. Young man.

MOONEY: Madam.

MRS. MUDDLE: I wishes you to—to—to ensnare my life!

SPOONEY: Oh, Moggs, hold me up a moment, I am took so bad!

MRS. MUDDLE: Now himperence, what are you a-grumbling about? Are you going to ensnare my life, or not?

MOONEY: Ensnare your life, ma'am!

MRS. MUDDLE: Yes, sir! What with all these collections and accidings as is so perpetually 'appening, I daren't go without you do!

SPOONEY: We couldn't do it, really, mum. I don't know what the consequences would be! Don't consent, Moggs!

MOONEY: I haven't a notion what she means! No, ma'am, we can't do it on any considerations!

MRS. MUDDLE: Then, young men, mark my words! If any of them collections happens, or the steam Indian blows up, or I get run over and killed in one of your funnels, which I never could see the sense of yet, and they never light 'em up, mark my words, it'll be manslaughter! And if it *be*, which I'm mortally certain it will, I'll write to the nugepaper! There!

SPOONEY: But, my dear madam, it can't be manslaughter, in any case. It will only be woman-slaughter.

MRS. MUDDLE: Well, and what then, you young Spooney, ain't that just as bad?

SPOONEY: How does she know my name?

MOONEY: She doesn't; don't betray yourself!

MRS. MUDDLE: No, I don't know your name, nor I don't want to; your face is bad enough, in all conscience!

Whistle heard. Lost rushes across back of stage.

MOONEY: Run and stop the train, Spicer, and see what that gentleman is after. *(Exit Spicer.)* Really, madam, you shouldn't go by the railway alone; why haven't you somebody with you?

MRS. MUDDLE: Because I'm suffidgent by myself, himperence! My missis was a sayin' to me only this mornin', says she: "Mrs. Muddle," says she, "won't you have someone with you?" "No, mum," says I, "I won't; I knows all about the docketts, and the collections, and the steam Indians," says I, "and I knows the himperence of the railway horficers," I says, "and I can manage it all, and when I gets to the station I wants to get out at," says I, "why, I'll just nudge the conductor with the pint of my rumberoller!"

MOONEY: My good woman, you are under some mistake. A railway train is not a bus!

MRS. MUDDLE: Oh, it ain't, ain't it, sir? Then what does it go and conduct itself as a bus for, I'd like to know?

MOONEY: I don't understand you, ma'am—

MRS. MUDDLE: Why, one of them steam Indians went and bust only last seek, at least so my neege Eliza telled me.

MOONEY: Bust? Madam, what in the world do you mean?

MRS. MUDDLE: Well, it *did* bust; don't you go for to denige it, himperence! And now, sir, are you going to ensnare my life for me, or not?

Enter Spicer and Mr. Lost.

LOST: Oh, whatever will become of me, I'm sure I don't know!

SPOONEY: Here's this gentleman was a-running like mad into the wrong train.

LOST: And so I ought to, oughtn't I? It was just on the point of starting.

MRS. MUDDLE: Just going, is it? and I haven't got my life ensnared yet! Oh, you villains!

Exit Mrs. Muddle. Whistle and train heard going.

Enter Mrs. Muddle.

MRS. MUDDLE: There now! there's the train gone, and all my luggridge in it!

LOST: Gone! Then it's all up!

SPOONEY: No, sir, that was the down train.

MRS. MUDDLE: Well, young men, I'll write to the nugepaper immediate, and what'll it'll do, I'm sure I can't tell, but I 'ope it'll give you six months in the treadmill, or else hard labour at the gallows! Mark my words—I says to you, says I, "See to the luggridge and baggridge"—that were the depression I made use of—and you've been and sent it off without me!

MOONEY: But, my dear madam, you shall go by the next train—won't *that* do?

MRS. MUDDLE: No, sir, it will *not* do!

MOONEY: What do you want then?

MRS. MUDDLE: Well, I'll say nothing' more about it, so long as you'll send me by the—the electric Diagrams.

Mooney, Spooney and Lost rush out.

MRS. MUDDLE: (*Singing. Air: "Norma."*)

Oh, dear! Whatever am I to do?

Dear, whatever am I to do?

Here's all my luggridge is gone,

I haven't the least idea where to!

There was three trunks and an oblong box

And none of them had got any locks;

And they'll be robbed on the way, as sure

As my name is Muddle, they will.

Oh, dear! Whatever am I to do?

Parody on *Casta Diva* from *Norma* by Vincenzo Bellini

Draw down W. Curtain.

Act III. Scene 2

Scene: Coloured paper—carpet.

Present: Sophonisba.

Draw up W. curtain.

SOPHONISBA: Ah, how my heart beats with fear!
Would that my beloved husband were here!
I wish he wasn't quite so late!
The dinner'll be spoilt as sure as fate!

Air: "Non Piu Mesta."

Is the mutton roasting, Sarah Jane?
And are the potatoes boiled?
If we have to send them out again
The dinner-party will be spoiled!

Parody on *Non Piu Mesta* from *La Cenerentola* by Gioachino Rossini

Enter Sarah Jane.

COOK: Why, I'm sorry to say, mum, the meat took a jump.
And into the ashes did rush;
But I've bin and I've scrubbed it under the pump,
With soap and a blacking-brush!
And the taties, mum, they was bilin' so well,
When just as turned my back,
A whole lot of soot down the chimbley fell,
And now they're as black as black!

SOPHONISBA: You don't say so! Is it *quite* spoilt?

COOK: *Quite*, mum! It'll only do for me and perliceman to 'ave for supper this night.

SOPHONISBA: Then what are we to have for dinner?

COOK: Oh, mum, I'll run you up some little thing in a jiffey! What d'you say to Irish stew?

SOPHONISBA: Irish stew, cook? The very thing!

COOK: Why, I thought as much, mum, so I've just done some; it's down to the fire now! (*Exit.*)

Enter Orlando.

ORLANDO: Dinner ready, my dear?

SOPHONISBA: Very nearly, I believe, love—

ORLANDO: What, the roast leg of mutton? That's right!

That roast leg of mutton, of mutton, of mutton,
That roast leg of mutton I've thought of all day.

So let us get at it, get at it, get at it,
So let us get at it without more delay!

SOPHONISBA: Why, the fact is, dear, it's not—

ORLANDO: Not hot mutton!

SOPHONISBA: No, my love, don't be angry.

Air: "La ci darem."

ORLANDO: I don't like cold mutton.

Parody on *Là ci darem la mano* from *Don Giovanni* by Wolfgang Amadeus Mozart

SOPHONISBA: I know that as well as you.
 ORLANDO: But whatever it is, I don't care a button!
 SOPHONISBA: Why, my dear love, it's Irish stew!
 ORLANDO: Then what has become of the joint?
 SOPHONISBA: That doesn't matter to you!
 ORLANDO: Where is it?
 SOPHONISBA: That's nothing to the point,
 For we're to dine on Irish stew.
 ORLANDO: Then since it must be so, must be so, must be so,
 Into the dining room let us go, let us go.
 Come with me—
 SOPHONISBA: I agree. (*Exeunt both.*)

A short pause.

Enter both by other door.

SOPHONISBA: Now, my love, that we have dined,
 Tell me, if you feel inclined,
 How you travelled and got on.
 ORLANDO: All my luggage, dear, is gone!
 I've been the sport of cruel fate,
 For every train I was too late!
 It's all along of Bradshaw!

Air: "Long, long ago."

When I arrived at the sta-ti-on
 Long, long ago, *etc.*
 I found that the train which I wanted was gone,
 Long, long ago, *etc.*
 The train-time in Bradshaw was printed all wrong,
 And that is the reason that I've been so long,
 And I only wish he had gone to Hong-Kong,
 Long, long ago, *etc.*

Parody on *Long, Long ago* by Thomas Haynes Bayly

Air: "Go, forget me."

SOPHONISBA: Oh! forget it. Why should Bradshaw
 O'er that brow a shadow cast?
 Let us think no more about it,
 Since you have got home at last.
 ORLANDO: Home? But where 's the roasted mutton?
 And I've got no clothes to put on;
 May that Guide of Bradshaws be
 Put behind the fire by me!

Parody on *Go Forget Me Why Should Sorrow* by William Clifton

Air: "Paloma"

ORLANDO: That Bradshaw, I wish he'd caught it as he ought; that
 Bradshaw's Railway Guide—"That Bradshaw!" *etc.*
 SOPHONISBA: *Ditto, as above.*

Parody on *La Paloma* by Sebastián de Yradier

Enter Bradshaw.

ORLANDO: Oh horror!

Enter all.

BRADSHAW: "Enter my minions all and hear my words:
I made a rule my servants were to sing.
That rule they disobeyed, and in revenge
I altered all the train-times in my book,
And made the world go wrong, what then? 'twas just;
And ever thus shall virtue be rewarded,
And vice be punished, ye that hear me now,
Say, do not I speak truly; let applause
Be ours if now our conduct be commended;
But hisses, groans, and howlings as of beasts,
If we have failed your hopes to satisfy!"

Draw down W. curtain.

Epilogue

By Mr. Flexmore

*Scene: Green curtain at back—green floor—green paper sides.
Draw up W. curtain, and change for P.*

Air: "Admiral."

How gallantly, how merrily, we've spent our time to-day!
The audience are delighted, delighted with our play,
Or so at least they seem to be, by making such a noise,
The cause for which, I fancy, is, there are so many boys!
Both strangers and relations, we thank you, one and all,
We asked you for your plaudits and you answered to our call,
Pit, gallery (if such there be) and stalls, and private boxes,
Spectators all of many names, especially Wilcoxes!
I hope you've all been satisfied with music, sound, and sight,
And now I think it's fully time to wish you all good-night.
I've but two words to say to you, so patient as you've been,
Which are "Good health to each one here," "Long live our gracious
Queen!"

Draw down P. curtain.
NATIONAL ANTHEM.

18.145 She's all my Fancy Painted Him

Source: The Comic Times, September 8, 1855; Mischmasch (as newspaper cutting)
Parody on *Alice Gray* by William Mee

Other version:
→ 18.175, p. 2386

[This affecting fragment was found in MS., among the papers of the well-known author of "Was it You or I?" a tragedy, and the two popular novels "Sister and Son," and "The Niece's Legacy, or the Grateful Grandfather."]

She's all my fancy painted him
 (I make no idle boast);
If he or you had lost a limb,
 Which would have suffered most?
He said that you had been to her,
 And seen me here before;
But, in another character,
 She was the same of yore.
There was not one that spoke to us,
 Of all that thronged the street:
So he sadly got into a 'bus,
 And pattered with his feet.
They sent him word I had not gone
 (We know it to be true);
If she should push the matter on,
 What would become of you?
They gave her one, the gave me two,
 They gave us three or more;
They all returned from him to you,
 Though they were mine before.
If I or she should chance to be
 Involved in this affair,
He trusts to you to set them free,
 Exactly as we were.
It seemed to me that you had been
 (Before she had this fit)
An obstacle, that came between
 Him, and ourselves, and it.
Don't let him know she liked them best,
 For this must ever be
A secret, kept from all the rest,
 Between yourself and me.

18.146 Brother and Sister

Source: Useful and Instructive Poetry

“Sister, sister, go to bed!
Go and rest your weary head.”
Thus the prudent brother said.

“Do you want a battered hide,
Or scratches to your face applied?”
Thus his sister calm replied.

“Sister, do not raise my wrath.
I’d make you into mutton broth
As easily as kill a moth!”

The sister raised her beaming eye
And looked on him indignantly
And sternly answered, “Only try!”

Off to the cook he quickly ran.
“Dear Cook, please lend a frying-pan
To me as quickly as you can.”

“And wherefore should I lend it you?”
“The reason, Cook, is plain to view.
I wish to make an Irish stew.”

“What meat is in that stew to go?”
“My sister’ll be the contents!” “Oh!”
“You’ll lend the pan to me, Cook?” “No!”

Moral: Never stew your sister.

18.147 Clara

Source: Useful and Instructive Poetry

Solemnly sighing
Like one a-dying,
The countess Clara on her pillow lay:
Along the pillow white,
Through the drear, drear, night
Her golden ringlets thickly cluster,
“Woe’s me, woe’s me!”
Thus did she sadly say,
“My punishment is just, what can be juster?
Yet am I wretched and in misery.
Why hath he left me here alone?
Why doth he thus delay his coming?
I hear no sound but the fitful drone
Of the beetle idly humming.
I live in woe and hopeless love,
And gaze on the lovely moon above.
The yellow moon, the yellow moon!
She looketh down aloft,
And through the dark and murky night
She sends her whispers soft.

With rays of light through the murky night
She makes the dark as noon,
Oh! would I were a screech owl now,
To woo the yellow moon!

Through distant lands of pleasantness
A region of despair
I wander on in weariness
And madly tear my hair.
Is it not so? Do not I hear his voice
Ah me! My heart, rejoice!
Woe, woe, woe, woe!
My brain it reels, my heart is all on fire,
As curls the smoke from yonder village spire!”
Alas, oh! no!
Sudden she hears a thundring charger’s stamp
She hears a horseman tramp
She hears a vacant tone
Still wild and wilder grown
“Ha! ha! ha! ha!
Some beer there, ho!
Who said so? hey?
Answer you baseborn churl!
One, two, three, four,
I took you for a door,

But still you are an earl!
 Stay!
 Fetch me the bottle, 'tis not empty yet!
 What? Will you fret?
 I didn't do it, no!
 I'll bet you two to three I win—
 What's that?
 Fish up that fish without a fin—
 Fetch me my walking stick and hat—
 Who trod upon the collar of my coat?
 I do not care a groat.
 Fill, fill the cup—
 Let's have a sup!
 Have not I rid the livelong night?
 Dear me! I cannot stand upright!"
 At the sound of his voice, and at his tone,
 The Lady Clara gave a moan,
 Thus said she, "Oh!
 Oh! what a go!
 What did he say? I did not understand.
 The gaiety, the sadness of the land
 Through bounding binnocks ever flows
 Like the red rose!
 The smoke it curls, the chimney topples near!
 The stars all quake for fear!
 Ah me! I make my troublous moan,
 But he is wild and wilder grown,
 His wrath is hot,
 Oh! is it not?
 "I shriek with agony's attack,
 I scream with sudden pain,
 I would I were a maniac!
 I would I were insane!"
 Through the dim darkness of the night,
 She saw a vision bright,
 An aged, hoary monk,
 Thus he the silence broke,
 And thus he spoke,
 Extending forth his shrivelled hand,
 It seemed a mountain, dimly grand,
 That did before the Lady stand.
 "Weep not for him, Lady fair!
 Tear not off thy golden hair!
 Do not scream, and do not faint,
 Utter not thy loud complaint,
 He's only swallowed too much beer,
 He'll not come to any harm,
 Don't waste time in useless fear,
 And indulge not in alarm!

Go down and let thy guilty husband in.”
Thus spake the monk,
“He’s only been a drinking too much gin,
And got dead drunk!”
Moral: “Woo the yellow moon.”

18.148 **Something fails**

Source: from a letter to Edith Blakemore, February 1, 1881

Something fails—
Perhaps the gales—
Still, there *are* scales
On the rails,
Packed in bales
With the mails,
Coming to a writer who regales
Little friends of his with fairy-tales.

18.149 Speak Roughly to Your Little Boy

Source: Alice's Adventures in Wonderland (extracted, connected)
Parody on *Speak Gently* by David Bates

Speak roughly to your little boy,
And beat him when he sneezes:
He only does it to annoy,
Because he knows it teases.

Wow! wow! wow!

I speak severely to my boy,
I beat him when he sneezes;
For he can thoroughly enjoy
The pepper when he pleases!

Wow! wow! wow!

18.150 Tell me truly, Maidens three

Source: from a letter to Harriet, Mary and Georgina Watson in 1870

Tell me truly, Maidens three,
Where can all these wonders be?
Where tooth of lion, eye of ox,
And foot of cat and tail of fox,
With ear of mouse and tongue of hound }
And beard of goat, together bound }
With hair of Maiden, strew the ground. }

Solution: *Taraxacum officinale* (dandelion), *Leucanthemum vulgare* (oxeye-daisy),
Antennaria dioica (catsfoot), *Alopecurus* (foxtail grass), *Cerastium fontanum*
(common mouse-ear), *Cynoglossum officinale* (houndstongue), *Aruncus dioicus*
(goatsbeard), *Adiantum* (Maidenhair fern)

18.151 Double Acrostic (Kerr)

Source: sent to Mabel and Emily Kerr, May 20, 1871

[Addressed to two young ladies in Canada, whose photograph I had seen & admired: on hearing of this they had sent me a copy. Their names form the two upright words, but there is no stanza to embody them.]

Thanks, thanks, fair Cousins, for your gift
So swiftly borne to Albion's isle—
Though angry waves their crests uplift
Between our shores, for many a league!
("So far, so good," you say: "but how
Your Cousins?" Let me tell you, Madam.
We're both descended, you'll allow,
From one great-great-great-grandsire, Noah.)
Your picture shall adorn the book
That's bound, so neatly and moroccoly,
With that bright green which every cook
Delights to see in beds of cauliflower.
The carte is very good, but pray
Send me the larger one as well!
"A cool request!" I hear you say.
"Give him an inch, he takes an acre!
"But we'll be generous, because
We well remember, in the story,
How good and gentle Alice was,
The day she argued with the Parrot!"

Solution: mile, Adam, broccoli, ell, lory: Mabel, Emily

18.152 Four Riddles. No. III

Source: Rhyme? and Reason?

The introduction has been moved here.

The original manuscript (titled "A Charade", introduced "Dedicated, without permission, to Miss Marion Terry", with stanzas numbered and labelled, the minor difference "falling day" instead of "fading day", and signature "Lewis Carroll. Jan. 23. 1879") can be found as scan in *Magic of Lewis Carroll*, p. 129

No. III. was written after seeing Miss Marion Terry perform in Mr. Gilbert's play of "Pygmalion and Galatea." The three stanzas respectively describe "My First," "My Second," and "My Whole."

The air is bright with hues of light
And rich with laughter and with singing:
Young hearts beat high in ecstasy,
And banners wave, and bells are ringing:
But silence falls with fading day,
And there's an end to mirth and play.
Ah, well-a-day!

Rest your old bones, ye wrinkled crones!
The kettle sings, the firelight dances.
Deep be it quaffed, the magic draught
That fills the soul with golden fancies!
For Youth and Pleasance will not stay,
And ye are withered, worn, and gray.
Ah, well-a-day!

O fair cold face! O form of grace,
For human passion madly yearning!
O weary air of dumb despair,
From marble won, to marble turning!
"Leave us not thus!" we fondly pray.
"We cannot let thee pass away!"
Ah, well-a-day!

Solution: gala, tea: Galatea

18.153 Lays of Sorrow. No. 1

Source: The Rectory Umbrella



The day was wet, the rain fell souse
Like jars of stawberry jam,¹ a
Sound was heard in the old henhouse,
A beating of a hammer.
Of stalwart form, and visage warm,
Two youths were seen within it,
Splitting up an old tree into perches for their poultry

¹i. e. the jam without the jars: observe the beauty of this rhyme.

At a hundred strokes² a minute.

The work is done, the hen has taken
Possession of her nest and eggs,
Without a thought of eggs and bacon,³
(Or I am very much mistaken:)

She turns over each shell,
To be sure that all's well,
Looks into the straw
To see there's no flaw,
Goes once round the house,⁴
Half afraid of a mouse,
Then sinks calmly to rest
On the top of her nest,

First doubling up each of her legs.

Time rolled away, and so did each shell,

"Small by degree and beautifully less,"

As the sage mother weth a powerful spell⁵

Forced each in turn it's contents to "express,"⁶

But ah! "imperfect is expression,"

Some poet said, I don't care who,

If you want to know you must go elsewhere,

One fact I can tell, if you're willing to hear,

He never attended a Parliament Session,

For I'm certain that if he had ever been there,

Full quickly would he have changed his ideas,

With the hissings, the hootings, the groans and the cheers.

And as to his name it is pretty clear

That it wasn't me and it wasn't you!

And so it fell upon a day,

(That is, it never rose again.)

A chick was found upon the hay,

It's little life had ebbed away.

No longer frolicsome and gay,

No longer could it run or play.

"And must we, chicken, must we part?"

It's master⁷ cried with bursting heart,

And voice of agony and pain

So one, whose ticket's marked "Return⁸".

When to the lonely roadside station

He flies in fear and perturbation.

Thinks of his home—the hissing urn—

Then runs with flying hat and hair,

Quoted from *Henry and Emma* by Matthew Prior (commonly misquoted)

Quoted from a folk song

²at the rate of a stroke and two thirds in a second.

³unless the hen was a poacher, which is unlikely.

⁴the hen-house.

⁵beak and claw.

⁶press out.

⁷probably one of the two stalwart youths.

⁸the system of return tickets is an excellent one. People are conveyed, on particular days, there and back again for one fare.

And, entering, finds to his despair
He's missed the very latest train!⁹
Too long it were to tell of each conjecture,
Of chicken suicide, and poultry victim,
The deadly frown, the stern and dreary lecture,
The timid guess, "perhaps some needle pricked him!"
The din of voice, the words both loud and many,
The sob, the tear, the sigh that none could smother,
Till all agreed "a shilling to a penny
"It killed it self, and we acquit the mother!"
Scarce was the verdict spoken,
When that still calm was broken,
A childish from hath burst into the throny,
With tears and looks of sadness,
That bring no news of gladness,
But tell too surely something hath gone wrong!
"The sight that I have come upon
"The stoutest¹⁰ heart would sicken,
"That nasty hen has been and gone
"And, killed another chicken!"

⁹an additional vexation would be that his "Return" ticket would be no use the next day.
¹⁰perhaps even the "bursting" heart of its master.

18.154 The Juvenile Jenkins

Source: Useful and Instructive Poetry



The juvenile Jenkins was jumping with joy,
As he sported him over the sandy lea;
In his small fat hand there was many a toy
And many a cake in his mouth had he.

But the juvenile Jenkins he heard a voice
Which made him with horror thrill through and through,
“Come into the house, don’t make any noise,
For I have got a parcel for you!”

The juvenile Jenkins he entered the door,
And, lo, on the table the parcel lay,
He wiped his feet on the mat on the floor,
While his mother reluctantly did say,

“Perhaps it may be a sock or a mitten:”
He covered her face with his kisses soft,
As he read the directions upon it written,
“The juvenile Jenkins.”

Moral: “A present from Croft.”

18.155 A Fable

Source: Useful and Instructive Poetry

The Khalif Emir sat upon his throne,
He ravaged all the land till he was left alone.
The Brahmin Mufti came his throne before,
He told a tale all full of learned lore;
“An ancient owl he sat upon a tree,
A younger owl, and he would married be,
He asked him for a boon and dowry fair,
Since he to all his property was heir.
He said, ‘My son, I have it not to give
But if one year our khalif he should live,
I’ll give you, dearest duck, as sure as fate
One hundred farms all waste and desolate.’”
He ceased his tale: he gazed upon his face,
He saw his tears come trickling down apace,
He thought upon it for an hour or more,
He did what he had never done before,
He changed his conduct, he the people bless’d
(No more he made them weep)
And the land was steeped in happiness
(Full eighteen inches deep.)
Moral: “Change your conduct.”

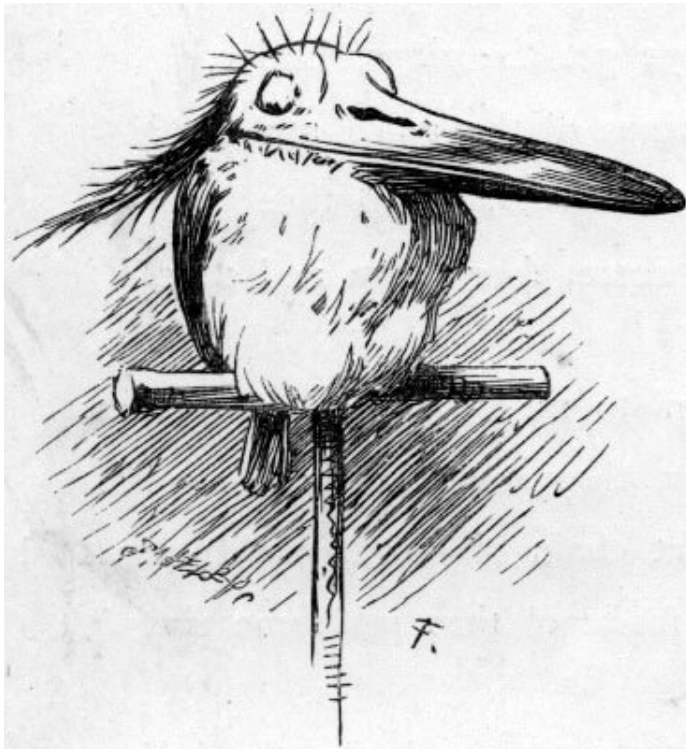
18.156 The Lang Coortin'

Source: The College Rhymes, November 1862 (without images, with signature "R. W. G." and minor differences as noted); Phantasmagoria (without images, with minor differences as noted); Rhyme? and Reason?

The lady she stood at her lattice high,
Wi' her doggie at her feet;
Thorough the lattice she can spy
The passers in the street.

"There's one that standeth at the door,
And tirlleth at the pin:
Now speak and say, my popinjay,¹²
If I sall let him in."

Then up and spake the popinjay
That flew abune her head:
"Gae let him in that tirls the pin:
He cometh thee to wed."



O when he cam' the parlour in,

¹*Popinjay*. This bird appears to have been a regular domestic institution with our forefathers (see the 'Minstrelsy of the Border'), and to have volunteered advice and moral reflections on all possible occasions—much after the fashion of the Chorus in Greek Tragedy.

²Footnote doesn't appear in *Rhyme? and Reason?*, in *College Rhymes* it says "... forefathers, according to the early English Ballads, and to ... after the manner of the ..."

A woeful man was he!
 “And dinna ye ken your lover agen,
 Sae well that loveth thee?”
 “And how wad I ken ye loved me, Sir,
 That have been sae lang away?
 And how wad I ken ye loved me, Sir?
 Ye never telled me sae.”
 Said—“Ladye dear,” and the salt, salt tear
 Cam’ rinnin’ doon his cheek,
 “I have sent thee tokens of my love
 This many and many a week.
 “O didna ye get the rings, Ladye,
 The rings o’ the gowd sae fine?
 I lwot³ that I have sent to thee
 Four score, four score and nine.”
 “They cam’ to me,” said that fair ladye.
 “Wow, they were flimsie things!”
 Said—“that chain o’ gowd, my doggie to lhowd,⁴
 It is made o’ thae self-same rings.”
 “And didna ye get the locks, the locks,
 The locks o’ my ain black hair,
 Whilk I sent by post, whilk I sent by box,
 Whilk I sent by the carrier?”
 “They cam’ to me,” said that fair ladye;
 “And I pritheer send nae mair!”
 Said—“that cushion sae red, for my doggie’s head,
 It is stuffed wi’ thae locks o’ hair.”
 “And didna ye get the letter, Ladye,
 Tied wi’ a silken string,
 Whilk I sent to thee frae the far countrie,
 A message of love to bring?”
 “It cam’ to me frae the far countrie
 Wi’ its silken string and a’;
 But it wasna prepaid,” said that high-born maid,
 “Sae I gar’d them tak’ it awa’.”
 “O ever alack that ye sent it back,
 It was written sae clerkly and well!
 Now the message it brought, and the boon that it sought,
 I must even say it mysel’.”
 Then up and spake the popinjay,
 Sae wisely counselled he.
 “Now say it in the proper way:
 Gae doon upon thy kneel!”
 The lover he turned baith red and pale,

³wist

⁴houd

̀Went⁵ doon upon his knee:
 “O Ladye, hear the waesome tale
 ̀That must be told⁶ to thee!
 “For five lang years, and five lang years,
 I coorted thee by looks;
 By nods and winks, by smiles and tears,
 As I had read in books.
 “For ten lang years, O weary hours!
 I coorted thee by signs;
 By sending game, by sending flowers,
 By sending Valentines.
 “For five lang years, and five lang years,
 I have dwelt in the far countrie,
 ̀Till that thy mind should be inclined⁷
 Mair tenderly to me.
 “Now thirty years are gane and past,
 I am come frae a foreign land:
 I am come to tell thee my love at last—
 O Ladye, gie me thy hand!”
 The ladye she turned not pale nor red,
 But she smiled a pitiful smile:
 “Sic’ a coortin’ as yours, my man,” she said
 “Takes a lang and a weary while!”
 And out and laughed the popinjay,
 A laugh of bitter scorn:
 “A coortin’ done in sic’ a way,
 It ought not to be borne!”
 Wi’ that the doggie barked aloud,
 And up and doon he ran,
 And tugged and strained his chain o’ gowd,
 All for to bite the man.
 “O hush thee, gentle popinjay!
 O hush thee, doggie dear!
 There is a ̀word⁸ I fain wad say,
 It needeth he should hear!”
 Aye louder screamed that ladye fair
 To ̀drown⁹ her doggie’s bark:
 Ever the lover shouted mair
 To make that ladye hark:
 Shrill and more shrill the popinjay
 ̀Upraised¹⁰ his angry squall:

⁵Gaed

⁶I have to tell

⁷In hopes thy mind might be inclined

⁸thing

⁹still

¹⁰Kept up



“And out and laughed the popinjay”

I trow the doggie's voice that day
 Was louder than them all!
 The serving-men and serving-maids
 Sat by the kitchen fire:
 They heard sic' a din the parlour within
 As made them much admire.



“O hush thee, gentle popinjay!”

Out spake the boy in buttons
 (I ween he wasna thin),
 “Now wha will tae the parlour gae,
 And stay this deadlie din?”
 And they have taen a kerchief,
 Casted their *kevils*¹¹¹² in,

¹¹ *Kevils*, lots. A method of deciding on a course of action, which was probably most popular with those who could not afford to keep a popinjay.

¹²Footnote doesn't appear in *Rhyme? and Reson?*, in *College Rhymes* it says “. . . which appears to have been chiefly in favour with those . . .”

For wha should tae the parlour gae,
 And stay that deadlie din.
 When on that boy the kevil fell
 To stay the fearsome noise,
 “Gae in,” they cried, “whate’er betide,
 Thou prince of button-boys!”
 Syne, he has taen a supple cane
 To _ˌswinge¹³ that dog sae fat:
 The doggie yowled, the doggie howled
 The louder aye for that.
 Syne, he has taen a mutton-bane—
 The doggie _ˌceased¹⁴ his noise,
 And followed doon the kitchen stair
 That prince of button-boys!
 Then sadly spake that ladye fair,
 Wi’ a frown upon her brow:
 “O dearer to me is my sma’ doggie
 Than a dozen sic’ as thou!
 “Nae use, nae use for sighs and tears:
 Nae use at all to fret:
 Sin’ ye’ve bided sae well for thirty years,
 Ye may bide a wee langer yet!”
 Sadly, sadly he crossed the floor
 And tirléd at the pin:
 Sadly _ˌwent¹⁵ he through the door
 Where sadly he cam’ in.
 “O gin I had a popinjay
 To fly abune my head,
 To tell me what I ought to say,
 I had by _ˌthis¹⁶ been wed.
 “O gin I find anither ladye,”
 He said _ˌwi¹⁷ sighs and tears,
 “I _ˌwot¹⁸ my coortin’ sall not be
 Anither thirty years:
 “For gin I find a ladye gay,
 Exactly to my taste,
 I’ll pop the question, aye or nay,
 In twenty years at maist.”

¹³beat

¹⁴hushed

¹⁵gaed

¹⁶now

¹⁷with

¹⁸wist



“The doggie ceased his noise”



18.157 Stolen Waters

Source: The College Rhymes, June 1862 (with minor differences as noted);
Phantasmagoria (with minor differences as noted); Three Sunsets

The light was faint, and soft¹ the air
That breathed around the place;
And she was lithe, and tall, and fair,
And with a wayward grace
Her queenly head she bare.

With glowing cheek, with gleaming eye,
She met me on the way:
My spirit owned the witchery
Within her smile that lay:
I followed her, I knew not why.

The trees were thick with many a fruit,
The grass with many a flower:
My soul was dead, my tongue was mute,
In that accursèd hour.

And, in my dream, with silvery voice,
She said, or seemed to say,
“Youth is the season to rejoice—”
I could not choose but stay:
I could not say her nay.

She plucked a branch above her head,
With rarest fruitage laden:
“Drink of the juice, Sir Knight,” she said:
“’Tis good for knight and maiden.”

Oh, blind mine eye that would not trace—
Oh,² deaf mine ear that would not heed—
The mocking smile upon her face,
The mocking voice of greed!

I drank the juice; and straightway felt
A fire within my brain:
My soul within me seemed to melt
In sweet delirious pain.

“Sweet is the stolen draught,” she said:
“Hath sweetness stint or measure?
Pleasant the secret hoard of bread:
What bars us from our pleasure?”

“Yea, take we pleasure while we may,”
I heard myself replying.
In the red sunset, far away,
My happier life was dying:

¹“warm” in *College Rhymes*

²And

My heart was sad, my voice was gay.
 And unawares, I knew not how,
 I kissed her dainty finger-tips,
 I kissed her on the lily brow,
 I kissed her on the false, false lips—
 That burning kiss, I feel it now!
 “True love gives true love of the best:
 Then take,” I cried, “my heart to thee!”
 The very heart from out my breast
 I plucked, I gave it willingly:
 Her very heart she gave to me—
 Then died the glory from the west.
 In the gray light I saw her face,
 And it was withered, old, and gray;³
 The flowers were fading in their place,⁴
 Were fading with the fading day.
 Forth from her, like a hunted deer,
 Through all that ghastly night I fled,
 And still behind me seemed to hear
 Her fierce unflagging tread;
 And scarce drew breath for fear.
 Yet marked I well how strangely seemed
 The heart within my breast to sleep:
 Silent it lay, or so I dreamed,
 With never a throb or leap.
 For hers was now my heart, she said,
 The heart that once had been mine own:
 And in my breast I bore instead
 A cold, cold heart of stone.
 So grew the morning overhead.
 The sun shot downward through the trees
 His old familiar flame:
 All ancient sounds upon the breeze
 From copse and meadow came—
 But I was not the same.
 They call me mad: I smile, I weep,
 Uncaring how or why:
 Yea, when one’s heart is laid asleep,
 What better than to die?
 So that the grave be dark and deep.
 To die! To die? And yet, methinks,
 I drink of life, to-day,
 Deep as the thirsty traveler drinks
 Of fountain by the way:
 My voice is sad, my heart is gay.

³Additional line in *College Rhymes*: “The fruits were rotting in their place,”

⁴“where we lay” in *College Rhymes*

When yestereve was on the wane,
I heard a clear voice singing
So sweetly that,⁵ like summer-rain,⁶
My happy tears came⁷ springing:
My human heart returned again.

*“A rosy child,
Sitting and singing, in a garden fair,
The joy of hearing, seeing,
The simple joy of being—
Or twining rosebuds in the golden hair
That ripples free and wild.*

*“A sweet pale child—
Wearily looking to the purple West—
Waiting the great For-ever
That suddenly shall sever
The cruel chains that hold her from her rest—
By earth-joys unbeguiled.*

*“An angel-child—
Gazing with living eyes on a dead face:
The mortal form forsaken,
That none may now awaken,
That lieth painless, moveless in her place,
As though in death she smiled!*

*“Be as a child—
So shalt thou sing for very joy of breath—
So shalt thou wait thy dying,
In holy transport lying—
So pass rejoicing through the gate of death,
In garment undefiled.”*

Then call me what they will, I know
That now my soul is glad:
If this be madness, better so,
Far better to be mad,
Weeping or smiling as I go.

For if I weep, it is that now
I see how deep a loss is mine,
And feel how brightly round my brow
The coronal might shine,
Had I but kept mine early vow:

And if I smile, it is that now
I see the promise of the years—
The garland waiting for my brow,
That must be won with tears,
With pain—with death—I care not how.

⁵“So sweetly, purely” in *College Rhymes*, “And suddenly” in *Phantasmagoria*

⁶“the rain” in *College Rhymes*

⁷“were” in *College Rhymes*

May 9, 1862.⁸

⁸Only in *Three Sunsets*, "Ch. Ch. C. L. D." in *College Rhymes*

18.158 The Willow-Tree

Source: Mischmasch (with minor differences as noted); Phantasmagoria (as “Stanzas for Music”, with minor differences as noted); Three Sunsets

⌊(Written to an old English air)¹

The morn was bright, the steeds were light,
The wedding guests were gay:
Young Ellen stood within the wood
And watched them ⌊pass² away.
She scarcely saw the gallant train:
The tear-drop dimmed her ee:
Unheard the maiden did complain
Beneath the Willow-Tree.

“Oh Robin, thou didst love me well,
⌊Till,³ on a bitter day,
She came, the Lady Isabel,
And stole ⌊thy heart⁴ away.
My tears are vain: I live again
In days that used to be,
When I could meet thy welcome feet
Beneath the Willow-Tree.

“Oh Willow gray, I may not stay
Till Spring renew thy leaf;
But I will hide myself away,
And nurse a ⌊lonely⁵ grief.
It shall not dim Life’s joy for him:
My tears he shall not see:
While he is by, I’ll come not nigh
My weeping Willow-Tree.

“But when I die, oh let me lie
⌊Beneath thy loving shade,⁶
That he may loiter careless by,
Where I am lowly laid.
And let the white white marble tell,
If he should stoop to see,
‘Here lies a maid that loved thee well,
Beneath the Willow-Tree.’”

⌊1859.⁷

¹Only in *Mischmasch*

²“troop” in *Mischmasch*

³“But” in *Mischmasch*

⁴“my Love” in *Phantasmagoria*

⁵hopeless

⁶“Within thy precious shade,” in *Mischmasch*

⁷Only in *Three Sunsets*

18.159 Faces in the Fire

Source: All the Year Round, February 11, 1860 (with minor differences as noted);
Mischmasch (with minor differences as noted); Phantasmagoria (with different
punctuation); Three Sunsets

 The night creeps onward, sad and slow:
 In these red embers' dying glow
 The forms of Fancy come and go.¹
 An island-farm—broad² seas of corn
 Stirred³ by the wandering breath of morn—
 The happy spot where I was born.
 The picture fadeth in its place:
 Amid the glow⁴ I seem to trace
 The shifting semblance of a face.
 'Tis now a little childish form—
 Red lips for kisses pouted warm—
 And elf-locks tangled in the storm.
 'Tis now a grave and gentle maid,
 At her own beauty half afraid,
 Shrinking, and⁵ willing to be stayed.⁶
 Oh, Time was young, and Life was warm,
 When first I saw that fairy-form,
 Her dark hair tossing⁷ in the storm.
 And fast and free these pulses played,
 When last I met that gentle maid—
 When last her hand in mine was laid.
 Those locks of jet are turned to gray,
 And she is strange and far away
 That might have been mine own to-day—
 That might have been mine own, my dear,
 Through many and many a happy year—
 That might have sat beside me here.

1

I watch the drowsy night expire,
And Fancy paints at my desire
Her magic pictures in the fire.

²mid

³Swayed

⁴“And fitfully” in *Mischmasch* and *Phantasmagoria*

⁵“yet” in *All the Year Round*

⁶Additional verse:

 'Tis now a matron with her boys,
 Dear centre of domestic joys;
 I seem to hear the merry noise.

⁷“fluttering” in *Mischmasch*

Ay, changeless through the changing scene,
The ghostly whisper rings between,
The dark refrain of 'might have been.'
The race is o'er I might have run:
The deeds are past I might have done;
And sere the wreath I might have won.
Sunk is the last faint flickering blaze:
The vision of departed days
Is vanished even as I gaze.
The pictures, with their ruddy light,
Are changed to dust and ashes white,
And I am left alone with night.

Jan., 1860.⁷⁸

⁸missing in *All the Year Round*

18.160 To M. A. B.

Source: inscribed into a copy of *Alice's Adventures* for Miss Marion Terry, "Mary Ann Bessie Terry", 1866

The royal MAB, dethroned, discrowned
By fairy rebels wild,
Has found a home on English ground,
And lives an English child.
I know it, Maiden, when I see
A fairy-tale upon your knee—
And note the page that idly lingers
Beneath those still and listless fingers—
And mark those dreamy looks that stray
To some bright vision far away,
Still seeking, in the pictured story,
The memory of a vanished glory.

18.161 The Walrus and the Carpenter

Source: Through the Looking Glass (extracted)

The sun was shining on the sea,
Shining with all his might:
He did his very best to make
The billows smooth and bright—
And this was odd, because it was
The middle of the night.

The moon was shining sulkily,
Because she thought the sun
Had got no business to be there
After the day was done—
“It’s very rude of him,” she said,
“To come and spoil the fun!”

The sea was wet as wet could be,
The sands were dry as dry.
You could not see a cloud, because
No cloud was in the sky:
No birds were flying overhead—
There were no birds to fly.

The Walrus and the Carpenter
Were walking close at hand;
They wept like anything to see
Such quantities of sand:
“If this were only cleared away,”
They said, “it *would* be grand!”

“If seven maids with seven mops
Swept it for half a year,
Do you suppose,” the Walrus said,
“That they could get it clear?”
“I doubt it,” said the Carpenter,
And shed a bitter tear.

“O Oysters, come and walk with us!”
The Walrus did beseech.
“A pleasant walk, a pleasant talk,
Along the briny beach:
We cannot do with more than four,
To give a hand to each.”

The eldest Oyster looked at him.
But never a word he said:
The eldest Oyster winked his eye,
And shook his heavy head—
Meaning to say he did not choose
To leave the oyster-bed.

But four young oysters hurried up,

All eager for the treat:
 Their coats were brushed, their faces washed,
 Their shoes were clean and neat—
 And this was odd, because, you know,
 They hadn't any feet.
 Four other Oysters followed them,
 And yet another four;
 And thick and fast they came at last,
 And more, and more, and more—
 All hopping through the frothy waves,
 And scrambling to the shore.
 The Walrus and the Carpenter
 Walked on a mile or so,
 And then they rested on a rock
 Conveniently low:
 And all the little Oysters stood
 And waited in a row.
 "The time has come," the Walrus said,
 "To talk of many things:
 Of shoes—and ships—and sealing-wax—
 Of cabbages—and kings—
 And why the sea is boiling hot—
 And whether pigs have wings."
 "But wait a bit," the Oysters cried,
 "Before we have our chat;
 For some of us are out of breath,
 And all of us are fat!"
 "No hurry!" said the Carpenter.
 They thanked him much for that.
 "A loaf of bread," the Walrus said,
 "Is what we chiefly need:
 Pepper and vinegar besides
 Are very good indeed—
 Now if you're ready Oysters dear,
 We can begin to feed."
 "But not on us!" the Oysters cried,
 Turning a little blue,
 "After such kindness, that would be
 A dismal thing to do!"
 "The night is fine," the Walrus said
 "Do you admire the view?"
 "It was so kind of you to come!
 And you are very nice!"
 The Carpenter said nothing but
 "Cut us another slice:
 I wish you were not quite so deaf—
 I've had to ask you twice!"

"It seems a shame," the Walrus said,
 "To play them such a trick,
 After we've brought them out so far,
 And made them trot so quick!"
 The Carpenter said nothing but
 "The butter's spread too thick!"
 "I weep for you," the Walrus said.
 "I deeply sympathize."
 With sobs and tears he sorted out
 Those of the largest size.
 Holding his pocket-handkerchief
 Before his streaming eyes.
 "O Oysters," said the Carpenter.
 "You've had a pleasant run!
 Shall we be trotting home again?"
 But answer came there none—
 And that was scarcely odd, because
 They'd eaten every one.¹

¹For H. Savile Clarke's dramatization Carroll added an additional verse and some more content:

The Carpenter he ceased to sob;
 The Walrus ceased to weep;
 They'd finished all the oysters;
 And they laid them down to sleep—
 And of their craft and cruelty
 The punishment to reap.

The Carpenter is sleeping, the butter's on his face,
 The vinegar and pepper are all about the place!
 Let oysters rock your cradle and lull you into rest;
 And if that will not do it, we'll sit upon your chest!
 We'll sit upon your chest!
 We'll sit upon your chest!
 The simplest way to do it is to sit upon your chest!
 O woeful, weeping Walrus, your tears are all a sham!
 You're greedier for Oysters than children are for jam.
 You like to have an Oyster to give the meal a zest—
 Excuse me, wicked Walrus, far stamping on your chest!
 For stamping on your chest!
 For stamping on your chest!
 Excuse me, wicked Walrus, for stamping on your chest!

18.162 The year when boilers froze

Source: perhaps written for Samuel Courthorpe Bosanquet, 1855

The sources claim it was written for Robert Holford Macdowall Bosanquet, but his birthday was July 31, not really the date for frozen boilers. Samuel Courthorpe Bosanquet's birthday was March 2, and he is the more likely addressee, anyway. Historical weather data suggest the year 1855, with extreme cold in February, though Carroll didn't mention anything of this in his diary.

The year when boilers froze and ket-
tles crystallised the fender
The natal day of Bosanquet
Dawned on us in its splendour.

For those who wear wool hosen cat-
ching colds a thing unheard of
But this great maxim Bosanquet
Would not believe a word of.

When Frenchmen say 'sare, no zank' et-
iquette suggests the answer
'A zoughtless, zankless Bosanquet
Would be more zief zan man Sir.'

Dear Bosanquet I've here expressed
The grateful feeling that is
But due to one who treats his guest
To genuine oyster patties.

C. L. D.

18.163 The Lady of the Ladle

Source: Whitby Gazette, August 31, 1854 (with minor differences as noted);
Mischmasch

Parody on *The Lady of the Lake* by Scott

The youth at eve had drunk his fill
Where stands the “Royal” on the Hill,
And long his midday stroll had made
On the so-called “Marine Parade”—
(Meant, I presume, for seamen brave,
Whose “march is on the mountain wave”—
'Twere just the bathing-place for him
Who stays on land till he can swim—)
Yes,¹ he had strayed into the town,
And paced each alley up and down,
Where still, so narrow grew the way,
The very houses seemed to say,
Nodding to friends across the street,
“One struggle more and we shall meet.”
And he had scaled that awful² stair
That soars from earth to upper air,
Where rich and poor alike must climb,
And walk the treadmill for a time—
That morning he had dressed with care,
And put pomatum in his hair;
He was, the loungers all agreed,
A very heavy swell indeed:
Men thought him, as he swaggered by,
Some scion of nobility,
And never dreamed, so cold his look,
That he had loved—and loved a Cook.
Upon the beach he stood and sighed,
All heedless³ of the rising⁴ tide;
Thus sang he to the listening main,
And soothed his sorrows⁵ with the strain:

Coronach.

“She is gone by the *Hilda*,
She is lost unto Whitby,
And her name is Matilda,
Which my heart it was smit by.
Tho’ I take the *Goliah*,
Yet⁶ I learn to my sorrow,

¹And

²wondrous

³Unheedful

⁴treacherous

⁵sorrow

⁶missing in the *Whitby Gazette*

That 'it won't,' says the crier,
 'Be off till to-morrow.'
 "She had called me her 'Neddy,'
 (Though⁷ there mayn't be munch in it),
 And I should have been ready
 If she'd waited a minute.
 I was following behind her,
 When, if you recollect, I
 Merely ran back to find a
 Gold pin for my neck-tie.
 "Rich dresser of *suet*⁸!
 Prime hand at a *sassage*⁹!
 I have lost thee, I rue it,
 And my fare for the passage!
 Perhaps *she* thinks it funny,
 Aboard of the *Hilda*,
 But I've lost purse and money,
 And thee, oh my 'Tilda!"

His pin of gold the youth undid,
 And in his waistcoat-pocket hid,
 Then gently folded hand in hand,
 And dropped asleep upon the sand.

*B. B. Whitby. Aug: 1854.*¹⁰

⁷Tho'

⁸suit

⁹sausage

¹⁰missing in the *Whitby Gazette*

18.164 A Sea Dirge

Source: The College Rhymes, November 1860 (with signature “Ch. Ch., Lewis Carroll” and minor differences as noted); Phantasmagoria (with minor differences as noted); Rhyme? and Reason?



There are certain things—as, a spider, a ghost,
The income-tax, gout, an umbrella for three—
That I hate, but the thing that I hate the most
Is a thing they call the Sea.

Pour some salt water over the floor—
Ugly I'm sure you'll allow¹ it to be:
Suppose it extended a mile or more,
That's very like the Sea.

Beat² a dog till it howls outright—
Cruel, but all very well for a spree:
Suppose that he did so day and night,
That would be like the Sea.

I had a vision of nursery-maids;
Tens of thousands passed by me—
All leading children with wooden spades,
And this was by the Sea.

Who invented those spades of wood?
Who was it cut them out of the tree?
None, I think, but an idiot could—
Or one that loved the Sea.

¹“confess” in *College Rhymes*

²“pinch” in *College Rhymes*

It is pleasant and dreamy, no doubt, to float
With 'thoughts as boundless, and souls as free':
But, suppose you are very unwell in the boat,
How do you like the Sea?³

Quoted from *The Corsair* by Lord Byron



“And this was by the Sea”

There is an insect that people avoid
(Whence is derived the verb ‘to flee’).
Where have you been by it most annoyed?

³Additional verses, with “were donkeys . . .” in *College Rhymes*:

“But it makes the intellect clear and keen—”
Prove it! Prove it! How can it be?
“Why, what does ‘B sharp’ (in music) mean,
If not the ‘natural C’?”

What, keen? With such questions as ‘When’s high tide?
Is shelling shrimps an improvement to tea?
Are donkeys adapted for Man to ride?’
Such are our thoughts by the Sea.

In lodgings by the Sea.
 If you like your⁴ coffee with sand for dregs,
 A decided hint of salt in your tea,
 And a fishy taste in the very eggs—
 By all means choose the Sea.
 And if, with these dainties to drink and⁵ eat,
 You prefer not a vestige of grass or tree,
 And a chronic state of wet in your feet,
 Then—I recommend the Sea.
 For I have friends who dwell by the coast—
 Pleasant friends they are to me!
 It is when I am with them I wonder most
 That any one likes the Sea.
 They take me a walk: though tired and stiff,
 To climb the heights I madly agree;
 And, after a tumble or so from the cliff,
 They kindly suggest the Sea.
 I try the rocks, and I think it cool
 That they laugh with such an excess of glee,
 As I heavily slip into every pool
 That skirts the cold cold Sea.⁶

⁴missing in *College Rhymes*

⁵“and to” in *College Rhymes*

⁶Additional verses, second verse starts with “Their cheeks were hollow . . .” in *College Rhymes*:

Once I met a friend in the street,
 With wife, and nurse, and children three—
 Never again such a sight may I meet
 As that party from the Sea!
 Their looks were sullen, their steps were slow,
 Convicted felons they seemed to be:
 “Are you going to prison, dear friend?” “On no!
 We’re returning—from the Sea!”



18.165 There be three Badgers on a mossy stone

Source: Sylvie and Bruno (extracted, connected)

There be three Badgers on a mossy stone,
Beside a dark and covered way:
Each dreams himself a monarch on his throne,
And so they stay and stay——
Though their old Father languishes alone,
They stay, and stay, and stay.

There be three Herrings loitering around,
Longing to share that mossy seat:
Each Herring tries to sing what she has found
That makes Life seem so sweet.
Thus, with a grating and uncertain sound,
They bleat, and bleat, and bleat.

The Mother-Herring, on the salt sea-wave,
Sought vainly for her absent ones:
The Father-Badger, writhing in a cave,
Shrieked out "Return, my sons!
You shall have buns," he shrieked, "if you'll behave!
Yea, buns, and buns, and buns!"

"I fear," said she, "your sons have gone astray?
My daughters left me while I slept."
"Yes 'm," the Badger said: "it's as you say."
"They should be better kept."
Thus the poor parents talked the time away,
And wept, and wept, and wept.

Oh, dear beyond our dearest dreams,
Fairer than all that fairest seems!
To feast the rosy hours away,
To revel in a roundelay!
How blest would be
A life so free——

Ipwergis-Pudding to consume,
And drink the subtle Azzigoom!

And if, in other days and hours,
Mid other fluffs and other flowers,
The choice were given me how to dine——
"Name what thou wilt: it shall be thine!"
Oh, then I see
The life for me——

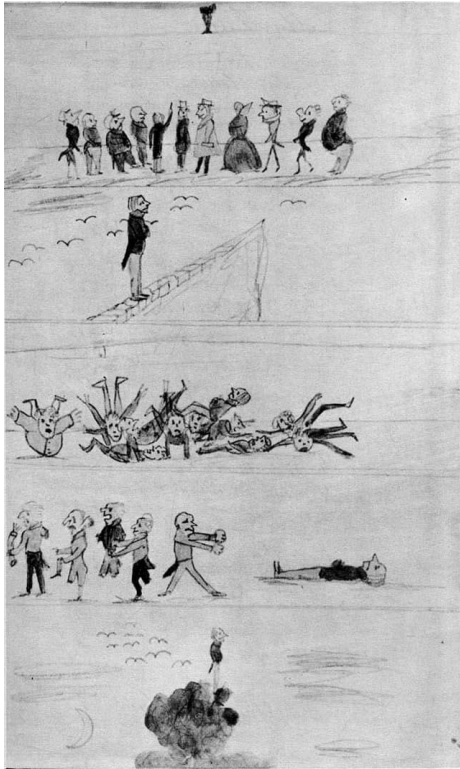
Ipwergis-Pudding to consume,
And drink the subtle Azzigoom!

The Badgers did not care to talk to Fish:
They did not dote on Herrings' songs:
They never had experienced the dish

To which that name belongs:
“And oh, to pinch their tails,” (this was their wish,)
“With tongs, yea, tongs, and tongs!”
“And are not these the Fish,” the Eldest sighed,
“Whose Mother dwells beneath the foam?”
“They *are* the Fish!” the Second one replied.
“And they have left their home!”
“Oh wicked Fish,” the Youngest Badger cried,
“To roam, yea, roam, and roam!”
Gently the Badgers trotted to the shore——
The sandy shore that fringed the bay:
Each in his mouth a living Herring bore——
Those aged ones waxed gay:
Clear rang their voices through the ocean’s roar,
“Hooray, hooray, hooray!”

18.166 The Headstrong Man

Source: Useful and Instructive Poetry



There was a man who stood on high,
Upon a lofty wall;
And every one who passed him by,
Called out "I fear you'll fall."

Naught heeded he of their advice,
He was a headstrong youth,
He stood as if fixed in a vice,
Or like a nail forsooth.

While thus he stood a wind began,
To blow both long and loud,
And soon it blew this headstrong man,
Right down among the crowd.

Full many a head was broken then,
Full many an arm was cracked,
Much they abused headstrong man,
Who sense and wisdom lacked.

For this mishap he cared naught,
As we shall shortly see,

For the next day, as if in sport,
He mounted in a tree.
The tree was withered, old, and grey,
And propped up with a stake,
And all who passed him by did say,
“That branch you’re on will break.”
Naught heeded he of their advice,
He was a headstrong youth,
He stood as fixed in a vice,
Or like a nail forsooth.
While thus he stood the branch began
To break, where he did stand,
And soon it dropped this headstrong man
Into a cart of sand.
The sandman vainly sought for him,
For half an hour or more,
At last he found him in a trim
He ne’er was in before.
For sand his face did nearly hide,
He was a mass of sand:
Loud laughed the sandman when he spied
The branch where he did stand.
“Why, what a foolish man thou art,
To stand in such a place!”
Then took some sand from out his cart,
And flung it in his face.
All wrathful then was sandy-coat,
Wrath filled his sandy eye,
He raised his sandy hand and smote,
The sandman lustily.
Full soon upon the ground he lay,
Urged by the sandman’s fist,
These words were all that he could say,
For those to hear who list.
Moral:
“If headstrong men will stand like me,
Nor yield to good advice,
All that they can expect will be,
To get sand in their eyes.”

18.167 The Pig-Tale

Source: Sylvie and Bruno Concluded (extracted, connected, first verse also in Sylvie and Bruno, with different punctuation)

There was a Pig that sat alone
Beside a ruined Pump:
By day and night he made his moan—
It would have stirred a heart of stone
To see him wring his hoofs and groan,
Because he could not jump.

A certain Camel heard him shout—
A Camel with a hump.
“Oh, is it Grief, or is it Gout?
What is this bellowing about?”
That Pig replied, with quivering snout,
“Because I cannot jump!”

That Camel scanned him, dreamy-eyed.
“Methinks you are too plump.
I never knew a Pig so wide—
That wobbled so from side to side—
Who could, however much he tried,
Do such a thing as *jump*!”

“Yet mark those trees, two miles away,
All clustered in a clump:
If you could trot there twice a day,
Nor ever pause for rest or play,
In the far future—Who can say?—
You may be fit to jump.”

That Camel passed, and left him there,
Beside the ruined Pump.
Oh, horrid was that Pig’s despair!
His shrieks of anguish filled the air.
He wrung his hoofs, he rent his hair,
Because he could not jump.

There was a Frog that wandered by—
A sleek and shining lump:
Inspected him with fishy eye,
And said “O Pig, what makes you cry?”
And bitter was that Pig’s reply,
“Because I cannot jump!”

That Frog he grinned a grin of glee,
And hit his chest a thump
“O Pig,” said, “be ruled by me,
And you shall see what you shall see.
This minute, for a trifling fee,
I’ll teach you how to jump!”

“You may be faint from many a fall,
 And bruised by many a bump:
 But, if you persevere through all,
 And practise first on something small,
 Concluding with a ten-foot wall,
 You’ll find that you *can* jump!”

That Pig looked up with joyful start:
 “Oh Frog, you *are* a trump!
 Your words have healed my inward smart—
 Come, name your fee and do your part:
 Bring comfort to a broken heart,
 By teaching me to jump!”

“My fee shall be a mutton-chop,
 My goal this ruined Pump.
 Observe with what an airy flop
 I plant myself upon the top!
 Now bend your knees and take a hop,
 For that’s the way to jump!”

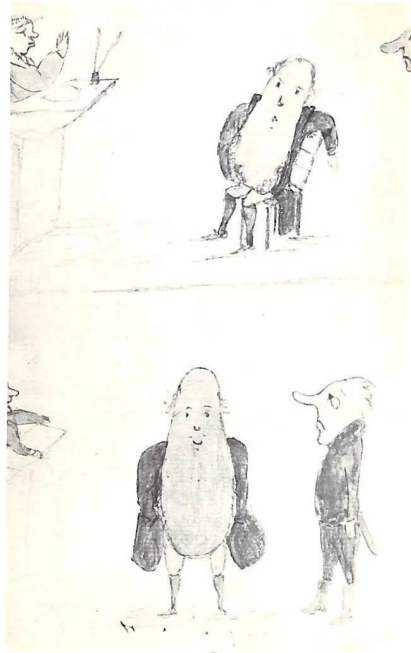
Uprose that Pig, and rushed, full whack,
 Against the ruined Pump:
 Rolled over like an empty sack,
 And settled down upon his back,
 While all his bones at once went ‘Crack!’
 It was a fatal jump.

That Camel passed, as Day grew dim
 Around the ruined Pump.
 “O broken heart! O broken limb!
 It needs,” that Camel said to him,
 “Something more fairy-like and slim,
 To execute a jump!”

That Pig lay still as any stone,
 And could not stir a stump:
 Nor ever, if the truth were known,
 Was he again observed to moan,
 Nor ever wring his hoofs and groan,
 Because he could not jump.
 That Frog made no remark, for he
 Was dismal as a dump:
 He knew the consequence must be
 That he would never get his fee—
 And still he sits, in miserie,
 Upon that ruined Pump!

18.168 The Trial of a Traitor

Source: Useful and Instructive Poetry



There was a strange being into the North,
And, oh, he was strange to see;
His chin was as broad as the Firth of Forth,
And as deep as the Zuyderzee.

Ne did his chin conceal his knees,
Ne did it show his waist;
Eke was it like a peck of peas,
In human skin encased.

The neighbours oft had viewed his chin
With admiration mute;
“Soothly,” said they, “we will begin,
This man to prosecute.”

“Who knows but that this chin may hide
A sword or pike or gun?
Perhaps the Government,” they cried,
“He’ll murder one by one!”

His warrant duly was enrolled,
“His body ye shall seize,
And in safe custody shall hold,
Till further notices.”

The constables, a grimly pair,
 Marched on their mission fell,
They took their victim by the hair,
 And dragged him to his cell.

The lifelong night upon the stones
 In fetters was he layn,
Whilom his sighs and eke his moans,
 Betoken grief and pain.

The morrow morn the magistrate
 Granted an interview.
His hair was short, though very straight
 Toward the skies it grew.

The magistrate he raised his hand,
 Ne from his seat he stirred,
“Aside,” said he, “I pr’y thee stand,
 Anon thou shalt be heard.”

“Soothly,” said he, “and that will I
 For certes am I weard.”
He sunk into a chair hard by,
 And rubbed his frizzled beard.

The evidence was fairly tried,
 The jury left the dock,
Upon their verdict to decide:
 The key turned in the lock.

“Not guilty.” The judge forward bent,
 His hair of eighty frosts,
“You see the prisoner’s innocent,
 So you must pay the costs.”

Moral: “Pay the costs.”

18.169 A Limerick

Source: sent to Miss Vera Beringer, perhaps 1888

There was a young lady of station,
"I love man" was her sole exclamation;
But when men cried, "You flatter,"
She replied, "Oh! no matter,
Isle of Man is the true explanation."

18.170 Four Riddles. No. I

Source: Phantasmagoria (as “A Double Acrostic”, with minor differences and different introduction as noted); Rhyme? and Reason?

Note that the introductions to the other riddles (only in “Rhyme? and Reason?”) have been moved there, in the original they follow directly, before all of the riddles, inside a square bracket.

⌊These consist of two Double Acrostics and two Charades.

No. I. was written at the request of some young friends, who had gone to a ball at an Oxford Commemoration—and also as a specimen of what might be done by making the Double Acrostic a connected poem instead of what it has hitherto been, a string of disjointed stanzas, on every conceivable subject, and about as interesting to read straight through as a page of a Cyclopædia. The first two stanzas describe the two main words, and each subsequent stanza one of the cross “lights.”¹

There was an ancient City, stricken down
 With a strange frenzy, and for many a day
 They paced from morn to eve the ⌊crowded² town,
 And danced the night away.

I asked the cause: the aged man grew sad:
 They pointed to a building gray and tall,
 And hoarsely answered “Step inside, my lad,
 And then you’ll see it all.”

Yet what are all such gaieties to me
 Whose thoughts are full of indices and surds?
 $x^2 + 7x + 53$
 $= \frac{11}{3}.$

But something whispered “It will soon be done:
 Bands cannot always play, nor ladies smile:
 Endure with patience the distasteful fun
 For just a little while!”

A change came o’er my Vision—it was night:
 We clove a pathway through a frantic throng:

¹Introduction in *Phantasmagoria*:

The Double Acrostic, a form of puzzle which has lately become fashionable, is constructed thus:—Two words are selected having the same number of letters: these are supposed to be written in two parallel columns, and a series of words is then found (their length is immaterial) such that the first column may consist of their initial letters, and the second of their final letters. For instance, if the column-words selected were ‘rose’ and ‘ring,’ we might fill

up thus:—

r	i	v	e	r	
o	b	i			
s	e	v	e	n	The two column-words, and the horizontal words, are then
e	g	g			

described in a series of lines or verses, and the puzzle is complete.

The innumerable specimens of this form of puzzle already published are in every way (if we except the studied insipidity of the separate verses, and their total want of connexion one with another) to be commended. The following attempt, made at the request of some friends who had gone to a ball at an Oxford Commemoration, is printed in the hope of suggesting a possible improvement in the treatment of the subject.

²noisy

The steeds, wild-plunging, filled us with affright:
 The chariots whirled along.
 Within a marble hall a river ran—
 A living tide, half muslin and half cloth:
 And here one mourned a broken wreath or fan,
 Yet swallowed down her wrath;
 And here one offered to a thirsty fair
 (His words half-drowned amid those thunders tuneful)
 Some frozen viand (there were many there),
 A tooth-ache in each spoonful.
 There comes a happy pause, for human strength
 Will not endure to dance without cessation;
 And every one must reach the point at length
 Of absolute prostration.
 At such a moment ladies learn to give,
 To partners who would urge them over-much,
 A flat and yet decided negative—
 Photographers love such.
 There comes a welcome summons—hope revives,
 And fading eyes grow bright, and pulses quicken:
 Incessant pop the corks, and busy knives
 Dispense the tongue and chicken.
 Flushed with new life, the crowd flows back again:
 And all is tangled talk and mazy motion—
 Much like a waving field of golden grain,
 Or a tempestuous ocean.
 And thus they give the time, that Nature meant
 For peaceful sleep and meditative snores,
 To ceaseless³ din and mindless merriment
 And waste of shoes and floors.
 And One (we name him not) that flies the flowers,
 That dreads the dances, and that shuns the salads,
 They doom to pass in solitude the hours,
 Writing acrostic-ballads.
 How late it grows! The hour is surely⁴ past
 That should have warned us with its double-knock?
 The twilight wanes, and morning comes at last—
 “Oh, Uncle, what’s o’clock?”
 The Uncle gravely nods, and wisely winks.
 It *may* mean much, but how is one to know?
 He opes his mouth—yet out of it, methinks,
 No words of wisdom flow.

³thoughtless

⁴Long since the hour is

Solution: quasiinsanity, commemoration; quadratic, undergo, alarm, stream/scrim,
ice, interim, no, supper, arena/arista/aurora/abracadabra, night, I, two, yawn

18.171 Melodies

Source: Useful and Instructive Poetry



I

There was an old farmer of Readall,
Who made holes in his face with a needle,
They went *far* deeper in
Than to pierce through the skin,
And yet strange to say he was made beadle.

II

There was an eccentric old draper,
Who wore a hat made of brown paper,
It went up to a point,
Yet it looked out of joint,
The cause of which *he* said was “vapour.”

III

There was once a young man of Oporta,
Who daily got shorter and shorter,
The reason he said

Was the hod on his head,
Which was filled with the *heaviest* mortar.
His sister, named Lucy O'Finner,
Grew constantly thinner and thinner;
 The reason was plain,
 She slept out in the rain,
And was never allowed any dinner.

18.172 The Two Brothers

Source: Mischmasch

There were two brothers at Twyford school,
And when they had left the place,
It was, "Will ye learn Greek and Latin?
'Or will ye run me a race?
'Or will ye go up to yonder bridge,
'And there we will angle for dace?"

"I'm too stupid for Greek and for Latin,
'I'm too lazy by half for a race,
'So I'll even go up to yonder bridge,
'And there we will angle for dace."

He has fitted together two joints of his rod,
And to them he has added another,
And then a great hook he took from his book,
And ran it right into his brother.



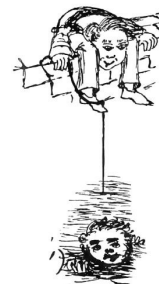
Oh much is the noise that is made among boys
When playfully pelting a pig,
But a far greater pother was made by his brother,
When flung from the top of the brigg.

The fish hurried up by the dozens,
All ready and eager to bite,
For the lad that he flung was so tender and young,
It quite gave them an appetite.

Said he, "Thus shall he wallop about
'And the fish take him quite at their ease,
'For me to annoy it was ever his joy,
'Now I'll teach him the meaning of 'Tees'!"

The wind to his ear brought a voice,
"My brother, you didn't had ought ter!
'And what have I done that you think it such fun
'To indulge in the pleasure of slaughter?"

'A good nibble or bite is my chiefest delight,
'When I'm merely expected to *see*,
'But a bite from a fish is not quite what I wish,
'When I get it performed upon *me*



‘And just now here’s a swarm of dace at my arm,
 ‘And a perch has got hold of my knee!
 ‘For water my thirst was not great at the first,
 ‘And of fish I have quite sufficien—”
 “Oh fear not!” he cried, “for whatever betide,
 ‘We are both in the selfsame condition!
 ‘I am sure that our state’s very nearly alike,
 ‘(Not considering the question of slaughter)
 ‘For I have my perch on the top of the bridge,
 ‘And you have your perch in the water.
 ‘I stick to my perch and your perch sticks to you,
 ‘We are really extremely alike;
 ‘I’ve a turn-pike up here, and I very much fear
 ‘You may soon have a turn with a pike.”
 “Oh, grant but one wish! If I’m took by a fish,
 ‘(For your bait is your brother, good man!)
 ‘Pull him up if you like, but I hope you will strike
 ‘As gently as ever you can.”
 “If the fish be a trout, I’m afraid there’s no doubt
 ‘I must strike him like lightning that’s greased;
 ‘If the fish be a pike, I’ll engage not to strike,
 ‘Till I’ve waited ten minutes at least.”
 “But in those ten minutes to desolate Fate
 ‘Your brother a victim may fall!”
 “I’ll reduce it to five, so *perhaps* you’ll survive,
 ‘But the chance is exceedingly small.”
 “Oh hard is your heart for to act such a part,
 ‘Is it iron, or granite, or steel?”
 “Why, I really can’t say—it is many a day
 ‘Since my heart was accustomed to feel.
 ‘Twas my heart-cherished wish for to slay many fish
 ‘Each day did my malice grow worse,
 ‘For my heart didn’t soften with doing it so often,
 ‘But rather, I should say, the reverse.”
 “Oh would I were back at Twyford school,
 ‘Learning lessons in fear of the birch!”
 “Nay, brother!” he cried, “for whatever betide,
 ‘You are better off here with your perch!
 ‘I am sure you’ll allow you are happier now,
 ‘With nothing to do but to play;
 ‘And this single line here, it is perfectly clear,
 ‘Is much better than thirty a day!
 ‘And as to the rod hanging over your head,
 ‘And apparently ready to fall,
 ‘That, you know, was the case, when you lived in that place,
 ‘So it need not be reckoned at all.



‘Do you see that old trout with a turn-up-nose snout?
‘(Just to speak on a pleasanter theme,)
‘Observe, my dear brother, our love for each other—
‘He’s the one I like best in the stream.



‘To-morrow I mean to invite him to dine,
‘(We shall all of us think it a treat,)
‘If the day should be fine, I’ll just *drop him a line*,
‘And we’ll settle what time we’re to meet.
‘He hasn’t been into society yet,
‘And his manners are not of the best,
‘So I think it quite fair that it should be *my care*,
‘To see that he’s properly dressed.”



Many words brought the wind of “cruel” and “kind,”
And that “man suffers more than the brute”:
Each several word with patience he heard,
And answered with wisdom to boot.
“What? prettier swimming in the stream,
‘Than lying all snugly and flat?
‘Do but look at that dish filled with glittering fish,
‘Has Nature a picture like that?
‘What? a higher delight to be drawn from the sight
‘Of fish full of life and of glee?
‘What a noodle you are! ’tis delightfuller far
‘To kill them than let them go free!
‘I know there are people who prate by the hour
‘Of the beauty of earth, sky, and ocean;
‘Of the birds as they fly, of the fish darting by,
‘Rejoicing in Life and in Motion.
‘As to any delight to be got from the sight,
‘It is all very well for a flat,
‘But *I* think it all gammon, for hooking a salmon
‘Is better than twenty of that!
‘They say that a man of a right-thinking mind
‘Will *love* the dumb creatures he sees—
‘What’s the use of his mind, if he’s never inclined
‘To pull a fish out of the Tees?
‘Take my friends and my home—as an outcast I’ll roam;

‘Take the money I have in the Bank—
‘It is just what I wish, but deprive me of *fish*,
‘And my life would indeed be a blank!’

Forth from the house his sister came,
Her brothers for to see,
But when she saw that sight of awe,
The tear stood in her ee.

“Oh what bait’s that upon your hook,
‘My brother, tell to me?’
“It is but the fantailed pigeon,
‘He would not sing for me.”

“Whoe’er would expect a pigeon to sing,
‘A simpleton he must be!
‘But a pigeon-cote is a different thing
‘To the coat that there I see!”

“Oh what bait’s that upon your hook,
‘My brother, tell to me?’
“It is but the black-capped bantam,
‘He would not dance for me.”

“And a pretty dance you are leading him now!”
In anger aswered she,
“But a bantam’s cap is a different thing
‘To the cap that there I see!”

“Oh what bait’s that upon your hook
‘Dear brother, tell to me?’
“It is my younger brother,” he cried,
“Oh woe and dole is me!

‘T’s mighty wicked, that I is!
‘Or how could such things be?
‘Farewell, farewell sweet sister,
‘I’m going o’er the sea.”

“And when will you come back again,
‘My brother, tell to me?’
“When chub is good for human food,
‘And that will never be!”

She turned herself right round about,
And her heart brake into three,
Said, “One of the two will be wet through and through,
‘And t’other’ll be late for his tea!”



Croft. 1853.



18.173 They both make a roaring

Source: sent to Agnes Hull, December 10, 1877

They both make a roaring—a roaring all night,
They both are a fisherman-father's delight,
They are both, when in fury, a terrible sight!
The First nurses tenderly three little hulls
To the lullaby-music of shrill-screaming gulls
And laughs when they dimple his face with their skulls.
The Second's a tidyish sort of a lad,
Who behaves pretty well to a man he calls "Dad,"
And earns the remark "Well, he isn't so bad!"
Of the two put together, oh what shall I say?
'Tis a time when "to live" means the same as "to play"
When the busiest person does nothing all day:
When the grave College Don, full of lore inexpressi-
ble, puts it all by, and is forced to confess he
Can think but of Agnes and Evey——.

The implied last words omitted at the end are "and Jessie", the solution is: sea, son:
season

18.174 The Majesty of Justice

Source: The College Rhymes, March 1863

An Oxford Idyll

They passed beneath the College gate,
And down the High went slowly on;
Then spake the Undergraduate
To that benign and portly Don;
“They say that Justice is a Queen—
A Queen of awful Majesty—
Yet in the papers I have seen
Some things that puzzle me.

“A Court obscure, so rumour states,
There is, called ‘Vice-Cancellarii,’
Which keeps on Undergraduates,
Who do not pay their bills, a wary eye.
A case, I’m told, was lately brought
Into that tiniest of places,
And ‘Justice’ in that case was sought—
As in most other cases.

“Well! Justice as *I* hold, dear friend,
Is Justice, neither more or less:
I never dreamed it could depend
On ceremonial or dress.
I thought that her imperial sway
In Oxford surely would appear:
But all the papers seem to say
She’s not majestic *here*.”

The portly Don he made reply,
With the most roguish of his glances,
“Perhaps she drops her Majesty
Under peculiar circumstances.”
“But that’s the point!” the young man cried,
“The puzzle that I wish to pen you in—
How are the public to decide
Which article is genuine?”

“Is’t only when the court is large
That we for ‘Majesty’ need hunt?
Would what is Justice in a barge
Be something different in a punt?
“Nay, nay!” the Don replied, amused,
“You’re talking nonsense, sir! You know it!
Such arguments were never used
By any friend of Jowett.”

“Then is it in the men who trudge

(Beef-eaters I believe they call them)
Before each wigged and ermined judge,
For fear some mischief should befall them?
If I should recognise in one
(Through all disguise) my own domestic,
I fear 'twould shed a gleam of fun
Even on the 'Majestic'!"

The portly Don replied, "Ahem!
They can't exactly be its *essence*:
I scarcely think the want of them
The 'Majesty of Justice' lessens.
Besides, they always march awry;
Their gorgeous garments never fit:
Processions don't make Majesty—
I'm quite convinced of it."

"Then is it in the *wig* it lies,
Whose countless rows of rigid curls
Are gazed at with admiring eyes
By country-lads and servant-girls?"
Out laughed that bland and courteous Don:
"Dear sir, I do not mean to flatter—
But surely you have hit upon
The essence of the matter.

"They will not own the Majesty
Of Justice, making monarchs bow,
Unless as evidence they see
The horsehair wig upon her brow.
Yes, yes! *That* makes the silliest men
Seem wise, the meanest men look big:
The 'Majesty of Justice,' then,
Is seated in the WIG."

Oxford. March, 1863. R. W. G.

18.175 They told me you had been to her

Source: Alice's Adventures in Wonderland (extracted)

Other version:
→ 18.145, p. 2323

They told me you had been to her,
And mentioned me to him:
She gave me a good character,
But said I could not swim.
He sent them word I had not gone
(We know it to be true):
If she should push the matter on,
What would become of you?
I gave her one, they gave him two,
You gave us three or more;
They all returned from him to you,
Though they were mine before.
If I or she should chance to be
Involved in this affair,
He trusts to you to set them free,
Exactly as we were.
My notion was that you had been
(Before she had this fit)
An obstacle that came between
Him, and ourselves, and it.
Don't let him know she liked them best,
For this must ever be
A secret, kept from all the rest,
Between yourself and me.

18.176 Three Children

Source: sent to Miss Mary Watson, 1871; here from Carroll's copy, with minor differences as noted in the published variant, which probably is the variant actually sent

[Addressed to three children, whose names form the two upright words, & who are described in the first stanza.]

Three children (their names were so fearful
You'll excuse me for leaving them out)
Sat silent, with faces all tearful;
What *was* it about?

They were sewing, but needles are prickly,
And fingers were cold as could be—
So they didn't get on very quickly,
And they wept, silly Three!

"O Mother!" said they, "England's¹ not a
Nice place for the winter, that's flat.
If you know any country that's hotter,
Please take us to *that*!"

"Cease crying," said she, "little daughters!²
And, when summer returns³ with the flowers,
You shall roam by the smooth-flowing waters,⁴
In sunny hours."

"And in summer," said sorrowful Mary,
"We shall welcome the scream⁵ of the train
That will bring that dear writer of Fairy-
tales hither again."

(Now the person she meant to allude to
Was—well! it is best to forget.
It was some one she *always* was rude to,
Whenever they met.)

"It's my duty," their mother continued,
"To fill with things useful and right
Your small minds: if I put nothing in, you'd
Be ignorant quite.

"But enough now of lessons & thinking:
Your meal is quite ready, I see—
So attend to your eating, & drinking,
You thirsty young Three!"

Apr. 10, 1871.

¹Guildford's

²daughter

³comes back

⁴edge of the water

⁵hear the shrill scream

Solution: Harriet, Mary, Ina; hem, Africa, river, railway, I, education, tea

18.177 To Three Puzzled Little Girls, From the Author

Source: inscribed into a copy of *Alice's Adventures* for the three Misses Drury, 1869

Three little maidens, weary of the Rail—
Three pair of little ears, listening to a tale—
Three little hands, held out in readiness
For three little puzzles, very hard to guess—
Three pair of little eyes, opened wonder-wide
At three little scissors lying side by side—
Three little mouths, that thanked an unknown friend
For one little book he undertook to send—
Tho' whether they'll remember the friend, or book, or day,
For three little weeks, is more than I can say.

August 1869.

18.178 Three Little Maids

Source: inscribed into a copy of *Phantasmagoria* for the three Misses Drury, 1873

Three little maids, one winter day,
While others went to feed,
To sing, to laugh, to dance, to play,
More wisely went to—Reed.
Others, when lesson-time's begun,
Go, half inclined to cry,
Some in a walk, some in a run;
But *these* went in a—Fly.
I give to other little maids
A smile, a kiss, a look,
Presents whose memory quickly fades;
I give to these—a Book.
Happy Arcadia may blind,
While *all abroad*, their eyes;
At home, this book (I trust) they'll find
A *very catching* prize.

18.179 Miss Jones

Source: written October 1862

For convenience, the text is here repeated after the notes.

Recording available at <http://areverend.free.fr/lesite/carroll/index90.html>

(1)

Tis a me - lan-cho - ly song, and it
will not keep you long, Tho I specs it will
work u - pon your feel - ings ve-ry strong For the
a - go - ni - sing moans of Miss A - ra-bel - la
Jones were ___ war - ranted to melt the hearts of
a - ny pa - ving stones. Si - mon Smith was tall and
slim and she do - ted u - pon him But he
(2)
al - ways called her *Miss* Jones, he ne - ver got so
far as to use her Chri - stian name it was
too fa - mi - li - ar When she called him "Si - mon



dear" he pre - ten - ded not to hear, and she
 told her sis - ter Su - san he be -
 haved ex - treme - ly queer: who said,
 "Ve - ry right! ve - ry right! shews his true af -
 fec - tion If you'd prove your (4) Si - mon's love
 fol - low my di - rec - tion. I'd cer - tain - ly ad -
 vise you just to write a sim - ple
 let - ter, And to tell him that the
 cold he kind - ly (5) asked a - bout is
 bet - ter. And say that by the
 tan - yard (6) you will wait in lov - ing
 hope, At nine o' clock this eve - ning if he's

wil - ling to e - lope With his
 faith - ful A - ra - - bel - la." So she

(7)

wrote it, & signed it, &
 sealed it, & sent it, & dressed her - self out in her
 ho - li - day things, With brace - lets & broo - ches, &
 ear - rings, & neck - lace, a watch, & an eye - glass, &
 di - a - mond rings For man is a crea - ture
 weak & im - pressi - ble, thinks such a deal of ap -
 pear - ance, my dear. So she wai - ted for her
 Si - mon be - side the tan - yard gate, Re -
 gard - less of the pie - man, who

hin - ted it was ⁽⁹⁾ late. Wait - ing for
 Si - mon, she coughed in the chil - ly night, un -
 til the Tan - ner found her, And kind - ly
 brought a light old coat to wrap a -
 round her. She felt her cold was
 get - ting worse, Yet still ⁽¹⁰⁾ she fond - ly
 whis - pe - red, "Oh take your time, my
 Si ⁽¹¹⁾ mon, al - though I've wait - ed long. I
 do not fear my Si - mon dear will
 fail to come at last, Al - though I know that
 long a - go the time I named is
 past. My Si - mon! my Si - mon!

(12)

Oh, char - ming man! oh! char - ming man! Dear

(13) Si - mon Smith, sweet Si - mon Smith." Oh,

there goes the church - clock, the town - clock, the

sta - tionclock, & there go the

(14) ther clocks, they all are stri - king twelve! Oh

Si - mon, it is get - ting late, It's

ve - ry dull to sit & wait. And

re - ally I'm in such a state, (14) I

hope you'll come at a - ny rate, quite —

ear-ly in the mor - ning, quite — ear - ly in the

(15) mor - ning. Then with pran - cing bays & a

yel - low chaise, we'll away to Gret-na

Green. For when ⁽¹⁶⁾ I am with my —
 Si - mon Smith— oh, that common name! Oh that
 vul - gar name! ⁽¹⁷⁾ shall ne - ver rest hap - py till he's
 changed that name, but when he has mar - ried me, may - be He'll
 love me to that de - gree, That he'll
 grant me my prayer & will call him - self "Clare." So she
 talked all a - lone, as she sat u - pon a stone, Still
 hop - ing he would come and find — her, and she
 star - ted most un - kim - mon, when in -
 stead of dar - ling "Simon" t'was a
 strange — man that stood ⁽¹⁹⁾ be - hind her, Who
 ci - villy ob - served "Good evening, M'am, I re - ally

am sur - prised to see that you're Out
 here a - lone, for you must own from
 thieves you're not se - cure. A watch, I
 see. Pray lend it me⁽²⁰⁾ (I hope the
 gold is pure) And all those rings, &
 o - ther things. Don't scream, you know, for
 long a - go The po - lice - men off - from⁽²¹⁾ his
 beat has gone In the kit - chen"— "Oh you
 des - pe - rate villain! Oh you treach - e - rous
 thief!" And these were the words⁽²²⁾ of her
 an - ger & grief. "When first to

Si - mon Smith I gave — my hand I
 ne - ver could have thought he would have
 ac - ted half so mean as — this, and
 where's the new Po - lice? Oh Si - mon, Simon!
 how could you treat your love so ill.
 They sit & chat - ter, they chat - ter with the
 cook, The guard - ians, so they're called, of pub - lic
 peace. Through the tan - yard was heard the dis - mal
 sound, "How on earth is it po - lice - men
 never, ne - ver, ne - ver, can be found?"

- (1) The Captain and his whiskers
- (2) Willow we have missed you
- (3) Cherry ripe
- (4) Katie's letter
- (5) Irish Emigrant
- (6) Annie Laurie
- (7) Irish Jig
- (8) Wait for the Waggon

- (9) Oft in the stilly night
- (10) Lucy Long
- (11) Reuben Wright
- (12) Oh Charming May
- (13) Oh weel may be Real row
- (14) So early in the morning
- (15) Some love to roam
- (16), (17) I will marry my own love
- (18) The girl I left behind me
- (19) The perfect cure
- (20) The Minstrel boy
- (21) Beautiful Rhines
- (22) Rule Britannia

Tis a melancholy song,
 and it will not keep you long,
 Tho I specs it will work upon your feelings very strong
 For the agonising moans
 of Miss Arabella Jones
 were warranted to melt the hearts of any paving stones.
 Simon Smith was tall and slim
 and she doted upon him
 But he always called her *Miss Jones*,
 he never got so far
 as to use her Christian name
 it was too familiar
 When she called him "Simon dear"
 he pretended not to hear,
 and she told her sister Susan he behaved extremely queer:
 who said, "Very right! very right!
 shews his true affection
 If you'd prove your Simon's love
 follow my direction.
 I'd certainly advise you just to write a simple letter,
 And to tell him that the cold he kindly asked about is better.
 And say that by the tanyard you will wait in loving hope,
 At nine o'clock this evening if he's willing to elope
 With his faithful Arabella." So she wrote it, & signed it, & sealed it,
 & sent it, & dressed herself out in her holiday things,
 With bracelets & brooches, & ear-rings, & necklace, a watch, & an
 eyeglass, & diamond rings
 For man is a creature weak & impressible, thinks such a deal of
 appearance, my dear.
 So she waited for her Simon
 beside the tanyard gate,
 Regardless of the pieman,
 who hinted it was late.
 Waiting for Simon,
 she coughed in the chilly night,
 until the Tanner found her,

And kindly brought a light
 old coat to wrap around her.
 She felt her cold was getting worse,
 Yet still she fondly whispered,
 "Oh take your time, my Simon,
 although I've waited long.
 I do not fear my Simon dear will fail to come at last,
 Although I know that long ago the time I named is past.
 My Simon! my Simon! Oh, charming man! oh! charming man!
 Dear Simon Smith, sweet Simon Smith."
 Oh, there goes the church-clock,
 the town-clock, the station-clock,
 & there go the other clocks,
 they all are striking twelve!
 Oh Simon, it is getting late,
 It's very dull to sit & wait.
 And really I'm in such a state,
 I hope you'll come at any rate,
 quite early in the morning,
 quite early in the morning.
 Then with prancing bays & a yellow chaise,
 we'll away to Gretna Green.
 For when I am with my Simon Smith —
 oh, that common name! Oh that vulgar name!
 I shall never rest happy till he's changed that name,
 but when he has married me, maybe
 He'll love me to that degree,
 That he'll grant me my prayer
 & will call himself "Clare."
 So she talked all alone,
 as she sat upon a stone,
 Still hoping he would come and find her,
 and she started most unkimmon,
 when instead of darling "Simon"
 t'was a strange man that stood behind her,
 Who civilly observed "Good evening, M'am,
 I really am surprised to see that you're
 Out here alone, for you must own
 from thieves you're not secure.
 A watch, I see. Pray lend it me
 (I hope the gold is pure)
 And all those rings, & other things.
 Don't scream, you know, for long ago
 The policemen off from his beat has gone
 In the kitchen" — "Oh you desperate villain!
 Oh you treacherous thief!"
 And these were the words of her anger & grief.
 "When first to Simon Smith I gave my hand
 I never could have thought he would have acted half so mean as this,
 and where's the new Police?

Oh Simon, Simon! how could you treat your love so ill.
They sit & chatter, they chatter with the cook,
The guardians, so they're called, of public peace.
Through the tanyard was heard the dismal sound,
"How on earth is it policemen never, never, never, can be found?"

18.180 'Tis the voice of the Lobster

Source: Alice's Adventures in Wonderland (extracted, connected, first version shorter and with minor differences as noted)

Parody on *The Sluggard* by Isaac Watts

'Tis the voice of the Lobster: I heard him declare
"You have baked me too brown, I must sugar my hair."
As a duck with its eyelids, so he with his nose
Trims his belt and his buttons, and turns out his toes.¹
When the sands are all dry, he is gay as a lark,
And will talk in contemptuous tones of the Shark:
But, when the tide rises and sharks are around,
His voice has a timid and tremulous sound.

I passed by his garden, and marked, with one eye,
How the Owl and the Panther were sharing a pie:²
The Panther took pie-crust, and gravy, and meat,
While the Owl had the dish as its³ share of the treat.
When the pie was all finished, the Owl, as a boon,
Was kindly permitted to pocket the spoon:
While the Panther received knife and fork with a growl,
And concluded the banquet by—⁴

¹first version ends here

²first version has "oyster" instead of "Panther" and ends here, for William Boyd's *Songs from Alice's Adventures in Wonderland* Carroll added the following lines:

While the duck and the Dodo, the lizard and cat
Were swimming in milk round the brim of a hat.

³"his", in version from October 31, 1886

⁴For H. Savile Clarke's theatre version (which also had some other small differences), the last two lines were:

But the Panther received both the fork and the knife,
So, when *he* lost his temper, the Owl lost its life.

18.181 To the Looking-Glass world it was Alice that said

Source: Through the Looking Glass (extracted, connected)
Parody on *Bonny Dundee* (*The Doom of Devorgoil*) by Walter Scott

To the Looking-Glass world it was Alice that said
"I've a sceptre in hand, I've a crown on my head.
Let the Looking-Glass creatures, whatever they be,
Come and dine with the Red Queen, the White Queen, and me!"

Then fill up the glasses as quick as you can,
And sprinkle the table with buttons and bran:
Put cats in the coffee, and mice in the tea—
And welcome Queen Alice with thirty-times-three!

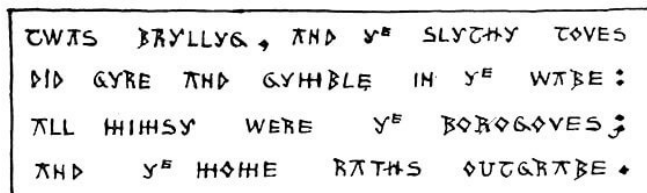
"O Looking-Glass creatures," quoth Alice, "draw near!
'Tis an honour to see me, a favour to hear:
'Tis a privilege high to have dinner and tea
Along with the Red Queen, the White Queen, and me!"

Then fill up the glasses with treacle and ink,
Or anything else that is pleasant to drink;
Mix sand with the cider, and wool with the wine—
And welcome Queen Alice with ninety-times-nine!

18.182 Stanza of Anglo-Saxon Poetry

Source: Mischmasch

Other version:
→ 18.183, p. 2405



This curious fragment reads thus in modern characters:

Twas bryllyg, and the slythy toves
Did gyre and gymble in the wabe:
All mimsy were the borogoves;
And the mome raths outgrabe.

The meanings of the words are as follows:

BRYLLYG (derived from the verb to BRYL or BROIL). "the time of broiling dinner, i. e. the close of the afternoon."

SLYTHY (compounded of SLIMY and LITHE). "Smooth and active."

TOVE. a species of Badger. They had smooth white hair, long hind legs, and short horns like a stag: lived chiefly on cheese.

GYRE, verb (derived from GYAOUR or GIAOUR, "a dog"). "to scratch like a dog."

GYMBLE (whence GIMBLET). "to screw out holes in anything."

WABE (derived from the verb to SWAB or SOAK). "the side of a hill" (from its being *soaked* by the rain).

MIMSY (whence MIMSERABLE and MISERABLE). "unhappy."

BOROGOVE. An extinct kind of Parrot. They had no wings, beaks turned up, and made their nests under sun-dials: lived on veal.

MOME (hence SOLEMOME, SOLEMONE, and SOLEMN). "grave."

RATH. A species of land turtle. Head erect: mouth like a shark: the fore legs curved out so that the animal walked on its knees: smooth green body: lived on swallows and oysters.

OUTGRABE, past tense of the verb to OUTGRIBE. (it is connected with the old verb to GRIKE or SHRIKE, from which are derived "shriek" and "creak.") "squeaked."

Hence the literal English of the passage is:

"It was evening, and the smooth active badgers were scratching and boring holes in the hill-side: all unhappy were the parrots; and the grave turtles squeaked out."

There were probably sun-dials on the top of the hill, and the "borogoves" were afraid that their nests would be undermined. The hill was probably full of the nests of "raths," which ran out, squeaking with fear, on hearing the "toves" scratching outside. This is an obscure, but yet deeply-affecting, relic of ancient Poetry.

Ed.
Croft. 1855.

18.183 Jabberwocky

Source: Through the Looking Glass (extracted)

Other version:
→ 18.182, p. 2404

'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe:
All mimsy were the borogoves,
And the mome raths outgrabe.

“Beware the Jabberwock, my son!
The jaws that bite, the claws that catch!
Beware the Jubjub bird, and shun
The frumious Bandersnatch!”

He took his vorpal sword in hand:
Long time the manxome foe he sought—
So rested he by the Tumtum tree,
And stood awhile in thought.

And, as in uffish thought he stood,
The Jabberwock, with eyes of flame,
Came whiffing through the tulgey wood,
And burbled as it came!

One, two! One, two! And through and through
The vorpal blade went snicker-snack!
He left it dead, and with its head
He went galumphing back.

“And hast thou slain the Jabberwock?
Come to my arms, my beamish boy!
O frabjous day! Callooh! Callay!”
He chortled in his joy.

'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe:
All mimsy were the borogoves,
And the mome raths outgrabe.

18.184 Twinkle, twinkle, little bat!

Source: Alice's Adventures in Wonderland (extracted, connected)
Parody on *The Star* by Jane Taylor

Twinkle, twinkle, little bat!
How I wonder what you're at!
Up above the world you fly,
Like a teatray in the sky.
Twinkle, twinkle——

18.185 Double Acrostic (Bremer)

Source: written for the two Misses Bremer, 1870

Two little girls near London dwell,
More naughty than I like to tell.

Upon the lawn the hoops are seen:
The balls are rolling on the green.

The Thames is running deep and wide:
And boats are rowing on the tide.

In winter-time, all in a row,
The happy skaters come and go.

"Papa!" they cry, "Do let us stay!"
He does not speak, but says they may.

"There is a land," he says, "my dear,
Which is too hot to skate, I fear."

Solution: Trina, Freda; turf, river, ice, nod, Africa

18.186 Double Acrostic (Hughes)

Source: written for Agnes and Emily Hughes, perhaps 1869

[Addressed to two children, whose names form the two “upright” words, which are supposed to be described in the first stanza.]

Two little maids were heard to say,
 (They dwelt in London city),
“This summers-day’s too hot to play,
 And picture-books are pretty.”

So, curling up like little mice,
 And clasping hand in hand,
They read (& whispered “Ain’t it nice!”)
 The tale of Wonderland.

Bright streamed the sunlight on the floor,
 To tempt them out to run;
But they (like mice, I’ve said before)
 Loved shadow more than sun.

And one cried “Sister, let’s invent
 A dream—and plan to go
Where Mr. Carroll says he went—
 That Russian Fair, you know!”

The other said “It’s nearly three:
 Papa will call us soon.
His picture’s on the stand, and we
 Must sit this afternoon.”

“And if we sit extremely good,”
 The younger cried in haste,
“He’ll give us wine—he said he would—
 A little tiny taste!”

[In explanation of the last two verses, it should be added that they are an Artist’s children.]

Solution: Agnes, Emily; Alice, gloom, Nijni, easel, sherry

18.187 Two Thieves

Source: inscribed into a copy of *Through the Looking-Glass* for the three Misses Drury, 1872

Two thieves went out to steal one day
Thinking that no one knew it:
Three little maids, I grieve to say,
Encouraged them to do it.

'Tis sad that little children should
Encourage men in stealing!
But these, I've always understood,
Have got no proper feeling.

An aged friend, who chanced to pass
Exactly at the minute,
Said "Children! Take this Looking-glass,
And see your badness in it."

Jan. 11, 1872.

18.188 Thrillings

Source: Rectory Magazine

Uncertain was his hazy pace,
His blood shot eye was dim:
I gazed in wonder on his face,
In wonder gazed on him.

All haggard was his cold-pale cheek,
All haggard was his brow:
Methinks again I hear him speak,
Methinks I hear him now.

As he paced across his lonely room,
With lightly clenched fist,
As his glaring eyes did hideous loom,
Through the blackly gathering mist.

As with desperate hand he struck his brow,
And stamped upon the floor,
Methinks I hear his accents now,
In solemn lone once more,

“I gave my pen a careless flirt,”
He said midst deep-drawn sighs,
“And the scratchy thing the ink did spirt,
‘Right into both my eyes.”

B. B.

18.189 We lived beneath the mat

Source: Alice's Adventures under Ground (extracted, formatted)

We lived beneath the mat
Warm and snug and fat
But one woe, & that
Was the cat!

To our joys a clog,
In our eyes a fog,
On our hearts a log
Was the dog!

When the cat's away,
Then the mice will play,
But, alas! one day,
(So they say)

Came the dog and cat,
Hunting for a rat,
Crushed the mice all flat,
Each one as he sat
Underneath the mat,
Warm, & snug, & fat—
Think of that!

18.190 A Visitor

Source: Useful and Instructive Poetry

Well, if you must know all the facts, I was merely reading a pamphlet
When what should I hear at the door but a knock as soft as a Zephyr.
I listened and heard it again, so, as loud as I possibly could call,
I shouted "Don't stand waiting there, come in, let me know who you
are, sir!"
Mild he entered the room, with his hat in his hand and his gloves
off,
And a meek gentle bow he performed, while my anger was rapidly
rising,
"Who are you?" I angrily cried, and with hand on his heart as he
bowed low,
In the gentlest of termes he replied, "Your servant, Sir Pokurran-
shuvvle."
Didn't I just ring the bell, "Here, Tom, Dick, George, Andrew!" I
bawled out,
"Come here! show this stranger the door!" My summons they heard
and they did it:
Soon to the door was he guided; once more he turned to me and
bowed low,
And so, with his hand on his heart, with all possible meekness de-
parted.

18.191 Facts

Source: Useful and Instructive Poetry

Were I to take an iron gun,
And fire it off towards the sun;
I grant 'twould reach its mark at last,
But not till many years had passed.
But should that bullet change its force,
And to the planets take its course,
'Twould *never* reach the *nearest* star,
Because it is so *very* far.

18.192 What hand may wreathe

Source: *Garland of Rachel*, privately printed, 1881

What hand may wreathe thy natal crown,
O tiny tender Spirit-blossom,
That out of Heaven hast fluttered down
Into this Earth's cold bosom?
And how shall mortal bard aspire—
All sin-begrimed and sorrow-laden—
To welcome, with the Seraph-choir,
A pure and perfect Maiden?
Are not God's minstrels ever near,
Flooding with joy the woodland mazes?
Which shall we summon, Baby dear,
To carol forth thy praises?
With sweet sad song the Nightingale
May soothe the broken hearts that languish
Where graves are green—the orphans' wail,
The widow's lonely anguish:
The Turtle-dove with amorous coo
May chide the blushing maid that lingers
To twine her bridal wreath anew
With weak and trembling fingers:
But human loves and human woes
Would dim the radiance of thy glory—
Only the Lark such music knows
As fits thy stainless story.
The world may listen as it will—
She recks not, to the skies up-springing:
Beyond our ken she singeth still
For very joy of singing.

Lewis Carroll

18.193 What though the world be cross and crooky?

Source: Wilhelm von Schmitz (extracted)

What though the world be cross and crooky?
Of Life's fair flowers the fairest bouquet
I plucked, when I chose *thee*, my Sukie!
Say, could'st thou grasp at nothing greater
Than to be wedded to a waiter?
And did'st thou deem thy Schmitz a traitor?
Nay! the fond waiter was rejected,
And thou, alone, with flower-bedecked head,
Sitting, did'st sing of one expected.
And while the waiter, crazed and silly,
Dreamed he had won that priceless lily,
At length he came, thy wished-for Willie.
And then thy music took a new key,
For whether Schmitz be boor or duke, he
Is all in all to faithful Sukie!

18.194 When Desolation snatched her tearful prey

Source: Novelty and Romancement (extracted)

When Desolation snatched her tearful prey
From the lorn empire of despairing day;
When all the light, by gemless fancy thrown,
Served but to animate the putrid stone;
When monarchs, lessening on the wildered sight,
Crumblingly vanished into utter night;
When murder stalked with thirstier strides abroad,
And redly flashed the never-sated sword;
In such an hour thy greatness had been seen—
That is, if such an hour had ever been—
In such an hour thy praises shall be sung,
If not by mine, by many a worthier tongue;
And thou be gazed upon by wondering men,
When such an hour arrives, but not till then!

18.195 When I was young, my ringlets waved

Source: The Wasp in a Wig (extracted)

When I was young, my ringlets waved
And curled and crinkled on my head:
And then they said "You should be shaved,
And wear a yellow wig instead."
But when I followed their advice,
And they had noticed the effect,
They said *I* did not look so nice
As they had ventured to expect.
They said it did not fit, and so
It made me look extremely plain:
But what was I to do, you know?
My ringlets would not grow again.
So now that I am old and gray,
And all my hair is nearly gone,
They take my wig from me and say
"How can you put such rubbish on?"
And still, whenever I appear,
They hoot at me and call me "Pig!"
And that is why they do it, dear,
Because I wear a yellow wig.

18.196 Maggie's Visit to Oxford

Source: written for Maggie Bowman when playing the child part in "Bootles' Baby"
(by Hugh Moss, based on *Bootles' Baby: A Story of the Scarlet Lancers* by John
Strange Winter) 1889

Parody on *Battle Cry of Freedom* by George Frederick Root

June 9 to 13, 1889

When Maggie once to Oxford came
On tour as 'Bootles' Baby,'
She said 'I'll see this place of fame,
However dull the day be!'
So with her friend she visited
The sights that it was rich in:
And first of all she poked her head
Inside the Christ Church Kitchen.
The cooks around that little child
Stood waiting in a ring:
And, every time that Maggie smiled,
Those cooks began to sing—
Shouting the Battle-cry of Freedom!
 'Roast, boil, and bake,
 For Maggie's sake!
 Bring cutlets fine,
 For *her* to dine:
 Meringues so sweet,
 For *her* to eat—
 For Maggie may be
 Bootles' Baby!'
Then hand-in-hand, in pleasant talk,
They wandered, and admired
The Hall, Cathedral, and Broad Walk,
Till Maggie's feet were tired:
One friend they called upon—her name
Was Mrs. Hassall—then
Into a College Room they came,
Some savage Monster's Den!
'And, when that Monster dined, I guess
He tore her limb from limb?'
Well, no: in fact, I must confess
That *Maggie dined with him!*
To Worcester Garden next they strolled—
Admired its quiet lake:
Then to St. John's, a College old,
Their devious way they take.
In idle mood they sauntered round

Its lawns so green and flat:
 And in that Garden Maggie found
 A lovely Pussey-Cat!
 A quarter of an hour they spent
 In wandering to and fro:
 And everywhere that Maggie went,
 That Cat was sure to go—
 Shouting the Battle-cry of Freedom!
 ‘Miaow! Miaow!
 Come, make your bow!
 Take off your hats,
 Ye Pussy Cats!
 And purr, and purr,
 To welcome *her*—
 For Maggie may be
 Bootles’ Baby!’

So back to Christ Church—not too late
 For them to go and see
 A Christ Church Undergraduate,
 Who gave them cakes and tea.

Next day she entered, with her guide,
 The Garden called ‘Botanic’:
 And there a fierce Wild-Boar she spied,
 Enough to cause a panic!
 But Maggie didn’t mind, not she!
 She would have faced *alone*,
 That fierce Wild-Boar, because, you see,
 The thing was made of stone!

On Magdalen walls they saw a face
 That filled her with delight,
 A giant-face, that made grimace
 And grinned with all its might!
 A little friend, industrious,
 Pulled upwards, all the while,
 The corner of its mouth, and thus
 He helped that face to smile!

‘How nice,’ thought Maggie, ‘it would be
 If *I* could have a friend
 To do that very thing for *me*,
 And make my mouth turn up with glee,
 By pulling at one end!’

In Magdalen Park the deer are wild
 With joy that Maggie brings
 Some bread a friend had given the child,
 To feed the pretty things.

They flock round Maggie without fear:
 They breakfast and they lunch,

They dine, they sup, those happy deer—
Still, as they munch and munch,
Shouting the Battle-cry of Freedom!

‘Yes, Deer are we,
And dear is she!
We love this child
So sweet and mild:
We all rejoice
At Maggie’s voice:
We all are fed
With Maggie’s bread—
For Maggie may be
Bootles’ Baby!’

To Pembroke College next they go,
Where little Maggie meets
The Master’s wife and daughter: so
Once more into the streets.

They met a Bishop on their way—
A Bishop large as life—
With loving smile that seemed to say
‘Will Maggie be my wife?’

Maggie thought *not*, because, you see,
She was so *very* young,
And he was old as old could be—
So Maggie held her tongue.

‘My Lord, she’s *Bootles’ Baby*: we
Are going up and down,’
Her friend explained, ‘that she may see
The sights of Oxford-town.’

‘Now say what kind of place it is!’
The Bishop gaily cried.
‘The best place in the Provinces!’
That little maid replied.

Next to New College, where they saw
Two players hurl about
A hoop, but by what rule or law
They could not quite make out.

‘Ringo’ the Game is called, although
‘Les Graces’ was once its name,
When *it* was—as its name will show—
A much more *graceful* Game.

The Misses Symonds next they sought,
Who begged the child to take
A book they long ago had bought—
A gift for friendship’s sake!

Away, next morning, Maggie went
From Oxford-town: but yet

The happy hours she there had spent
She could not soon forget.
The train is gone: it rumbles on:
The engine-whistle screams:
But Maggie's deep in rosy sleep—
And softly, in her dreams,
Whispers the Battle-cry of Freedom!
 'Oxford, good-bye!'
 She seems to sigh,
 'You dear old City,
 With Gardens pretty,
 And lawns, and flowers,
 And College-towers,
 And Tom's great Bell—
 Farewell, farewell!
 For Maggie may be
 Bootles' Baby!'

Lewis Carroll

18.197 Puzzle

Source: sent to Mary, Ina, and Harriet or "Hartie" Watson, 1869

When .a.y and I.a told .a..ie they'd seen a
Small ..ea.u.e with .i..., dressed in crimson and blue,
.a..ie cried "'Twas a .ai.y! Why, I.a and .a.y,
I *should* have been happy if I had been you!"

Said .a.y "You wouldn't." Said I.a "You shouldn't—
Since *you* can't be *us*, and *we* couldn't be *you*.
You are *one*, my dear .a..ie, but *we* are a .a..y,
And a.i...e.i. tells us that *one* isn't *two*."

Solution: Mary, Ina, Hartie; creature, wings; Hartie, fairy, Ina, Mary. Mary, Ina;
Hartie, party; arithmetic

18.198 Dreamland

Source: printed 1882; Aunt Judy's Magazine, July 1882 (without introduction, stanzas numbered)

For convenience the first stanza is here repeated after the notes.

Of poetry composed in dreams there are several well-authenticated instances—the most remarkable, perhaps, being the fragment of *Kubla Khan* composed by COLERIDGE: instances of 'dream-music' are, I think, less common. The history of the dream, in which the accompanying specimen of dream-music was composed, is here given in the words of the dreamer. In adapting words to the music, a slight transposition of the lines recalled by the dreamer seemed necessary, in order to meet the rhythmical necessities of the melody.

"I found myself seated, with many others, in darkness, in a large amphitheatre. Deep stillness prevailed. A kind of hushed expectancy was upon us. We sat awaiting I know not what. Before us hung a vast and dark curtain, and between it and us was a kind of stage. Suddenly an intense wish seized me to look upon the forms of some of the heroes of past days. I cannot say whom in particular I longed to behold, but, even as I wished, a faint light flickered over the stage, and I was aware of a silent procession of figures moving from right to left across the platform in front of me. As each figure approached the left-hand corner, it turned and gazed at me, and I knew (by what means I cannot say) its name. One only I recall—Saint George: the light shone with a peculiar blueish lustre on his shield and helmet as he turned and slowly faced me. The figures were shadowy and floated like mist before me: as each one disappeared an invisible choir behind the curtain sang the 'Dream Music.' I awoke with the melody ringing in my ears, and the *words* of the last line complete—'I see the shadows falling. And slowly pass away'—the rest I could not recall."

Words by LEWIS CARROLL.

Music by C. E. HUTCHINSON.

mf ≡

When mid - night mists are creep - ing, And

all the land is sleep - ing, A - round me tread the

migh - ty dead, And slow - ly pass a - way.

cres.

molto rall. pp

dim.

When midnight mists are creeping,
 And all the land is sleeping,
 Around me tread the mighty dead,
 And slowly pass away.

Lo, warriors, saints, and sages,
 From out the vanished ages,
 With solemn pace and reverend face
 Appear and pass away.

The blaze of noonday splendour,
 The twilight soft and tender,
 May charm the eye: yet they shall die,
 Shall die and pass away.

But here, in Dreamland's centre,
 No spoiler's hand may enter,
 These visions fair, this radiance rare,
 Shall never pass away.

I see the shadows falling,
 The forms of old recalling;
 Around me tread the mighty dead,
 And slowly pass away.

18.199 Size and Tears

Source: Mischmasch (as “Bloggs’ Woe”, with minor differences as noted); The College Rhymes, June 1863 (with signature “R. W. G.” and minor differences as noted); Phantasmagoria (with different punctuation); Rhyme? and Reason?



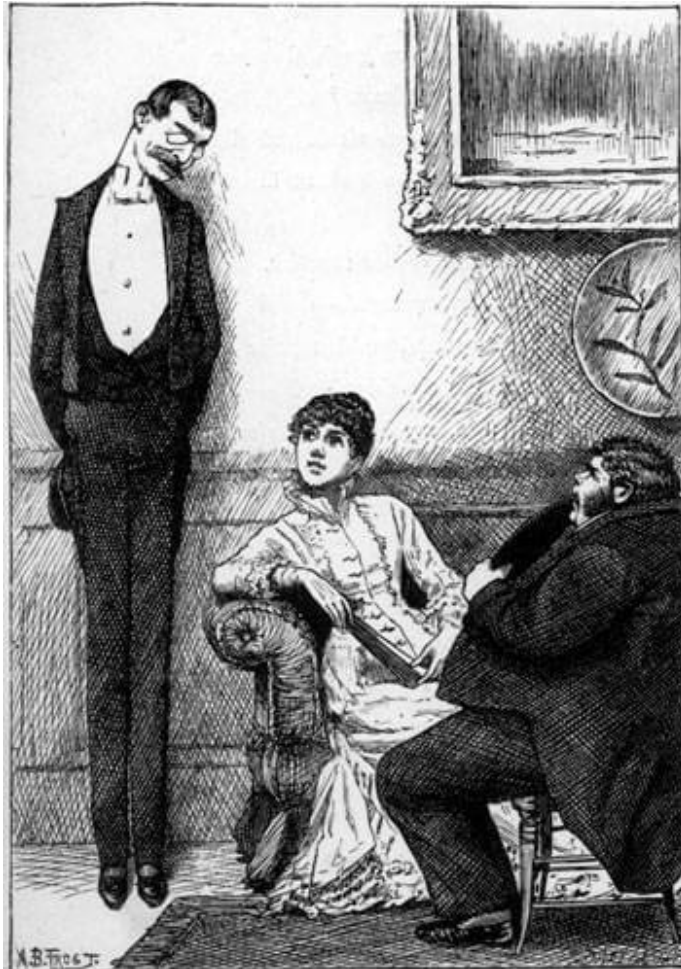
When on the sandy shore I sit,
Beside the salt sea-wave,
And fall into a weeping fit
Because I dare not shave—
A little whisper at my ear
Enquires the reason of my fear.

I answer “If that ruffian Jones
Should recognise me here,
He’d bellow out my name in tones
Offensive to the ear:
He chaffs me so on being stout
(A thing that always puts me out).”

Ah me! I see him on the cliff!
Farewell, farewell to hope,
If he should look this way, and if
He’s got his telescope!
To whatsoever place I flee,
My odious¹ rival follows me!

¹“hated” in *Mischmasch*

For every night, and everywhere,
I meet him out at dinner;
And when I've found some charming fair,
And vowed to die or win her,
The wretch (he's thin and I am stout)
Is sure to come and cut me out!²



“He’s thin and I am stout”

The girls (just like them!) all agree
To praise J. Jones, Esquire:
I ask them what on earth they see

²In *Mischmasch*:

For it has happend once or twice
I've met him out at dinner,
Just as I've come across a nice
Party, and sworn to win her;
And he is slim, and I am stout,
And so he comes and cut me out.

About him to admire?
 They cry³ “He is so sleek and slim,
 It’s quite a treat to look at him!”
 They vanish in tobacco smoke,
 Those visionary maids—
 I feel a sharp and sudden poke
 Between the shoulder-blades—
 “Why, Brown,⁴ my boy! You’re growing stout!”
 (I told you he would find me out!)
 “My growth⁵ is not *your* business, Sir!”
 “No more it is, my boy!
 But if it’s *yours*, as I infer,
 Why, Brown,⁶ I give you joy!
 A man, whose business prospers so,
 Is just the sort of man to know!
 “It’s hardly safe, though, talking here—
 I’d best get out of reach:
 For such a weight as yours, I fear,
 Must shortly sink the beach!”—
 Insult me thus because I’m stout!
 I vow I’ll go and call him out!



³“say” in *Mischmasch*

⁴Bloggs

⁵“fat” in *College Rhymes*

⁶Bloggs

18.200 Charity

Source: Useful and Instructive Poetry

While once in haste I crossed the street,
A little girl I saw,
Deep in the mud she'd placed her feet,
And gazed on me with awe.

"Dear sir," with trembling tone she said,
"Here have I stood for weeks,
And never had a piece of bread,"
Her tears bedewed her cheeks.

"Poor child!" said I, "do you stand here,
And quickly will I buy,
Some wholesome bread and strengthening beer,
And fetch it speedily."

Off ran I to the baker's shop,
As hard as I could pelt,
Fearing 'twas late, I made a stop,
And in my pocket felt.

In my left pocket did I seek,
To see how time went on,
Then grief and tears bedewed my cheek,
For, oh! My watch was gone!

Moral: "Keep your wits about you."

18.201 Prologue (1873)

Source: Prologue to a private theatrical by Miss Hatch and her brother, 1873

[Enter Beatrice, leading Wilfred. She leaves him to centre (front), & after going round on tip-toe to make sure they are not overheard returns & takes his arm.]

B. "Wiffie! I'm *sure* that something *is* the matter!
All day there's been—oh *such* a fuss and clatter!
Mamma's been trying on a funny dress—
I never *saw* the house in such a mess!
(puts her arm round his neck)
Is there a secret, Wiffie?"

W. (Shaking her off) "Yes, of course!"

B. "And you won't tell it? (whispers) Then you're very cross!
(turns away from, & clasps her hands, looking up ecstatically)
I'm sure of *this*! It's something *quite* uncommon!"

W. (stretching up his arms with a mock-heroic air)
"Oh, Curiosity! Thy name is Woman!
(puts his arm round her coaxingly)
Well, Birdie, then I'll tell! (mysteriously) What should you say
If they were going to act—a little play?"

B. (jumping and clapping her hands)
"I'd say '**How nice!**'"

W. (pointing to audience)
"But will it please the rest?"

B. "Oh *yes*! Because, you know, they'll do their best!
[turns to audience]
"You'll praise them, won't you, when you've seen the play?
Just say '**How nice!**' before you go away!"
[they run away hand in hand].

Quoted from *Hamlet*
by William
Shakespeare

Feb 14. 1873.

18.202 “Will you trot a little quicker?”

Source: sent to Edith Argles for her sister Dolly, April 29, 1868 (several errors corrected to obtain a consistent version)

Encrypted with the Telegraph-Cipher (→ 15.1, p. 1902) with key-word “fox”

“Jgmu qjl vgrv x ugemdt pupdeto?” wxxl x Ugmh vj f Jji.
“Ge’n ijsk tukcbb qfds fb qrug, eq xud eyk cxdmfit ddjdef:
Fbu cgkskg-mglb gf mstutt, had vbjj, okc Ljudz *jgmu* nt jxjmh,
Pa st’ok krv eykgb vj dogoq gruke vqb zmfvtn as tuemak-exjmh.”
Wrs-brs, brs-brs, wrs-brs, brs-brs: “Vret fdjsi!” ffgu, Ugmh.
Njj-sjj, sjj-sjj, njj-sjj, sjj-sjj; Jji wxxl “Urb’e ek fxdmh.”
“Ljs’v efdn ma lb as zapsi hlgvv,” wxxl Srr, “zru qrsmxbr Yads!
Lh jtbtv xok urbt jgey zxmkkm imlk, eyoe nvpdef mhtt vj mht zxjlbv.
Xv pn cz rsk xbcbbexak—na Urdmh btblk’m wvrdu:
Nht dok’m gkkkkm o ifvtsv ruut mxm’w brxey gen stxiqm gk
zame!”
Njj-sjj, sjj-sjj, njj-sjj, sjj-sjj: “*G* urb’e dogb jjo Ljudz!”
Eab-jab, jab-jab, eab-jab, jab-jab: Umgh wxxl “Eyoe’n jjudz.”

In plain English:

“Will you trot a little quicker?” said a Lily to a Fox.
“It’s gone eleven half an hour, by all the village clocks:
And dinner-time is twelve, you know, and Dolly *will* be wroth.
If we’re not there to carry round the plates of mutton-broth.”
Bow-wow, wow-wow, bow-wow, wow-wow: “Come along!” said Lily.
Bow-wow, wow-wow, bow-wow, wow-wow: Fox said “Don’t be silly.”
“Don’t talk to me of going quick,” said Fox, “you howling Hound!
My feet are done with patent glue, that sticks them to the ground.
It is my own invention—so Dolly needn’t scold:
She can’t invent a patent glue that’s worth its weight in gold!”
Bow-wow, wow-wow, bow-wow, wow-wow: “*I* don’t care for Dolly!”
Bow-wow, wow-wow, bow-wow, wow-wow; Lily said “That’s folly.”

18.203 Will you Walk a Little Faster?

Source: Alice's Adventures in Wonderland (extracted, with different spelling in first version)

Parody on *The Spider and the Fly* by Mary Howitt

“Will you walk a little faster?” said a whiting to a snail,
“There’s a porpoise close behind us, and he’s treading on my tail.
See how eagerly the lobsters and the turtles all advance!
They are waiting on the shingle—will you come and join the dance?
Will you, wo’n’t you, will you, wo’n’t you, will you join the dance?
Will you, wo’n’t you, will you, wo’n’t you, wo’n’t you join the
dance?”

“You can really have no notion how delightful it will be
When they take us up and throw us, with the lobsters, out to sea!”
But the snail replied, “Too far, too far!” and gave a look askance—
Said he thanked the whiting kindly, but he would not join the dance.
Would not, could not, would not, could not, would not join the
dance.
Would not, could not, would not, could not, could not join the
dance.

“What matters it how far we go?” his scaly friend replied,
“There is another shore, you know, upon the other side.
The further off from England the nearer is to France—
Then turn not pale, beloved snail, but come and join the dance.
Will you, wo’n’t you, will you, wo’n’t you, will you join the dance?
Will you, wo’n’t you, will you, wo’n’t you, wo’n’t you join the
dance?”

18.204 A Quotation from Shakespeare with Slight Improvements

Source: Useful and Instructive Poetry

Parody on *Henry the Fourth, Second Part* by William Shakespeare

WAR. Wil't please your grace to go along with us?

P. No I will sit and watch here by the king.

[*Exeunt all but P. H.*]

“Why doth the crown lie there upon his pillow

Being so troublesome a bedfellow?

Oh polished perturbation! golden care!

That keepst the ports of slumber open wide

To many a watchful night—sleep with it now!

Yet not so sound, and half so deeply sweet,

As he whose brow with homely biggin bound

Snores out the watch of night.”

K. Harry I know not

The meaning of the word you just have used.

P. What word, my liege?

K. The word I mean is “biggin.”

P. It means a kind of woolen nightcap, sir,

With which the peasantry are wont to bind

Their wearied heads, ere that they take their rest.

K. Thanks for your explanation, pray proceed.

P. “Snores out the watch of night. Oh majesty!

When thou dost pinch thy bearer thou dost sit

Like a rich armour, worn in heat of day

That scalds with safety.”

K. Scalding ne'er is safe

For it produces heat and feverishness

And blisters on the parched and troubled skin.

P. Pray interrupt not. “By his gates of breath
There lies a downy feather which stirs not.”

K. I knew not that there was one, brush it off.

P. “Did he suspire that light and weightless down
Perforce must move.”

K. And it *hath* moved already.

P. It hath *not* moved. “My gracious lord! my father!
This sleep is sound indeed, this is a sleep
That from this golden rigol hath divorced
So many English—”

K. What meaneth rigol, Harry?

P. My liege, I know not, save that it doth enter
Most apt into the metre.

K. True, it doth.

But wherefore use a word which hath no meaning?

P. My lord, the word is said, for it hath passed
My lips, and all the powers upon this earth
Can not unsay it.

K. You are right, proceed.

P. "So many English kings; thy due from me
 Is tears and heavy sorrows of the blood
 Which nature, love, and filial tenderness,
 Shall, oh dear father, pay thee plenteously:
 My due from thee is this imperial crown
 Which as—"

K. 'Tis *not* your due, sir! I deny it!

P. It *is*, my liege! How dare you contradict me?
 Moreover how can you, a sleeper, know
 That which another doth soliloquise?

K. Your rhetoric is vain, for it is true:
 Therefore no arguments can prove it false.

P. Yet sure it is not possible, my liege!

K. Upon its possibility I dwelt not
 I merely said 'twas true.

P. But yet, my liege,
 What is not possible can never happen,
 Therefore this cannot.

K. Which do you deny
 That I have heard you or that I'm asleep?

P. That you're asleep, my liege.

K. Go on, go on,
 I see you are not fit to reason with.

P. "Which as immediate from thy place and blood
 Derives itself to me. Lo, here it sits,—
 Which heaven itself shall guard, and put the world's whole strength
 Into which giant arm, it shall not force
 This lineal honour from me: this from thee
 Will I to mine leave as 'tis left to me."

18.205 The Three Voices (early version)

Source: *The Train*, November 1856 (with minor differences as noted); *Mischmasch* (with illustration and minor differences as noted); *Phantasmagoria*
Parody on *The Two Voices* by Alfred Lord Tennyson

Other version:
→ 18.55, p. 2100



The First Voice

With hands tight clenched through matted hair,
He crouched in trance of dumb despair:
There came a breeze from out the air.

It passed athwart the glooming flat—
It fanned his forehead as he sat—
It lightly bore away his hat,

All to the feet of one who stood
Like maid enchanted in a wood,
Frowning as darkly as she could.

With huge umbrella, lank and brown,
Unerringly she pinned it down,
Right through the centre of the crown.

Then, with an aspect cold and grim,
Regardless of its battered rim,¹
She took it up and gave it him.

Awhile like one in dreams he stood,
Then faltered forth his gratitude,

¹“brim” in *Mischmasch*

In words just short of being rude:
 For it had lost its shape and shine,
 And it had cost him four-and-nine,
 And he was going out to dine.
 With grave indifference to his speech,
 Fixing her eyes upon the beach,
 She said "Each gives to more than each."
 He could not answer yea or nay;²
 He faltered "Gifts may pass away."
 Yet knew not what he meant to say.
 "If that be so," she staight replied,
 "Each heart with each doth coincide.
 What boots it? For the world is wide."
 And he, not wishing to appear
 Less wise, said "This Material Sphere
 Is but Attributive Idea."
 But when she asked him "Wherefore so?"
 He felt his very whiskers glow,
 And frankly owned "I do not know."
 While, like broad waves of golden grain,
 Or sunlit hues on cloistered pane,
 His colour came and went again.
 Pitying his obvious distress,
 Yet with a tinge of bitterness,
 She said "The More exceeds the Less."
 "A truth of such undoubted weight,"
 He urged, "and so extreme in date,
 It were superfluous to state."
 Roused into sudden passion, she
 In tone of cold³ malignity:
 "To others, yes; but not to thee."
 But when she saw him quail and quake,⁴
 And when he urged "For pity's sake!"
 Once more in gentle tone she spake:
 "Thought in the mind doth still abide;
 That is by Intellect supplied,

²In earlier versions, this verse is:

He raised his eyes in sudden awe,
 And stammered out "Thy wish is law!"
 Yet knew not what he said it for.

³stern

⁴In earlier versions, this verse is:

Then proudly folded arm in arm:
 But when he urged, "I meant no harm,"
 Once more her speech grew mild and calm:

And within that Idea doth hide.

“And he, that yearns the truth to know,⁷⁵
Still further inwardly may go,
And find Idea from Notion flow.

“And thus the chain, that sages sought,
Is to a glorious circle wrought,
For Notion hath its source in Thought.”

When he, with racked and whirling brain,
Feebly implored her to explain,
She simply said it all again.

Wrenched with an agony intense,
He spake, neglecting Sound and Sense,
And careless of all consequence:

“Mind—I believe—is Essence—Ent—
Abstract—that is—an Accident—
Which we—that is to say—I meant—”

When, with quick breath and cheeks all flushed,⁷⁶
At length his speech was somewhat hushed,⁷⁷
She looked at him, and he was crushed.

It needed not her calm reply;
She fixed him with a stony eye,⁷⁸
And he could neither fight nor fly,

While she dissected, word by word,
His speech, half guessed at and half heard,
As might a cat a little bird.

Then, having wholly overthrown
His views, and stripped them to the bone,
Proceeded to unfold her own.

So passed they on with even pace,
Yet gradually one might trace
A shadow growing on his face.

The Second Voice

They walked beside the wave-worn beach,
Her tongue was very apt to teach,
And now and then he did beseech

She would abate her dulcet tone,
Because the talk was all her own,
And he was dull as any drone.

She urged “No cheese is made of chalk:”⁷⁹

⁵“He who doth yearn the Truth to know” in *Mischmasch*

⁶“Thus far he panted, wild and flushed” in *Mischmasch*

⁷“But when his speech was somewhat hushed” in *Mischmasch*

⁸She did the buisness with her eye

⁹No knife is like a fork

And ceaseless flowed her dreary talk,
Tuned to the footfall of a walk.

Her voice was very full and rich,
And, when at length she asked him "Which?"
It mounted to its highest pitch.

He a bewildered answer gave,
Drowned in the sullen moaning wave,
Lost in the echoes of the cave.

He answered her he knew not what;
Like shaft from bow at random shot:
He spoke, but she regarded not.

She waited not for his reply,
But with a downward leaden eye
Went on as if he were not by.

Sound argument and grave defence,
Strange questions raised on "Why?" and "Whence?"
And weighted down with common sense.

"Shall Man be Man? And shall he miss
Of other thoughts no thought but this,
Harmonious dews of sober bliss?

"What boots it? Shall his fevered eye
Through towering nothingness descry
The grisly phantom hurry by?

"And hear dumb shrieks that fill the air;
See mouths that gape, and eyes that stare
And redden in the dusky glare?

"The meadows breathing amber light,
The darkness toppling from the height,
The feathery train of granite Night?

"Shall he, grown gray among his peers,
Through the thick¹⁰ curtain of his tears
Catch glimpses of his earlier years,

"And hear the sounds he knew of yore,
Old shufflings on the sanded floor,
Old knuckles tapping¹¹ at the door?

"Yet still before him as he flies
One pallid form shall ever rise,
And, bodying forth in glassy eyes

"The vision¹² of a vanished good,
Low peering through the tangled wood,
Shall freeze the current of his blood."

Still from each fact, with skill uncouth

¹⁰"dark" in *The Train*

¹¹footsteps kicking

¹²A dim reflex

And savage rapture, like a tooth
She wrenched some slow reluctant truth.

Till, like a silent water-mill,
When summer suns have dried the rill,
She reached a full stop, and was still.

Dead calm succeeded to the fuss,
As when the loaded omnibus¹³
Has reached the railway terminus;

When, for the tumult of the street,
Is heard the engine's stifled beat,
The velvet¹⁴ tread of porters' feet.

With glance that ever sought the ground,
She moved her lips without a sound,
And every now and then she frowned.

He gazed upon the sleeping sea,
And joyed in its tranquillity,
And in that silence dead, but she

To muse a little space did seem,
Then, like the echo of a dream,
Harped back upon her threadbare theme.

Still an attentive ear he lent,
But could not fathom what she meant:
She was not deep, nor eloquent.

He marked the ripple on the sand:
The even swaying of her hand
Was all that he could understand.

He left her, and he turned aside:
He sat and watched the coming tide
Across the shores so newly dried.

He wondered at the waters clear,
The breeze that whispered in his ear,
The billows heaving far and near;

And why he had so long preferred
To hang upon her every word;
"In truth," he said, "it was absurd."

The Third Voice

Not long this transport held its place:
Within a little moment's space
Quick tears were raining down his face.

His heart stood still, aghast with fear;
A wordless voice, nor far nor near,
He seemed to hear and not to hear.

¹³overladen bus

¹⁴weary

"Tears kindle not the doubtful spark:
 If so, why not? Of this remark
 The bearings are profoundly dark."
 "Her speech," he said, "hath caused this pain;
 Easier I count it to explain
 The jargon of the howling main,
 "Or, stretched beside some sedgy brook,
 To con, with inexpressive look,
 An unintelligible book."
 Low spake the voice within his head,
 In words imagined more than said,
 Soundless as ghost's intended tread:
 "If thou art duller than before,
 Why quittedst thou the voice of lore?
 Why not endure, expecting more?"
 "Rather than that," he groaned aghast,
 "I'd writhe in depths of cavern vast,
 Some loathly vampire's rich repast."
 "Twere hard," it answered, "themes immense
 To coop within the narrow fence
 That rings *thy* scant intelligence."
 "Not so," he urged, "nor once alone:
 But there was that within her tone
 Which chilled me to the very bone.
 "Her style was anything but clear,
 And most unpleasantly severe;
 Her epithets were very queer.
 "And yet, so grand were her replies,
 I could not choose but deem her wise;
 I did not dare to criticise;
 "Nor did I leave her, till she went
 So deep in tangled argument
 That all my powers of thought were spent."
 A little whisper inly slid,
 "Yet truth is truth: you know you did—"
 A little wink beneath the lid.
 And, sickened with excess of dread,
 Prone to the dust he bent his head,
 And lay like one three-quarters dead.
 Forth went the whisper like a breeze;
 Left him amid the wondering trees,
 Left him by no means at his ease.
 Once more he weltered in despair,
 With hands, through denser-matted hair,
 More tightly clenched than then they were.

When, bathed in dawn of living red,
 Majestic frowned the mountain head,
 "Tell me my fault," was all he said.
 When, at high noon, the blazing sky
 Scorched in his head each haggard eye,
 Then keenest rose his weary cry.
 And when at eve the¹⁵ unpitying sun
 Smiled grimly on the solemn fun,
 "Alack," he sighed, "what *have* I done?"
 But saddest, darkest was the sight,
 When the cold grasp of leaden Night
 Dashed him to earth, and held him tight.
 Tortured, unaided, and alone,
 Thunders were silence to his groan,
 Bagpipes sweet music to its tone:
 "What? Ever thus, in dismal round,
 Shall Pain and Mystery profound
 Pursue me like a sleepless hound,
 "With crimson-dashed and eager jaws,
 Me, still in ignorance of the cause,
 Unknowing what I broke of laws?"
 The whisper to his ear did seem
 Like echoed flow of silent stream,
 Or shadow of forgotten dream;
 The whisper trembling in the wind:
 "Her fate with thine was intertwined,"
 So spake it in his inner mind;
 "Each orb'd on each a baleful star,
 Each proved the other's blight and bar,
 Each unto each were best, most far:
 "Yea, each to each was worse than foe,
 Thou, a scared dullard, gibbering low,
 And she, an avalanche of woe."

¹⁵"th" in *Mischmasch*

18.206 Woes

Source: Rectory Magazine

With rapid start,
And forward dart,
As when it left the cannon,
Along the ground,
With swift rebound,
The cannon-ball it ran on.

Through hill and dale,
Through many a vale,
Through country, town, and village:
Now onward borne,
Through fields of corn,
Rich recompense for tillage.

Still hop, hop, hop,
No pause nor stop,
O'er precipice and mountain,
Through briar and brake,
Through pool and lake,
By stream and sparkling fountain.

Across the plain,
Along the main,
Of ocean loudly roaring,
Now here, now there,
Now in the air
Like swallow lightly soaring.

And still hop, hop.
No pause nor stop,
The cannon ball it ran on,
With swift rebound,
Along the ground,
As when it left the cannon.

Along the ground,
Through hill and mound
It passed, no pause nor warning,
When, see! oh see!
Beneath a tree,
A lion grimly yawning!

Deep yawning, grim,
Of massive limb,
And jaws with blood be-spattered:
While all around,
Upon the ground,
White skulls and bones were scattered.

With rapid bound,

Along the ground,
The cannon ball did fly on,
No pause, nor stop,
Till it entered, pop!
The deep throat of the lion.
Two chokes, one howl,
A stifled growl,
It died without a struggle:
And the only sound
That was heard around
Was its last expiring guggle.

B. B.

18.207 Melancholetta

Source: Mischmasch (without images, with minor differences as noted); The College Rhymes, March 1862 (without images, with minor differences as noted); Phantasmagoria (without images, with minor differences as noted); Rhyme? and Reason?

With saddest music all day long
She soothed her secret sorrow:
At night she sighed "I fear 'twas wrong
Such cheerful words to borrow.
Dearest, a sweeter, sadder song
I'll sing to thee to-morrow."
I thanked her, but I could not say
That I was glad to hear it:
I left the house at break of day,
And did not venture near it
Till time, I hoped, had worn away
Her grief, for nought could cheer it!
My dismal sister! Couldst thou know
The wretched home thou keepest!
Thy brother, drowned in daily woe,
Is thankful when thou sleepest;
For if I laugh, however low,
 When thou'rt awake, thou weapest!¹
I took my sister t'other day
 (Excuse the slang expression)
To Sadler's Wells to see the play,
In hopes the new impression
Might in her thoughts, from grave to gay
Effect some slight digression.
I asked _three gay young dogs² from town
To join us in our folly,
 Whose mirth, I thought, might serve to drown³
My sister's melancholy:
The lively Jones, the sportive Brown,
And Robinson the jolly.

¹Additional verse in *Mischmasch*:

Melancholetta! what a word!
Far better Julius Cæsar,
But, though in youth, I've always heard
They christened her Theresa,
"Melancholetta" she preferred,
And I was glad to please her.

²three friends of mine

³"In hopes their liveliness might drown" in *Mischmasch*, "Thinking their mirth might serve to drown" in *College Rhymes*



"At night she sighed"

The maid announced the meal in tones⁴
 That⁵ I myself⁶ had taught her,
 Meant to allay⁷ my sister's moans
 Like oil on troubled water:⁸
 I rushed to Jones, the lively Jones,
 And begged him to escort her.
 Vainly he strove, with ready wit,⁹
 To joke about the weather—
 To ventilate the last 'on dit'—
 To quote the price of leather—
 She groaned "Here I and Sorrow sit:
 Let us lament together!"
 I urged "You're wasting time, you know:
 Delay will spoil the venison."
 "My heart is wasted with my woe!
 There is no rest—in Venice, on¹⁰
 The Bridge of Sighs!" she quoted¹¹ low
 From Byron and from Tennyson.
 I need not tell of¹² soup and fish
 In solemn silence swallowed,
 The sobs that ushered in each dish,
 And its departure followed,
 Nor yet my suicidal wish
 To *be* the cheese I hollowed.
 Some desperate attempts were made
 To start a conversation;
 "Madam,"¹³ the sportive Brown¹⁴ essayed,

⁴This and the next two verses don't appear in *Phantasmagoria*

⁵"Which" in *College Rhymes*

⁶"Of mirth, which" in *Mischmasch*

⁷"They acted on" in *Mischmasch*

⁸"Much like a fire on water—" in *Mischmasch*

⁹In *Mischmasch* this verse is:

"If I'm the man so honour'd—"
 He said in accents cheerful,
 "Allow me, miss—" She raised her head,
 With countenance all tearful—
 "If I be he—" "Boo! hoo!" she said;
 Matters were getting fearful.

In *College Rhymes*, it is

"If I be he so honour'd,"
 Cried Jones, in accents cheerful,
 "Allow me, Miss!"—She raised her head,
 All woe-begone and tearful—
 "If I be he"—"Boo-hoo!" she said;
 Matters were growing fearful!

¹⁰"There is—I stood in Venice, on" in *Mischmasch* and *College Rhymes*

¹¹"muttered" in *College Rhymes*

¹²"I won't detail the" in *Mischmasch*

¹³"Pray, miss," in *Mischmasch* and *College Rhymes*

¹⁴lively Jones

“Which kind of recreation,
 Hunting or fishing, have you made
 Your special occupation?”
 Her lips curved downwards instantly,
 As if of *india-rubber*.¹⁵
 “Hounds *in full cry* I like,” said she:
 (Oh how I longed to snub her!)
 “Of¹⁶ fish, a whale’s the *one*¹⁷ for me,
It is so full of blubber!”
 The *night*’s¹⁸ performance was “King John.”
 “It’s dull,” she wept, “and so-so!”
 A while I let her tears flow on,¹⁹
 She said they soothed her woe so!
 At length the curtain rose upon
 ‘Bombastes Furioso.’
 In vain *we*²⁰ *roared*;²¹ in vain *we*²² tried
 To rouse her into laughter:
 Her *pensive*²³ glances wandered wide
 From orchestra to rafter—
 “*Tier upon tier!*” she said, and sighed;
 And silence followed after.²⁴

¹⁵“Indian-rubber” in *Mischmasch*

¹⁶“For” in *Mischmasch*

¹⁷“sport” in *Mischmasch*

¹⁸“first” in *Mischmasch*

¹⁹“Awhile I let her moans go on;” in *Mischmasch*

²⁰I

²¹“nudged” in *Mischmasch*

²²I

²³“tearful” in *Mischmasch*

²⁴Additional verses in *Mischmasch* and *College Rhymes*:

That very hour I laid a plan
 In utter desperation,
 And felt myself another man
 By fond anticipation;
 And, ere the morrow morn began,
 Had reached the railway station.
 Since then, though I can scarce afford
 (I took so little money)
 To pay for lodging or for board,
 For butter or for honey,
 My spirits are so far resored,
 Sometimes I’m almost funny.
 I live by hook, or else by crook;
 I lodge at present up a
 Two-story back: my favorite book
 Is Martin Farquhar Tupper:
 My landlady, a famous cook,
 Fries bacon for my supper.
 But if my supper is not light—
 A pardonable blunder
 In one whose youthful appetite
 Can no way be kept under—
 Why, then she comes in dreams at night,
 A sight of fear and wonder!



Ch. Ch. B. B.²⁵

But yesterday I tried a slice
 Of melon, and I eat a
 Large quantity, it proved so nice—
 That night in dreams I met her!
 Green as a melon, cold as ice—
 “Dearest!” she moaned, “art better?
 Thy melon I—will that suffice?
 Or must I add—choletta?”

with the following differences in *Mischmasch*: 1. hour → night, “By fond” → “In fond”, “ere the morrow morn” → “long before the day”, 2. far → much, “Sometimes I’m” → “I’m sometimes”, 3. “Two-story back” → “Three-story-back”, 4. blunder → error, lines 3 and 4: (My doctor says, and he is right;/His name, believe me, ’s Ferrer—), line 6: And fills my soul with terror. 5. starts with “The other night . . .”

²⁵only in *College Rhymes*

18.208 Maggie B—

Source: sent to Maggie Bowman, 1891

Written by Maggie B—
Bought by me:
A present to Maggie B—
Sent by me:
But *who* can Maggie be?
Answered by me:
“She is she.”

Aug. 13, 1891.

18.209 Yn the Auckland Castell cellar

Source: The Legend of "Scotland" (extracted)
Parody on *Long long ago* by Thomas H. Bayly

Yn the Auckland Castell cellar,
 Long, long ago,
I was shut—a brisk young feller—
 Woe, woe, ah woe!
 To take her at full-lengthe
 I never hadde the strengthe
Tempore (and soe I tell her)
 Praeterito!

She was hard—oh, she was cruel—
 Long, long ago,
Starved mee here—not even gruel—
 No, believe mee, no!—
 Frae Scotland could I flee,
 I'd gie my last bawbee,—
Arrah, bhoys, fair play's a jhewel,
 Lave me, darlints, goe!

18.210 Father William

Source: Alice's Adventures under Ground (extracted, with minor differences as noted); Alice's Adventures in Wonderland (extracted, with different punctuation in first version)

Parody on *The Old Man's Comforts and How He Gained Them* by Robert Southey

"You are old, Father William," the young man said,
"And your hair has become very¹ white;
And yet you incessantly stand on your head—
Do you think, at your age, it is right?"

"In my youth," Father William replied to his son,
"I feared it might injure the brain;
But, now that I'm perfectly sure I have none,
Why, I do it again and again."

"You are old," said the youth, "as I mentioned before,
And have grown most uncommonly fat;
Yet you turned a back-somersault in at the door—
Pray, what is the reason of that?"

"In my youth," said the sage, as he shook his grey locks,
"I kept all my limbs very supple
By the use of this ointment—one² shilling the box—
Allow me to sell you a couple?"

"You are old," said the youth, "and your jaws are too weak
For anything tougher than suet;
Yet you finished³ the goose, with the bones and the beak—
Pray, how did you manage to do it?"

"In my youth," said his father, "I took to the law,
And argued each case with my wife;
And the muscular strength, which it gave to my jaw,
Has lasted the rest of my life."

"You are old," said the youth, "one would hardly suppose
That your eye was as steady as ever;
Yet you balanced an eel on the end of your nose—
What made you so awfully clever?"

"I have answered three questions, and that is enough,"
Said his father. "Don't give yourself airs!
Do you think I can listen all day to such stuff?
Be off, or I'll kick you down-stairs!"

¹is exceedingly

²five

³eat all

18.211 Y^e Fatale Cheyse

Source: The Rectory Umbrella

Ytte wes a mirke an dreiry cave,
Weet scroggis¹ owr ytte creepe,
Gurgles withyn y^e flowan wave
Throw channel braid an deip.
Never withyn that dreir recesse
Wes sene y^e lyghte of daye,
Quhat bode azont² yt's mirkinesse³
Nane kend an nane mote saye.
Y^e monarche rade owr brake an brae,
An drave y^e yellynge packe,
Hiz meany⁴ au', richte cadgily,⁵
Are wendynge⁶ yn hiz tracke.
Wi' eager iye, wi' yalpe an crye
Y^e hondes yode⁷ down y^e rocks:
Ahead of au' their companye
Renneth y^e panky⁸ foxe.
Y^e foxe hes soughte that cave of awe,
Forewearied⁹ wi' hiz rin,
Quha nou ys he sae bauld an brow¹⁰
To dare to enter yn?
Wi' eager bounde hes ilka honde
Gane till that caverne dreir,
Fou¹¹ many a yowl¹² ys¹³ hearde around,
Fou¹¹ many a screech of feir.
Like ane wi' thirstie appetite
Quha swalloweth orange pulp,
Wes hearde a huggle an a bite,
A swallow an a gulp.
Y^e kynge hes lap frae aff hiz steid,
Outbrayde¹⁴ hiz trenchant brande;
"Quha on my packe of hondes doth feed,

¹bushes.

²beyond.

³darkness.

⁴company.

⁵merrily.

⁶going, journeying.

⁷went.

⁸cunning.

⁹much wearied.

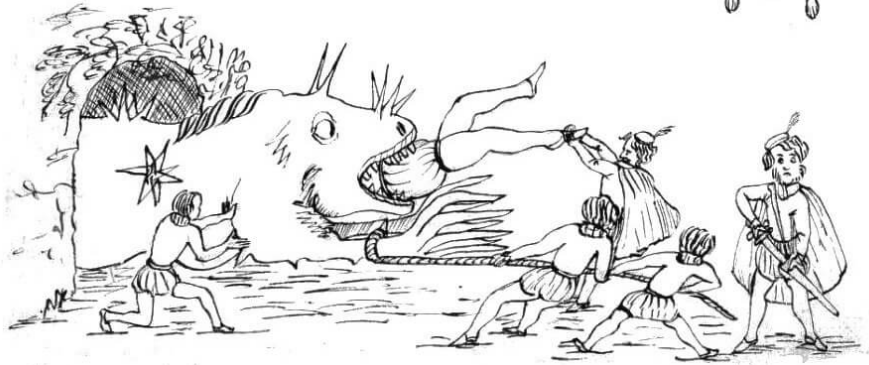
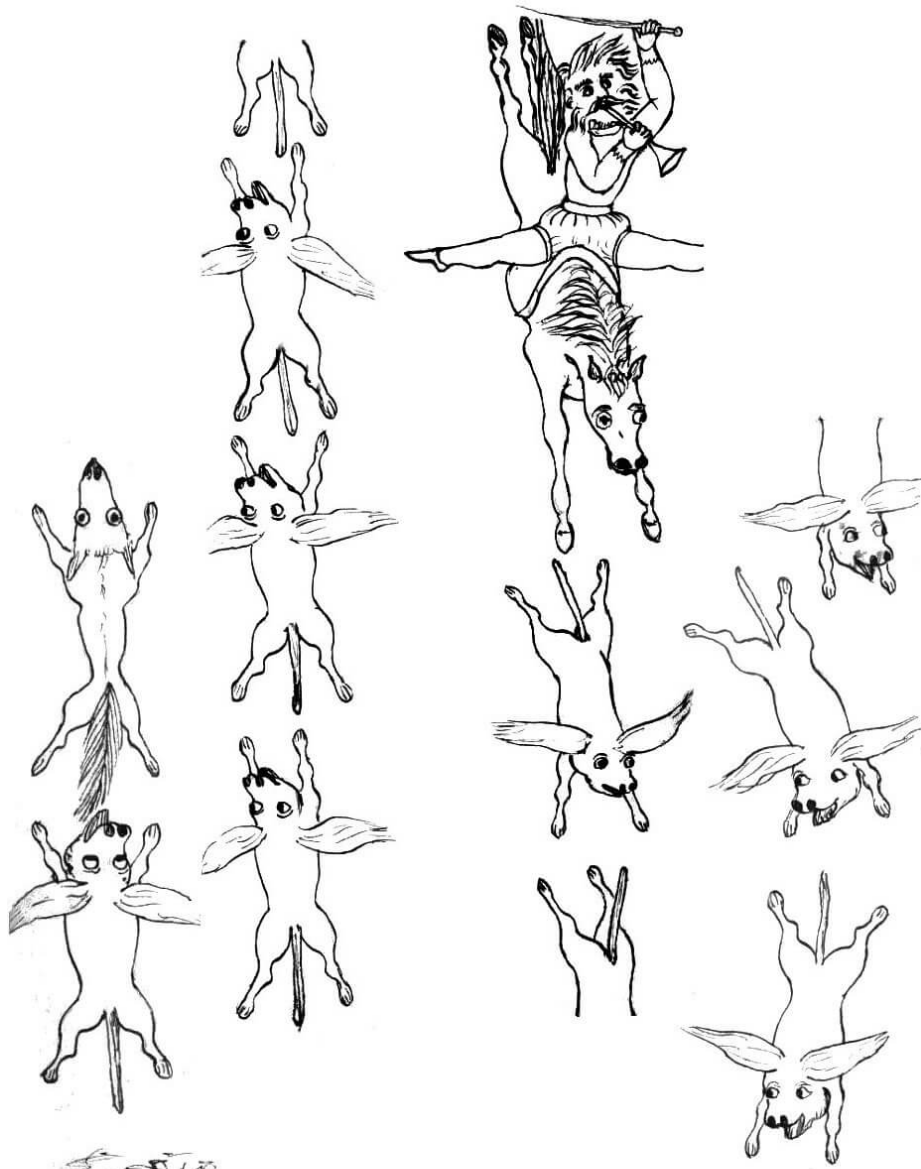
¹⁰brave.

¹¹full.

¹²howl.

¹³is.

¹⁴drawn.



“Maun deye benead thilke hande.”

Sae sed, sae dune: y^e stonderes¹⁵ hearde
Fou many a mickle¹⁶ stroke,
Sowns¹⁷ lyke y^e flappyng of a birde,
A struggle an a choke.

Owte of y^e cave scarce fette¹⁸ they ytte,
Wi pow¹⁹ an push an hau²⁰—
Whereof Y’ve drawne a little bytte,
Bot durst nat draw ytte au.²¹

¹⁵bystanders.

¹⁶heavy.

¹⁷sounds.

¹⁸fetches.

¹⁹pull.

²⁰haul.

²¹all.

Part 19

Prefaces, Introductions, and Other Texts about Books

This part contains prefaces, introductions and similar parts of books, unless they form one part with the main content, in which case they are kept together with the main text. It also contains other texts about books, like advertisements and announcements.

19.1 Alice's Adventures in Wonderland

Source: Alice's Adventures in Wonderland, different editions with different prefaces



Preface to the Seventy-Ninth Thousand

As Alice is about to appear on the Stage, and as the lines beginning “’Tis the Voice of the lobster” were found to be too fragmentary for dramatic purposes, four lines have been added to the first stanza, and six to the second, while the Oyster has been developed into a Panther. *Christmas, 1886.*

Preface to the Eighty-Sixth Thousand

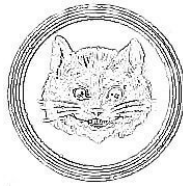
Enquiries have been so often addressed to me, as to whether any answer to the Hatter's Riddle (see p. 137) can be imagined, that I may as well put on record here what seems to me to be a fairly appropriate answer, viz. “Because it can

produce a few notes, though they are *very flat*; and it is „never“¹ put with the wrong end in front!” This, however, is merely an after-thought: the Riddle, as originally invented, had no answer at all.

For this eighty-sixth thousand, fresh electrotypes have been taken from the wood-blocks (which, never having been used for printing from, are in as good condition as when first cut in 1865), and the whole book has been set up afresh with new type. If the artistic qualities of this re-issue fall short, in any particular, of those possessed by the original issue, it will not be for want of painstaking on the part of author, publisher, or printer.

I take this opportunity of announcing that the Nursery “Alice,” hitherto priced at four shillings, net, is now to be had on the same terms as the ordinary shilling picture-books—although I feel sure that it is, in every quality (except the *text* itself, on which I am not qualified to pronounce), greatly superior to them. Four shillings was a perfectly reasonable price to charge, considering the very heavy initial outlay I had incurred: still, as the Public have practically said “We will *not* give more than a shilling for a picture-book, however artistically got-up”, I am content to reckon my outlay on the book as so much dead loss, and, rather than let the little ones, for whom it was written, go without it, I am selling it at a price which is, to me, much the same thing as *giving* it away.

Christmas, 1896.



¹accidentally “never” in printed text

19.2 To the Editor of the Nineteenth Century

Source: Nineteenth Century, November 1887

To the Editor of the NINETEENTH CENTURY

SIR,—I find it stated, in an article on ‘Literature for the Little Ones,’ in your October number, that my little book, ‘Alice’s Adventures in Wonderland,’ first published in 1865, was probably suggested by the late Mr. T. Hood’s ‘From Nowhere to the North Pole,’ first published in 1861. May I mention, first, that I have never read Mr. Hood’s book; secondly, that I composed mine in the summer of 1862, and wrote it out, in the form lately published in facsimile, during 1863? Thus it will be seen that neither book could have been suggested by the other.

As it is, in my view, and no doubt in that of many others of your readers, an act of dishonesty to imitate another man’s book without due acknowledgment, I trust to your sense of justice to allow this reply to the charge brought against me in the above-named article to appear in your forthcoming number.

I am, Sir, your obedient servant,

Lewis Carroll.

29 Bedford Street, Covent Garden.

19.3 Cautions to Readers

Source: added to the advertisements of several books (e. g. in “Eight or Nine Wise Words” and “Sylvie and Bruno Concluded” with different punctuation), in some as “Caution to Readers” only the first paragraph, with variants like “Fräulein Ida Lackowitz, of 14, Lottumstrasse, Berlin” or “Miss Cato Schaap, of 40, West Zeedijk, Rotterdam”; here the variant from The Nursery “Alice”

On August 1st, 1881, a story appeared in *Aunt Judy’s Magazine* No. 184, entitled “The Land of Idleness, by LEWIS CARROLL.” This story was really written by a lady, FRÄULEIN IDA LACKOWITZ. Acting on her behalf, Mr. CARROLL forwarded it to the Editor: and this led to the mistake of naming him as its author.

In October, 1887, the writer of an article on “Literature for the Little ones,” in *The Nineteenth Century*, stated that, in 1864, “TOM HOOD was delighting the world with such works as *From Nowhere to the North Pole*. Between TOM HOOD and Mr. LEWIS CARROLL there is more than a suspicion of resemblance in some particulars. *Alice’s Adventures in Wonderland* narrowly escapes challenging a comparison with *From Nowhere to the North Pole*. The idea of both is so similar that Mr. CARROLL can hardly have been surprised if some people have believed he was inspired by HOOD.” The date 1864 is a mistake. *From Nowhere to the North Pole* was first published in 1874.¹

¹“1874, nine years after the publication of *Alice’s Adventures in Wonderland*.” in *Sylvie and Bruno Concluded*

19.4 Through the Looking-Glass, and What Alice Found There

Source: Through the Looking-Glass, “Dramatis Personæ” only in early editions, preface only in later ones

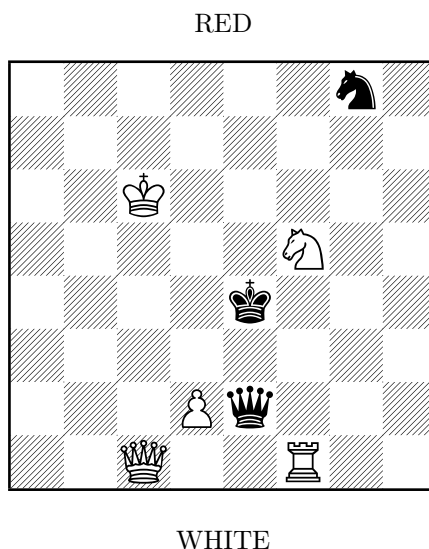


Dramatis Personæ

(As arranged before commencement of game.)

WHITE.		RED.	
PIECES.	PAWNS.	PAWNS.	PIECES.
Tweedledee	Daisy.	Daisy	Humpty Dumpty.
Unicorn	Haigha.	Messenger	Carpenter.
Sheep	Oyster.	Oyster	Walrus.
W. Queen	“Lilly.”	Tiger-lily	R. Queen.
W. King	Fawn.	Rose	R. King.
Aged man	Oyster.	Oyster	Crow.
W. Knight	Hatta.	Frog	R. Knight.
Tweedledum	Daisy.	Daisy	Lion.

Chess Game



White Pawn (Alice) to play, and win in eleven moves.

	PAGE		
1. Alice meets R. Q.	189	1. R. Q. to K. R.'s 4th	
2. Alice through Q.'s 3d (<i>by railway</i>)	194	2. W. Q. to Q. B.'s 4th (<i>after shawl</i>)	
to Q.'s 4th (<i>Tweedledum and Tweedledee</i>)	196	3. W. Q. to Q. B.'s 5th (<i>becomes sheep</i>)	
3. Alice meets W. Q. (<i>with shawl</i>)	210	4. W. Q. to K. B.'s 8th (<i>leaves egg on sh</i>)	
4. Alice to Q.'s 5th (<i>shop, river, shop</i>)	215	5. W. Q. to Q. B.'s 8th (<i>flying from R. K</i>)	
5. Alice to Q.'s 6th (<i>Humpty Dumpty</i>)	219	6. R. Kt. to K.'s 2nd (ch.)	
6. Alice to Q.'s 7th (<i>forest</i>)	234	7. W. Kt. to K. B.'s 5th	
7. W. Kt. takes R. Kt.	237	8. R. Q. to K.'s sq. (<i>examination</i>)	
8. Alice to Q.'s 8th (<i>coronation</i>)	246	9. Queens castle	
9. Alice becomes Queen	250	10. W. Q. to Q. R.'s 6th (<i>soup</i>)	
10. Alice castles (<i>feast</i>)	253		
11. Alice takes R. Q. & wins	258		

Preface

As the chess-problem, given on a previous page, has puzzled some of my readers, it may be well to explain that it is correctly worked out, so far as the *moves* are concerned. The *alternation* of Red and White is perhaps not so strictly observed as it might be, and the “castling” of the three Queens is merely a way of saying that they entered the palace: but the “check” of the White King at move 6, the capture of the Red Knight at move 7, and the final “checkmate” of the Red King, will be found, by any one who will take the trouble to set the pieces and play the moves as directed, to be strictly in accordance with the laws of the game.

The new words, in the poem “Jabberwocky” (see p. 184), have given rise to some difference of opinion as to their pronunciation: so it may be well to give instructions on *that* point also. Pronounce “slithy” as if it were the two words “sly, the”: make the ‘g’ *hard* in “gyre” and “gimble”: and pronounce “rath” to rhyme with “bath.”

For this sixty-first thousand, fresh electrotypes have been taken from the wood-blocks (which, never having been used for printing from, are in as good condition as when first cut in 1871), and the whole book has been set up afresh with new type. If the artistic qualities of this re-issue fall short, in any particular, of those possessed by the original issue, it will not be for want of painstaking on the part of author, publisher, or printer.

I take this opportunity of announcing that the Nursery “Alice,” hitherto priced at four shillings, net, is now to be had on the same terms as the ordinary shilling picture-books—although I feel sure that it is, in every quality (except the *text* itself, in which I am not qualified to pronounce), greatly superior to them. Four shillings was a perfectly reasonable price to charge, considering the very heavy initial outlay I had incurred: still, as the Public have practically said, “We will *not* give more than a shilling for a picture-book, however artistically got-up,” I am content to reckon my outlay on the book as so much dead loss, and, rather than let the little ones, for whom it was written, go without it, I am selling it at a price which is, to me, much the same thing as *giving* it away.

Christmas, 1896



19.5 Through the Looking-Glass (Times)

1893

Source: The Times, December 2, 1893

Mr. Lewis Carroll, after having for over 25 years made it his chief object with regard to his books that they should be of the best workmanship attainable at the price is deeply annoyed to find that the last issue of "Through the Looking-glass," consisting of the Sixtieth Thousand, has been put on sale without its being noticed that most of the pictures have failed so much in the printing as to make the book not worth buying. He requests all holders of copies to send them to Messrs. Macmillan and Co., 29, Bedford-street, Covent-garden, with their names and addresses, and copies of the next issue shall be sent them in exchange. Instead, however, of destroying the unsold copies, he proposes to utilise them by giving them away to mechanics' institutes, village school libraries, and similar institutions, where the means for purchasing such books are scanty. Accordingly, he invites applications for such gifts, addressed to him, "care of Messrs. Macmillan." Every such application should be signed by some responsible person, and should state how far they are able to buy books for themselves, and what is their average number of readers. He takes this opportunity of announcing that, if, at any future time, he should wish to communicate anything to his readers, he will do so by advertising in the "Agony" Column of some of the daily papers on the first Tuesday in the month.

1894

Source: The Daily News, March 6, 1894 (with minor differences in spelling and punctuation); The Times, March 6, 1894

Mr. Lewis Carroll advertised on Dec. 2, 1893, that the sixtieth thousand was withdrawn from sale, as some of the pictures had failed in the printing, and that he would present them to mechanics' institutes, village reading rooms, &c., on receiving applications, addressed 29, Bedford-street, Covent-garden, stating how far they are able to buy books for themselves and what is their average number of readers. He has received a great number of applications, but not enough to exhaust the supply. Many of the applicants have neglected to furnish the required information, and it will be necessary to send a circular to them and to get their replies before they can have copies. He takes this opportunity of giving his readers the rules for "Co-operative Backgammon," which he thinks will prove a novel and interesting variety of the game. (1.) Each player throws three dice: with two he moves for himself, and with the third for his adversary. (2.) If no one of the three dice is available for the adversary, a player may use any two he likes: otherwise he is bound to leave, as third die, one which will be available for the adversary. If at any future time Mr. Carroll should wish to communicate anything to his readers, he will do so by advertising in the "Agony" column of some of the daily papers on the first Tuesday in the month.

19.6 Advertisement

Source: printed 1893

For over 25 years, I have made it my chief object, with regard to my books, that they should be of the best workmanship attainable for the price. And I am deeply annoyed to find that the last issue of "Through the Looking-Glass," consisting of the Sixtieth Thousand, has been put on sale without its being noticed that most of the pictures have failed so much, in the printing, as to make the book not worth buying. I request all holders of copies to send them to Messrs. Macmillan & Co., 29, Bedford Street, Covent Garden, with their names and addresses; and copies of the next issue shall be sent them in exchange.

Instead, however, of destroying the unsold copies, I propose to utilise them by giving them away, to Mechanics' Institutes, Village Reading-Rooms, and similar institutions, where the means for purchasing such books are scanty. Accordingly I invite applications for such gifts, addressed to me, "care of Messrs. Macmillan." Every such application should be signed by some responsible person, and should state how far they are able to buy books for themselves, and what is their average number of readers.

I take this opportunity of announcing that, if at any future time I should wish to communicate anything to my readers, I will do so by advertising, in the 'Agony' Column of some of the Daily Papers, *on the first Tuesday in the month.*

Lewis Carroll.
Christmas, 1893.

19.7 Alice's Adventures under Ground

Source: Alice's Adventures under Ground (preface only in book, where the images are monochrome)



“Who will Riddle me the How and the Why?”

So questions one of England's sweetest singers. The “How?” has already been told, after a fashion, in the verses prefixed to “Alice in Wonderland”; and some other memories of that happy summer day are set down, for those who care to see them, in this little book—the germ that was to grow into the published volume. But the “Why?” cannot, and need not, be put into words. Those for whom a child's mind is a sealed book, and who see no divinity in a child's smile, would read such words in vain: while for any one that has ever loved one true child, no words are needed. For he will have known the awe that falls on one in the presence of a spirit fresh from GOD's hands, on whom no shadow of sin, and but the outermost fringe of the shadow of sorrow, has yet fallen: he will have felt the bitter contrast between the haunting selfishness that spoils his best deeds and the life that is but an overflowing love—for I think a child's *first* attitude to the world is a simple love for all living things: and he will have learned that the best work a man can do is when he works for love's sake only, with no thought of name, or gain, or earthly reward. No deed of ours, I suppose, on this side

Quoted from *The 'How' and the 'Why'*
by Alfred Lord
Tennyson



the grave, is really unselfish: yet if one can put forth all one's powers in a task where nothing of reward is hoped for but a little child's whispered thanks, and the airy touch of a little child's pure lips, one seems to come somewhere near to this.

There was no idea of publication in my mind when I wrote this little book: *that* was wholly an afterthought, pressed on me by the "perhaps too partial friends" who always have to bear the blame when a writer rushes into print: and I can truly say that no praise of theirs has ever given me one hundredth part of the pleasure it has been to think of the sick children in hospitals (where it has been a delight to me to send copies) forgetting, for a few bright hours, their pain and weariness—perhaps thinking lovingly of the unknown writer of the tale—perhaps even putting up a childish prayer (and oh, how much it needs!) for one who can but dimly hope to stand, some day, not quite out of sight of those pure young faces, before the great white throne. "I am very sure," writes a lady-visitor at a Home for Sick Children, "that there will be many loving earnest prayers for you on Easter morning from the children."

I would like to quote further from her letters, as embodying a suggestion that may perhaps thus come to the notice of some one able and willing to carry it out.

"I want you to send me one of your Easter Greetings for a very dear child who is dying at our Home. She is just fading away, and 'Alice' has brightened some of the weary hours in her illness, and I know that letter would be such a delight to her—especially if you would put 'Minnie' at the top, and she could know you had sent it for her. She knows you, and would so value it. . . . She suffers so much that I long for what I know would so please her." . . . "Thank you very much for sending me the letter, and for writing Minnie's name. . . . I am

quite sure that all these children will say a loving prayer for the 'Alice-man' on Easter Day: and I am sure the letter will help the little ones to the real Easter joy. How I do wish that you, who have won the hearts and confidence of so many children, would do for them what is so very near my heart, and yet what no one will do, viz. write a book for children about GOD and themselves, which is *not* goody, and which begins at the right end, about religion, to make them see what it really is. I get quite miserable very often over the children I come across: hardly any of them have an idea of *really* knowing that GOD loves them, or of loving and confiding in Him. They will love and trust *me*, and be sure that I want them to be happy, and will not let them suffer more than is necessary: but as for going to Him in the same way, they would never think of it. They are dreadfully afraid of Him, if they think of Him at all, which they generally only do when they have been naughty, and they look on all connected with Him as very grave and dull: and, when they are full of fun and thoroughly happy, I am sure they unconsciously hope He is not looking. I am sure I don't wonder they think of Him in this way, for people never talk of Him in connection with what makes their little lives the brightest. If they are naughty, people put on solemn faces, and say He is very angry or shocked, or something which frightens them: and, for the rest, He is talked about only in a way that makes them think of church and having to be quiet. As for being taught that all Joy and all Gladness and Brightness is His Joy—that He is wearying for them to be happy, and is not hard and stern, but always doing things to make their days brighter, and caring for them so tenderly, and wanting them to run to Him with *all* their little joys and sorrows, they are not taught that. I do so long to make them trust Him as they trust us, to feel that He will 'take their part' as they do with us in their little woes, and to go to Him in their plays and enjoyments and not only when they say their prayers. I was quite grateful to one little dot, a short time ago, who said to his mother 'when I am in bed, I put out my hand to see if I can feel JESUS and my angel. I thought perhaps *in the dark* they'd touch me, but they never have yet.' I do so want them to *want* to go to Him, and to feel how, if He is there, it *must* be happy."

Let me add—for I feel I have drifted into far too serious a vein for a preface to a fairy-tale—the deliciously naïve remark of a very dear child-friend, whom I asked, after an acquaintance of two or three days, if she had read 'Alice' and the 'Looking-Glass.' "Oh yes," she replied readily, "I've read both of them! And I think" (this more slowly and thoughtfully) "I think 'Through the Looking-Glass' is *more* stupid than 'Alice's Adventures.' Don't *you* think so?" But this was a question I felt it would be hardly discreet for me to enter upon.

Lewis Carroll.

Dec. 1886.

Postscript

The profits, if any, of this book will be given to Children's Hospitals and Convalescent Homes for Sick Children; and the accounts, down to June 30 in each year, will be published in the St. James's Gazette, on the second Tuesday of the following December.

P.P.S.—The thought, so prettily expressed by the little boy, is also to be found in Longfellow's "Hiawatha," where he appeals to those who believe

“That the feeble hands and helpless,
Groping blindly in the darkness,
Touch God’s right hand in that darkness,
And are lifted up and strengthened.”

Quoted from *The
Song of Hiawatha* by
Henry Wadsworth
Longfellow



19.8 To All Readers of *Alice's Adventures Under Ground*

1887

Source: The St. James's Gazette, December 13, 1887

When this book appeared last Christmas, I undertook that the profits, if any, should be given to Children's Hospitals and Convalescent Homes for Sick Children, and that the accounts, down to June 30 in each year, should be published, in the *St. James's Gazette*, on the second Tuesday in the following December. On this occasion I have only to announce that—although 1,575 copies of the book had been sold on June 30—the receipts had not quite overtaken the heavy outlay incurred in bringing it out.

Lewis Carroll.
Tuesday, Dec. 13, 1887.

1888

Source: The St. James's Gazette, December 11, 1888

When this book made its first appearance, I undertook that the profits, if any, should be given to Children's Hospitals and Convalescent Homes for Sick Children, and that the accounts, down to June 30 in each year, should be published, in the *St. James's Gazette*, on the second Tuesday in the following December. On this occasion I have only to announce that—although 1687 copies of the book had been sold on June 30—the receipts had not quite overtaken the heavy outlay incurred in bringing it out.

Lewis Carroll.
Tuesday, Dec. 11, 1888.

1889

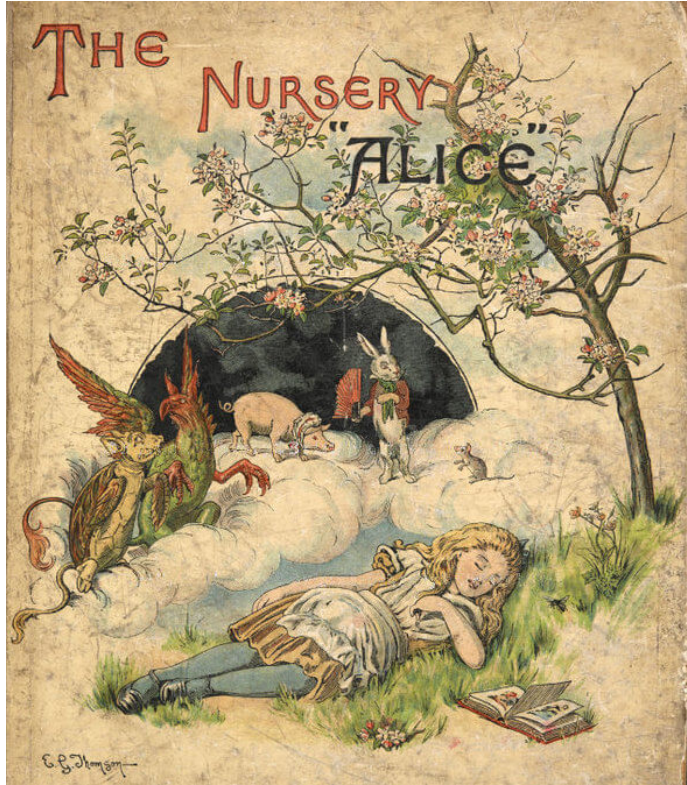
Source: The St. James's Gazette, December 10, 1889

When this book (which is a facsimile of the original MS. book, written in 1863, and afterwards developed into "Alice's Adventures in Wonderland") made its first appearance in 1886, I undertook that the profits, if any, should be given to Children's Hospitals and Convalescent Homes for Sick Children, and that the accounts of the disposal of the profits, down to June 30 in each year, should be published, in the *St. James's Gazette*, on the second Tuesday in the following December. On this occasion I have again to announce that—although 1742 copies of the book had been sold on June 30, 1889—the receipts had not overtaken the heavy outlay incurred in bringing it out. The exact balance against the book was £117 14s. 7d. If ever the balance should be in favour of the book, I will advertise again. Till then "speech" may be "silvern," but "silence" is (literally) "golden"!

Lewis Carroll.
Tuesday, Dec. 10, 1889.

19.9 The Nursery “Alice”

Source: The Nursery “Alice”



(Cover)

Preface

(Addressed to any Mother.)

I have reason to believe that “Alice’s Adventures in Wonderland” has been read by some hundreds of English Children, aged from Five to Fifteen: also by Children, aged from Fifteen to Twenty-five: yet again by Children, aged from Twenty-five to Thirty-five: and even by Children—for there *are* such—Children in whom no waning of health and strength, no weariness of the solemn mockery, and the gaudy glitter, and the hopeless misery, of Life has availed to parch the pure fountain of joy that wells up in all child-like hearts—Children of a “certain” age, whose tale of years must be left untold, and buried in respectful silence.

And my ambition *now* is (is it a vain one?) to be read by Children aged from Nought to Five. To be read? Nay, not so! Say rather to be thumbed, to be cooed over, to be dogs’-eared, to be rumped, to be kissed, by the illiterate, ungrammatical, dimpled Darlings, that fill your Nursery with merry uproar, and your inmost heart of hearts with a restful gladness!

Such, for instance, as a child I once knew, who—having been carefully instructed that *one* of any earthly thing was enough for any little girl; and that to ask for *two* buns, *two* oranges, *two* of anything, would certainly bring upon her the awful charge of being “greedy”—was found one morning sitting up in bed, solemnly regarding her *two* little naked feet, and murmuring to herself, softly and penitently, “deedy!”

Eastertide, 1889.



(Backcover)

19.10 For All Lovers of Children

Source: *The Lady*, March 24, March 31 (both with minor differences as noted), April 14, April 28, May 12, May 19, May 26, 1892 (as part of the *Syzygy* column)

When I brought out, in 1890, "*The Nursery Alice*" (a thin 4to book, containing 20 coloured enlargements of Tenniel's illustrations to "Alice in Wonderland," with text adapted to very young children, and with a coloured picture-cover, designed by Miss E. G. Thomson), the colours, in the first impression, came out rather brighter than I liked. The second impression was exactly right; and these are now on sale, at 4s. each. I am selling off the over-bright ones, as a "People's Edition," at 2s. each (which scarcely covers the cost of production), as long as they last: when they are exhausted, no more can be supplied at so cheap a rate. If not quite artistic enough for your own children, you will find them well suited to give to invalid children among the poor. I shall be very glad to receive the addresses of any Hospitals, or Homes, for Sick Children, where the funds are not adequate for buying them books, and where I have not already presented copies of the various "Alice" books: my present list contains the addresses of 134 such Institutions, whose wants I have already supplied.¹ The publishers are Messrs. Macmillan and Co., 29, Bedford Street, Strand.

¹Missing in the first version

19.11 For All Writers of Letters

Source: *The Lady*, March 24, April 7, April 21, May 5, May 19, May 26, 1892 (as part of the Syzygy column)

“Necessity is the mother of invention”: and it was the constant worry, of never having ready to hand, when one wanted it, a postage-stamp of the right value for a letter or parcel, which drove me to invent my “Wonderland Postage-Stamp Case,” which contains twelve pockets, marked for stamps of various values, and two Coloured Pictorial Surprises from “Alice in Wonderland.” It is accompanied with a small book, “Eight or Nine Wise Words about Letter-Writing.”¹ The price is 1s., but, if it be ordered by post, additional payment will be required to cover postage, as follows:—One copy 1-1/2d.; two or three, 2d.; four, 2-1/2d.; five to fourteen, 3d.; and every subsequent fourteen, 1-1/2d. The publishers are Messrs. Emberlin and Son, 4, Magdalen Street, Oxford.

¹Remark: → 15.6, p. 1908

19.12 Sylvie and Bruno

Source: Sylvie and Bruno



One little picture in this book, the Magic Locket, at p. 355, was drawn by 'Miss Alice Havers.' I did not state this on the title-page, since it seemed only due, to the artist of all these (to my mind) *wonderful* pictures, that his name should stand there alone.

The descriptions, at pp. 462, 463, of Sunday as spent by children of the last generation, are quoted *verbatim* from a speech made to me by a child-friend and a letter written to me by a lady-friend.

The Chapters, headed 'Fairy Sylvie' and 'Bruno's Revenge,' are a reprint, with a few alterations, of a little fairy-tale which I wrote in the year 1867, at the request of the late Mrs. Gatty, for 'Aunt Judy's Magazine,'¹ which she was then editing.

It was in 1874, I believe, that the idea first occurred to me of making it the nucleus of a longer story. As the years went on, I jotted down, at odd moments, all sorts of odd ideas, and fragments of dialogue, that occurred to me—who knows how?—with a transitory suddenness that left me no choice but either to record them then and there, or to abandon them to oblivion. Sometimes one could trace to their source these random flashes of thought—as being suggested by the book one was reading, or struck out from the 'flint' of one's own mind by the 'steel' of a friend's chance remark—but they had also a way of their own, of occurring, *à propos* of nothing—specimens of that hopelessly illogical phenomenon, 'an effect without a cause.' Such, for example, was the last line of 'The Hunting of the Snark,' which came into my head (as I have already related in 'The Theatre' for April, 1887²) quite suddenly, during a solitary walk: and such, again, have been passages which occurred in *dreams*, and which I cannot trace to any antecedent cause whatever. There are at least *two* instances of such dream-suggestions in this book—one, my Lady's remark, 'it often runs in families, just as a love for pastry does', at p. 358; the other, Eric Lindon's *badinage* about having been in domestic service, at p. 444.

And thus it came to pass that I found myself at last in possession of a huge unwieldy mass of literature—if the reader will kindly excuse the spelling—which only needed stringing together, upon the thread of a consecutive story, to constitute the book I hoped to write. Only! The task, at first, seemed absolutely hopeless, and gave me a far clearer idea, than I ever had before, of the meaning of the word 'chaos': and I think it must have been ten years, or more, before I

¹Remark: → 3.11, p. 667

²Remark: → 14.4, p. 1883

had succeeded in classifying these odds-and-ends sufficiently to see what sort of a story they indicated: for the story had to grow out of the incidents, not the incidents out of the story.

I am telling all this, in no spirit of egoism, but because I really believe that some of my readers will be interested in these details of the 'genesis' of a book, which looks so simple and straight-forward a matter, when completed, that they might suppose it to have been written straight off, page by page, as one would write a letter, beginning at the beginning and ending at the end.

It is, no doubt, *possible* to write a story in that way: and, if it be not vanity to say so, I believe that I could, myself,—if I were in the unfortunate position (for I do hold it to be a real misfortune) of being obliged to produce a given amount of fiction in a given time,—that I could 'fulfil my task,' and produce my 'tale of bricks,' as other slaves have done. One thing, at any rate, I could guarantee as to the story so produced—that it should be utterly commonplace, should contain no new ideas whatever, and should be very very weary reading!

This species of literature has received the very appropriate name of 'padding'—which might fitly be defined as 'that which all can write and none can read.' That the present volume contains *no* such writing I dare not avow: sometimes, in order to bring a picture into its proper place, it has been necessary to eke out a page with two or three extra lines: but I can honestly say I have put in no more than I was absolutely compelled to do.

My readers may perhaps like to amuse themselves by trying to detect, in a given passage, the one piece of 'padding' it contains. While arranging the 'slips' into pages, I found that the passage, which now extends from the top of p. 339 to the top on p. 340, was 2 lines too short. I supplied the deficiency, not by interpolating a word here and a word there, but by writing in 2 consecutive lines. Now can my readers guess *which* they are?

A harder puzzle—if a harder be desired—would be to determine, as to the Gardener's Song, in *which* cases (if any) the stanza was adapted to the surrounding text, and in *which* (if any) the text was adapted to the stanza.

Perhaps the hardest thing in all literature—at least *I* have found it so: by no voluntary effort can I accomplish it: I have to take it as it comes—is to write anything *original*. And perhaps the easiest is, when once an original line has been struck out, to follow it up, and to write any amount more to the same tune. I do not know if 'Alice in Wonderland' was an *original* story—I was, at least, no *conscious* imitator in writing it—but I do know that, since it came out, something like a dozen story-books have appeared, on identically the same pattern. The path I timidly explored—believing myself to be 'the first that ever burst into that silent sea'—is now a beaten high-road: all the way-side flowers have long ago been trampled into the dust: and it would be courting disaster for me to attempt that style again.

Hence it is that, in 'Sylvie and Bruno,' I have striven—with I know not what success—to strike out yet another new path: be it bad or good, it is the best I can do. It is written, not for money, and not for fame, but in the hope of supplying, for the children whom I love, some thoughts that may suit those hours of innocent merriment which are the very life of Childhood; and also in the hope of suggesting, to them and to others, some thoughts that may prove, I would fain hope, not wholly out of harmony with the graver cadences of Life.

If I have not already exhausted the patience of my readers, I would like

to seize this opportunity—perhaps the last I shall have of addressing so many friends at once—of putting on record some ideas that have occurred to me, as to books desirable to be written—which I should much like to *attempt*, but may not ever have the time or power to carry through—in the hope that, if I should fail (and the years are gliding away *very* fast) to finish the task I have set myself, other hands may take it up.

First, a Child's Bible. The only real *essentials* of this would be, carefully selected passages, suitable for a child's reading and pictures. One principle of selection, which I would adopt, would be that Religion should be put before a child as a revelation of *love*—no need to pain and puzzle the young mind with the history of crime and punishment. (On such a principle I should, for example, omit the history of the Flood.) The supplying of the pictures would involve no great difficulty: no new ones would be needed: hundreds of excellent pictures already exist, the copyright of which has long ago expired, and which simply need photo-zincography, or some similar process, for their successful reproduction. The book should be handy in size—with a pretty attractive-looking cover—in a clear legible type—and, above all, with abundance of pictures, pictures, pictures!

Secondly, a book of pieces selected from the Bible—not single texts, but passages of from 10 to 20 verses each—to be committed to memory. Such passages would be found useful, to repeat to one's-self and to ponder over, on many occasions when reading is difficult, if not impossible: for instance, when lying awake at night—on a railway-journey—when taking a solitary walk—in old age, when eye-sight is failing or wholly lost—and, best of all, when illness, while incapacitating us for reading or any other occupation, condemns us to lie awake through many weary silent hours: at such a time how keenly one may realise the truth of David's rapturous cry '*O how sweet are thy words unto my throat: yea, sweeter than honey unto my mouth!*'

Quoted from Psalm
119:103

I have said 'passages,' rather than single texts, because we have no means of *recalling* single texts: memory needs *links*, and here are none: one may have a hundred texts stored in the memory, and not be able to recall, at will, more than half-a-dozen—and those by mere chance: whereas, once get hold of any portion of a *chapter* that has been committed to memory, and the whole can be recovered: all hangs together.

Thirdly, a collection of passages, both prose and verse, from books other than the Bible. There is not perhaps much, in what is called 'un-inspired' literature (a misnomer, I hold: if Shakespeare was not inspired, one may well doubt if any man ever was), that will bear the process of being pondered over, a hundred times: still there *are* such passages—enough, I think, to make a goodly store for the memory.

These two books—of sacred, and secular, passages for memory—will serve other good purposes besides merely occupying vacant hours: they will help to keep at bay many anxious thoughts, worrying thoughts, uncharitable thoughts, unholy thoughts. Let me say this, in better words than my own, by copying a passage from that most interesting book, Robertson's Lectures on the Epistles to the Corinthians, Lecture XLIX. "If a man finds himself haunted by evil desires and unholy images, which will generally be at periodical hours, let him commit to memory passages of Scripture, or passages from the best writers in verse or prose. Let him store his mind with these, as safe-guards to repeat

Quoted from
*Expository lectures on
St. Paul's Epistles to
the Corinthians* by
Frederick William
Robertson

when he lies awake in some restless night, or when despairing imaginations, or gloomy, suicidal thoughts, beset him. Let these be to him the sword, turning everywhere to keep the way of the Garden of Life from the intrusion of profaner footsteps.”

Fourthly, a “Shakespeare” for girls: that is, an edition in which everything, not suitable for the perusal of girls of (say) from 10 to 17, should be omitted. Few children under 10 would be likely to understand or enjoy the greatest of poets: and those, who have passed out of girlhood, may safely be left to read Shakespeare, in any edition, ‘expurgated’ or not, that they may prefer: but it seems a pity that so many children, in the intermediate stage, should be debarred from a great pleasure for want of an edition suitable to them. Neither Bowdler’s, Chambers’s, Brandram’s, nor Cundell’s ‘Boudoir’ Shakespeare, seems to me to meet the want: they are not sufficiently ‘expurgated.’ Bowdler’s is the most extraordinary of all: looking through it, I am filled with a deep sense of wonder, considering what he has left in, that he should have cut *anything* out! Besides relentlessly erasing all that is unsuitable on the score of reverence or decency, I should be inclined to omit also all that seems too difficult, or not likely to interest young readers. The resulting book might be slightly fragmentary: but it would be a real treasure to all British maidens who have any taste for poetry.

If it be needful to apologize to any one for the new departure I have taken in this story—by introducing, along with what will, I hope, prove to be acceptable nonsense for children, some of the graver thoughts of human life—it must be to one who has learned the Art of keeping such thoughts wholly at a distance in hours of mirth and careless ease. To him such a mixture will seem, no doubt, ill-judged and repulsive. And that such an Art *exists* I do not dispute: with youth, good health, and sufficient money, it seems quite possible to lead, for years together, a life of unmixed gaiety—with the exception of one solemn fact, with which we are liable to be confronted at *any* moment, even in the midst of the most brilliant company or the most sparkling entertainment. A man may fix his own times for admitting serious thought, for attending public worship, for prayer, for reading the Bible: all such matters he can defer to that ‘convenient season’, which is so apt never to occur at all: but he cannot defer, for one single moment, the necessity of attending to a message, which may come before he has finished reading this page, ‘*this night shall thy soul be required of thee.*’

Quoted from Luke
12:20

The ever-present sense of this grim possibility has been, in all ages,³ an incubus that men have striven to shake off. Few more interesting subjects of enquiry could be found, by a student of history, than the various weapons that have been used against this shadowy foe. Saddest of all must have been the thoughts of those who saw indeed an *existence* beyond the grave, but an existence far more terrible than annihilation—an existence as filmy, impalpable, all but invisible spectres, drifting about, through endless ages, in a world of shadows, with nothing to do, nothing to hope for, nothing to love! In the midst of the gay verses of that genial ‘bon vivant’ Horace, there stands one dreary word whose utter sadness goes to one’s heart. It is the word ‘*exilium*’ in the well-known passage

Omnes eodem cogimur, omnium

Quoted from *Ode to
Dellius* by Horace

³At the moment, when I had written these words, there was a knock at the door, and a

*Versatur urnâ serius ocius
Sors exitura et nos in æternum
Exilium impositura cymbæ.*

Yes, to him this present life—spite of all its weariness and all its sorrow—was the only life worth having: all else was ‘exile’! Does it not seem almost incredible that one, holding such a creed, should ever have smiled?

And many in this day, I fear, even though believing in an existence beyond the grave far more real than Horace ever dreamed of, yet regard it as a sort of ‘exile’ from all the joys of life, and so adopt Horace’s theory, and say ‘let us eat and drink, for to-morrow we die.’

Quoted from 1
Corinthians 15:32

We go to entertainments, such as the theatre—I say ‘we’, for *I* also go to the play, whenever I get a chance of seeing a really good one—and keep at arm’s length, if possible, the thought that we may not return alive. Yet how do you know—dear friend, whose patience has carried you through this garrulous preface—that it may not be *your* lot, when mirth is fastest and most furious, to feel the sharp pang, or the deadly faintness, which heralds the final crisis—to see, with vague wonder, anxious friends bending over you—to hear their troubled whispers—perhaps yourself to shape the question, with trembling lips, “Is it serious?”, and to be told “Yes: the end is near” (and oh, how different all Life will look when those words are said!)—how do you know, I say, that all this may not happen to *you*, this night?

And *dare* you, knowing this, say to yourself “Well, perhaps it *is* an immoral play: perhaps the situations *are* a little too ‘risky’, the dialogue a little too strong, the ‘business’ a little too suggestive. I don’t say that conscience is *quite* easy: but the piece is so clever, I must see it this once! I’ll begin a stricter life to-morrow.” *To-morrow, and to-morrow, and to-morrow!*

*“Who sins in hope, who, sinning, says,
‘Sorrow for sin God’s judgement stays!’
Against God’s Spirit he lies; quite stops
Mercy with insult; dares, and drops,
Like a scorch’d fly, that spins in vain
Upon the axis of its pain,
Then takes its doom, to limp and crawl,
Blind and forgot, from fall to fall.”*

Quoted from *The
Scorched Fly* by
Coventry Patmore

Let me pause for a moment to say that I believe this thought, of the possibility of death—if calmly realised, and steadily faced—would be one of the best possible tests as to our going to any scene of amusement being right or wrong. If the thought of sudden death acquires, for *you*, a special horror when imagined as happening in a *theatre*, then be very sure the theatre is harmful for *you*, however harmless it may be for others; and that *you* are incurring a deadly peril in going. Be sure the safest rule is that we should not dare to *live* in any scene in which we dare not *die*.

But, once realise what the true object *is* in life—that it is *not* pleasure, *not* knowledge, *not* even fame itself, ‘that last infirmity of noble minds’—but that it *is* the development of *character*, the rising to a higher, nobler, purer standard, the building-up of the perfect *Man*—and then, so long as we feel that this is

Quoted from *Lycidas*
by John Milton

telegram was brought me, announcing the sudden death of a dear friend.

going on, and will (we trust) go on for evermore, death has for us no terror; it is not a shadow, but a light; not an end, but a beginning!

One other matter may perhaps seem to call for apology—that I should have treated with such entire want of sympathy the British passion for ‘Sport’, which no doubt has been in by-gone days, and is still, in some forms of it, an excellent school for hardihood and for coolness in moments of danger. But I am not entirely without sympathy for *genuine* ‘Sport’: I can heartily admire the courage of the man who, with severe bodily toil, and at the risk of his life, hunts down some ‘man-eating’ tiger: and I can heartily sympathize with him when he exults in the glorious excitement of the chase and the hand-to-hand struggle with the monster brought to bay. But I can but look with deep wonder and sorrow on the hunter who, at his ease and in safety, can find pleasure in what involves, for some defenceless creature, wild terror and a death of agony: deeper, if the hunter be one who has pledged himself to preach to men the Religion of universal Love: deepest of all, if it be one of those ‘*tender and delicate*’ beings, whose very name serves as a symbol of Love—‘*thy love to me was wonderful, passing the love of women*’—whose mission here is surely to help and comfort all that are in pain or sorrow!

Quoted from
Deuteronomy 28:56
Quoted from 2
Samuel 1:26

*‘Farewell, farewell! but this I tell
To thee, thou Wedding-Guest!
He prayeth well, who loveth well
Both man and bird and beast.
He prayeth best, who loveth best
All things both great and small;
For the dear God who loveth us,
He made and loveth all.’*

Quoted from *The
Rime of the Ancient
Mariner* by Samuel
Coleridge



19.13 Sylvie and Bruno (St. James's Gazette)

Source: St. James's Gazette, January 10, 1890

To the EDITOR of the ST. JAMES'S GAZETTE

SIR,—You will, I believe, be doing a kindness to many readers of this book, who have found difficulties, unforeseen by me, in the sudden changes of scene, and the introduction into real life of what they suppose to be “dream-children,” if you will allow me space to explain that the book is written on the theory of the actual existence of fairies, and of their being able to assume human form. The “I” of the story goes through three different stages of being, (1) real life, (2) the “eerie” stage, in which he can see fairies, (3) trance, in which, while his body remains apparently asleep, his spirit is free to pass into fairyland and witness what is going on there at the moment. There are no “dreams” in the book: the many imitations, that have appeared, of my two “dream-stories,” have effectually barred me from any further attempt to write fiction of that kind.—I am, Sir, your obedient servant,

Lewis Carroll.

January 9.

19.14 Sylvie and Bruno Concluded

Source: Sylvie and Bruno Concluded



I must begin with the same announcement as in the previous Volume (which I shall henceforward refer to as “Vol. I.,” calling the present Volume “Vol. II.”), viz. that the Locket, at p. 607, was drawn by ‘Miss Alice Havers.’ And my reason, for not stating this on the title-page—that it seems only due, to the artist of these wonderful pictures, that his name should stand there alone—has, I think, even greater weight in Vol. II. than it had in Vol. I. Let me call especial attention to the three “Little Birds” borders, at pp. 588, 592, 596. The way, in which he has managed to introduce the most minute details of the stanzas to be illustrated, seems to me a triumph of artistic ingenuity.

Let me here express my sincere gratitude to the many Reviewers who have noticed, whether favorably or unfavorably, the previous Volume. Their unfavorable remarks were, most probably, well-deserved; the favorable ones less probably so. Both kinds have no doubt served to make the book known, and have helped the reading Public to form their opinions of it. Let me also here assure them that it is not from any want of respect for their criticisms, that I have carefully forborne from reading *any* of them. I am strongly of opinion that an author had far better *not* read any reviews of his books: the unfavorable ones are almost certain to make him cross, and the favorable ones conceited; and *neither* of these results is desirable.

Criticisms have, however, reached me from private sources, to some of which I propose to offer a reply.

One such critic complains that Arthur’s strictures, on sermons and on choristers, are too severe. Let me say, in reply, that I do *not* hold myself responsible for *any* of the opinions expressed by the characters in my book. They are simply opinions which, it seemed to me, might probably be held by the persons into whose mouths I put them, and which were worth consideration.

Other critics have objected to certain innovations in spelling, such as “ca’n’t,” “wo’n’t,” “traveler.” In reply, I can only plead my firm conviction that the popular usage is *wrong*. As to “ca’n’t,” it will not be disputed that, in all *other* words ending in “n’t,” these letters are an abbreviation of “not”; and it is surely absurd to suppose that, in this solitary instance, “not” is represented by “t”! In fact “can’t” is the *proper* abbreviation for “can it,” just as “is’t” is for “is it.” Again, in “wo’n’t,” the first apostrophe is needed, because the word “would” is here *abridged* into “wo”: but I hold it proper to spell “don’t” with only *one* apostrophe, because the word “do” is here *complete*. As to such words as “traveler,” I hold the correct principle to be, to *double* the consonant when the accent falls on that syllable; otherwise to leave it *single*. This rule is observed in most cases

(e. g. we double the “r” in “preferred,” but leave it single in “offered”), so that I am only extending, to other cases, an existing rule. I admit, however, that I do not spell “parallel,” as the rule would have it; but here we are constrained, by the etymology, to insert the double “l”.

In the Preface to Vol. I. were two puzzles, on which my readers might exercise their ingenuity. One was, to detect the 2 lines of “padding,” which I had found it necessary to supply in the passage extending from the top of p. 339 to the top of p. 340. They are the lines 42 to 42 of p. 339. The other puzzle was, to determine which (if any) of the 8 stanzas of the Gardener’s Song (see pp. 349, 355, 357, 359, 364, 369, 387, 389) were adapted to the context, and which (if any) had the context adapted to them. The last of them is the only one that was adapted to the context, the “Garden-Door that opened with a key” having been substituted for some creature (a Cormorant, I think) “that nestled in a tree.” At pp. 355, 364, and 387, the context was adapted to the stanza. At p. 359, neither stanza nor context was altered: the connection between them was simply a piece of good luck.

In the Preface to Vol. I., at p. 2472, I gave an account of the making-up of the story of “Sylvie and Bruno.” A few more details may perhaps be acceptable to my Readers.

It was in 1873, as I *now* believe, that the idea first occurred to me that a little fairy-tale (written, in 1867, for “Aunt Judy’s Magazine,” under the title “Bruno’s Revenge”¹) might serve as the nucleus of a longer story. This I surmise, from having found the original draft of the last paragraph of Vol. II., dated 1873. So that this paragraph has been waiting 20 years for its chance of emerging into print—more than twice the period so cautiously recommended by Horace for ‘repressing’ one’s literary efforts!

It was in February, 1885, that I entered into negotiations, with Mr. Harry Furniss, for illustrating the book. Most of the substance of *both* Volumes was then in existence in manuscript: and my original intention was to publish the *whole* story at once. In September, 1885, I received from Mr. Furniss the first set of drawings—the four which illustrate “Peter and Paul” (see I. pp. 378, 380, 382, 384): in November, 1886, I received the second set—the three which illustrate the Professor’s song about the “little man” who had “a little gun” (Vol. II. pp. 553, 554, 554): and in January, 1887, I received the third set—the four which illustrate the “Pig-Tale.”

So we went on, illustrating first one bit of the story, and then another, without any idea of sequence. And it was not till March, 1889, that, having calculated the number of pages the story would occupy, I decided on dividing it into *two* portions, and publishing it half at a time. This necessitated the writing of a *sort* of conclusion for the first Volume: and *most* of my Readers, I fancy, regarded this as the *actual* conclusion, when that Volume appeared in December, 1889. At any rate, among all the letters I received about it, there was only *one* which expressed *any* suspicion that it was not a *final* conclusion. This letter was from a child. She wrote “we were so glad, when we came to the end of the book, to find that there was no ending-up, for that shows us that you are going to write a sequel.”

It may interest some of my Readers to know the *theory* on which this story is constructed. It is an attempt to show what might *possibly* happen, supposing

¹Remark: → 3.11, p. 667

that Fairies really existed; and that they were sometimes visible to us, and we to them; and that they were sometimes able to assume human form: and supposing, also, that human beings might sometimes become conscious of what goes on in the Fairy-world—by actual transference of their immaterial essence, such as we meet with in ‘Esoteric Buddhism.’

I have supposed a Human being to be capable of various psychical states, with varying degrees of consciousness, as follows:—

- (a) the ordinary state, with no consciousness of the presence of Fairies;
- (b) the ‘eerie’ state, in which, while conscious of actual surroundings, he is *also* conscious of the presence of Fairies;
- (c) a form of trance, in which, while *unconscious* of actual surroundings, and apparently asleep, he (i. e. his immaterial essence) migrates to other scenes, in the actual world, or in Fairyland, and is conscious of the presence of Fairies.

I have also supposed a Fairy to be capable of migrating from Fairyland into the actual world, and of assuming, at pleasure, a Human form; and also to be capable of various psychical states, viz.

- (a) the ordinary state, with no consciousness of the presence of Human beings;
- (b) a sort of ‘eerie’ state, in which he is conscious, if in the actual world, of the presence of actual Human beings; if in Fairyland, of the presence of the immaterial essences of Human beings.

I will here tabulate the passages, in both Volumes, where abnormal states occur.

Vol. I.	Historian's Locality and State.		Other characters.
pp. 1–16	In train	<i>c</i>	Chancellor (<i>b</i>) p. 2.
33–55	do.	<i>c</i>	
65–79	do.	<i>c</i>	
83–99	At lodgings	<i>c</i>	
105–117	On beach	<i>c</i>	
119–183	At lodgings	<i>c</i>	S. and B. (<i>b</i>) pp. 158–163. Professor (<i>b</i>) p. 169.
190–221	In wood	<i>b</i>	Bruno (<i>b</i>) pp. 198–220.
225–233	do. sleep-walking	<i>c</i>	S. and B. (<i>b</i>).
247–253	Among ruins	<i>c</i>	do. (<i>b</i>).
262, 263	do. dreaming . . .	<i>a</i>	
263–269	do. sleep-walking	<i>c</i>	S. B. and Professor in Human form.
270	In street	<i>b</i>	
279–294	At station, &c.	<i>b</i>	S. and B. (<i>b</i>).
304–323	In garden	<i>c</i>	S. B. and Professor (<i>b</i>).
329–344	On road, &c.	<i>a</i>	S. and B. in Human form.
345–356	In street, &c.	<i>a</i>	
361–382	In wood	<i>b</i>	S. and B. (<i>b</i>).
Vol. II.			
pp. 4–18	In garden	<i>b</i>	S. and B. (<i>b</i>).
47–52	On road	<i>b</i>	do. (<i>b</i>).
53–78	do.	<i>b</i>	do. in Human form.
79–92	do.	<i>b</i>	do. (<i>b</i>).
152–211	In drawing-room	<i>a</i>	do. in Human form.
212–246	do.	<i>c</i>	do. (<i>b</i>).
262–270	In smoking-room	<i>c</i>	do. (<i>b</i>).
304–309	In wood	<i>b</i>	do. (<i>a</i>); Lady Muriel (<i>b</i>).
311–345	At lodgings	<i>c</i>	
351–399	do.	<i>c</i>	
407–end.	do.	<i>b</i>	

In the Preface to Vol. I., at p. 2472, I gave an account of the *origination* of some of the ideas embodied in the book. A few more such details may perhaps interest my Readers:—

I. p. 400. The very peculiar use, here made of a dead mouse, comes from real life. I once found two very small boys, in a garden, playing a microscopic game of ‘Single-Wicket.’ The bat was, I think, about the size of a table-spoon; and the utmost distance attained by the ball, in its most daring flights, was some 4 or 5 yards. The *exact* length was of course a matter of *supreme* importance; and it was always carefully measured out (the batsman and the bowler amicably sharing the toil) with a dead mouse!

II. p. 419. The two quasi-mathematical Axioms, quoted by Arthur at p. 419 of Vol. I., (“Things that are greater than the same are greater than one another,” and “All angles are equal”) were actually enunciated, in all seriousness, by undergraduates at a University situated not 100 miles from Ely.

II. p. 470. Bruno’s remark (“I can, if I like, &c.”) was actually made by a little boy.

II. p. 470. So also was his remark (“I know what it *doesn't* spell.”) And his remark (“I just twiddled my eyes, &c.”) I heard from the lips of a little girl, who had just solved a puzzle I had set her.

II. p. 485. Bruno's soliloquy ("For its father, &c.") was actually spoken by a little girl, looking out of the window of a railway-carriage.

II. p. 511. The remark, made by a guest at the dinner-party, when asking for a dish of fruit ("I've been wishing for them, &c.") I heard made by the great Poet-Laureate, whose loss the whole reading-world has so lately had to deplore.

II. p. 518. Bruno's speech, on the subject of the age of 'Mein Herr,' embodies the reply of a little girl to the question "Is your grandmother an *old* lady?" "I don't know if she's an *old* lady," said this cautious young person; "she's *eighty-three*."

II. p. 533. The speech about 'Obstruction' is no mere creature of my imagination! It is copied *verbatim* from the columns of the Standard, and was spoken by Sir William Harcourt, who was, at the time, a member of the 'Opposition,' at the 'National Liberal Club,' on July the 16th, 1890.

II. p. 576. The Professor's remark, about a dog's tail, that "it doesn't bite at *that* end," was actually made by a child, when warned of the danger he was incurring by pulling the dog's tail.

II. p. 594. The dialogue between Sylvie and Bruno, which occupies lines 15 to 20, is a *verbatim* report (merely substituting "cake" for "penny") of a dialogue overheard between two children.

One story in this Volume—"Bruno's Picnic"—I can vouch for as suitable for telling to children, having tested it again and again; and, whether my audience has been a dozen little girls in a village-school, or some thirty or forty in a London drawing-room, or a hundred in a High School, I have always found them earnestly attentive, and keenly appreciative of such fun as the story supplied.

May I take this opportunity of calling attention to what I flatter myself was a successful piece of name-coining, at p. 341 of Vol. I. Does not the name 'Sibimet' fairly embody the character of the Sub-Warden? The gentle Reader has no doubt observed what a singularly useless article in a house a brazen trumpet is, if you simply leave it lying about, and never blow it!

Readers of the first Volume, who have amused themselves by trying to solve the two puzzles propounded at p. 2473 of the Preface, may perhaps like to exercise their ingenuity in discovering which (if any) of the following parallelisms were intentional, and which (if any) accidental.

"Little Birds."	Events, and Persons.
Stanza	1. Banquet.
	2. Chancellor.
	3. Empress and Spinach (II. 575).
	4. Warden's Return.
	5. Professor's Lecture (II. 579).
	6. Other Professor's song (I. 376).
	7. Petting of Uggug.
	8. Baron Doppelgeist.
	9. Jester and Bear (I. 370). Little Foxes.
	10. Bruno's Dinner-Bell; Little Foxes.

I will publish the answer to this puzzle in the Preface to a little book of "Original Games and Puzzles," now in course of preparation.

I have reserved, for the last, one or two rather more serious topics.

I had intended, in this Preface, to discuss more fully, than I had done in the previous Volume, the 'Morality of Sport', with special reference to letters

I have received from lovers of Sport, in which they point out the many great advantages which men get from it, and try to prove that the suffering, which it inflicts on animals, is too trivial to be regarded.

But, when I came to think the subject out, and to arrange the whole of the arguments 'pro' and 'con', I found it much too large for treatment here. Some day, I hope to publish an essay on this subject. At present, I will content myself with stating the net result I have arrived at.

It is, that God has given to Man an absolute right to take the *lives* of other animals, for *any* reasonable cause, such as the supply of food: but that He has *not* given to Man the right to inflict *pain*, unless when *necessary*: that mere pleasure, or advantage, does not constitute such a necessity: and, consequently, that pain, inflicted for the purposes of *Sport*, is cruel, and therefore wrong. But I find it a far more complex question than I had supposed; and that the 'case', on the side of the Sportsman, is a much stronger one than I had supposed. So, for the present, I say no more about it.

Objections have been raised to the severe language I have put into the mouth of 'Arthur', at p. 424, on the subject of 'Sermons,' and at p. 423, on the subjects of Choral Services and 'Choristers.'

I have already protested against the assumption that I am ready to endorse the opinions of characters in my story. But, in these two instances, I admit that I am much in sympathy with 'Arthur.' In my opinion, far too many sermons are expected from our preachers; and, as a consequence, a great many are preached, which are not worth listening to; and, as a consequence of *that*, we are very apt *not* to listen. The reader of this paragraph probably heard a sermon last Sunday morning? Well, let him, if he can, name the text, and state how the preacher treated it!

Then, as to 'Choristers,' and all the other accessories—of music, vestments, processions, &c.,—which have come, along with them, into fashion—while freely admitting that the 'Ritual' movement was sorely needed, and that it has effected a vast improvement in our Church-Services, which had become dead and dry to the last degree, I hold that, like many other desirable movements, it has gone too far in the opposite direction, and has introduced many new dangers.

For the Congregation this new movement involves the danger of learning to think that the Services are done *for* them; and that their bodily *presence* is all they need contribute. And, for Clergy and Congregation alike, it involves the danger of regarding these elaborate Services as *ends in themselves*, and of forgetting that they are simply *means*, and the very hollowest of mockeries, unless they bear fruit in our *lives*.

For the Choristers it seems to involve the danger of self-conceit, as described at p. 423 (N.B. "stagy-entrances" is a misprint for "stage-entrances"), the danger of regarding those parts of the Service, where their help is not required, as not worth attending to, the danger of coming to regard the Service as a mere outward form—a series of postures to be assumed, and of words to be said or sung, while the *thoughts* are elsewhere—and the danger of 'familiarity' breeding 'contempt' for sacred things.

Let me illustrate these last two forms of danger, from my own experience. Not long ago, I attended a Cathedral-Service, and was placed immediately behind a row of men, members of the Choir; and I could not help noticing that they treated the *Lessons* as a part of the Service to which they needed not to

give *any* attention, and as affording them a convenient opportunity for arranging music-books, &c., &c. Also I have frequently seen a row of little choristers, after marching in procession to their places, kneel down, as if about to pray, and rise from their knees after a minute spent in looking about them, it being but too evident that the attitude was a mere mockery. Surely it is very dangerous, for these children, to thus accustom them to *pretend* to pray? As an instance of irreverent treatment of holy things, I will mention a custom, which no doubt many of my readers have noticed in Churches where the Clergy and Choir enter in procession, viz. that, at the end of the private devotions, which are carried on in the vestry, and which are of course inaudible to the Congregation, the final “Amen” is *shouted*, loud enough to be heard all through the Church. This serves as a signal, to the Congregation, to prepare to rise when the procession appears: and it admits of no dispute that it is for this purpose that it is thus shouted. When we remember to Whom that “Amen” is *really* addressed, and consider that it is here *used* for the same purpose as one of the Church-bells, we must surely admit that it is a piece of gross irreverence? To *me* it is much as if I were to see a Bible used as a footstool.

As an instance of the dangers, for the Clergy themselves, introduced by this new movement, let me mention the fact that, according to *my* experience, Clergymen of this school are *specially* apt to retail comic anecdotes, in which the most sacred names and words—sometimes actual texts from the Bible—are used as themes for jesting. Many such things are repeated as having been originally said by *children*, whose utter ignorance of evil must no doubt acquit *them*, in the sight of God, of all blame; but it must be otherwise for those who *consciously* use such innocent utterances as material for their unholy mirth.

Let me add, however, *most* earnestly, that I fully believe that this profanity is, in many cases, *unconscious*: the ‘environment’ (as I have tried to explain at p. 507) makes all the difference between man and man; and I rejoice to think that many of these profane stories—which *I* find so painful to listen to, and should feel it a sin to repeat—give to *their* ears no pain, and to *their* consciences no shock; and that *they* can utter, not less sincerely than myself, the two prayers, “*Hallowed be Thy Name,*” and “*from hardness of heart, and contempt of Thy Word and Commandment, Good Lord, deliver us!*” To which I would desire to add, for their sake and for my own, Keble’s beautiful petition, “*help us, this and every day, To live more nearly as we pray!*” It is, in fact, for its *consequences*—for the grave dangers, both to speaker and to hearer, which it involves—rather than for what it is *in itself*, that I mourn over this clerical habit of profanity in social talk. To the *believing* hearer it brings the danger of loss of reverence for holy things, by the mere act of listening to, and enjoying, such jests; and also the temptation to retail them for the amusement of others. To the *unbelieving* hearer it brings a welcome confirmation of his theory that religion is a fable, in the spectacle of its accredited champions thus betraying their trust. And to the speaker himself it must surely bring the danger of *loss of faith*. For surely such jests, if uttered with no consciousness of harm, must necessarily be also uttered with no consciousness, at the moment, of the *reality* of God, as a *living being*, who hears all we say. And he, who allows himself the habit of thus uttering holy words, with no thought of their meaning, is but too likely to find that, for him, God has become a myth, and heaven a poetic fancy—that, for him, the light of life is gone, and that he is at heart an atheist, lost in “*a darkness that may be felt.*”

Quoted from Lord’s Prayer

Quoted from *Book of Common Prayer, The Litany*

Quoted from *Hues of the Rich Unfolding Morn (The Christian Year, 1827)* by John Keble

Quoted from Exodus 10:21

There is, I fear, at the present time, an increasing tendency to irreverent treatment of the name of God and of subjects connected with religion. Some of our theatres are helping this downward movement by the gross caricatures of clergymen which they put upon the stage: some of our clergy are themselves helping it, by showing that they can lay aside the spirit of reverence, along with their surplices, and can treat as jests, when *outside* their churches, names and things to which they pay an almost superstitious veneration when *inside*: the "Salvation Army" has, I fear, with the best intentions, done much to help it, by the coarse familiarity with which they treat holy things: and surely every one, who desires to *live* in the spirit of the prayer "*Hallowed be thy Name,*" ought to do what he can, however little that may be, to check it. So I have gladly taken this unique opportunity, however unfit the topic may seem for the Preface to a book of this kind, to express some thoughts which have weighed on my mind for a long time. I did not expect, when I wrote the Preface to Vol. I, that it would be read to any appreciable extent: but I rejoice to believe, from evidence that has reached me, that it *has* been read by many, and to hope that this Preface will also be so: and I think that, among them, some will be found ready to sympathise with the views I have put forwards, and ready to help, with their prayers and their example, the revival, in Society, of the waning spirit of reverence.

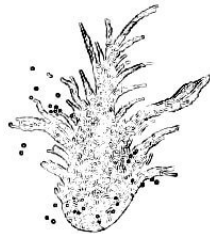
Quoted from Lord's
Prayer

Christmas, 1893.



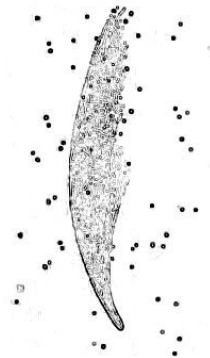
19.15 Phantasmagoria and Other Poems

Source: Phantasmagoria



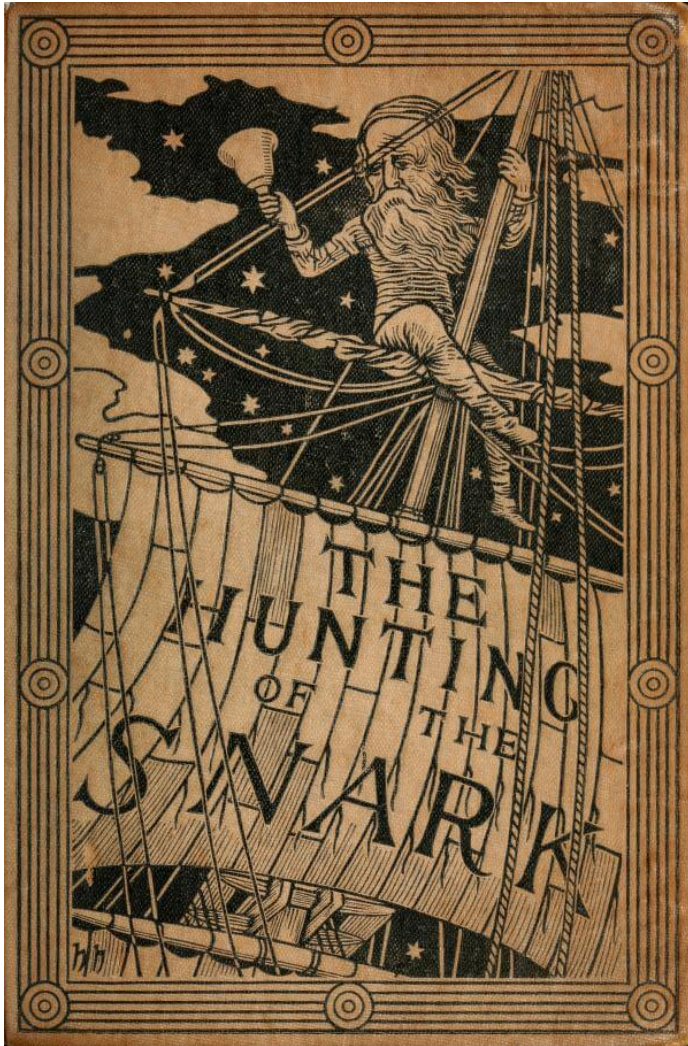
[Of the following poems, *Phantasmagoria*, *A Valentine*, *A Double Acrostic*, *The Valley of the Shadow of Death*, *Lines*, *Stanzas for Music*, and *Christmas Greetings*, are here printed for the first time. The others have all appeared before in magazines and other periodicals, with the exception of *The Elections to the Hebdomadal Council*, which was published by itself.

The decorations on the cover represent the *Crab Nebula* in *Taurus* and *Donati's Comet*, two distinguished members of the Celestial Phantasmagoria.]



19.16 The Hunting of the Snark

Source: The Hunting of the Snark (with different punctuation and cover images);
Rhyme? and Reason?



(Cover)



(later variant cover ornament)

If—and the thing is wildly possible—the charge of writing nonsense were ever brought against the author of this brief but instructive poem, it would be based, I feel convinced, on the line (in p. 2185)

“Then the bowsprit got mixed with the rudder sometimes:”

In view of this painful possibility, I will not (as I might) appeal indignantly to my other writings as a proof that I am incapable of such a deed: I will not (as I might) point to the strong moral purpose of this poem itself, to the arithmetical principles so cautiously inculcated in it, or to its noble teachings in *Natural History*—I will take the more prosaic course of simply explaining how it happened.

The Bellman, who was almost morbidly sensitive about appearances, used to have the bowsprit unshipped once or twice a week to be revarnished; and it more than once happened, when the time came for replacing it, that no one on board could remember which end of the ship it belonged to. They knew it was not of the slightest use to appeal to the Bellman about it—he would only refer to his Naval Code, and read out in pathetic tones Admiralty Instructions which none of them had ever been able to understand—so it generally ended in its being fastened on, anyhow, across the rudder. The helmsman¹ used to stand by with tears in his eyes: *he* knew it was all wrong, but alas! Rule 42 of the Code, “*No one shall speak to the Man at the Helm,*” had been completed by the Bellman himself with the words “*and the Man at the Helm shall speak to no one.*” So remonstrance was impossible, and no steering could be done till the next varnishing day. During these bewildering intervals the ship usually sailed backwards.

As this poem is to some extent connected with the lay of the Jabberwock, let me take this opportunity of answering a question that has often been asked me, how to pronounce “slithy toves.” The “i” in “slithy” is long, as in “writhe”; and “toves” is pronounced so as to rhyme with “groves.” Again, the first “o” in “borogoves” is pronounced like the “o” in “borrow.” I have heard people try to give it the sound of the “o” in “worry.” Such is Human Perversity.

This also seems a fitting occasion to notice the other hard words in that poem. Humpty-Dumpty’s theory, of two meanings packed into one word like a portmanteau, seems to me the right explanation for all.

For instance, take the two words “fuming” and “furious.” Make up your mind that you will say both words, but leave it unsettled which you will say first. Now open your mouth and speak. If your thoughts incline ever so little towards “fuming,” you will say “fuming-furious”; if they turn, by even a hair’s breadth, towards “furious,” you will say “furious-fuming”; but if you have that rarest of gifts, a perfectly balanced mind, you will say “frumious.”

Supposing that, when Pistol uttered the well-known words—

“Under which king, Bezonian? Speak or die!”

Justice Shallow had felt certain that it was either William or Richard, but had not been able to settle which, so that he could not possibly say either name before the other, can it be doubted that, rather than die, he would have gasped out “Rilchiam!”

Quoted from *Henry IV, Part II* by William Shakespeare

¹This office was usually undertaken by the Boots, who found in it a refuge from the Baker’s constant complaints about the insufficient blacking of his three pair of boots.



(Backcover)



(later variant backcover ornament, sometimes missing)

19.17 Rhyme? and Reason?

Source: Rhyme? and Reason? (originally only the following untitled note appeared, later it was replaced by the preface)



I have had nor rhyme nor reason

[Of the following poems, ECHOES, A GAME OF FIVES, the last three of the FOUR RIDDLES, and FAME'S PENNY-TRUMPET, are here published for the first time. The others have all appeared before, as have also the illustrations to THE HUNTING OF THE SNARK.]

Preface to Fourth Thousand.

Most of the poems, included in this collection (first published, in 1883), had been previously published, as follows:—

TÉMA CON VARIAZIÓNİ had appeared, in THE COMIC TIMES, in 1855: Y^E CARPETTE KNYGHTE and THE THREE VOICES, in THE TRAIN, in 1856: HI-AWATHA'S PHOTOGRAPHING, in the same, in 1858: A SEA DIRGE, in COLLEGE RHYMES, in 1861: MELANCHOLETTA and POETA FIT, NON NASCITUR, in the same, in 1862: THE LANG COORTIN' and SIZE AND TEARS, in the same, in 1863: ATALANTA IN CAMDEN TOWN, in PUNCH, in 1867.

All the above, except the first, were republished, with the addition of PHANTASMAGORIA, A VALENTINE, and A DOUBLE ACROSTIC (the first of the FOUR RIDDLES in this volume), in the collection entitled PHANTASMAGORIA AND OTHER POEMS, first published in 1869.

THE HUNTING OF THE SNARK first appeared, with the present illustrations, in 1876.

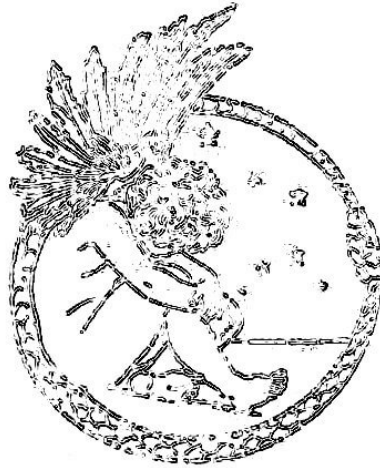
The other illustrations in this volume first appeared in 1883.

December, 1887.



19.18 Three Sunsets and Other Poems

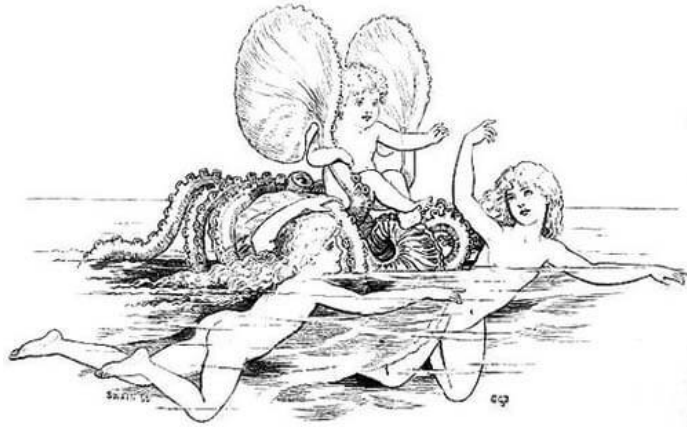
Source: Three Sunsets



Nearly the whole of this volume is a reprint of the serious portion of *Phantasmagoria and other Poems*, which was first published in 1869 and has long been out of print. "The Path of Roses" was written soon after the Crimean War, when the name of Florence Nightingale had already become a household-word. "Only a Woman's Hair" was suggested by a circumstance mentioned in *The Life of Dean Swift*, viz., that, after his death, a small packet was found among his papers, containing a single lock of hair and inscribed with those words. "After Three Days" was written after seeing Holman Hunt's picture, *The Finding of Christ in the Temple*.

The two poems, "Far Away" and "A Song of Love", are reprinted from *Sylvie and Bruno* and *Sylvie and Bruno Concluded*, books whose high price (made necessary by the great cost of production) has, I fear, put them out of the reach of most of my readers. "A Lesson in Latin" is reprinted from *The Jabberwock*, a Magazine got up among the Members of "The Girls' Latin School, Boston, U.S.A." The only poems, here printed for the first time, are put together under the title of "Puck Lost and Found," having been inscribed in two books—*Fairies*, a poem by Allingham, illustrated by Miss E. Gertrude Thomson, and *Merry Elves*, a story-book, by whom written I do not know, illustrated by C. O. Murray—which were presented to a little girl and boy, as a sort of memento of a visit paid by them to the author one day, on which occasion he taught them the pastime—dear to the hearts of children—of folding paper—"pistols," which can be made to imitate, fairly well, the noise of a real one.

Jan., 1898.



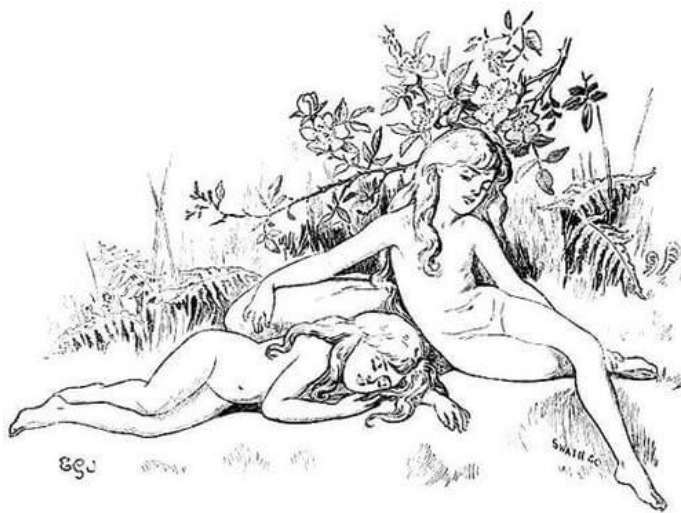
Fairies and Nautilus
(Frontispiece)



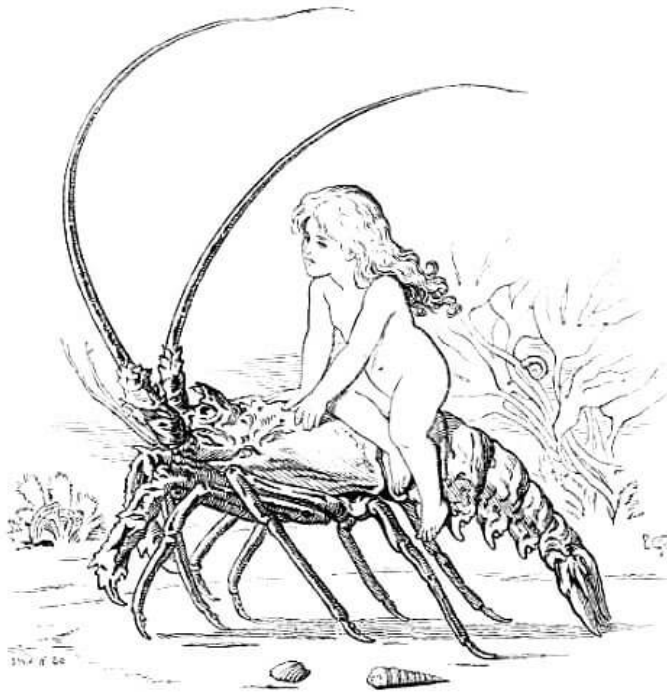
Fairies in Boat



Fairies and Bower



Sleeping Fairies



Fairy Riding on Cray-Fish



Fairies and Squirrel



Fairies and Jonquils



Fairies and Frog



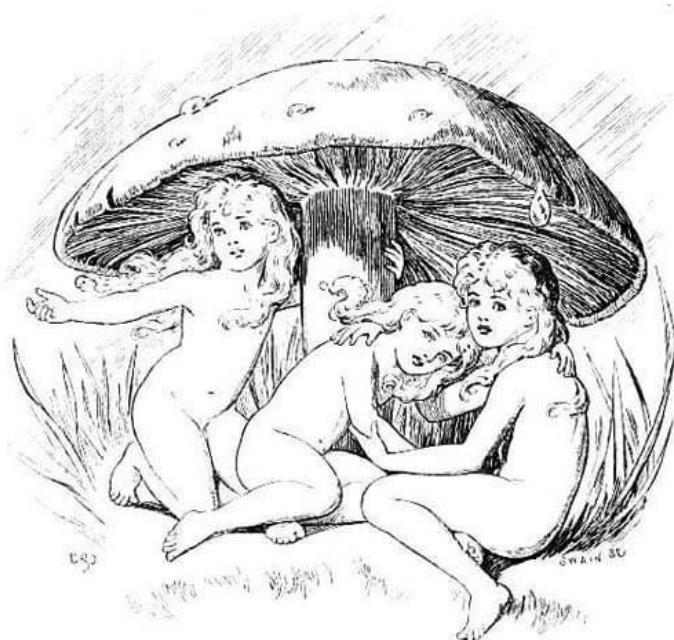
Fairy on Mushroom



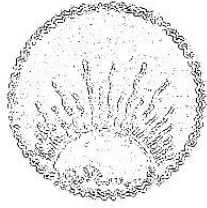
Fairies Riding on Fish



Fairy and Wasp



Fairies under Mushroom



19.19 Euclid and his Modern Rivals

Source: Euclid and his Modern Rivals, second edition

‘All for your delight
We are not here. *That you should here repent you*
The actors are at hand; and, by their show,
You shall know all, that you are like to know.’

Quoted from *A
Midsummer Night’s
Dream* by William
Shakespeare

Preface to Second Edition

The only new features, worth mentioning, in the second edition, are the substitution of words for the symbols introduced in the first edition, and one additional review—of Mr. Henrici, to whom, if it should appear to him that I have at all exceeded the limits of fair criticism, I beg to tender my sincerest apologies.

C. L. D.
Ch. Ch. 1885.

Preface to First Edition

*‘ridentem dicere verum
Quid vetat?’*

Quoted from Horace

The object of this little book is to furnish evidence, first, that it is essential, for the purpose of teaching or examining in elementary Geometry, to employ one text-book only; secondly, that there are strong *a priori* reasons for retaining, in all its main features, and specially in its sequence and numbering of Propositions and in its treatment of Parallels, the Manual of Euclid; and thirdly, that no sufficient reasons have yet been shown for abandoning it in favour of any one of the modern Manuals which have been offered as substitutes.

It is presented in a dramatic form, partly because it seemed a better way of exhibiting in alternation the arguments on the two sides of the question; partly that I might feel myself at liberty to treat it in a rather lighter style than would have suited an essay, and thus to make it a little less tedious and a little more acceptable to unscientific readers.

In one respect this book is an experiment, and may chance to prove a failure: I mean that I have not thought it necessary to maintain throughout the gravity of style which scientific writers usually affect, and which has somehow come to be regarded as an ‘inseparable accident’ of scientific teaching. I never could quite see the reasonableness of this immemorial law: subjects there are, no doubt, which are in their essence too serious to admit of any lightness of treatment—but I cannot recognise Geometry as one of them. Nevertheless it will, I trust, be found that I have permitted myself a glimpse of the comic side of things only at fitting seasons, when the tired reader might well crave a moment’s breathing-space, and not on any occasion where it could endanger the continuity of a line of argument.

Pitying friends have warned me of the fate upon which I am rushing: they have predicted that, in thus abandoning the dignity of a scientific writer, I shall alienate the sympathies of all true scientific readers, who will regard the book

as a mere *jeu d'esprit*, and will not trouble themselves to look for any serious argument in it. But it must be borne in mind that, if there is a Scylla before me, there is also a Charybdis—and that, in my fear of being read as a jest, I may incur the darker destiny of not being read at all.

In furtherance of the great cause which I have at heart—the vindication of Euclid's masterpiece—I am content to run some risk; thinking it far better that the purchaser of this little book should *read* it, though it be with a smile, than that, with the deepest conviction of its seriousness of purpose, he should leave it unopened on the shelf.

To all the authors, who are here reviewed, I beg to tender my sincerest apologies, if I shall be found to have transgressed, in any instance, the limits of fair criticism. To Mr. Wilson especially such apology is due—partly because I have criticised his book at great length and with no sparing hand—partly because it may well be deemed an impertinence in one, whose line of study has been chiefly in the lower branches of Mathematics, to dare to pronounce any opinion at all on the work of a Senior Wrangler. Nor should I thus dare, if it entailed my following him up 'yonder mountain height' which *he* has scaled, but which *I* can only gaze at from a distance: it is only when he ceases 'to move so near the heavens,' and comes down into the lower regions of Elementary Geometry, which I have been teaching for nearly five-and-twenty years, that I feel sufficiently familiar with the matter in hand to venture to speak.

Let me take this opportunity of expressing my gratitude, first to Mr. Todhunter, for allowing me to quote *ad libitum* from the very interesting Essay on Elementary Geometry, which is included in his volume entitled 'The Conflict of Studies, and other Essays on subjects connected with Education,' and also to reproduce some of the beautiful diagrams from his edition of Euclid; secondly, to the Editor of the Athenæum, for giving me a similar permission with regard to a review of Mr. Wilson's Geometry, written by the late Professor De Morgan, which appeared in that journal, July 18, 1868.

C. L. D.
Ch. Ch. 1879.

Quoted from *The Princess* by Alfred Lord Tennyson

19.20 Supplement to “Euclid and his Modern Rivals”

Source: Supplement to “Euclid and his Modern Rivals”

This supplement is paged continuously with ‘Euclid and his Modern Rivals,’ to suit the convenience of those who possess the volume. For those who do not possess it, it may be well to explain that the speakers are ‘Minos’ (a University examiner who has been commissioned by the ghost of Euclid to criticize the works of his Modern Rivals), and ‘Herr Niemand’ (a ghostly German Professor who appears as counsel for the authors criticized). Thirteen such books have been already discussed, namely, Legendre—the American writers, Chauvenet, Loomis, and Pierce—the English writers, Cooley, Cuthbertson, Morell, Reynolds, Willock, Wilson, and Wright—and the Syllabus put forth by ‘The Association for the Improvement of Geometrical Teaching,’ together with Wilson’s book founded on that Syllabus; so that M. Henrici fills the *rôle* of that popular functionary, dear to Parisian diners, ‘*le quatorzième*.’

*C. L. Dodgson.
Ch. Ch., Oxford,
April, 1885.*

19.21 A Tangled Tale

Source: A Tangled Tale



Hoc meum tale quale est accipe.

This Tale originally appeared as a serial in *The Monthly Packet*, beginning in April, 1880. The writer's intention was to embody in each Knot (like the medicine so dexterously, but ineffectually, concealed in the jam of our early childhood) one or more mathematical questions—in Arithmetic, Algebra, or Geometry, as the case might be—for the amusement, and possible edification, of the fair readers of that Magazine.

L. C.
October, 1885.



19.22 Limits of Circle-Squaring

Source: manuscript for unpublished book, 1882

April 20, 1882

Suppose that a controversy had arisen about the details of the battle of Waterloo, and that in a certain Debating Society the question had been raised as to the exact time when Bulow's Prussian Corps appeared on the field of battle. Disputants, who supported the theory that it was a little before 6 p. m., or a little after, would no doubt be patiently listened to: but what would the Society say to a member who proposed that it took place at 4 p. m. on the *nineteenth* of June? Would they not exclaim with one voice, 'If there is one fact in History more certain than another, it is that the battle was fought on the *eighteenth*. To go outside the limits of that day is simply absurd. We cannot waste our time in listening to any one who does not accept the ordinary *data* of the subject.'

Now this is precisely the position I propose to take with reference to the theories of the "Circle-Squarers," under which term I include all who have attempted to give an *exact* value to the area of a circle, expressed in terms of the square on its radius. The mathematical world are agreed that it is somewhere very near 3.14159 times that square—so near, indeed, that the above number is too small to express it, while 3.1416 is too great. Any one, then, who should suggest the theory that it was a little more or less than this number, say 3.14161 or 3.14158, might perhaps find listeners: but what would be said to a theorist who proposed to prove it to be $4\frac{1}{2}$? "My good sir," we should exclaim, "if there is one fact in Geometry more certain than another, it is that the area of a circle is less than its circumscribed square and greater than its inscribed square; and that these two squares are respectively four times, and twice, the square of the radius. To go outside these limits is simply absurd. We cannot waste our time in listening to any one who does not accept the ordinary *data* of the subject."

For any Circle-Squarer, then, whose theory is that the area of a circle is more than four times, or less than twice, the square on its radius, what has been already said would be amply sufficient, and this little book would not need to be written. But the numbers proposed are in no case so wide of the mark as this; and if an answer of this kind is to be given to their proposers, the limits fixed must be very much closer together than the numbers 4 and 2.

And this, it has occurred to me, it is possible to do, without using more than the very simplest facts in Mathematics—facts to dispute which would be much the same thing as to deny that two and two make four. To measure the area of the circle itself is a complicated matter, and the processes, by which the value 3.14159 has been calculated, are long and abstruse: and any Circle-Squarer, if called upon to disprove the results so obtained, before he can expect a hearing for his rival theory, might very reasonably reply, "As a mere question of wasting time, it is much more reasonable that *you* should give a few minutes to examining my Theorem, and to disproving it if you can, than that *I* should spend months, or even years, in mastering these difficult calculations."

"Why not, then," it may be asked me, "content yourself with simply *disproving* the Theorem of each Circle-Squarer you meet with? Their proofs are usually short: they seldom go beyond the range of elementary Geometry: and

being, as we know they must be, untrue, they no doubt contain palpable logical fallacies.”

That is all very true: but, in the first place, the *disproof* of his pet Theorem is precisely the very last fact in the world that a Circle-Squarer can be got even to listen to with patience: long contemplation of the result of his labours has made him as sure of its truth as of his own existence: and, in the second place, this would require a fresh argument to be composed for every fresh Circle-Squarer, instead of having, when I hope this little book will furnish, an answer equally applicable to all comers.

The course I propose to take is briefly this:—first, to give a list of the elementary truths I shall afterwards have occasion to quote: then to prove, by very simple methods (in which I shall make no attempt at measuring the *circle* at all, but shall merely measure certain *rectilinear figures* drawn within it and outside it), that, whatever be the *exact* value of the area, it is at any rate less than 3.1417 times, and greater than 3.1413 times, the square on its radius.

Hence, for any Circle-Squarer, whose value for this area lies outside these two limits, this little book will I hope be a sufficient answer. He cannot plead that the proofs here offered are too long, or too abstruse, for him to understand them: and he may fairly be called upon to disprove the truth of the above-named limits, before he can expect a hearing for a theorem which contradicts the opinion of most of the world. If he should take exception to any one of the preliminary truths here quoted, he is of course out of court at once, as they stand on the same footing as the fact that two and two are four: further discussion would be absolute waste of time. If, however, he accepts these preliminary truths, he cannot well avoid being led on, by irresistible logic, to accept the truth of the above-named limits. The method, by which they are obtained, is one that he can easily carry further for himself, and find new pairs of limits, each pair closer together than the preceding pair: so that, even if he has adopted a value a little within the limits 3.1417 and 3.1413, he may still find limits which will exclude the possibility of his value being true.

The exact value of π (the name usually given to “the ratio which the area of a circle bears to the square on its radius”) has in all ages proved an *ignis fatuus*, that has led hundreds, if not thousands, of hapless mathematicians to waste valuable years in the hope of immortalizing themselves by discovering what has been so long sought in vain. I cherish the hope that this little book may fall into the hands of some who have been dazzled by its mocking light, and may prove the means of saving to them much time and labour that would otherwise be wasted.

There is also a proof sheet with two propositions. It has many annotations, indicating that the text would have been more or less completely re-written before publication. Therefore this proof sheet is not included here. The first proposition proves $2 < \pi < 4$, the second $2\frac{2}{3} < \pi < 3\frac{1}{3}$. The second relies on $\frac{\pi}{4} = \tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{3}$ with a geometric proof for (quite rough) limits of \tan^{-1} and allows for generalisations in the way of Question 11530 in the *Educational Times* (\rightarrow 9.18, p. 1463), though much better limits are required to get the precision aimed at.

19.23 The Game of Logic

Source: The Game of Logic (edition from 1886 with minor differences as noted)

Nota Bene

With each copy of this Book is given an Envelope, containing a diagram (similar to the frontispiece) on card, and nine Counters, four red and five grey.

The Envelope, &c. can be had separately, at 3*d.* each.

⌋The Author will be very grateful for suggestions, especially from beginners in Logic, of any alterations, or further explanations, that may seem desirable. Letters should be addressed to him at “29, Bedford Street, Covent Garden, London.”¹

Preface

“There foam’d rebellious Logic, gagg’d and bound.”

Quoted from *The Dunciad* by Alexander Pope

This Game requires nine Counters—four of one colour and five of another: say four red and five grey.

Besides the nine Counters, it also requires one Player, *at least*. I am not aware of any Game that can be played with *less* than this number: while there are several that require *more*: take Cricket, for instance, which requires twenty-two. How much easier it is, when you want to play a Game, to find *one* Player than twenty-two! At the same time, though one Player is enough, a good deal more amusement may be got by two working at it together, and correcting each other’s mistakes.

A second advantage, possessed by this Game, is that, besides being an endless source of amusement (the number of arguments, that may be worked by it, being infinite), it will give the Players a little instruction as well. But is there any great harm in *that*, so long as you get plenty of amusement?

¹paragraph missing in 1886 edition, where this note comes after the preface

19.24 A Fascinating Mental Recreation for the Young

Source: printed 1896, here the earliest published variant (with minor differences as noted) and latest variant

Symbolic Logic by Lewis Carroll. Part I. Elementary

29, Bedford Street, Strand
May, 1896.¹

Dear Madam, or Sir,

Any one, who has to superintend the education of young people (say between 12 and 20 years of age), must have realised the importance of supplying them with healthy mental recreations, to occupy times when both brain and muscles have done their fair share of work for the day. The best possible resource, no doubt, is *reading*; and a taste for reading is quite the most valuable acquirement you can give to your pupil. But *variety* is essential, and many a boy or girl is glad to exchange the merely *passive* enjoyment of reading a book for something which will employ the *hands* as well as the *eyes*, and which will call out some form of mental *activity*. Under this heading may be reckoned such occupations as drawing, painting, &c., and sedentary games, such as chess, backgammon, &c.: also (what many young people keenly enjoy) the guessing of puzzles, which generally involves a certain amount of *handiwork*. And all games and puzzles (excepting of course *whist*) allow, and even encourage, *talking*—which in itself is one of the best and healthiest of mental recreations. Also many of them (and this is a most valuable property) will only yield the *full* enjoyment, that is to be got out of them, in return for a certain amount of *painstaking*. The chess-player, who has learned the true meaning of “*whatsoever thy hand findeth to do, do it with thy might*,” and who gives his full attention to the game, and tries to find the *best* solution for the problems that arise in it, will get *ten* times the enjoyment received by the languid, indolent player, who moves the pieces almost at random, and takes no interest whatever in winning or losing.

Quoted from
Ecclesiastes 9:10

I claim, for Symbolic Logic, a very high place among recreations that have the nature of games or puzzles; and I believe that any one, who will really *try* to understand it, will find it more interesting and more absorbing than most of the games or puzzles yet invented. The reading of the *book* about it is a *very* small part of the business: the *real* occupation and the *real* enjoyment come when the reader has gained the power of solving for himself the fascinating *problems* of the Science. And this power is far sooner, and far more easily, acquired in *Symbolic Logic* than it is in the Science as taught in the ordinary text-books.

The occupation, of solving such problems, furnishes keen and inexhaustible enjoyment, even for the *solitary* student. But a still greater amount of pleasure may be obtained, when two or three students, of tolerably equal powers, agree to work it *together*. It adds enormously to one’s interest in such problems, to be able to *talk* them over with another: and the help it gives, in getting one’s own ideas *clear* on the subject, is simply invaluable.

¹29 Bedford Street,
Covent Garden,
January, 1896.

Symbolic Logic has one *unique* feature, as compared with games and puzzles, which entitles it, I hold, to rank above them all. The accomplished backgammon player has received, no doubt, a great deal of enjoyment, well worth the winning, in the process of making himself a good player; but, when that object is attained, it is of no *further* use to him, except for the one purpose of playing more games, and winning more victories, and possibly becoming the Champion-player for his town or county. Now the accomplished *Logician* has not only enjoyed himself, all the time he was working up to that position, fully as much as the Champion-player has done; but he finds himself, when that position is won, the holder of an "Open Sesame!" to an inexhaustible treasure-house of varied interests. He may apply his skill to any and every subject of human thought; in every one of them it will help him to get *clear* ideas, to make *orderly* arrangement of his knowledge, and, more important than all, to detect and unravel the *fallacies* he will meet with in every subject he may interest himself in.

Quoted from *Ali Baba and the Forty Thieves*

Among the popular ideas about Logic there are *three* special and most fallacious ones² which have prevented its receiving anything like the attention which it deserves.

One is, that it is much too hard for average intellects; that only the exceptionally-gifted can make anything of it; and that it is *quite* beyond the reach of children.

Another is that even those, who *do* succeed in mastering its principles, find it hopelessly dry and uninteresting.

And a third objection is that its results are absolutely and entirely *useless*, and have no connection with the actual facts of life.³

The first two objections may fairly be urged, I think, against *Formal* Logic. Some of the text-books of this Science might almost have been composed with the benevolent intention of furnishing, for the eager minds of children, the *hardest* work that could be devised—giving the *maximum* of fatigue with the *minimum* of result. As compared with *Symbolic* Logic, it is much as if a schoolmaster were to close his cricket-ground, and erect a *treadmill* for his boys instead!

Think of some complicated algebraical problem, which, if worked out with *x*, *y*, *z*, would require the construction of several intricate simultaneous equations, ending in an affected quadratic. Then imagine the misery of having to solve it in *words* only, and being forbidden the use of *symbols*. This will give you a very fair idea of the difference, in solving a Syllogism or Sorites, between the use of *Symbolic* Logic, and of *Formal* Logic as taught in the ordinary text-books.

As to the *first* popular idea—that Logic is much too hard for ordinary folk, and specially for children, I can only say that I have taught the method of Symbolic Logic to *many* children, with entire success. They learn it easily, and take *real* interest in it. High-School girls take to it readily. I have had classes of such girls, and also of the *mistresses*, who are of course yet more interesting pupils to deal with. When your little boys, or little girls, can solve *Syllogisms*, I fancy they will be much more eager to have fresh *Pairs of Premises* supplied them, than any *riddles* you can offer them!

As to Symbolic Logic being *dry*, and *uninteresting*, I can only say, *try* it! I have amused myself with various scientific pursuits for some forty years, and

²special ones

³These two charges seem to dispose of its claim to be regarded as a *Recreation*. And if, abandoning this claim, it demands our attention as a *Science*, it must of course offer us something of practical *use*, to repay us for the trouble of studying it. And here comes in the *third* of these popular ideas, viz., that its results are absolutely and entirely *useless*.

have found none to rival it for sustained and entrancing attractiveness.

As to its being *useless*, I think I have already said enough.

In conclusion, let me point out that even those, who are obliged to study *Formal Logic*, with a view to being able to answer Examination-Papers in that subject, will find the study of *Symbolic Logic* most helpful for this purpose, in throwing light upon many of the obscurities with which Formal Logic abounds, and in furnishing a delightfully easy method of *testing* the results arrived at by the cumbrous process which Formal Logic enforces upon its votaries.⁷⁴

This is, I believe, the very first attempt (with the exception of my own little book, *The Game of Logic*, published in 1886, a very incomplete performance) that has been made to *popularise* this fascinating subject. It has cost me *years* of hard work: but if it should prove, as I hope it may, to be of *real* service to the young, and to be taken up, in High Schools and in private families, as a valuable addition to their stock of healthful mental recreations, such a result would more than repay ten times the labour that I have expended on it. *Your obedient servant,*

Lewis Carroll⁷⁵

N.B. Books to be Given Away.⁷⁶

(1) For Village-Libraries, &c.

Mr. Lewis Carroll will be glad to receive applications for copies of the following books:—

Through the Looking-Glass In the Sixtieth Thousand of this book, some of the pictures came out too black for good artistic effect, and Mr. Carroll decided to *give* the whole of them away, as they were not good enough to *sell*. There are still some on hand, which he will be glad to give for the use of Village-Libraries, &c., or to lend to *invalids*.

The Nursery Alice In one impression of this book some of the pictures are too bright and gaudy, and these also Mr. Carroll has decided to *give* away, for the use of Kinder-Garten, or Infant Schools, or to lend to sick children.

Sylvie and Bruno: Sylvie and Bruno (Concluded) These books are on sale, but the price (which he cannot afford to reduce) puts them beyond the reach of people with small means. He will be glad to *give* some copies for Village-Libraries, &c., or for reading aloud to children, or for lending to invalids.

Every application, for copies of the above, should be signed by some resident householder, and should contain a promise that the books shall be used for the purposes intended.

Applications should be addressed to Messrs. Macmillan and Co. Ltd., 29, Bedford Street, Covent Garden, and should contain stamps to cover the cost of postage, viz., for each separate volume $4\frac{1}{2}d.$; for two volumes $6d.$; for three $9d.$; for the four volumes in one packet $10\frac{1}{2}d.$

⁴Paragraph missing in version from January.

⁵The version from January is followed by: "P.S.—The book is nearly all in type, and will, I *hope*, be ready for delivery before the end of January."

⁶only in version from January

(2) For Sick Children Only.

Mr. Lewis Carroll has had special editions prepared, for this purpose, of "Alice in Wonderland" and "Through the Looking-Glass," and has already given away hundreds of them to Hospitals, Homes, &c.

Applications, from Hospitals, &c., for these books, or for "The Nursery Alice" named above, should be addressed to himself, care of Messrs. Macmillan and Co. Ltd., and should be signed by some official of the Hospital, &c., and should state the number of children, capable of enjoying such books, who are there at once, the number of copies in hand, and also whether it possesses any funds with which such books could be purchased.

January, 1896.

19.25 Symbolic Logic

Advertisement.

Source: Symbolic Logic, fourth edition, first, second and third edition with minor differences as noted

└An envelope, containing two blank Diagrams (Bilateral and Trilateral) and 9 counters (4 Red and 5 Grey), may be had, from Messrs. Macmillan, for 3*d.*, by post 4*d.*¹

I shall be grateful to any Reader └of this book² who will point out any mistakes or misprints he may happen to notice └in it,³ or any passage which he thinks is not clearly expressed.

I have a quantity of MS. on hand for Parts II and III, and hope to be able—
—should life, and health, and opportunity, be granted to me, to publish them in the course of the next few years. Their contents will be as follows:—

Part II. Advanced.

Further investigations in the subjects of Part I. Propositions of other forms (such as “Not-all x are y ”). Trilateral and Multilateral Propositions (such as “All abc are de ”). Hypotheticals. └Dilemmas.⁴ &c. &c.

Part III. Transcendental.

Analysis of a Proposition into its Elements. Numerical and Geometrical Problems. └The Theory of Inference. The Construction of Problems.⁵ And many other *Curiosa Logica*.

└It will greatly assist me in composing these two Parts, if my Readers will send me any good examples of Fallacies that they may chance to meet with, or any out-of-the-way Problems, Dilemmas, or other Puzzles in Logic.⁶

P.S.

└I take this opportunity of giving what publicity I can to my contradiction of a silly story, which has been going the round of the papers, about my having presented certain books to Her Majesty the Queen. It is so constantly repeated, and is such absolute fiction, that I think it worth while to state, once for all, that it is utterly false in every particular: nothing even resembling it has ever occurred.⁷

¹Missing in first and second edition.

²missing in first edition

³“in this book” in first edition

⁴First and second editions have additionally: Paradoxes.

⁵only in the fourth edition.

⁶This paragraph appears in the second edition only.

⁷This paragraph appears in the second and third edition only.

Preface to the Fourth Edition.

Source: Symbolic Logic, fourth edition, second edition as “Preface to the Second Edition” with minor differences as noted, third edition as “Preface to the Third Edition” with minor differences as noted

The chief alterations, since the First Edition,⁷⁸ have been made in the Chapter on ‘Classification’ (p. 1044) and the Book⁷⁹ on ‘Propositions’⁷¹⁰ (pp. 1049 to 1049). The chief additions have been the questions on words and phrases, added to the Examination-Papers at p. 1098, and the Notes inserted at pp. 1145, 1173.⁷¹¹

In Book I, Chapter II,⁷¹² I have adopted a new definition of ‘Classification’,⁷¹³ which enables me to regard the whole Universe as a ‘Class,’ and thus to dispense with the very awkward phrase ‘a Set of Things.’

In the Chapter on ‘Propositions of Existence’⁷¹⁴ I have adopted a new ‘normal form,’ in which the Class, whose existence is affirmed or denied, is regarded as the *Predicate*, instead of the *Subject*, of the Proposition, thus evading a very subtle difficulty which besets the other form. These subtle difficulties seem to lie at the root of every Tree of Knowledge, and they are *far* more hopeless to grapple with than any that occur in its higher branches. For example, the difficulties of the Forty-Seventh Proposition of Euclid are mere child’s play compared with the mental torture endured in the effort to think out the essential nature of a straight Line. And, in the present work, the difficulties of the “5 Liars” Problem, at p. 1171, are “trifles, light as air,” compared with the bewildering question “What is a Thing?”⁷¹⁵

In the Chapter on ‘Propositions of Relation’ I have inserted a new Section, containing the proof that a Proposition, beginning with “All,” is a *Double Proposition* (a fact that is quite independent of the arbitrary rule, laid down in the next Section, that such a Proposition is to be understood as implying the actual *existence* of its Subject). This proof was given, in the earlier editions, incidentally, in the course of the discussion of the Biliteral Diagram: but its *proper* place, in this treatise, is where I have now introduced it.

In the Sorites-Examples, I have made a good many verbal alterations, in order to evade a difficulty, which I fear will have perplexed some of the Readers of the first three Editions. Some of the Premisses were so worded that their Terms were not Specieses of the Univ. named in the Dictionary, but of a larger Class, of which the Univ. was only a portion. In all such cases, it was intended that the Reader should perceive that what was asserted of the larger Class was thereby asserted of the Univ., and should ignore, as superfluous, all that it asserted of its *other* portion. Thus, in Ex. 15, the Univ. was stated to be “ducks in this village,” and the third Premiss was “Mrs. Bond has no gray ducks,” i. e. “No gray ducks are ducks belonging to Mrs. Bond.” Here the Terms are *not*

⁸“in this Edition” in the second edition

⁹“Chapter” in the second edition

¹⁰“Propositions of Existence” in the second edition

¹¹Missing in second edition.

¹²“In the first of these” in the second edition, “In the Chapter on ‘Classification’” in the third edition

¹³the Process

¹⁴“In the second” in the second edition

¹⁵Second and third edition differs from here, see below.

Specieses of the Univ., but of the larger Class “ducks,” of which the Univ. is only a portion: and it was intended that the Reader should perceive that what is here asserted of “ducks” is thereby asserted of “ducks in this village.” and should treat this Premiss as if it were “Mrs. Bond has no gray ducks in this village,” and should ignore, as superfluous, what it asserts as to the *other* portion of the Class “ducks,” viz. “Mrs. Bond has no gray ducks *out of* this village”.

In the Appendix I have given a new version of the Problem of the “Five Liars.” My object, in doing so, is to escape the subtle and mysterious difficulties which beset all attempts at regarding a Proposition as being its own Subject, or a Set of Propositions as being Subjects for one another. It is certainly, a most bewildering and unsatisfactory theory: one cannot help feeling that there is a great lack of *substance* in all this shadowy host—that, as the procession of phantoms glides before us, there is not *one* that we can pounce upon, and say “*Here* is a Proposition that *must* be either true or false!”—that it is but a Barmecide Feast, to which we have been bidden—and that its prototype is to be found in that mythical island, whose inhabitants “earned a precarious living by taking in each others’ washing”! By simply translating “telling 2 Truths” into “taking *both* of 2 condiments (salt and mustard),” “telling 2 Lies” into “taking *neither* of them” and “telling a Truth and a Lie (order not specified)” into “taking only *one* condiment (it is not specified *which*),” I have escaped all those metaphysical puzzles, and have produced a Problem which, when translated into a Set of symbolized Premisses, furnishes the very same *Data* as were furnished by the Problem of the “Five Liars.”

The coined words, introduced in previous editions, such as “Eliminands” and “Retinends”, perhaps hardly need any apology: they were indispensable to my system: but the new plural, here used for the first time, viz. “Soriteses”, will, I fear, be condemned as “bad English”, unless I say a word in its defence. We have *three* singular nouns, in English, of plural *form*, “series”, “species”, and “Sorites”: in all three, the awkwardness, of using the same word for both singular and plural, must often have been felt: this has been remedied, in the case of “series” by coining the plural “serieses”, which has already found its way into the dictionaries: so I am no rash innovator, but am merely “following suit”, in using the new plural “Soriteses”.

In conclusion,¹⁶ let me point out that even those, who are obliged to study *Formal Logic*, with a view to being able to answer Examination-Papers in that subject, will find the study of *Symbolic Logic* most helpful for this purpose, in throwing light upon many of the obscurities with which Formal Logic abounds, and in furnishing a delightfully easy method of *testing* the results arrived at by the cumbrous processes which Formal Logic enforces upon its votaries.

This is, I believe, the very first attempt (with the exception of my own little book, *The Game of Logic*, published in 1886, a very incomplete performance) that has been made to *popularise* this fascinating subject. It has cost me *years* of hard work: but if it should prove, as I hope it may, to be of *real* service to the young, and to be taken up, in High Schools and in private families, as a valuable addition to their stock of healthful mental recreations, such a result would more than repay ten times the labour that I have expended on it.

L. C.
29, Bedford Street, Strand.

¹⁶Second and third edition identical from here.

„Christmas, 1896.“¹⁷

Preface to the Second Edition

...

Besides these alterations, I have corrected a number of misprints, some of which have been pointed out to me by friends—but none of my critics have been sharp-eyed enough to detect the splendid misprint at p. 1113, where the following Trio of Propositions is proposed as a Syllogism:—

“A prudent man shuns hyænas;
Anything but gold will fail to silence him.
No banker fails to shun hyænas.”

Kind friends have tried their best, with a really touching confidence in the infallibility of author and printer, to make sense of this hopeless jumble; and no suspicion has crossed their innocent minds (“For they suspected harm from none, They were themselves so good”) that the second Premiss has wandered in here from the opposite page, and has displaced the lawful occupant, viz. “No banker is imprudent.”

„Lastly, I have corrected one terrible mistake of my own, pointed out to me by a logical friend, who wrote that he had twice worked out the “5 Liars” Problem, and brought out the result “no solution.” And it was even so, I had to confess (of course in the appropriate attitude, prostrate, prone, and with ashes on my head). However, by transposing two words, I have set things right, and can now guarantee, to any Reader bold enough to attempt the Problem, that there *is* a solution, if only he can find it!“¹⁸

...

Introduction

Source: Symbolic Logic, second and fourth edition, first edition with minor differences

To Learners.

[N.B. Some remarks, addressed to *Teachers*, will be found in the Appendix, at p. 1146.]

The Learner, who wishes to try the question *fairly*, whether this little book does, or does not, supply the materials for a most interesting mental recreation, is *earnestly* advised to adopt the following Rules:—

(1) Begin at the *beginning*, and do not allow yourself to gratify a mere idle curiosity by dipping into the book, here and there. This would very likely lead to your throwing it aside, with the remark “This is *much* too hard for me!”, and thus losing the chance of adding a very *large* item to your stock of mental delights. This Rule (of not *dipping*) is very *desirable* with *other* kinds of books—such as novels, for instance, where you may easily spoil much of the

¹⁷“May 11, 1896.” in the second edition, “July 20, 1896.” in the third edition

¹⁸This paragraph is missing in the third edition.

enjoyment you would otherwise get from the story, by dipping into it further on, so that what the author meant to be a pleasant surprise comes to you as a matter of course. Some people, I know, make a practice of looking into Vol. III first, just to see how the story ends: and perhaps it *is* as well just to know that all ends *happily*—that the much-persecuted lovers *do* marry after all, that he is proved to be quite innocent of the murder, that the wicked cousin is completely foiled in his plot and gets the punishment he deserves, and that the rich uncle in India (*Qu. Why in India? Ans. Because, somehow, uncles never can get rich anywhere else*) dies at exactly the right moment—before taking the trouble to read Vol. I. This, I say, is *just* permissible with a *novel*, where Vol. III has a *meaning*, even for those who have not read the earlier part of the story; but, with a *scientific* book, it is sheer insanity: you will find the latter part *hopelessly* unintelligible, if you read it before reaching it in regular course.

(2) Don't begin any fresh Chapter, or Section, until you are certain that you *thoroughly* understand the whole book *up to that point*, and that you have worked, correctly, most if not all of the examples which have been set. So long as you are conscious that all the land you have passed through is absolutely *conquered*, and that you are leaving no unsolved difficulties *behind* you, which will be sure to turn up again later on, your triumphal progress will be easy and delightful. Otherwise, you will find your state of puzzlement get worse and worse as you proceed, till you give up the whole thing in utter disgust.

(3) When you come to any passage you don't understand, *read it again*: if you *still* don't understand it, *read it again*: if you fail, even after *three* readings, very likely your brain is getting a little tired. In that case, put the book away, and take to other occupations, and next day, when you come to it fresh, you will very likely find that it is *quite* easy.

(4) If possible, find some genial friend, who will read the book along with you, and will talk over the difficulties with you. *Talking* is a wonderful smoother-over of difficulties. When *I* come upon anything—in Logic or in any other hard subject—that entirely puzzles me, I find it a capital plan to talk it over, *aloud*, even when I am all alone. One can explain things so *clearly* to one's self! And then, you know, one is so *patient* with one's self: one *never* gets irritated at one's own stupidity!

If, dear Reader, you will faithfully observe these Rules, and so give my little book a really *fair* trial, I promise you, most confidently, that you will find Symbolic Logic to be one of the most, if not *the* most, fascinating of mental recreations! In this First Part, I have carefully avoided all difficulties which seemed to me to be beyond the grasp of an intelligent child of (say) twelve or fourteen years of age. I have myself taught most of its contents, *vivâ voce*, to *many* children, and have found them take a real intelligent interest in the subject. For those, who succeed in mastering Part I, and who begin, like Oliver, "asking for more," I hope to provide, in Part II, some *tolerably* hard nuts to crack—nuts that will require all the nut-crackers they happen to possess!

Mental recreation is a thing that we all of us need for our mental health; and you may get much healthy enjoyment, no doubt, from Games, such as Backgammon, Chess, and the new Game "Halma". But, after all, when you have made yourself a first-rate player at any one of these Games, you have nothing real to *show* for it, as a *result*! You enjoyed the Game, and the victory, no doubt, *at the time*: but you have no *result* that you can treasure up and get real *good* out of. And, all the while, you have been leaving unexplored a perfect

mine of wealth. Once master the machinery of Symbolic Logic, and you have a mental occupation always at hand, of absorbing interest, and one that will be of real *use* to you in *any* subject you may take up. It will give you clearness of thought—the ability to *see your way* through a puzzle—the habit of arranging your ideas in an orderly and get-at-able form—and, more valuable than all, the power to detect *fallacies*, and to tear to pieces the flimsy illogical arguments, which you will so continually encounter in books, in newspapers, in speeches, and even in sermons, and which so easily delude those who have never taken the trouble to master this fascinating Art. *Try it.* That is all I ask of you!

L. C.

29, Bedford Street, Strand.

February 21,¹⁹ 1896.

¹⁹“January” in first edition

19.26 An Index to “In Memoriam”

Source: An Index to “In Memoriam”

The principle adopted in this Index is that of referring to each clause under the heading of the most important noun contained in it. Where a clause contains two or more nouns of equal importance, it is referred to under each; and where it contains no nouns, recourse is had to the most important word in it, preference being given to verbs.

The references have been made to sonnets and stanzas rather than to pages and lines, in order that the Index may be equally applicable to different editions of the Poem.

This Index was originally begun for the use of the Compilers, who had found that, in so long a poem, it was difficult to refer readily to passages of which fragments only were remembered. It is now published, with the Poet’s kind permission, in the hope that it may prove of like service to others.

As a specimen, the first entry under “A” is shown here.

	Son.	Stan.	
Index.			ABIDE (<i>verb</i>)
	57.	3.	A. a little longer here
	124.	4.	<i>Abiding</i> with me till I sail

19.27 Notice re Concordance to ‘In Memoriam’

Source: probably printed 1881, also added to advertisements

This was published in 1862, and is adapted to all editions in which the Poem consists of 130 sections. About the year 1870, a new section was introduced as No. 39; for all subsequent editions, the Index may be used equally well, by simply adding “1” to every sectional number above “38.”

19.28 Syzygies and Lanrick

Source: Syzygies and Lanrick

This pamphlet is a portion of a volume, now in preparation, of original Games and Puzzles: it is published in this form, for the convenience of readers of "*The Lady*," with a view to the possibility of another Syzygy-Tournament being started in that Paper.

I have proved, by experiment, that the Puzzle of "Syzygies" is also available as a Game for two Players, and that it is well adapted to relieve the tedium of a railway-journey; since it involves no *reading* (so tiring to the eyes of travelers) or *talking* (so tiring to their voices and ears). The only materials needed are writing-materials—say a couple of memorandum-books. Each Player thinks of a good long word, the longer the better. When *she* has thought of *hers* (I assume the two travelers to be a 'he' and a 'she,' and that 'she' is the quicker thinker) she says 'Ready!': then, when *he* has thought of *his*, the two words are announced, watches are consulted, and the Game begins, each Player trying to make a 'Chain' to connect the two words. At the end of ten minutes (or whatever period they like to fix) the Chains are exchanged and examined, and the scores recorded. Then they think of another couple of words; and so on. Whichever first scores 100, wins: or, if both score it, the highest score wins.

I have taken this opportunity to publish the Rules for "Lanrick," in order to make this game known rather sooner than it would otherwise be, and with the hope of receiving criticisms on it, so as to render it as perfect as possible when published in the volume. Not that *much* increase in perfection can now be hoped for, as the first version of the Rules was written on Dec. 26, 1878, and I have been improving them, off and on, ever since! Every change in the rules has necessitated the playing of several games, to see how it worked.

The chief novelty of this Game—the attempt to play all the men on the Board into a set of squares, whose number is less than that of the men—was suggested to me by the well-known game for children, "Musical Chairs," where the number of chairs is one less than that of the children trying to occupy them. Mine is, I believe, the first attempt to introduce this principle into a game of skill.

Also Rule 5, on p. 1597, was suggested to me by the common expedient, practised by school-boys, for securing a fair division of a cake or an apple, namely "one cuts, the other chooses."

The name "Lanrick" was suggested by a passage in "The Lady of the Lake," where Roderick Dhu, when summoning his clan to the appointed rendezvous, says

"The muster place be Lanrick mead—
Instant the time—speed, Malise, speed!"

Other version:
→ 10.29, p. 1661

Quoted from *The Lady of the Lake* by Sir Walter Scott

Dec. 1892

19.29 Introduction to “The Lost Plum Cake”

Source: E. G. Wilcox: *The Lost Plum Cake* (1897)

The writer of the Introduction to a book, who is *not* himself the author of the book, enjoys one singular privilege—he can discuss its merits with a freedom that very few authors would venture to use: since, however sweet the “blowing one’s own trumpet” may sound to the enraptured trumpeter, it is apt to pall on other ears. Let me, then, avail myself of this privilege by saying that I believe Mrs. Egerton Allen has a very special talent for writing books for very young children. Her dialogues have all the vividness of a photograph; and I feel sure that all *real* children—children who have not been spoiled by too much notice, and thus taught to give themselves the airs of little men and women—will like to read the story of tiny “Joey,” and will enjoy the clever and sympathetic sketches with which Mrs. Shute has adorned it. It is, I think, a real loss to the thousands of child-readers, for whom so many charming books have been written, that Mrs. Allen’s first little book—“Little Humphrey’s Adventure”—has been allowed by the Publishers, who hold the copyright of it, to go out of print. It is a *thorough* child’s book, and I trust the S.P.C.K. may ere long see their way to issuing another edition of it.

But the writer of this Introduction is not alone in his good fortune: the *reader* of this little book has *also* a singular privilege at his command, in connection with the *cover*, which was designed for it by Miss E. Gertrude Thomson. Holding the book at the middle point of each side, and turn it about till the light (which should come from *behind* him) causes what look like little hills on the red cover to glitter, he can then fidget it about—he will soon catch the knack—till the gold ornamentation seems to lift itself a good half-inch off the cover; and he can easily persuade his *eye*, if not his intellect, to believe that, in turning the book about, he is causing the gold to cover now one part of the red and now another. It is a really curious optical illusion.

Let me seize this opportunity of saying one earnest word to the mothers into whose hands this little book may chance to come, who are in the habit of taking their children to church with them. However well and reverently those dear little ones have been taught to behave, there is no doubt that so long a period of enforced quietude is a severe tax on their patience. The hymns, perhaps, tax it least: and what a pathetic beauty there is in the sweet fresh voices of the children, and how earnestly they sing! I took a little girl of six to church with me one day: they had told me she could hardly read at all—but she made me find all her places for her! And afterwards I said to her elder sister, “What made you say Barbara couldn’t read? Why, I heard her joining in, all through the hymn!” And the little sister gravely replied, “She knows the *tunes*, but not the *words*.” Well, to return to my subject—children in church. The lessons and the prayers, are not wholly beyond them: often they can catch little bits that come within the range of their small minds. But the sermons! It goes to one’s heart to see, as I so often do, little darlings of five or six years old, forced to sit still through a weary half-hour, with nothing to do, and not one word of sermon that they can understand. Most heartily can I sympathise with the little charity-girl, who is said to have written to some friend, “I think, when I grows up, I’ll never go to church no more. I think I’s getting sermons enough to last me all my life!” But need it be so? Would it be so *very* irreverent to let your child have a story-book

to read during the sermon, to while away that tedious half-hour, and to make church-going a bright and happy memory, instead of rousing the thought "I'll never go to church no more?" I think not. For my part, I should love to see the experiment tried. I am quite sure it would be a success. My advice would be to *keep* some books for that special purpose—I would call such books "Sunday-treats"—and your little boy or girl would soon learn to look forward with eager hope to that half-hour, once so tedious. If I were the preacher, dealing with some subject too hard for the little ones, I should love to see them all enjoying their picture-books. And if *this* little book should ever come to be used as a "Sunday-treat" for some sweet baby-reader, I don't think it could serve a better purpose.

Lewis Carroll. Christmas, 1897

19.30 Introductions in *The Rectory Magazine*

Source: Rectory Magazine

Reasonings on Rubbish

“Aye, there’s the rub!” Shakespeare.

Quoted from *Hamlet*
by William
Shakespeare

The beginning of a new periodical is always an anxious moment for the editor: the question naturally suggests itself, “What if it should fail altogether?” This, however is a fate which, we must confess, we do not by any means anticipate for this Magazine. We look forwards with confident prospection to the time when, teeming with the voluntary productions of the most gifted and talented authors and authoresses of this country, the Rectory Magazine shall draw from admiring thousands their unanimous and uncalled for plaudits! when it shall become one of the staple and essential portions of the literature of England, when infants shall lisp their first spelling-lessons out of “Reasonings on Rubbish”! “But you are wandering from your subject!” methinks I hear some fidgetty reader exclaim. We question that, good Reader: have we not been writing about our Magazine? and is it not, to all intents and purposes, Rubbish? yea veritable and unmitigated Rubbish. We would, however, make a few remarks, in the capacity of Editor. Many obliging contributors have favoured us with stories &c. in many of which a considerable amount of talent is displayed: these are, with small exception, decidedly of a juvenile cast, and we would observe that this Magazine is far from being *exclusively* intended for Juvenile Readers. We have therefore been compelled, with considerable pain, to reject many of them, being well asured, from what we have already seen, that their authors are perfectly competent to contribute productions of a far more aspiring nature. We would again earnestly request more assistance, otherwise we regret to state that our Magazine will inevitably die out, like an un-replenished fire.

Editor.

Thoughts on Thistles

How strange and unexpected are many of the events of life! I who in bygone years pictured to myself many a pleasing dream of future greatness, when I should be admired and sought after by all my countrymen; when monarchs should condescend to employ me, and thousands should lie prostrate at my feet; when I should tread upon flowers and gorgeous satin drapery; when my trappings should be of gold and silver, and my saddle of the richest morocco; when my food should be the choicest Indian corn, awaiting me in mangers of satin-wood—I who indulged in these delicious speculations in former days, am now browsing upon a thistle! Ah well! The vicissitudes of life are various, (as the Great Chinese philosopher, Confucious, was once heard to mutter to himself in an inaudible tone when no one was near) they are very various and there is no calculating upon them! From henceforth therefore I resolve to take events as they occur, to adapt my conduct to circumstances, to endure with fortitude the blows and kicks my employers may think fit to bestow upon me, and only to repay them by the most enduring obstinacy!

Such were the thoughts of an individual of that most patient tribe of animals, a Donkey, as he quietly awaited by the roadside the return of his master with a load of coals. We beg to state without hesitation that we cordially echo them ourselves, and it only remains for us to remark that we do not intend these remarks in any offensive light, that we have no wish to make a Donkey of our reader, however much in the habit he may be of making one of himself.

Editor.

Things in General

"Scarce wert thou gone." Scott.

Quoted from *Rokeby*
by Walter Scott

The question, "What is your opinion of things in general," has been much oftener asked than answered: it has been so long and so constantly bandied about among small wits that we almost fear to write on so trite a subject. It is our intention on the present occasion to attempt something like an answer to this difficult question. We know that whatever we can see, handle, or think about is a thing, and if the question were confined to some particular thing, as, "What is your opinion of yesterday's gooseberry pudding?" or, "What is your opinion of my new hat?" we could answer, "Never saw a worser," or "A shocking bad 'un," as the case might be, with the utmost confidence and readiness, but the case is changed when the question is indefinitely extended, for our opinions of different things are of course as different as the things themselves, and it would seem impossible to combine all these in one. If the question had been, "What *are* your *opinions* of things in general?" an answer might be given, but it would take volumes to express it. After mature consideration, the only way we can see out of this difficulty is this: as it can by no possibility affect or concern the questioner what your opinion may be, the best and most satisfactory answer to the question appears to be, to ask in a stern and reproachful tone of voice, "What's that to you?"

Editor.



The Rising Sun

Anon

Rust

*“The knights are dust,
'and their good swords rust.”*

Quoted from *The Knight's Tomb* by Samuel Taylor Coleridge

Rubigo, or rust is that sand-coloured powdery covering which appears on iron after exposure to damp; it appears too on various other metals under different names such as verdigris on copper &cc; it never extends beyond a certain depth, and when once formed, it protects the metal underneath, and keeps it from the effects of the atmosphere.

Such is the philosophical definition of rust, and as such, the term is only applicable to metals, but in a metaphorical sense, it's application is more widely extended. Thus ¹there may be a rust of the mind or of the intellect, and there is no fate which we dread more for our magazine than that it should become rusty. We would have it's wheels run smoothly on, the axletrees well oiled by a copious and constant stream of contributions, the dust of stupidity cleared away by the rapidly-moving fan of wit, and all obstacles and impediments removed from it's course by the zeal and attention of it's supporters. And yet, successful as our Magazine has hitherto been, and enthusiastically as it has been received, the fate we have been dreading for it does not seem to be very far distant. We opened our Editor's box this morning, expecting of course to find it overflowing with contributions, and found it—our pen shudders and our ink blushes as we write—empty!

One word more on the nature of rust. As verdigris is a copper oxide &cc. &cc. so rust is usually called an iron



OX-EYED.

Editor.

But

“But let us not proceed too furious.” Goldsmith.

Quoted from *A New Simile, in the Manner of Swift* by Oliver Goldsmith

I *would* have a gorgeous and resplendent castle, fitted up in the first style of elegance and grandeur, superb gardens, full of the choicest and rarest flowers,

¹mistakenly “their” in the original

a magnificent and extensive park, stocked with deer, abounding in natural cascades and artificial fountains, with think-foliaged avenues of trees, an enormous library, containing all the books ever printed in the world, I *would* have every pleasure and convenience that wealth can give, *but*—I can't! Alas! reader, how many bright visions, fairy-like castles in the air, have vanished before the all-potent influence of the little monosyllable, *but*! "Brill," as D^r Johnson finely observes, "*brill would* be turbot, *but*—it can't." Napoleon *would* have conquered all the inhabitable world, England included, *but*—he didn't! And we ourselves *would* gladly prolong this learned article to pages and pages, till our reader fell asleep through weariness, *but*—we can't think of anything more to say!

Editor.

Musings on Milk

Marvellously many materials make milk! Much too many to mention. 'Tis morning, and the merry milkmaid, murmuring a melting melody, moves towards the meadow; the majestic cows move meekly to meet their mirthful mistress; now mantles in the moderate milkpail the marble milk; anon mark many minute masters and misses with measureless mouths march to their morning meat of mighty mugs! Marvellest thou not, my reader, how mankind can be so matchlessly mischievous and madly meddlesome as to molest their mild maintainers? My mind misgives me at the memory of many merciless men, who may monthly be marked in our mighty metropolis, like morbid, morbid monsters, mauling and murderously misusing the mild milch cows! Murky misanthropes! Much do they merit manacles! Methinks their manners meelly mimic mouthing moonstruck maniacs! But let us mind more mundane matters. A missive met my manuals this morning from one of the munificent ad-mirers of this Magazine; morally magnificent as it was, we have not ad-mitted it, because it militates much against the manner in which this Magazine is meant to be managed. It made us mournful, and moved us to melancholy misery, even to moaning. Let not our meaning be misunderstood or misinterpreted. The matters ad-mitted *must* be our ad-mirer's *own*. And more, they *must* be new, lest our magazine merge into a monotonous, mouldy mockery of mirth. With these memorable remarks let me conclude this matter, merely mentioning that as this manuscript is a musing (referring) to milk, we mean this Magazine to be, as much as we can make it, a-musing to all mankind!

Editor.

Ideas upon Ink

"There was a time." Thomson.

There was a time, good Reader,—you will hardly believe us, but the fact is true, nevertheless—there was a time when ink was positively unknown, when manuscripts were labouriously scratched on the leaves of the papyrus, or tablets coated with wax: imagine reading the Times on papyrus, with the leaders on the stalks, the advertisements neatly inserted between the fibres, and a double Supplement, (gratis of course) on a handsome Lotus leaf! imagine plodding through a large volume (literally) in boards, with abundance of cuts, but no plates! if you did'n't stick in the middle, it wouldn't be the wax's fault. To be

Quoted from
Britannia by James
Thomson

sure all you read therein would *stick* by you, and you would *wax* daily wiser and wiser, but still I fancy you would be exceedingly *bored* by it. The other way would be even more voluminous, we should hear the street porters crying, "By your leaf, gentlemen, by your leaf, make way for a copy of the Queen's Speech!" We would have you observe, good reader, the many benefits which the discovery of ink has conferred on Society. It has infinitely lightened the labours of both writer and reader: it has lessened the size of volumes, and at the same time made them more legible: it has increased a hundred-fold the literature of England, and it has procured for your delectation and instruction the publication of that inestimable periodical, the Rectory Magazine.



Editor.

Twaddle on Telescopes

"Give ear." Goldsmith.

We would not have you suppose, good reader, that because this is twaddle, it is not worth your while to peruse it. For there are many books which we are well assured you delight to read, which nevertheless are quite as much twaddle as our Magazine. Nay, perhaps even more, for many of them contain no sort of instruction or benefit for their readers, whereas by perusing *our* far-famed columns, you may lay in a certain store of *useful* and *entertaining* knowledge: do not smile at this assertion, we know it by experience; even while we write we feel that we are gradually rising in the scale of moral elevation, every number of the Magazine we publish elevates us two pegs, and, as certainly, elevates the attentive reader three: yes, reader, if you have carefully and with due attention read the seven numbers of this Magazine already out, you have our warrant for it that you are twenty-one pegs higher in the scale of humanity than you were when you began: that this fact admits of no doubt may be satisfactorily proved by the simple multiplication sum, "seven times three is twenty-one": this

Quoted from *An Elegy On The Death Of A Mad Dog* by Oliver Goldsmith

must convince the most sceptical: argue the matter as you will, the stubborn fact remains as before. Facts *are* stubborn things, as Lady M— is reported to have observed to M^r F— at the conclusion of a long and tedious dispute: he is *said* to have replied, “then what a Fact your Ladyship must be!” but we hope for the honour of humanity he did not. We repeat reader that you *are* morally elevated by reading our Magazine let your heart bound at the thought, though to be sure, *that* direction appears to be *somewhat* superflous, for as the motion of the heart are acknowledged by the best anatomists to be involuntary, it will not be in your power to prevent it. And now, reader, if you suppose that we have been wandering from our subject, all we can say is, we pity your want of discernment.

Editor

Cogitations on Conclusions

“But, to conclude.”

And this is to be our last number! and we, whose unceasing occupation for a period of full six months has been the publication of this magazine,—by-the-bye it wasn't *full* six months, because the Editor was at school for five months of the time—and we, are now to give up our labours, and desert the lofty task of instructing & entertaining the public in general! Ah! well! it would somewhat console us at this melancholy moment to see a fit successor fill our place—but there is none! and yet with onward glance we fancy we can discern the coming brightness of some meteor in the skies, what is it? “is that a Comet which I see before me? with tail of boundless length?” Reader, it is. Farewell.

(Editor.)

Quoted from *Second Treatise of Civil Government* by John Locke

19.31 The Rectory Umbrella

Source: The Rectory Umbrella

Preface

We venture once more before the Public, hoping to receive the same indulgence and support which has been hitherto bestowed on our Editorial efforts. Our success in former Magazines¹ has been decided: each has been more admired than its predecessor, and the last, the Comet, has been so universally believed to be the ne plus ultra of magazines, that we believe the only thing which can put an end to the delusion will be the issue of the Umbrella. We now in full confidence enter on our present duties. *Editor.*

¹Viz: the Rectory Magazine and the Rectory Comet. The "R.M." succeeded "Useful and instructive Poetry."

19.32 Mischmasch

Source: Mischmasch

Preface

“Yet once more,” (to use the time-honoured words of our poet Milton,) we present ourselves before an eager and expectant public, let us hope under even better auspices than hitherto.

Quoted from *Lycidas*
by John Milton

In making our bow for the—may we venture to say so?—forth time, it will be worth while to review the past, and to consider the probable future. We are encouraged to do so by Mrs. Malaprop’s advice, “Let us not anticipate the past: let all our retrospections be to the future,” and by the fact that our family motto is “Respiendo prudens.”

We purpose then to give a brief history of our former domestic magazines in this family, their origin, aim, progress, and ultimate fate, and we shall notice, as we go on, the other magazines which have appeared, but not under our own editorship: we commence our history, then, with

Useful and Instructive Poerty

This we wrote ourselves about the year 1845, the idea of the first poem being suggested by a piece in the “Etonian”: it lasted about half a year, and was then very clumsily bound up in a sort of volume: the binding, however, was in every respect worthy of the contents: the volume still exists.

The Rectory Magazine

This was the first started for general contribution, and at first the contributions poured in in one continuous stream, while the issuing of each number was attended by the most violent excitement through the whole house: most of the family contributed one or more articles to it. About the year 1848 the numbers were bound into a volume, which still exists.

The Comet

This was started by us about the year 1848. It was the same shape as the former, but, for the sake of variety, opened at the end instead of the side. Little interest attended this publication, and its contents were so poor, that, after 6 numbers were out, we destroyed all but the last, and published no more. The last number, we believe, is still in existence.

The Rosebud

This was started in imitation of the Comet, but only reached a second number: the cover of each number was tastefully ornamented with a painted rosebud: the two numbers do not contain much worth notice, but are still preserved.

The Star

Another imitator of the Comet, on a less ambitious scale even than the last: the manuscript and illustrations decidedly below par: some half-dozen numbers still survive.

The Will-O'-The-Wisp

Even inferior to the last: the numbers were cut in a triangular shape: we believe some numbers are still to be found.

The Rectory Umbrella

This we started, we believe, in 1849 or 1850, in a ready-bound square volume. It was admired at the time, but wholly unsupported, and it took us a year or more to fill the volume by our own unaided efforts. The volume exists, and in good preservation, and therefore any further account of it is needless.

We will here notice one or two of our own writings, which have seen more extended publicity than the above mentioned. In the summer of 1854 we contributed two poems to the "Oxonian Advertiser," neither at all worth preservation; and in the Long Vacation of the same year, when staying with a reading party at Whitby, we contributed "The Lady of the Ladle" and "Wilhelm von Schmitz," to the weekly Gazette of that place. Both will be found inserted in this volume. From this subject we hasten to the consideration of the present magazine.

Mischmasch

The name is German, and means in English "midge-madge," which we need not inform the intelligent reader is equivalent to "hodge-podge": our intention is to admit articles of every kind, prose, verse, and pictures, provided they reach a sufficiently high standard of merit.

The best of its contents will be offered at intervals to a contemporary magazine of a less exclusively domestic nature: we allude to the "Comic Times"; thus affording to the contributors to this magazine an opportunity of presenting their productions to the admiring gaze of the English Nation.

Croft. Aug: 13. 1855.

Notice to the Public

Source: Mischmasch, including a newspaper cutting from the Whitby Gazette, September 28, 1854

Introduction to *Wilhelm von Schmitz* (→ 3.6, p. 638) and *The Lady of the Ladle* (→ 18.163, p. 2358)

The two following compositions, "Wilhelm von Schmitz" and "The Lady of the Ladle," were originally published in the "Whitby Gazette," a weekly periodical, price one penny: what opinion the Editor of that paper formed of them may be judged from his farewell address, inserted below.

As the scenery and many of the allusions refer to Whitby, the papers may not prove very intellegible to the general reader; still, if they succeed in imparting

one transient glow of satisfaction to the breast of any individual however humble, or in awakening one sickly smile on the countenance of any reader however disreputable, the author's incessant and exhausting toil of sixteen long years will have been abundantly repaid.

The Publisher of the Whitby Gazette in issuing the last number for the first season, gratefully acknowledges its favourable reception, and although he cannot but own that the literary department as a whole, has not been of a high or specially attractive nature, yet the object originally intended has been realized, namely, the publishing of a List of Lodging Houses and Visitors, for the use of the greatly increased number who have sought health and recreation amid the attractions of of this rapidly rising watering place.

Although as a pecuniary speculation the past would not warrant him in promoting its re-appearance, yet, confidently hoping that its usefulness will be more generally owned, he respectfully announces that at the proper season it will again be issued.

Thanks are awarded to those who have taken an interest in its publication and have so kindly furnished materials for its columns, and hopes are entertained that the services of those and other kind friends will again be afforded when the publication is resumed.