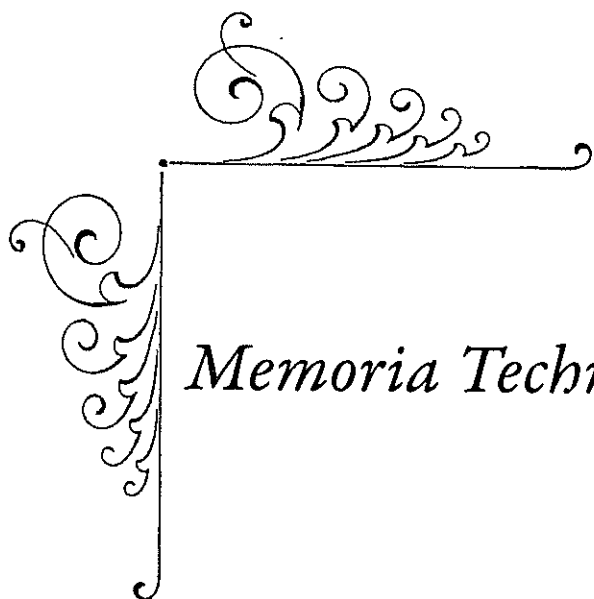


*Rare, Uncollected,
Unpublished,
& Nonexistent Verse
of Lewis Carroll*

*Collected and Annotated by
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Memoria Technica





Lewis Carroll's own account of his "Memoria Technica" was first published as a cyclostyled sheet in 1877 and revised in a new and typewritten sheet issued in June 1888. It was reprinted in Stuart Dodgson Collingwood's *Life and Letters of Lewis Carroll* (London: T. Fisher Unwin, 1898) pp. 268-269.

My "Memoria Technica" is a modification of Gray'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 "quattuor."
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," and "k" from the Greek "okto."
9. "n" from "nine"; and "9" because it is so like a "g."
10. "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	i	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 :—

492

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 poetic faculty must now be brought into play, and the following couplet will soon be evolved :—

“Columbus sailed the world around,
Until America was FOUND.”

If possible, invent the couplets for yourself; you will remember them better than any others.

June, 1888.



A Further Note on Memoria Technica

EDWARD WAKELING

Memoria Technica was a system devised by Dodgson, based on a previous scheme by Dr. Grey, for using a rhyming couplet to remember key dates and mathematical data. Dr. Richard Grey (1694-1771) published *Memoria Technica, or Method of Artificial Memory* in 1730, but a new revised edition was published in 1851 (J. Vincent, Oxford). Dodgson probably consulted this new edition. The system required the memory of gibberish words in order to derive numbers and dates. Dodgson realised that if a person had difficulty in remembering a number, they would have as much difficulty in remembering a gibberish word, hence his improvement requiring only the memory of a short appropriate rhyming couplet. Each consonant is allocated a number (and occasionally vowels and vowel sounds) and this provides the required date or number. For example "Look wild. No hams! O my!" was found on a fragment among Dodgson's mathematical papers at Princeton. *Memoria Technica* gives the following numbers (see table below including vowels and vowel sounds as listed):

5, 8, 8, 2, 3, 5, 2, 9, 4, 1, 7, 6, 4, 7, 0

l	2	3	4	5	6	7	8	9	0
b	d	t	f	l	s	p	h	n	z
c	w	j	qu	v	x	m	k	g	r
a	e	i	o	u	au	ee	oo	ou	y

This turns out to be the first part of one-seventeenth written as a decimal:

0.058823594176470

Whether remembering the phrases and verses is more effective than using tables is open to doubt. Dodgson developed the idea in June 1877, but continued to modify and improve his method over several years. The table given above is the last version and applies to most of the rhyming couplets given below. He indicated that on 21 March 1878 he had written verses that gave him π to 102 decimal places, but this has yet to be identified.

MEMORIA TECHNICA

1875

Mathematical poem, dated December 2, 1875, which is a memoria technica for finding inverse sines of seven angles to seven significant figures:

In France they screech "Egal!" The gangs
 Of doctors cry
 "Cachexy! Dy!"
 In China there are no few Changs.
 That claret, though you think it good,
 Is thaunny from the blotchy wood.
 Some synonym for "onion"? Speak!
 You answer, with acumen, "leek."

The Memoria Technica produces:

α	07.62815	<u>screech "Egal!"</u>
β	16.26020	<u>cachexy dy</u>
γ	22.61986f	<u>ew Changs</u>
δ	30.51023	<u>that claret</u>
ϵ	36.86990	<u>is thaunny</u>
ζ	43.60282	<u>blotchy wood</u>
θ	57.29578	<u>acumen leek</u>

SOURCE: MS: Princeton

MEMORIA TECHNICA

CIRCA 1875

Mathematical poem, not dated, which is a memoria technica for two key cosines:

One rock upon my lee I jag
 By pounding it with cannon, Oo!
 Its nobbut souch I call a crag,
 "Thy queen" is written "queen thy" too.

The Memoria Technica produces:

[1] $\cos. 05.73918$ degrees gives 0.994989

[2] $\cos. 11.53696$ degrees gives 0.979800

SOURCE: MS: Princeton

MEMORIA TECHNICA

CIRCA 1875

Mathematical verses, not dated, which are a memoria technica for the logarithms for the prime numbers 2, 3, 5, 7, 11, 13, 17 and 19 to seven significant figures:

Two jockeys to carry
 Made *that* racer tarry.
 Tres puellas amabat,
 Sed quam pauca dabat!
 Five fingers he plies,
 Yet wins no huge prize.
 Seven Dials! Oh dear!
 There's a watchful rogue here!
 Eleven at cricket: "Short Slip"
 Must be active and perfect in dip.
 Thirteen diners: you won't hear poor me
 Say "shabby!" to any fit fee.
 Ah, sweet Seventeen! If you've money,
 Your hive has a sweet roof of honey.
 At nineteen to his club house he trots,
 Where much change for the Kingdom he plots.

The Memoria Technica produces:

log. 2	.3010300
log. 3	.4771213
log. 5	.6989700
log. 7	.8450980
log. 11	1.0413927
log. 13	1.1139434
log. 17	1.2304489
log. 19	1.2787536

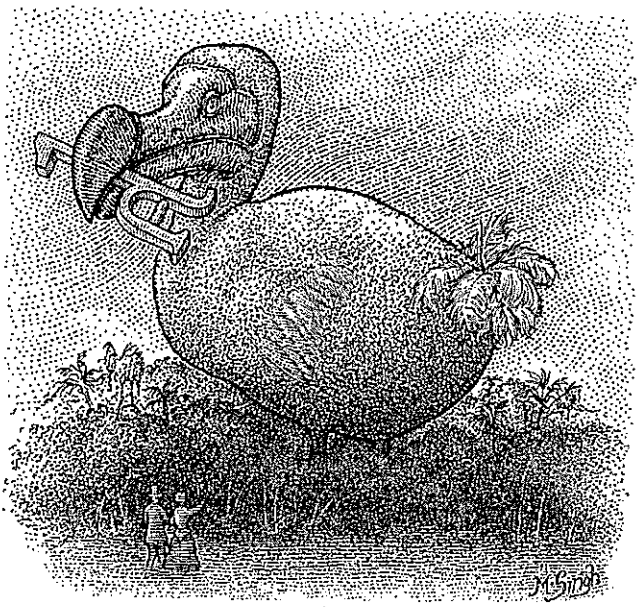
NOTE: To read the numbers, this example may help. The opening of the last verse gives the logarithm in question, here "log 19."

Take the last part of the second line of the verse - "dom he plots" and, ignoring the vowels, convert the consonants into numbers using the table given above. The result will be 2787536.

TRES PUELLAS: He loves three girls but how little he gives them.

SHORT SLIP: in the game of cricket a fielder behind the batsman on the off side of the field.

SOURCE: MS: Princeton



MEMORIA TECHNICA
Kings and Queens of England

NOT DATED, C. 1875

8 Henrys:

crazy | belief | we cause | to none:
 a fact, | if dead | of a hil- | ly run.

In each case, 1000 needs to be added:

100 | 154 | 216 | 399

413 | 422 | 485 | 509

e.g., Henry VIII came to the throne in 1509

6 Edwards:

we made | a trap | (at *you* we aim),
 of ox-be|ef, key to | oily fame.

272 | 307 | 327

461 | 483 | 547

4 Williams:

roses | irk me:
 seek an | oak-tree. (ax *any* fee).

066 | 087

689 | 830

4 Georges:

pacify | Madam ?
 misery | - hider!

714 | 727

760 | 820

3 Richards:

a boy, akin | to me, my
 foe, I hate!

189 | 377

483

2 Charles, 2 James:
 sad lo|ss I rue!
 sour jo|ys have you!
 625 | 660
 603 | 685

Stephen—John:
 active—begone!
 135 | 199

Mary and Elizabeth:
 I love it!
 I love ho!
 553 | 558

Anne—Victoria:
 Poor I die
 Hay-time
 702 | 837

Execution of Charles:
 We pardon faults like thine,
 Whose ending was so fine.
 649

Cromwell made Protector:
 Ambition was *thy* fault:
 Thine own self to exalt.
 653

SOURCE: MS: Princeton



MEMORIA TECHNICA

JUNE 27 1877

"Shout again! We are free!"

Says the loud voice of glee.

"Nestle home like a dove,"

Says the low voice of love.

[Gives the two dates of the "Israelites leaving Egypt"—1495, and the "Israelites enter Canaan"—1455]

NOTE: This is one of the better examples of a "Memoria Technica" verse fitting the sense of the event.

SOURCE: MS: Texas

MEMORIA TECHNICA

CIRCA 1877

Specific Gravities of Metals, &c.

[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.

19.36

Silver:

With Silver the young soldier tip,

And with a new sabre equip.

10.47

Copper:

I bet you a copper that nook

Is the place where the salmon broke hook.

08.88

Tin:

It is merely a question of Tin,

Where the wealthier suitor may win.

07.29

Lead:

Leaden shot had been busy that day,

Where many a dead rabbit lay.

11.35

Iron:	Yes, Iron's the metal, old stoker, To make a superior poker!	07.80
Brass:	Brass trumpet and brazen bassoon Will speedily mark you a tune.	08.39
Mercury:	Quicksilver is quicker by far Than the liveliest live rabbits are.	13.60
Platinum:	Of Platinum's little to spare: It is a commodity rare.	23.00
Lithium:	From Lithium dread no fatigue, Though a lump you should carry a league.	00.59
Glass:	Spun Glass will delight girl or boy: Nothing else makes so pretty a toy.	03.33
Deal:	Yes, Deal is the timber old mate, To make you a door or a gate.	00.93
Cork:	This Cork to my shoulders I tie, And all marine terror defy.	00.24
Alcohol:	For Alcohol cherish a dread; In excess it will injure your head.	00.82
Sea-water:	Sea-water is held in repute An invalid's health to recruit.	01.03

NOTE: Printed poorly in Winkfield *Circular* II, p. 45.

DEAL: A soft wood, usually pine.

SOURCE: MS Texas

MEMORIA TECHNICA

1877-1878

Mathematical poem, dated as begun on 11 June 1877 and finished on 26 March 1878, which derives by memoria technica the logarithms of the numbers 101 to 109 and 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 five-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!

=====

The last five consonants (not including “y”) in the third line of each stanza give the logarithm of the three digit number commencing 101.

The last five consonants in the fourth line of each stanza give the logarithm of the four digit number commencing 1001.

For example, from the first two stanzas:

log. 101 is [2.00] 43214

log. 1001 is [3.00] 04341

log. 102 is [2.00] 86002

log. 1002 is [3.00] 08677

Again all are derived by “*memoria technica*.”

NOTE: Published in *Winkfield Circular* II, p. 46.

SOURCE: MS: Princeton

MEMORIA TECHNICA FOR SINES

JANUARY 6 1888

I ne'er limit nice pay
 When your river I buy.
 "Bridge, be built soon," I say:
 "I'll be carried o'er dry."

Of this welcome flame's ray
 No refuser I see:
 They sedately make chay
 For the market, if he
 Permits his age gray
 To inflict it on me —
 What a poor mob ye be!

Dividing your pie by 180!
 You won't find *this* recipe fail you "a tatey." [0.0174533 = $\pi/180$]

When over a pie all you rascals I take
 How empty and lame a denial you make. [57.29578 = $180/\pi$]

Line	Sine	Angle in degrees	(1—Cosine)
1	0.1	05.73917	
2	0.1		0.00501
3	0.2	11.53696	
4	0.2		0.02020
5	0.3	17.45760	
6	0.3		0.04606
7	0.4	23.57818	
8	0.4		0.08348
	0.5	30	
10	0.5		0.13397
9	0.6	36.86990	
11	0.70711	45	

NOTE: "tatey" or "tatie" means a potato or part of a Cornish "pasty." It also has an astrological sense involving the number 8 and the planet Saturn.

For some reason, Dodgson changes the order of the poem to fit the sines. There is no line in the poem for $0.5 = \sin 30$ and $0.6 = (1 - \cos) 0.2$, and lines 9 and 10 are reversed. He probably did it to make the poem rhyme every other line.

SOURCE: Private collection

MEMORIA TECHNICA

1891

Gives dates of Easter Sunday

1891 / 1892 / 1893

To dine/ if I come/a queer way

Mar. 29/Ap. 17/Ap. 2

1894 / 1895 / 1896

To weave/ fib of a /faëry lay,/

Mar. 25/Ap. 14/Ap. 5

1897 / 1898 / 1899 / 1900

Quick/ fibre, /afraid/ of clay./

Ap. 18/ Ap. 10/ Ap. 2/ Ap. 15

NOTE: originally sent to Ethel Lucy

SOURCE: MS: NYUL (Berol) Manuscript XIX-551

ALICE J. COOPER

JANUARY 21 1892

*Memoria Technica for the foundation of St. John's College,
Oxford (1555).*

They must use a good bevel,

Their lawn is so level.

NOTE: Alice J. Cooper was the first headmistress of the Edgbaston School for Girls, which was founded in 1876, making it the oldest girls' secondary school open to the public in Birmingham.

SOURCE: MS Edgbaston High School, Birmingham, England.

MEMORIA TECHNICA

OCTOBER 16 1894

The First Crusade.

The First Crusaders all
Deserved a coronal. [1095]

Wycliffe's Bible completed.

The Bible to translate
Brought Wycliffe nought but hate. [1383]

French Revolution.

I loathe your cry of "Liberty!
"Equality, Fraternity!"
A miserable orphan I. [1789]

SOURCE: MS private collection

MEMORIA TECHNICA

NOT DATED

Cried Alfred "Onward press!
"The Danes are in a *mess*! [766]

Exit Doctor, in grief
"He has taken *to beef* [314]

At five I awoke,
With the rest of the *folk* [458]

Birth of the celebrated E. L.

So beautiful, she has a job
To shun the notice of the mob! [1871]

NOTE: Edith Elizabeth Lucy (1871-1907) was the daughter of William Lucy, an iron-founder, and his wife, Alice. She was a pupil in Carroll's logic class at the Oxford High School. See *Diaries*, Vol. 8, p. 338, etc. *Letters*, Vol. II, p. 683-684, etc.

SOURCE: The first three memoria technica examples above are in a private collection.

MEMORIA TECHNICA

NOT DATED

Brasenose:

With a nose that is brazen
Our gate we emblazon

[1509]

Christ Church:

Ring Tom when you please:
We ask but small fees.

[1546]

Discovery of America:

Columbus sailed the world around
Until America was found.

[1492]

*Battle of Crécy:*

The string is wet! If so,
Useless is my bow.

[1346]

SOURCE: Collingwood and Evelyn Hatch's *A Selection from the Letters of Lewis Carroll* (London: Macmillan, 1933) pp. 230-234.

MEMORIA TECHNICA

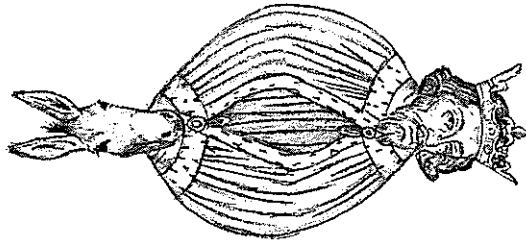
UNDATED

Dates of Treaties

- 878 Wedmore
 [What King Alfred's wife, said, on being told that he meant to marry nine more wives.]
 "What, WED MORE nine more wives?" said Mrs. A.
 "Alfred's a donkey! Give him hay!"

NOTE: The treaty, which has not survived, was between King Alfred and the Viking leader Guthrum at Wedmore in Wessex.

SOURCE: NYU



- 1360 Brétigny
 The newsboys BRAY "Come, buy, Sir,
 The Morning Advertiser!"

NOTE: Treaty at Brétigny between King Edward III of England and King John II of France ended the first phase of the Hundred Years War.

SOURCE: NYU

- 1520 Troyes
 "Would changing 'TROYES' to 'TROYER'
 Be legal?" "Ask a lawyer."

NOTE: Should read 1420. This refers to the agreement that King Henry V of England and his heirs would inherit the French throne upon the death of King Charles VI of France.

SOURCE: NYU

- 1703 Methuen
 By METHUEN the English Court
 Reduced the duty on port.

NOTE: A military and commercial treaty between Portugal and England that was negotiated by John Methuen, British ambassador to Portugal, and signed in 1703. Dodgson

had originally thought Methuen was a place name and therefore wrote "At METHUEN." In a letter of Feb. 11, 1897, he wrote to a Miss Hodgson:

I need not wait any longer for a reply from your wicked little niece (who, apparently, has not recovered her temper after being reprimanded for giving me a wrong date) for information about "Methuen" and "port wine," as I have learned elsewhere. So I enclose the rhymes and with love to the sullen little culprit.

The next day, Feb. 12, he again wrote to Miss Hodgson only to say,

Please alter "At Methuen" to "By Methuen."

These two letters are not in Morton Cohen and Roger Lancelyn Green's edition of *The Letters of Lewis Carroll*. Nothing further is known about Miss Hodgson or her niece.

SOURCE: NYU

1713 Utrecht
 [What Queen Anne said about it.]
 "The Peace of UTRECHT
 Will make an impression
 On Spanish Succession,
 I fully expect!"

NOTE: Treaty signed by the major belligerent parties to end the War of Spanish Succession, thereby establishing the "Peace of Utrecht."

SOURCE: NYU

1748 Aix-la-Chapelle
 "How my teeth ACHE!
 Making me quake!"

NOTE: Treaty of Aix-la-Chapelle ended the War of Austrian Succession.

SOURCE: NYU

1783 Versailles
 [What the Boston men said.]
 "WhoEVER SAILS upon this sea
 May ell the fish, ten years ago
 We sent them some supplies below,
 To help them to make tea!"
 [N.B. This was the only chance the Boston fishes ever got of
 enjoying a *really good cup of tea.*]

NOTE: Also called the Treaty of Paris as well as the Treaty of Versailles, it ended the American Revolutionary War.

SOURCE: NYU