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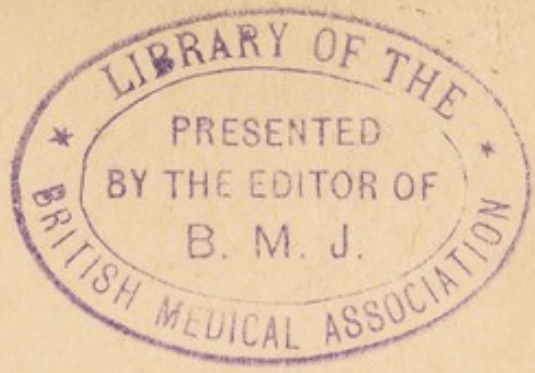
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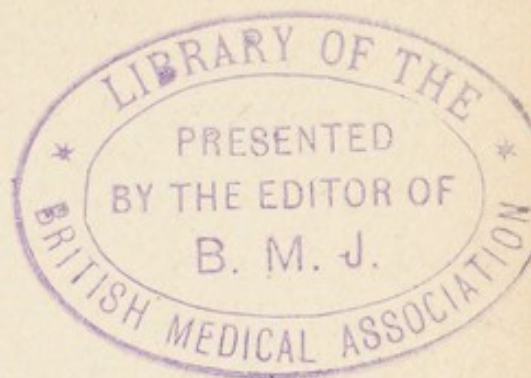
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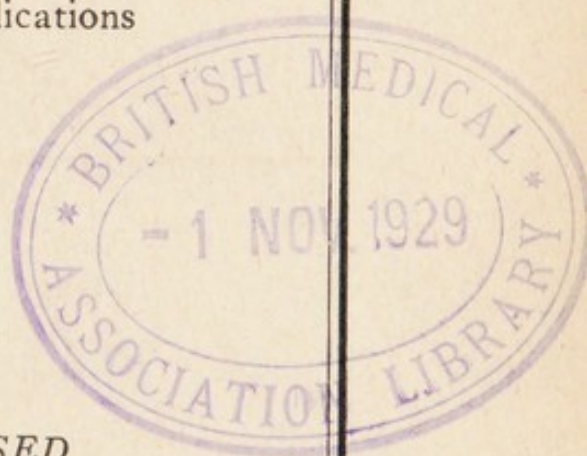
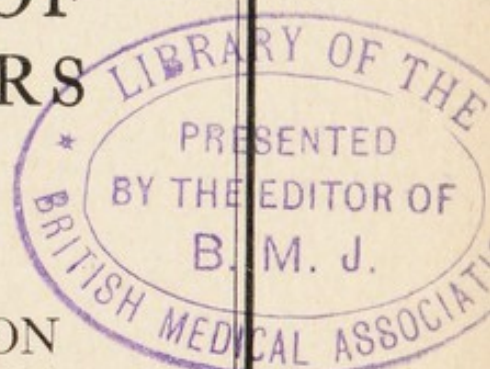
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THE WRITING OF MEDICAL PAPERS

BY

MAUD H. MELLISH-WILSON

Editor of The Mayo Clinic Publications



THIRD EDITION, REVISED

PHILADELPHIA AND LONDON

W. B. SAUNDERS COMPANY

1929

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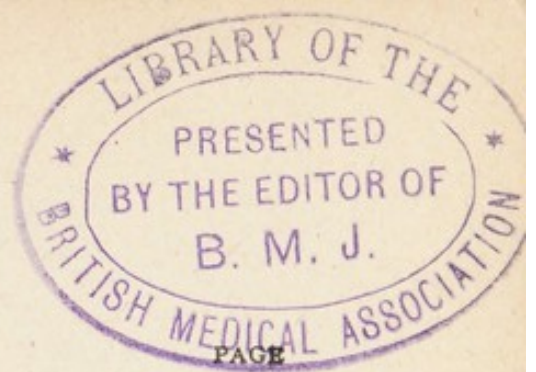
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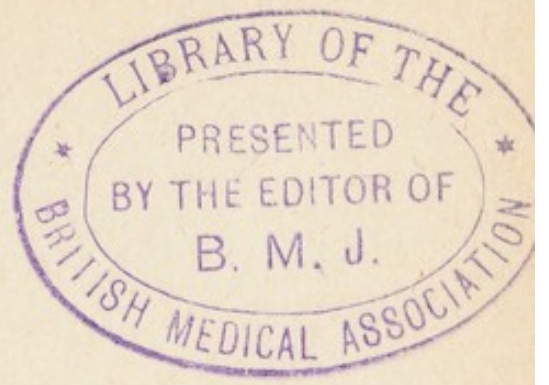
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The artist uses whatever material and whatever forces he finds at hand, but he does not allow himself to be mastered by them. And when he has finished his work, he does not fall down before it. He looks at it critically, he sees its limitations, and he plans a new work which he hopes may surpass it.—*Crothers*.



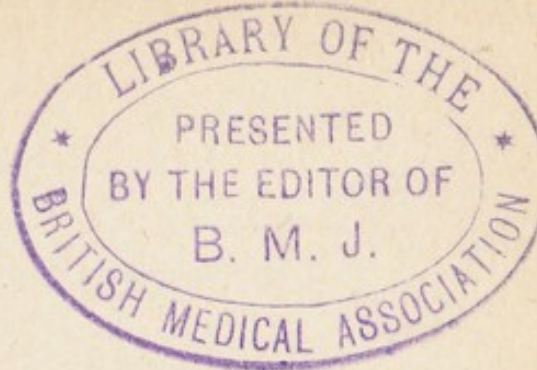
INTRODUCTION

Many men and women who unfortunately do not possess the art of writing and have not acquired its usable substitute, the craft of writing, have yet chosen medicine as a life-work, for success in which they should be able to write well for the medical profession. They desire therefore to acquire the craft of writing with the least possible effort or delay. For these there is a need, not for new manuals, but for a handbook adapted especially to their profession and including the essential points to be found in general textbooks. The present handbook is an attempt to supply this need in a brief form, for writers of medical papers, and for those who edit, or read proof on such papers.

Quotations have been used freely where the thought has been already happily expressed by others. The topics have been reduced to a minimum, and rules have been made definite, even dogmatic, that they may be easy to refer to and follow. The subject matter has been arranged in two parts: specifically technical, Chapters I to VII, and general, Chapters VIII to XX.

It is hoped that the book may help untrained and partly trained writers to prepare for publication articles that will convey information with brevity, accuracy, and clearness, and adhere to the accepted forms of present day usage. The volume is necessarily incomplete; the excuse for this is the purpose in view; its justification rests with those who use the book.

The author takes this opportunity to express her appreciation of the books quoted, and the pleasure and benefit she has derived from their study.



THE WRITING OF MEDICAL PAPERS

CHAPTER I

GOOD USAGE

Every man has the fullest liberty to indulge in any sort of linguistic asceticism under the illusion that he is setting an example of linguistic holiness. It is only when he insists that others cannot be pure without accepting his notions of purity that he becomes objectionable.—*Lounsbury*.

The above and the following quotations apply with particular fitness to the language of the science of medicine, with its ever changing theories and methods, evolving in turn new words and phrases, some of the more worthy of which in time may be adopted into the vocabulary of medicine.

Writers should not be too ready to follow others in the misuse of terms or words. The medical vocabulary of today is by no means meager and the practical writer will do well to confine himself to that which is already in established use. The coining of words of doubtful value obviously is not the function of busy men or women whose privilege it is to select from

an established vocabulary those best adapted to their purposes. It is often desirable to give new meanings to old words, but this too may become a much abused practice and may be safely eliminated from ordinary writing.

The use of unnecessary foreign words or phrases when English serves the purpose as well or better is often nothing more than affectation, and should be rigidly guarded against and discouraged. The effect on the reader of such construction is usually not what the writer would desire; it is likely to irritate rather than to flatter.

Yet to be regarded as a "purist in style" I have no claim, and certainly no ambition. It is not with my goodwill that the "reviewer" too often busies himself with details of style to the neglect of the stuff of a book. The pedant is not confined to the academy, and to cavil at words is easier by far than to arrive at a judgment upon the matter of them. That in literature, as in society, good form is useful, we are now to learn, but in the amenities of form it shall not be said of us that in a coxcombry of manners we become too exquisite for the primary forces of the human mind.¹

A language, like a living creature, bears its whole history in its own being; it is what it is today because of what it did and was yesterday. Usage is the final law of language, and violations of usage, though they may on occasion be justifiable, are linguistic errors. What was once an error may become usage; it then ceases to be an error and becomes correct.¹⁶

Obscurity, however, may exist or be avoided in ways that have nothing to do with either grammatical or rhetorical rules. A writer, for instance, may use obsolete or provincial forms of expression, or foreign words, in doing either of which he lays himself open to the charge of using bad English as well as obscure diction. A foreign word, of course, may or may not be clear, according to the degree of knowledge of the person to whom it is addressed. It used to be presumed that every well educated person knew Latin, and it was therefore admissible to use Latin words and quotations quite freely in any work addressed to people of education. But in our time, education does not follow fixed lines, and it is quite possible that one may be well educated without a knowledge of the classical tongues. Much Latin, or even any Latin at all, therefore, may sin against clearness. The same may be said of French, German, and other languages.⁶

Choose words already approved and in use.

Hesitate to give new meanings to old words.

Do not invent words.

Use only English words and phrases.

CHAPTER II

VOCABULARY

If the word first accepted is precisely the word wanted, to vary it is to vary the sense, to confuse the argument, and to vex the reader.—*Lounsbury.*

The accurate use of a large vocabulary of words clear and sharp in their meaning marks the scholarly writer. In the study of the craft of writing the acquiring of such a vocabulary and of ready skill in its use should be the first consideration. New words or those new to the student should be painstakingly investigated before they are appropriated and utilized. In this way only can accuracy in the use of many words be attained.

Nevertheless, while a meager supply of words is often a handicap to convincing and pleasing diction, in many instances writers of medical papers will find it more important to clear up their vocabularies than to enlarge them. Irrelevant words and words remote in application should be unhesitatingly eliminated. If suitable ones cannot be found to take their places, the manuscript should be

reconstructed so that it will read logically and harmoniously without them. The chief fault of the inexperienced writer is the use of too many words.

No language has so complex and varied a vocabulary as English. Our everyday speech includes a multitude of words from all periods of history, and every quarter of the globe. All the great civilizations have contributed to our vocabulary. Indeed, the history of English words is the history of our civilization in all its aspects.¹³

Out of the army of terms that offer themselves for admission in every generation, but a very limited number find lodgment in the speech. Nor do these, save in the rarest instances, displace or make obsolete those already there.¹⁵

The habit which injures one's vocabulary most is the habit of using crystallized phrases. Thought and the real phrasing of thought soon become impossible.¹⁶

When we call a word popular we do not mean that it is a favorite word, but simply that it belongs to the people as a whole, that is, it is everybody's word, not the possession of a limited number. When we call a word learned we do not mean that it is used by scholars alone, but simply that its presence in the English vocabulary is due to books and the cultivation of literature rather than to the actual needs of ordinary conversation.

Here is one of the main differences between a cultivated and an uncultivated language. Both possess a large stock of popular words, but the cultivated language is also rich in learned words, with which the ruder tongue has not provided itself simply because it has never felt the need of them.

There is nothing abnormal about slang. In making it men proceed in precisely the same manner as in making language and under the same natural laws. The motive,

however, is somewhat different, for slang is not meant simply to express one's thoughts. Its coinage and circulation come rather from the wish of the individual to distinguish himself by oddity or grotesque humor. Hence slang is seldom controlled by any regard for propriety, and it bids deliberate defiance to all considerations of good taste.¹³

Acquire a large and varied vocabulary from which to select the most fitting words.

Do not repeat a word or phrase needlessly, although repetition is preferable to awkward or labored avoidance of it.

Before using unfamiliar words, thoroughly investigate their meaning. Consult the dictionary.

Use words accurately.

Discard irrelevant and needless words.

Avoid crystallized phrases.

CHAPTER III

ITALICS

Italics should be used sparingly to express emphasis. The practice of italicizing words too frequently spoils rather than adds to the effect, and wearies the reader.—*Manly and Powell*.

The gradual disuse of italics as a means of emphasis, and for such foreign words as may not have been discarded from the English language, is welcomed by readers who are invariably annoyed by this method of attracting their attention. Italics in English and their substitute, the wide spacing of the letters of a word so common in German literature, equally insult the intelligence of the reader. Their use for the purpose of calling attention to humor or irony is undignified. However, there are various uses to which italics may be properly applied, for example:

Inserted subheads in papers; foreign words; symbols (*a*), (*b*), (*c*), and so forth, used to indicate subdivisions when beginning a paragraph; particular letters of the alphabet when referred to as such (the letter *u*, a small *v*),

and periodicals, titles of books or articles quoted in regular matter, unquoted in footnotes, and so forth.

To indicate in manuscript the use of italics, a line should be drawn under the letters, words, or sentences. Quotation marks are not used with an italicized word.

Italicize scientific names of genera and species when used together, such as *Stegomyia calopus*, *Streptococcus pyogenes*, *Bacillus tetani*, *Bacillus subtilis*, and *Micrococcus nitrificans*. Many names of genera have become naturalized as common nouns and should be set in Roman when standing alone, for example, bacillus, streptococcus, staphylococcus, treponema, spirochete, micrococcus, blastomyces, ankylostoma, anopheles, paramecium, and streptothrix.

ILLUSTRATIVE LIST OF WORDS STILL ITALICIZED

ab ovo	ibid. (ibidem)	par excellence
amour-propre	idem	persona non grata
bête noire	in re	raison d'être
chef-d'œuvre	inter alia	savoir faire
coup d'état	intra vitam	sui generis
esprit de corps	ipso facto	tour de force
ex parte	loc. cit. (loco citato)	vis à tergo
ex post facto	mens sana in corpore sano	vis medicatrix naturæ

ILLUSTRATIVE LIST OF WORDS NO LONGER ITALICIZED

ad infinitum	fête	per rectum
aide de camp	fistula in ano	per se
alma mater	furunculosis orientalis	personnel
alveolar carcinoma	grand mal	petit mal
anlage	gyrus angularis	postmortem
a posteriori	habeas corpus	prima facie
a priori	habitué	privat docent
apropos	in extenso	pro and con (tra)
attaché	in loco	protégé
bas-relief	in maximo	pro tem (pore)
bona fide	in minimo	questionnaire
café	innuendo	queue
charge d'affaires	in situ	régime
clientèle	in statu quo	rendezvous
confrère	in utero	résumé
connoisseur	in vitro	réveille
crèche	in vivo	rigor mortis
criterion	locum tenens	rôle
culdesac	massage	savant
data	mêlée	(sic)
débris	modus operandi	sine die
début	morale	sine qua non
décolleté	motif	sobriquet
dénouement	naïve	soirée
de novo	net	status epilepticus
depot	niche	terra firma
doctrinaire	nil	tête-à-tête
éclat	nom de plume	tonneau
élite	os calcis	"treppe"
ennui	papier mâché	umlaut
entrée	per annum	verbatim
erratum	per capita	versus
ex officio	per cent	via
exposé	per contra	vice versa
façade	per os	vis-à-vis
facsimile		visé

Avoid the use of italics and the wide spacing of words for emphasis.

Use italics for subheads in manuscript, for figures and letters subdividing paragraphs or sentences, and so forth.

Italicize foreign words until their frequent use results in their adoption into English.

Underscore with a single line to indicate italics.

CHAPTER IV

ABBREVIATIONS, TABLES, AND MISCELLANY

Abbreviations are in bad taste in literary compositions of any kind, including letters. Use no abbreviations except those which you know are employed, not by the newspapers and writers of common-place business letters, but by recognized masters of English prose.—*Woolley*.

While standard abbreviations may be used quite correctly in technical papers, tabulations, and so forth, they should in general be used sparingly, and they should always be used consistently. Compilations of tabulations and statistics should not be abbreviated in one column and then, because space seems to permit, spelled out in the next column. It is quite possible for the casual writer to be wholly inappreciative of the time and care expended by editors in recasting and checking tabulated data. The writer himself should experience the satisfaction which follows the accomplishment of an orderly grouping of figures and statistics. In arranging tabulations the size of the journal page must be con-

sidered. Data should be condensed to fit the space. A printed table may be continued on the next page; it should not be folded.

Long complicated tabulations, if made at all, should be made only after careful consideration, and with the conviction that the

WATER ADMINISTRATION

Animal	Weight, kg.	Water, c.c.	Hours elapsed	Gain in weight, kg.	Comment
Dog	6.1	1800	3	0.5	Fasted three days
	6.0	2400	4	0.4	Fasted one more day
Dog	5.9	3600	8	0.6	Normal
	5.7	3300	5	0.7	Fasted two days
Cat	3.0	1700	6	0.7	Normal
Rabbit	1.7	400	3	0.3	Normal
Guinea pig . . .	0.7	220	4	0.2	Normal

data cannot be presented in simpler form. [It is doubtful if such tabulations ever repay the labor involved in their construction.

Definite proportions should be adhered to in tabulating material for lantern slides. The proportion should conform to the size and shape of the slide. A space 10 by 8 inches

should not be exceeded for the typewritten copy. The amount of reduction within this limit and the excellence of the reproduction will depend largely on the skill of the statistician. The figures and lettering should be very black against a white background in

WATER ADMINISTRATION

Dog	Weight	Amount of H ₂ O	Time elapsed	Gain in weight	Percentage increase	Remarks
E 713	6.1	1800	3 hours	0.5		Fasted 3 days
E 713	6	2400	4 hours	0.4		Fasted one more day
E 804	5.9	3600	8 hours	0.6		Normal
E 804	5.7	3300	5 hours	0.7		After fasting 2 days
Cat						
I	3.	1700	6 hours	0.7		Normal
Rabbit						
III	1.7	400	3 hours	0.3		Normal
Guinea pig						
II	711 gms.	220	4 hours	193 gms.		Normal

order to bring out a sharp projection on the screen. A heavy white paper should be used and all lines should be drawn with India ink. The same rules apply to making charts. Specially prepared paper ruled in brown or black should be used and the tracings made in black.

In general, headings in a table are arranged with the units (subjects, cases, or intervals of time) at the left and the headings for the data concerning them at the top of the table. This facilitates comparison of like data in vertical columns. The data and headings in a table that is to be used for publication or for a lantern slide should be arranged so there is as little waste space as possible. When a table appears in printed form or on the screen waste space is much more noticeable than in the typewritten or handwritten copy. The tables shown illustrate space wasted and space saved.

Each table should be provided with a descriptive heading.

If there is more than one table, all should be numbered consecutively, Table 1, Table 2, Table 3, and so forth.

Words or letters of the alphabet should not be used when Arabic numerals or mathematical signs can be used.

Vertical (not horizontal) columns should consist of like data.

Condensation should be studied. Often a column can be condensed by putting in the heading a factor common to all the entries in the column.³

The author should indicate in the manuscript about where he wishes tables placed.

Abbreviate volume, number, division, chapter, article, section, page, column, line, note, and figure followed by their number in foot-

notes and in bibliographic matter; and abbreviate the word following after the number to denote continuance or sequence. Abbreviate figure at the beginning of legends and when it is placed in parenthesis in a sentence or at the close of a sentence. Write the word in full when it occurs in the text. Example:

Fig. 1. The crystals of the amino form of thyroxin, shown also in Figure 2.

Fig. 2. The solution becomes turbid and fine branching crystals separate (Fig. 1).

The common designations of weights and measures in the metric system, the symbols of measurement in common use, should be abbreviated when following numerals and time.

A PARTIAL LIST OF STANDARD ABBREVIATIONS

alternating current.....	a.-c.
centigrade.....	C.
centimeters.....	cm.
cubic.....	cu.
cubic centimeters.....	c.c.
decigram.....	dg.
deciliter.....	dl.
decimeter.....	dm.
direct current.....	d.-c.
Fahrenheit.....	F.
feet.....	ft.
gallons.....	gal.
grains.....	gr.*

* This should be spelled out to avoid confusing with gm

gram-calories.	gm.-cal.
grams.	gm.
hours.	hr.
inches.	in.
kilogram-calories.	kg.-cal.
kilogram-meters.	kg.-m.
kilograms.	kg.
kilometers.	km.
kilowatts.	kw.
liter.	l.
meter-kilograms.	m.-kg.
meters.	m.
micron.	μ
milligrams.	mg.
millimeters.	mm.
minim.	min.
minutes.	min.
ounces.	oz.
pounds.	lb.
seconds.	sec.
square.	sq.
kilovolt-amperes.	kv.-a
kilovolts.	kv.
yards.	yd.

Spell out all numbers at the beginning of sentences.

Spell out all numbers less than three figures, except those denoting blood count, respiration, pulse, temperature, specific gravity, weight, length, area, capacity, degrees, percentages, ratios, and so forth.

Spell out all fractions except decimals (half

a pound; half a mile; three-quarters of a dollar; 2.5 inches).

Spell out length of time (fifteen minutes; fifteen hours; fifteen years).

Spell out months except when necessary to abbreviate in tabulated material (January 1, 1922). When two years are hyphenated, set both in full (1921-1922).

Spell out centuries: right, nineteenth century; wrong, 19th century; right, the nineties; wrong, the 90's.

Do not spell out Mr., Mrs., and Dr.

Abbreviate Professor, President, Secretary, Superintendent, Surgeon, Colonel, and Captain before the first name or initials, but not before the family name alone: Capt. Charles Albright; Captain Albright; Col. Thomas R. Manning; Colonel Manning.

Do not abbreviate names of persons: right, Thomas R. Manning; wrong, Thos. R. Manning.

Degrees after names are abbreviated as follows:

Bachelor of Arts.....	B. A.
Bachelor of Divinity.....	B. D.
Bachelor of Law.....	B. L.
Bachelor of Laws.....	LL. B.
Bachelor of Medicine.....	M. B.
Bachelor of Philosophy.....	Ph. B.

Bachelor of Science.....	B. S.
Diplomate of the National Board of Medical Examiners.....	D. N. B. M. E.
Doctor of Dental Surgery.....	D.D.S.
Doctor of Divinity.....	D. D.
Doctor of Laws.....	J. D. or LL. D.
Doctor of Letters.....	Litt. D.
Doctor of Medicine.....	M. D.
Doctor of Philosophy.....	Ph. D.
Doctor of Science.....	D. Sc.
Fellow of the American College of Physicians.....	F. A. C. P.
Fellow of the American College of Surgeons.....	F.A.C.S.
Fellow of the Royal College of Phys- icians (England)	F.R.C.P.
Fellow of the Royal College of Sur- geons (London, Edinburgh, Ire- land).....	F.R.C.S.
Graduate in Pharmacy.....	Ph. G.
Master of Arts.....	M. A.
Master of Dental Surgery.....	M. D. S.
Master of Science.....	M. S.
Master of Surgery.....	M. S.

Abbreviate Saint (St. Paul, St. Louis).

Do not abbreviate Fort or Mount (Fort Dodge, Mount Vernon).

Set in figures the day of the month and the year (May 19, 1922); time of day (11 a.m., 3:30 p.m.); and numbers indicating serial position (page 10, Case 3, Table 1, Vol. xx).

Set in figures sums of money (\$5.50).

Set in figures practically all data in tabulations.

All of the foregoing rules are subject to variations, but such variations should not be accepted as precedents.

ABBREVIATION OF NAMES OF STATES

Spell out Cuba, Guam, Samoa, Utah, and as a rule all state names containing only four or five letters. Spelling out names of all states undoubtedly facilitates the handling of mail.

Ala.	Ga.	Me.	N. H.	Que.
Alta.	H. I.	Mich.	N. J.	R. I.
Ariz.	Ia.	Minn.	N. M.	Sask.
Ark.	Ida.	Miss.	N. S.	S. C.
B. C.	Ill.	Mo.	N. Y.	S. D.
Calif.	Ind.	Mont.	O.	Tenn.
C. Z.	Kan.	Neb.	Okla.	Tex.
Colo.	Ky.	Nev.	Ont.	Va.
Conn.	La.	N. B.	Ore.	Vt.
Del.	Manit.	N. C.	Pa.	Wash.
D. C.	Mass.	N. D.	P. I.	W. Va.
Fla.	Md.	N. F.	P. R.	Wis.
				Wyo.

NAMES OF CITIES AFTER WHICH STATE MAY BE OMITTED

Baltimore	Detroit	Philadelphia
Boston	Indianapolis	Pittsburgh
Brooklyn	Los Angeles	Salt Lake City
Buffalo	Minneapolis	San Francisco
Chicago	New Orleans	Seattle
Cincinnati	New York	St. Louis
Cleveland	Oklahoma City	St. Paul
Denver	Omaha	

Ordinarily write out specific gravity; in tables or other condensed matter abbreviate to sp. gr., 1.078.

Never abbreviate names of foreign countries.

Write 4 by 5 by 7 inches, not 4 x 5 x 7 in. Write one-sixth by volume, not $1/6$ x vol.

Except where condensation is an object, as in tables, write eighth-molecular, not $m/8$; write tenth-normal, not decinormal or $N/10$. But if it is desirable for some special reason to use the fraction, use the slant instead of the horizontal line to separate numerator and denominator.

Write fourth cervical, second lumbar, and so forth, not C IV, L 2, and so forth.

In ordinary matter spell out dosages. Write 4 grains, three times a day, not gr. iv, t. i. d.

In a trade name the expression & Co. is used; otherwise Company is spelled out.

The abbreviation for the expression 1 to 1,000 is 1:1,000. A thin space after the colon is desirable. Thin spaces are also to be used with all signs, as the plus, minus, and sign of equality.

Never use ditto marks; if they occur in the copy the words for which they stand are to be spelled out.

Indicate the magnification of photomicrographs by the sign of multiplication and the number, as:

Fig. 1 (Case 1).—Section of sarcoma ($\times 100$).²

FOOTNOTES

Use superior figures in the text instead of the star, dagger, and so forth. They are less conspicuous and the number may be extended indefinitely. If symbols are used they are placed in the following order: star, dagger, double dagger, section, parallel lines, and paragraph (*, †, ‡, §, ||, ¶).

A note at the end of an article, not referred to in the text, is written as follows:

Note.—Dr. Jones exhibited a number of animals with encephalitis.

CAPITALS

Capitalize only the first word in English titles of publications (books, pamphlets, documents, periodicals, reports, and so forth) and their divisions (parts, chapters, sections, and articles), and in subjects of lectures, papers, and toasts when they appear either in bibliographic matter or in the body of the text.

In foreign titles, in addition to capitalizing the first word, follow these general rules:

(a) In Latin titles capitalize proper nouns and adjectives derived therefrom.

(b) In French, Italian, Spanish, and Scandinavian titles capitalize proper nouns but not adjectives derived therefrom.

(c) In German and Danish capitalize all nouns but not the adjectives, except German adjectives derived from the names of persons.

(d) In Dutch capitalize all nouns and all adjectives derived from proper nouns.

Capitalize titles of ancient manuscripts (abbreviation: MS in the singular; MSS in the plural).

In botanical and zoölogical matter capitalize the names of species if derived from names of persons or from generic names, but in geological and medical matter never capitalize the names of species.

To indicate on the manuscript (copy) that CAPITALS are desired, draw three lines, and to indicate SMALL CAPITALS

draw two lines under the letter or word to be capitalized. It is also a frequent practice to express these directions by writing caps, s. c. (small caps), or l. c. (lower case), or c. and l. c. (caps and lower case) in the margin as a direction for a line or passage to be so treated.

To indicate *italic*, underscore with a straight line. For italic capitals underscore with three lines and add the words italic caps in the margin.

To indicate **black-face** or **bold-face** type underscore with a wavy line, thus ~~~~~.

Quoted matter exceeding five or six lines of type is usually set in type of smaller size than the body of the text.¹⁶

Draw line down left side of page to designate small type.

Use standard abbreviations only.

Use abbreviations sparingly and consistently.

When necessary abbreviate statistical data in charts, tables, and so forth.

Arrange tabulated material for the printed page so that folding will not be necessary.

Arrange material for lantern slides within a prescribed limit proportional to the dimensions of the slide.

Use superior figures in the text to indicate footnotes.

Follow general rules in capitalizing.

CHAPTER V

PUNCTUATION

When to use a mark, and what mark to use, are determined by reason or by convention. The full value of marks is rarely understood even by educated and cultured people.—*Klein.*

It is obvious that a limited number of even well selected rules is of little value in deciding points of punctuation. Differences of opinion alone demand detailed explanations and examples. Obviously, also, it is unnecessary to call attention to the importance of somewhat more than an intuitive knowledge of punctuation. The writer should study thoroughly a well recognized treatise on the subject before assuming that he can make his meaning clear with marks of punctuation. If such study is not feasible he should place marks cautiously and be guided in their further use by the printer and the editor.)

Close punctuation is characterized by the use of many commas; the form was in common use in English in the eighteenth century and is still used in French. Open punctuation is characterized by the avoidance of all point-

ing not clearly required by the construction; it now prevails in the best English usage. In some cases, as in certain legal papers, title pages, and so forth, punctuation is wholly omitted.

The function of marks is twofold:

1. To reveal the *real* meaning of printed language.
2. To reveal such meaning *at a glance*.

Marks perform this function in three ways:

1. By breaking up apparent groups of words, which readily form themselves into new groups.
2. By showing the relations between groups.
3. By characterizing a group of words.

Every group of words, as well as every word, sustains some relation to another word or group of words in the sentence or paragraph. Somewhat exact knowledge of this relation is possessed by everybody, even by the child just beginning to talk. It is part of one's common sense; but unfortunately many textbooks on language, used in the grade school, the high school, and the college, bury the common-sense knowledge of the pupil under technicalities that are never mastered. In like manner the technicalities of punctuation have made the art so difficult that it may be said to be almost a lost art. We are attempting to re-discover it through our common sense.

While we must recognize the fact that for some years there has been a tendency among good writers to use fewer marks, we should disregard any such tendency based upon a lack of appreciation of the value of marks or, more specifically, upon ignorance of the fine sense relations of language so easily overlooked when not indicated by marks with meanings.¹⁴

THE FOLLOWING GENERAL RULES DEFINE PRESENT GOOD
USAGE OF PUNCTUATION

THE PERIOD (.)

The period is used:

1. After a complete declarative or imperative sentence.
2. After an abbreviated word or a single or double initial letter representing a word, as etc., viz., Mrs., i. e., e. g., LL. D., pp.

THE COMMA (,)

The comma is used:

1. To set off a substantive used in direct address, as: You see, John, how I stand.
2. To set off appositives, as: Vienna, *the capital of Austria*.
3. To set off absolute phrases, as: The temperature being normal, the patient was dismissed.
4. To set off any word or phrase which has a parenthetical function but for which parenthesis marks or double dashes are not suitable, as: His refusal to my offer, however, I don't understand.
5. To set off a geographical name explaining a preceding name.
6. To separate coördinate clauses connected by one of the simple conjunctions, as: The train moved swiftly, but Turner arrived too late.
7. To set off a dependent clause preceding its principal clause. When the dependent clause follows the principal clause a comma is usually unnecessary. Example: When darkness comes, the candles are lit.
8. To indicate every distinct pause within a sentence, except the pauses for which other marks of punctuation are appropriate.
9. To indicate separation between any sentence elements that might, in reading, be improperly joined or misunderstood, were there no comma, as: On the path leading to

the cellar steps were heard; and: On the path leading to the cellar, steps were heard.

Two adjectives modifying the same noun should be separated by commas if they are coördinate in thought; but if the first adjective is felt to be superposed on the second, they should not be separated by a comma, as: A faithful, sincere friend. A big gray cat.

In a series of the form *a, b, and c*, a comma should precede the conjunction. The practice of omitting the comma before the conjunction is illogical and is not favored by the best modern usage.

Often a phrase or clause, though grammatically a modifier of a preceding substantive, is felt to be not an adjunct to that substantive, but rather a statement added to the main assertion of the sentence. Such phrases and clauses are called nonrestrictive. They should always be set off by commas, as: Washington Irving, whose personality was genial and charming, became very popular in England. When a phrase or clause, modifying a preceding substantive, is felt to be essentially a modifier restricting that substantive, it is called a restrictive phrase or clause. Such phrases and clauses are not to be set off by commas, as: Every man who holds such an opinion is by tendency a criminal.

After an interjection a comma is often preferable to an exclamation point.

Expressions like *he said*, preceding direct quotations in narrative, and such expressions preceding short direct quotations in general, should be followed by a comma.

Guard against the use of commas where they are not necessary. As a rule, do not put a comma where no pause is made in reading.

Do not put a comma or other mark of punctuation before the first member of a series of sentence elements unless it would be required there, were there one element instead of a series.

Put no comma before a substantive clause introduced by *that* or *how* when the governing verb (such as *said*, *thought*, *supposed*) immediately or very closely precedes the clause.

Clauses of a compound sentence that are not joined by conjunctions may be separated by commas when the clauses are short, have no commas within themselves, and are closely parallel in substance and form.

THE SEMICOLON (;)

The semicolon is used:

1. Between clauses of a compound sentence that are not joined by a conjunction, as: He did not go to Canada; he went to Mexico.

2. Between clauses of a compound sentence that are joined by one of the conjunctive adverbs *so*, *therefore*, *hence*, *however*, *nevertheless*, *moreover*, *accordingly*, *besides*, *also*, *thus*, *then*, *still*, and *otherwise*.

3. Between clauses of a compound sentence that are joined by a simple conjunction, when these clauses are somewhat long or when a more decided pause than a comma would furnish is desirable.

4. To separate two or more coördinate members of a simple or complex sentence when those members, or some of them, have commas within themselves.

5. To separate any two members of a simple or complex sentence when for any reason a comma would not make the relation between them immediately clear.

Do not use a semicolon between two members of a simple or complex sentence; use a comma if any punctuation is required at such a place.

THE COLON (:)

The colon is used after a word, phrase, or sentence constituting an introduction to something that follows, such

as a list or an extended quotation, as: There are three causes: poverty, injustice, and indolence.

THE QUESTION MARK (?)

The question mark is used after a direct question but not after an indirect question.

The question mark within parentheses is properly used only in serious compositions, such as historical works. Its use as a notice of humor or irony is puerility. Example: This event occurred in 411 B. C. (?).

THE DASH (—)

The dash is used:

1. When a sentence is abruptly broken off before its completion.
2. After a comma, to increase the separation slightly.
3. As a substitute for parenthesis marks.
4. Before a word summarizing the preceding part of a sentence.
5. Before a repetition or modification having the effect of an afterthought.
6. After the word immediately preceding a sentence element that is set apart on the page from the first part of the sentence.

Do not use dashes indiscriminately, where commas, periods, or other marks of punctuation belong.

PARENTHESIS MARKS ()

When parenthesis marks are used to set off matter in a sentence, a comma, a period, or other mark of punctuation belonging to the part before such matter should be placed after the second parenthesis mark, not elsewhere.

A comma should not be used with parenthesis marks unless it would be required were there no parenthetical matter.

Do not use parenthesis marks to enclose matter that is not parenthetical. Do not use them:

1. To emphasize a word; italicize.
2. To enclose a word about which something is said as a word. Such words should be italicized.
3. To indicate the title of a book; italicize.
4. To enclose a letter, number, or symbol, unless it is used parenthetically.
5. To cancel a word or passage.

BRACKETS ([])

Square brackets, [], are used to enclose a word or words interpolated in a quotation by the person quoting. Words enclosed in parenthesis marks, (), occurring in a quotation, are understood to belong to the quotation; words enclosed in brackets, [], are understood to be interpolated by the writer quoting.

QUOTATION MARKS (" ")

Quotation marks are used to enclose a direct quotation, but not to enclose an indirect quotation.

Do not fail to put quotation marks at the beginning and the end of every quotation.

Do not punctuate sentences of a single speech as if they were separate speeches.

When a quotation mark and a question or exclamation mark both follow the same word:

The question or exclamation mark should stand first if it applies to the quotation and not to the sentence containing the quotation.

The comma and the period always precede the final quotation marks, and do so simply because they appear better thus arranged on the printed page. The semicolon, the colon, the interrogation point, and the exclamation point follow or precede the closing marks of quotation according to their relation to the quoted matter.

In either case no comma or period should be used in addition to the quotation mark and the question or exclamation mark.

A quotation within a quotation is marked by single quotation marks; one within that by double marks.

When a quotation consists of several paragraphs, quotation marks should be placed at the beginning of each paragraph and at the end of the quotation.

Quotation marks may sometimes be used to mark a technical term presumably unfamiliar to the reader.

Quotation marks may sometimes be used to indicate apology for slang or nicknames.

Do not use quotation marks:

1. To enclose the title at the head of a composition, unless the title is a quotation.
2. To enclose proper names, including names of animals
3. To enclose proverbial expressions that do not constitute grammatically and logically complete statements.
4. To enclose words coined *extempore*.
5. To serve the undignified and inartistic purpose of labeling your own humor or irony.
6. For no reason at all.

THE APOSTROPHE (')

In the possessive singular of regularly inflected nouns an apostrophe should ordinarily precede the *s*; in the possessive plural of such nouns an apostrophe should follow the *s*.

Do not form the possessive singular of a noun ending in *s* by putting an apostrophe before the *s*; put an apostrophe after the *s* or add *'s*.

Never use an apostrophe with the possessive adjectives *hers*, *its*, *ours*, *yours*, and *theirs*.

In a contracted word an apostrophe should stand in the place of the omitted letter or letters, not elsewhere.

The plural of letters of the alphabet and of numerical

symbols is formed by adding 's to the letter or symbol. The plural of a word considered *as a word* may also be formed in the same way. But the regular plural of a noun should never be formed by adding 's.

THE HYPHEN (-)

No simple rule can be given for determining whether a compound word should be hyphenated or written *solid*. One must simply learn, from observation and from dictionaries, what is the correct practice in individual cases.

In dividing a word at the end of a line, place a hyphen after the first element of the word and there only; never put a hyphen at the beginning of a line.²²

THE EXCLAMATION POINT (!)

Use the exclamation point after a word or group of words to express command, surprise, or emotion. Do not use two or three exclamation points together.

MISCELLANEOUS RULES

If *such as* is used to introduce an example, or examples, it is preceded by a comma, a comma and dash, or a semicolon, and should not be followed by a punctuation mark unless a parenthetical expression is inserted between the *such as* and the words it introduces.

In an example or explanation introduced by one of the expressions, viz. (namely), e. g. (for example), and i. e. (that is), the expression should always be followed by a comma.

O is always written with a capital, but *oh* takes a capital only when beginning a sentence. Some writers prefer always to write *oh* with a capital.

A period, or any other mark except an interrogation point, is not often used after a display line in the title-page of a book. This practice is well-nigh universal in book work and almost equally so in magazines.

A period and a dash are generally used after a side head. The dash sets the group of words off from what follows and thus shows at a glance that the words are a heading and not a part of the sentence following.

A period is generally placed after the letter or the number indicating a division in enumerations.

If the divisions have subdivisions and the subdivisions are further subdivided, it is helpful to the reader if a good conventional style is followed. In the case of four divisions and subdivisions, a good conventional style is as follows:

- A. The capital letters (A, B, C, and so forth) will mark the main divisions of the subject.
- I. The Roman numerals (I, II, III, and so forth) will mark the subdivisions of A, B, C, and so forth.
- 1. The Arabic figures (1, 2, 3, and so forth) will mark the subdivisions of I, II, III, and so forth.
- a. The italic lower-case letters (*a*, *b*, *c*, and so forth) will mark the subdivisions of 1, 2, 3, and so forth.

The word *cent* in *per cent* is now generally written without a period.

The terms *4 to*, *8 vo*, *12 mo*, and so forth, used to denote the size of books, are not abbreviations and so do not take periods after them. Each number stands for a suppressed part of the word in which it appears.

When one, for the sake of brevity or otherwise, omits a word, a group of words, or one or more sentences from a quotation, such omission or *ellipsis* is indicated by either

periods or stars. Periods are generally preferred on the ground that they look better on the printed page than stars. Unfortunately the number of periods used for an ellipsis is not definitely fixed by convention.

If words are omitted from the end of a sentence, the end-mark of the sentence, if an exclamation point or an interrogation point, is retained and follows the three periods. If the end-mark of the sentence is a period and one or more sentences following are omitted there will be four periods at this point. There will be the same number if words are omitted from the beginning of a sentence following a sentence ending with a period.

If stars are used the closing period is retained.

If one or more paragraphs, or if, in poetry, one or more lines are omitted a full line of periods or stars is used.

A dash or stars are used in the place of letters omitted from a word, and the dash in place of figures omitted from a number of figures.¹⁴

Study punctuation thoroughly; the art cannot be learned from a few rules.

Use marks of punctuation to show the relation between groups of words.

When in doubt place marks guardedly, using only such as are clearly indicated.

Avoid unnecessary division of words at the end of a line.

CHAPTER VI

MISCELLANEOUS GRAMMATICAL NOTES

Grammar is not pedantry; mathematics is not pedantry; military maneuvers are not pedantry; but pedantry is to take grammar for literature, mathematics for physics, or maneuvers for war.—*Allbutt.*

It has been said: "The man of science appears to be the only man who has something to say and the only man who does not know how to say it."

Errors of grammar in writing as in speaking are quite as often the result of careless habits of thinking and of expression as of unfamiliarity with the common rules of grammar. There seems to be a certain prejudice against correctness of expression. No one can attain proficiency in writing without care and without method and, least of all, without effort. If the writer will cultivate a fixed habit of searching for exactly the right words to form a sentence, he will be saved from committing gross errors in speaking as well as in writing. He will, moreover, be repaid for the time and care thus expended when he contrasts

the results with those of others less painstaking.

Grammatical sentences are economical, since they present facts clearly, and may thus be read rapidly with perfect understanding. Carelessly constructed sentences weaken and blur the meaning, and if read at all must be reconstructed in the mind of the reader.

Scientific writers are too apt to suppose that restatement in bigger words is explanation.

Rôle is inferior to *part*, for *rôle* takes us back to a dried sheepskin, whereas to play a part is to be engaged in the drama itself. *Summary* is at least as good as *résumé*; and *dernier ressort* has no advantage over *last resort*. *Raison d'être*, *tout ensemble*, *cortège*, *par excellence*, and so forth, give us nothing that we have not of our own. *Taboo* is generally used incorrectly, and in this common use is no better than *ban*. There is no virtue in the barbarous *cavitation* which is not in the civiller word *excavation*. To *exteriorise* is no better than to *utter*, nor *centrifugalisation* than *spinning*. *Standardisation* is a grievous infliction; let it serve as a warning.

To the journalist, *opinion* is almost obsolete; he abases *theory* to take its place. An antiquary, as he tells us, has a *theory* that a certain coin is of Constantine; in the next paragraph he himself has a *theory* that a burglar climbed over the garden wall and let himself in by the cellar window; in the next a *theory* that the leader of the opposite political party talks nonsense; and so on. We, who shrink from pedantry, scarcely venture nowadays to speak of *opinions* or *notions*, or to keep *theory* for higher uses.

The neutral or indefinite pronoun *one* should be used

sparingly in English; one says, one does, are good French or good German, but, if used indifferently, are not good English.

The use of *you* and *yours* as indefinite pronouns is generally vulgar, and not rarely unpleasant; *e. g.*, when a student reads to me, *You* may then get secondary deposits of cancer in *your* liver, I resent the suggestion.

The following sentence, culled two or three years ago from one of our theses, is, I admit, a record example:

Then I should advise putting *your* feet into hot water, when *he* will feel a gentle perspiration breaking out, and the next morning *one* will feel the cold passing off.

Even in more careful writings the pronoun *one* is sometimes followed later in the sentence or paragraph by *we*, *your*, and so forth.

I note that an indirect construction is often used to avoid the little word *I*. It would seem that an impression is abroad among the writers of academic essays that the first person is indecent. No doubt, as in our manners generally, self must be intruded with tact; we must intrude, that is, just so much of one's self as the reader is attuned to, and no more. Of the reader of a thesis, or other such paper, it is expected that he speak in due measure of himself—of his own work and his own opinions; and persistently to evade the first person singular is in him affectation. Egoism may lurk even in impersonality.

The hanging participle.—It is a very common fault to leave a participle hanging, that is, without a subject; for example, "My thesis was half written, having consulted Professor Wilkinson as to the subject." Did the thesis consult the Professor? "Complaining of shortness of breath, the nurse lifted her into bed." Was it the nurse who complained?

The following expressions are inadmissible: "I discussed a series of cases occurring (which occurred) in this hospital"; "the building stood for many years, being pulled down,

however, fifty years ago"; "I intend doing" (to do); "to which I propose alluding" (to allude); "we are contemplating walking back"; and so forth.

The double passive is a clumsy mode of speech and in many cases hazy in meaning. Why do we say "were considered to be produced by" (were attributed to); "his voice was unable to be heard"; "the meaning may not be able to be made out"; or "a frothy fluid would be able to be squeezed out"?

Transitive and intransitive verbs: e. g., "The patient quiets down." There is no authority worth mentioning for this use of the verb, nor is the use needed. Even in the active, some verbs, as *to give*, become transitive only by means of the preposition *to*: for example, "I will give to him"; but to write, "The patient *was given* a rhubarb pill" is bad, and gratuitously bad, for we can say as readily that "a rhubarb pill was given to him." For "the remedy should be given a thorough trial," read "should be well tried."¹

Adjectives.—Occasionally more than one adjective may be needed to describe an object, but each should convey a distinct meaning.

Adverbs.—Place the adverbs *only*, *merely*, *just*, *almost*, *ever*, *hardly*, *scarcely*, *quite*, and *nearly* next to the words they modify and not elsewhere. Example: ambiguous: Present abstracts of long papers to an audience only; correct: Present to an audience only abstracts of long papers.

Past tenses and perfect participles.—Of some verbs the past tenses and perfect participles are often confused: for

example, "I had scarcely began when he begun" (a double error); "he drunk (drank) the mixture"; "the rags must be burnt" (burned).

The subjunctive mood is falling into disuse but is still effective for grave or emphatic doubt. *If*, however, often means *seeing that*, when no doubt is assumed, and the subjunctive would be incorrect.

False concords.—These are relatively few, but they happen occasionally: for example, "The *ideas* he had gained was his chief concern." "This tablet, with the window above, *are* a tribute," and so forth, was written on brass in Exeter Cathedral. "The professor, with his friend and his pupil, *were*" (was), and so forth. "The severity of the symptoms *were* such," and so forth. "Policy as well as fashion dictate" (dictates). "Gout as well as glycosuria *were* (was) present." "Neither the one nor the other *were* (was) there." "The outline of the breastbone is altered, as *are* also some of the ribs" (as is also that of some of the ribs). Even in careful writing a false concord will creep in furtively sometimes, as: "My intentions were good, but my perseverance faulty" (my perseverance *were*). "His gait is reeling and his steps (*are*) irregular." "The outline was blurred and the details (*were*) indistinct." Or again, "The complexion *is* pallid, the forehead wrinkled, the nose depressed, and the lips thick and everted"; here *and* should be transferred to the previous clause, a semicolon put after *depressed*, and *are* inserted between *lips* and *thick*.

I will accumulate some examples here of other false concords, as these minor errors are frequent: "Neither of these boys *were* (was) remarkable," and so forth. "*Nobody* ever put so much of *themselves* into *their* work." "Of these persons none (no one) *were* (was) robust." "Now none of these things *were* (was) there." How far more effective is the singular verb after *none*!

A relative pronoun may determine the number of the

verb: for example, "One of the most valuable *books that have* appeared" is correct, for *that* relates to *books*, not to *one*. "This *was* one of the first objects *that were* found" is correct likewise. "I am one of those who are unable to refuse my assent" is correct as to *are*, but consequently *my* should have been omitted.

Tenses are not to be changed when the sense is unchanged: as in, "The leaves *were* dry and brown, and under the microscope there *is* seen," and so forth.

It is not well, unless deliberately for emphasis, to change construction in the course of a sentence: for example, "The reaction first described by Jones and to which he gave the name of," and so forth; it should run, "described by Jones and named by him," and so forth.¹

Too, very.—Neither of these words should immediately precede a past participle; say *too much, very much*. Wrong: "He is too exhausted to speak." Right: "He is too much exhausted to speak." Wrong: "He felt very insulted." Right: "He felt very much insulted."

It is often advantageous to place *however, therefore, nevertheless, moreover*, and the like, within the sentences they introduce rather than at the beginning.²²

Whose is conveniently and quite correctly applied to things as well as to persons.

Cases.—Errors in cases are few and venial, but I find in a thesis before me, "The patient did not know *who* to speak to." Such phrases as "Between you and I," "Do you mind *me* seeing them?" and "I heard of him (his) running away" are not to be excused even in speech.

Than as a conjunction does not govern a case. "I know you are wiser *than me*" should be "than I" (am). Avoid such an uncomfortable ambiguity as this: "Anthony was not less desirous of destroying the conspirators than his officers."

The *and which* and *and who* blunders are by no means yet

extinct: for example, "These scenes, painful to witness *and* which did no good"; where *and*, of course, is intrusive; omit it or write, "Scenes which were painful to witness and were," and so forth. The *whom blunder* may also be mentioned here: "To persons *whom* he thought were far away." "Mr. Jones, *whom* I trusted would have helped me." In both instances, read *who*.

That.—Keep down your *that's*, for they multiply like lower organisms: for example, "He told me *that* he told you *that* you were to see *that* all was in order," and so forth; "I cannot suppose (*that*) you mean *that* the dog saw the rabbit and (*that* he) ran away from it."

This and that.—When two subjects are mentioned, *this* refers to the latter and *that* to the former, a good and efficient rule often transgressed: for example, we write correctly "The patient suffered from nephritis and pleurisy; *that* the physician observed, *this* he overlooked." Not uncommonly a paragraph begins with a vague *this*: for example, "This being so," and so forth, where *this* may indicate any one of several antecedents or the sum of them, without definite distinction.¹

Shall and will.—In affirmative sentences, *shall* in the first person signifies expectancy, future action; its meaning is reversed in the second and third persons and signifies determination on the part of the speaker; *will*, in the first person, signifies willingness or determination or promise; in the second and third persons it signifies merely future action: "I [or we] *shall* go to town with him"; "He [or you, they] *will* go to town with him." (Both of these sentences express future action.) "I [or we] *will* go to town with him," "He [or you, they] *shall* go to town with him," express determination or a promise on the part of the speaker.

Should and would follow the rules for *shall* and *will*.

The use of *should* and *would* in indirect discourse is in general determined by the form used in the speech reported;

but there are many subtleties which can be learned only by careful and minute observation.¹⁶

Would rather and *had rather* are with us interchangeable. But this is not true of *would better* and *had better*. The two idioms under consideration stand on an entirely different footing. In the one, volition is the underlying idea. "He had rather do it," means that he would prefer to do it. Hence there is no difficulty in substituting *would* for *had*, for in both cases the meaning would be essentially the same. But no such easy interchange can take place in the case of the other idiom. In *had better* there is implied not a sense of mere choice or volition, but one of obligation or of the compulsion of circumstances. Hence the absolute insufficiency of *would* in place of *had*, were there no other objections to its employment. There are instances in which *might better* could be properly substituted for *had better*, but in most cases the change would be unsatisfactory. It was probably the desire for directness and conciseness, and perhaps for additional energy, which led to the introduction of the established locution into the speech. "He had better do it" once was and still can be represented by the phrase, "It were (or would be) better that he should do it." It was hardly to be expected that the latter diffuse locution could hold its ground permanently against the brevity and condensed energy of the former. Still the history of this contracted method of expression shows that while now accepted everywhere by cultivated men, it made its way but slowly into its present wide employment.¹⁵

Prepositions.—The prepositions most often confused in use are *at* and *to*, *by* and *which*, and *in* and *into*. Careful study should be given to these and to the standard forms of such phrases as: with regard *to*, with a view *to*, compare *to*, compare *with*, agree *to*, agree *with*, differ *from*, differ *with*, different *from* (not *to* or *than*), disappointed *by*, and disappointed *in*. The correct and idiomatic use of prepositions

is very hard to learn, but there are few subjects which will better repay the careful student of language.

Conjunctions.—Attention should be given to the distinction between *and* and *but*, and to that between *and* and *or*.

Either . . . or, and *neither . . . nor* are correlative conjunctions. Care should be taken that each member of the pair used be placed in the same relative position, that is, before the same part of speech. The following is wrong: "I could *neither* see him *or* his father." Never use *either . . . nor* or *neither . . . or* as correlatives.¹⁶

Beware of *the intrusive not*: for example, "I ran to see if I could (not) get a seat." "Let us see if we can (not) help him." "I cannot say what disease she may (not) have." "Mr. Jones asked if both lungs might (not) be diseased." "We should consider whether this may (not) be a case of infection." A recent gazette contained an inquiry whether a certain title might (not) be conferred. On the other hand, *not* is often in error omitted: for example, "He depended on me no more than he could help" is, strictly speaking, nonsense; if this form is to be used, *not* is required before *help*. "I doubt whether the reverse be *not* the case" is a common and bad form for, "I suspect the contrary to be true."

Genitive.—Ought we to write, "I heard it in a speech of Mr. Gladstone's (or of Mr. Gladstone)"? is a question often asked of me. *Gladstone's* may be regarded as an inflexional genitive, as we say "in an undertaking of *his*" (not of him); if this be the notion I should discard the 's after *of* as obsolescent.

Whether in the genitive of a noun ending in *s*, for example, Socrates, we should write Socrateses, Socrates's, or Socrates,' is not a matter of grammar but of custom, and the last is the most convenient. Usually, however, as also in the plural of such nouns, we avoid these hisses by a periphrasis: for example, "in the opinion of Socrates." "Would there were more Socrateses in the world" is very harsh.

A common grammatical error is the forcing of an *alien preposition* upon a verb: for example, "of which he had heard but never seen" (seen of!); "This addition can be applied and connected with the instrument" (applied with!). Or by the omission of a necessary preposition the meaning may be vitiated: for example, "Much depends on the home and the care bestowed upon them." Here *on* must be repeated before *the care*, as the home is not bestowed upon them.

Singular and plural nouns.—Whether Greek be compulsory or not, Latin cannot well be omitted from a good education; yet when in theses before me I read not only *prodromata* (sing., prodromon; pl., prodroma) passim, and not rarely a *phenomena*, and so forth, ignorance of Greek is scarcely an excuse. But what are we to say when not long ago a well known physician wrote of *vocal fremitu*! In editorial paragraphs of smart newspapers I have lately read of *omnibi, excursi, comitiæ*, and even of *non possumi*; *apparati* is pretty common; *carnivoræ* appeared lately in a leading scientific magazine; in a well known book by a celebrated author we are told that "the hands of the Scipii were nailed to the rostræ"—blunders which remind us of Frank Lockwood's jest: "They will apply for a mandamus! Then we will apply for a brace of mandami."¹

If the writer is furnished with but a lean stock of words, those that he has must be degraded to rude and indiscriminate uses. In such a sentence as this: "From this center the germs were extended to other parts" (for *were disseminated* or *scattered*), the writer does not search for the aptest word for his meaning, nor does he care to do so; he fills the gap with the handiest of the few in his scrip. A problem, a dilemma, a proposition, a subject, a case, or nothing whatever, are all questions: for example, "He gave credence to a doubtful question"; "The question is one of decreased resistance" (for the *condition* or *problem*); "The question is one of decreased tissue change," where *answer* would have been nearer the

meaning; "The question of the shoulder and elbow will be referred to later" (for *question* read *affection* or *injury*). To *involve*, with its ugly noun, *involvement*, has to do duty for *to attack*, *to invade*, *to injure*, *to affect*, *to pervert*, *to encroach upon*, *to influence*, *to enclose*, *to implicate*, *to permeate*, *to pervade*, *to penetrate*, *to dislocate*, *to contaminate*, *to complicate*, and so forth. I see in a thesis before me, "the liver also was involved, there being a few secondary growths in it"; the author might as well have said that his lawn was involved in a few dandelions. Again, "the anemia *involves* the hemoglobin," for example, a certain chemical compound is enclosed in an abstraction! "The mesenteric artery was involved" (in an embolism); surely the converse was the truth.

Before leaving grammar I may inquire why scientific essayists generally go out of their way to an *indirect construction* which does but take the life out of their sentences. We read, "*there is found* a blue coloration," "*there exists* a marked tendency for the parts to unite," "only rarely does one find," and "to the apathy of the sufferer was added an appearance of exhaustion,"—all vapid substitutes for direct assertion, such as "it turns blue," "the parts are very apt to unite," "one rarely finds," and so forth.

Statements of fact, such as "the speaker *said*," are properly of the past tense, but general propositions, if valid, are valid in the present and future; to put them in a past tense is to suggest that even the speaker had no faith in their constancy. A little while ago Ehrlich was thus reported: "Toxins *were* unstable substances" (as if since they had become stable!); and, more absurdly, "*at present it was* impossible to define them chemically." Again, in another place, "Real education *was* not an affair of the memory only; the mind *was* a live thing," and so forth. "They acted at that epoch just as people *did* (do) at the present day." But the blunder is rarely so untimely as in the attribution to a prelate, at a recent church congress, of the words, "that there *was* a God above us."

The same false sequence in concords is seen in such phrases as, "I intended to *have written*" (for "I intended to write"); "I should like to *have seen* him" (for "I should have liked to see him"); "It would have been wrong to *have refused*" (for "to refuse"); "I should have deserved to *have been* dismissed" (for "to be dismissed").¹

If two ideas are equal in rank, one should not be expressed in a subordinate clause. "The lumen of the sigmoid was from 7.5 to 10 cm. in diameter, while that of the transverse colon was 5 to 7.5 cm. in diameter." (The lumen of the sigmoid was from 7.5 to 10 cm. in diameter, and that of the transverse colon was 5 to 7.5 cm. in diameter.)

EXAMPLES OF ACCEPTED ENGLISH PLURALS

abscissas	exanthems	myomas
antrums	fetuses	myxomas
apexes	fibromas	perineums
appendixes	fistulas	plasmas
cannulas	formulas	psammomas
carcinomas	ganglions	sanatoriums
chondromas	glaucomas	sarcomas
condylomas	gummas	scotomas
corneas	hematomas	septums
craniums	indexes	sequestrums
curriculum	lipomas	serums
endotheliomas	meatuses	sputums
enemas	mediums	stigmas
epitheliomas	microns	stomas
erythemas		traumas

FOREIGN PLURALS AS YET RETAINED

apparatus	diverticula	nuclei
areolæ	emboli	papillæ
axillæ	foci	phenomena
bacteria	fossæ	pleuræ
bronchi	foramina	protozoa
conjunctivæ	larvæ	radii
cortices	lumina	sequelæ
criteria	maxillæ	spermatozoa
data	nevi	uteri
deliria	nidi	vertebræ
desiderata		viscera

ADJECTIVES WITH VARIANT ENDINGS

alphabetic	empiric
(pertaining to an alphabet)	entomologic
alphabetical	ethnographic
(in the order of the letters	etiologic
of the alphabet)	etymological
analytic	galenic
anatomic	(galenical is the noun)
anthropologic	generic
anthropometric	geographic
astronomical	gonococcic
bacteriologic	hemianopic
biochemical	hemorrhoidal
biologic	histologic
botanic	historic
chemical	(celebrated in history)
chronological	historical
classic	(relating to history)
clinical	hypodermic
cylindric	hypothetic
dynamic	hysterical

immunologic	psychiatric
intraspinal	psychologic
logical	roentgenologic
macroscopic	serologic
microscopic	spherical
morphologic	staphylococcic
mystic	streptococcic
neurologic	symmetrical
obstetric	teleologic
paradoxical	theoretical
parasitic	therapeutic
parasitologic	tubercular
parenthetical	(nodular)
pathogenic	tuberculous
pathognomonic	(infected with tubercles
pathologic	caused by the bacillus of
periodic	tuberculosis)
pharmaceutic	typographic
pharmacologic	zoölogical ³
physiologic	

USAGE OF WORDS

Words often used	Words preferred
adrenal	suprarenal
apparatuses	apparatus
autopsy	necropsy
Bright's disease	chronic interstitial nephritis
cane-sugar	sucrose
cure	treatment; these two words are not interchangeable
enteric fever	typhoid
functionating	functioning
Graves' disease, Basedow's disease	exophthalmic goiter
guts	intestine
Hebrew, Israelite	Jew, Jewish

hyperdermatic	hyperdermic
in extremis	moribund, dying
intraspinous	intraspinal
microphotograph	photomicrograph
milk-sugar	lactose
pediatrist	pediatrician
polynuclear	polymorphonuclear, when referring to leukocytes
round-celled	round cell
sacrificed	killed
spotted fever	specify disease meant, such as typhus or cerebrospinal meningitis
x-ray	roentgen ray
x-ray picture	roentgenogram ¹⁹

PITFALLS IN DICTION

Abbreviate is sometimes used for *abridge*. A book or a lecture is *abridged* when it is given in condensed form; it is *abbreviated* when shortened in any way.

Above should not be used as an adjective, as: "Rules stated in the *above* section." Substitute *preceding*, *foregoing*, or some similar adjective.

Affect is to be distinguished from the verb *effect*. To *affect* is to influence; to *effect* is to cause or bring about.

Alike should not be reinforced by *both*: "They are both *alike* in this respect." The absurdity is easily seen in the stock example: "Sam and Jim are *both* very much *alike*, especially Sam."

All, in connection with *right*, is a separate word: *all* right, never *alright*. *All* and *universally* should never be used together.

Allege is a common error for *say*.

Alone expresses the sense of *unaccompanied*, and should be distinguished from *only*, which means *no other*.

Alternative indicates a possibility of two courses. "Several *alternatives* are open to me" is therefore bad.

Any is sometimes ambiguous. *Any of them* may be either singular or plural.

Apparent, evident.—If a condition is *apparent*, it appears to exist; if it is *evident*, it is unmistakable (proved by evidence).

Appear is physical, external, in its meaning, and should be distinguished from *seem*, which expresses a mental experience.

Apt should never be used in place of *likely* or *liable*. It means capable, suitable, or skilled.

Avocation is not the same as *vocation*. A man's *vocation* is his calling, his principal occupation; his *avocation* is a secondary occupation which, however, may interest him more than his *vocation*.

Between applies only to two persons or things: "Between you three" is ungrammatical.

Brainy is a colloquial Americanism.

But, used in connection with *that*, is redundant, unless intended to express the opposite of what the meaning would be without it.

Can has the meaning of ability, power, and should not be confused with *may*, which implies permission.

Cheaply, for *cheap*, sounds affected. "He sold it *cheap*" is correct. *Cheap* is an adverb as well as an adjective.

Claim, in the sense of assert, maintain, or say, is not sanctioned by good usage.

Conscious should not be used for *aware* or *sensible*. We can be *conscious* only of the facts of our own inner life; we are *sensible* of external facts which affect our feelings; we are *aware* of whatever external facts or general truths are known to us. "I was *conscious* of his treachery" is incorrect.

Continuous must be distinguished from *continual*; the former

implies something uninterrupted, unceasing, the latter, something frequently recurring but with interruptions.

Data is plural. "This data" is as bad as "this facts."

Decided must not be confused with *decisive*.

Different should be followed by *from*, never by *than* or *to*.

Distinguish must not be confused with *differentiate*; *distinguish* means to perceive differences between things or persons; *differentiate* means to make or constitute a difference.

Due should not be used for *owing to* or *because of*.

Each is distributive and therefore is singular, not plural.

Either is distributive and therefore is singular and should never be used of more than two.

Else should be followed by *than*, not by *but*.

Enthuse has not yet obtained the sanction of good usage.

Evidence is sometimes used when *testimony* would be preferable. The *testimony* of a witness may contain no *evidence*.

Factor is loosely used for *cause* by careless writers.

Female for *woman* is a vulgarism: "Clothing for males and females" (men and women).

Fewer applies to number; *less*, to quantity: "I have *fewer* (not *less*) books than you."

Firstly should not be employed for *first*, even though succeeded in an enumeration by *secondly*, *thirdly*, and so forth. *First* is an adverb as well as an adjective.

Former, and its antithesis, *latter*, should be used to designate one of two persons, things, ideas, and so forth. In case of more than two, the expressions the first, the second, the third, the last, should be employed.

Frequently should be distinguished from *commonly*, *generally*, *perpetually*, *usually*; each has its own refinement of meaning. *Commonly* expresses the antithesis of rarely; *frequently* and *generally*, the antithesis of seldom or occasionally; *usually* is the opposite of casually.

Got, in the sense of possession, is superfluous and is to be avoided.

Guess, in the sense of imagine, suppose, think, as: "I *guess* he is a rich man," is a provincialism sanctioned in conversation but condemned in writing.

Healthy should be distinguished from *healthful* and from *wholesome*.

High should be distinguished from *tall*.

If is often misused for *whether*.

Individual means a person or thing regarded as a unit. It is improperly used as a mere synonym of *person*.

Kind is not plural.

Last is often misused for *latest*.

Latter applies only to the last of two.

Like must never be used in the sense of *as*.

Locate, in the sense of *settle*, is regarded as a vulgarism.

Lovely, like *elegant*, is a greatly overworked word.

Luxuriant, as distinguished from *luxurious*, means superabundant in growth or production.¹⁶

The too frequent use of the participial adjectives *marked* or *pronounced*, when the writer means great, large, distinct, appreciable, moderate, considerable, extreme, intense or some other quality that he could easily, with a little thought, express accurately by means of a descriptive word, is perhaps the most frequent fault. . . . The adverb *quite* is used in the same way; sometimes it is used as a diminutive adverb, as *quite frequently* for *occasionally*, or to express all degrees of qualification from slightly to completely: "His mentality was quite low" for "His mentality was extremely low." The great objection to the loose use of such words as *marked* and *quite* is that the words when so used do not indicate accurately what qualifications the writer means.

Tautology, such as *palms of hands*, *soles of feet*, and *taste in the mouth*, appears constantly, although everybody knows that there are no other palms or soles and that there is no other seat of the sense of taste.¹⁸

Minus, in the sense of without, or lacking, is colloquial.

Most has been used instead of *almost* for almost a thousand years, but this use is not permissible.

Necessities has almost entirely usurped the place of *necessaries* in current English. "The necessities of life often reduce one to the bare necessities." It is unfortunate that the distinction between the words is no longer observed.

Neither denotes one of two and should not be used for *none* or *no one*.

Nice, in the sense of pleasant, agreeable, has established itself in colloquial, but not in good literary usage.

None should be treated as a singular: "*None* of them *was* present"; "There is *none* of them that *doeth* good."

Not must be followed by the correlative *nor* in such a sentence as: "*Not* for wealth *nor* for fame did he strive."

Observation should not be used for *observance*.

Other. After *no other*, use *than*, not *but*.

Panacea is ludicrously misused to mean an effective remedy for a single disease; it means something that cures all diseases.

Paradox means what seems absurd or self-contradictory. *Seeming* is therefore redundant in "a *seeming* paradox."

Per should be used in connection with other words of Latin form: *Per diem*, *per annum*, *per cent*; but, "He is paid \$50 per week" is to be avoided. Use *a* with *week*, *day*, and so forth.

Perpendicular merely means at right angles to something else mentioned; it should not be used for *vertical*.

Perpetually means "without interruption or cessation."

Place, when used in the sense of *where*, is a vulgarism.

Popular means "pleasing to many people."

Post and *posted*, for *inform* and *informed*, are too colloquial for serious writing.

Practical and *practicable* are often confused.

Premature. To call a false report *premature* is ludicrous, unless there is reason to believe that the event reported will occur later.

Promise, in the sense of *assure*, is slang.

Propose is often misused for *purpose*.

Proposition is often misused for *proposal*. A *proposition* is a statement of a judgment or a plan, a *proposal* is the presentation or statement of an offer.

Providing is sometimes misused for *provided*.

Quite means entirely, wholly. *Quite a few* is nonsense as well as bad English.

Reference is often wrongly used with the preposition *in*.

Researcher is a vulgarism of the worst sort.

Reside is used for *live* by those who like fine words.

Retire, for *go to bed*, is affected.

Some, for *somewhat*, is a vulgarism.

Splendid means *shining*, *brilliant*.

State is now used vulgarly for *say*.

Through should not be used in the sense of *finished*.

Transpire does not mean *happen*.

Ugly, in the sense of *bad tempered*, *vicious*, should be avoided.

Unique does not mean *rare*, or *odd*, as many seem to suppose; it means "alone of its kind."

Verbal. "A *verbal* message" means only "a message in words"; a message by word of mouth is "an *oral* message."

Way should not be used in the sense of *away*.

Ways is often misused for *way*.

Witness is used for *see* by persons who like large words.¹⁶

A revised medical dictionary has been satirically proposed in which definitions would be found as follows:

Exploratory. Exploratory operation. (*Operation* is omitted for brevity only—never otherwise.) Noun. May be singular (very often) or plural.

Pathology. The disease removed from an organ at operation and located elsewhere at postmortem. Formerly used to mean: The doctrine or consideration of diseases and of deviations from normal structure.

Temperature. Synonymous with *fever*, *pyrexia*.

Wasserman (occasionally spelled **Wassermann**), **Babinski**, **von Graefe**, **Romberg**. Once distinguished physicians and investigators, now reactions and signs that indicate various pathologies.

X-Ray. Once used to designate the peculiar light rays discovered by Roentgen. Modern medical writers used the term to mean an *x-ray picture* or an *x-ray examination*, e. g., "an *x-ray* of the stomach showed marked pathology."⁸

CHAPTER VII

DON'TS

Even the calamities of ignorance and carelessness—deplorable and blameworthy though they may be—serve to the well-balanced mind as mighty and lasting stimulants toward increased knowledge and painstaking care.—*Richardson.*

Don't always go back to the Garden of Eden and review the literature to date.

Don't say *frequently* so frequently.

Don't say *per* instead of *each* or *for each*.

Don't say *up until* when you mean *until*.

Don't overwork the word *very*; nine times out of ten it can be deleted.

Don't say the patient *was operated*.

Don't say *vast majority*.

Don't say *lymph glands* in place of *lymph nodes*.

Don't use *while* for *although* or vice versa.

Don't use *located* for *situated* or vice versa.

Don't confuse *if* and *when*.

Don't say *diseased condition*. Correct: Disease condition, or condition of disease. Incorrect: diseased condition.

Don't begin papers by saying, "This is a rare disease," or, "This is a rare case and seems, therefore, to warrant being reported."

Don't say *symptomatology* when you mean

symptoms. Symptomatology treats of symptoms.

Don't say that a person is *tubercular*; this implies that he is afflicted with nodules, which may or may not be tuberculous.

Don't confuse *beside* and *besides*. *Beside* is a preposition meaning *next to*; *besides* is a preposition meaning *in addition to*.

Don't estimate measurements in terms of cocoanuts, oranges, fists, eggs, beans, and so forth; use the metric system.

Don't say, "There was no pathology in the appendix." Pathology is that branch of medicine which treats of the essential nature of disease.

Don't use a double negative to express a positive idea. "Unsuspected cancer is not infrequently found." (Cancer that has not been suspected is often found.)

Don't say *case* when you mean *patient*. *Case*, in a medical sense, signifies disease or injury. There is no excuse for the expressions: "The case was operated and recovered"; "The cases could not take such large doses"; "Five of the empyemas died"; "Of the 276 deaths, sixteen had gallstones."

Don't confuse *toxicity* with *toxemia* or *toxic effects*. *Toxicity*: The quality, state, or degree

of being poisonous; the degree of virulence of a toxic microbe. *Toxemia*: Blood poisoning; poisoning by toxins produced in the cells or by the influence of microorganisms. *Toxic*: Pertaining to, due to, caused by, or of the nature of, a poison. A poison cannot produce toxicity, for toxicity is a characteristic of the poison itself. The poison can produce toxemia or toxic effects.

Don't confuse *differentiate* with *distinguish*, *discriminate*, or *contrast*. *Differentiate* may be used correctly to explain a biologic process, for example: "Squamous epithelium does not originate from columnar epithelium, since the columnar cell is differentiated and cannot regenerate." *Differentiate* may also be used in describing differences, point by point, for example: Simple cardiac hypertrophy and pericarditis may be differentiated by the heart sounds. Right use: Differentiate cardiac hypertrophy and pericarditis. Wrong use: Differentiate between cardiac hypertrophy and pericarditis.

Don't say *between* when you mean *among*. Look up these words in the dictionary.

Don't say *consider* when you mean *regard*, *think*, or *view*.

Don't say *coördinate* when you mean *correlate*. Look up these words in the dictionary.

Don't say *due to* when you mean *attributable to* or *on account of*, or perhaps something else. *Due to* is inaccurate and slovenly.

Don't say *during* when you mean *in*.

Don't say *eventuate* when you mean *occur* or *happen*.

Don't say *motivate* when you mean *move*, or *force of motivation* when you mean *motive*.

Don't say *phenomena* (plural) when you mean *phenomenon* (singular).

Don't forget that *none* is a contraction of *no one* and takes the verb *is*, not *are*.

Don't say *people* when you mean *individuals* or *persons*. Neither fifty *Kaisers* nor fifty *wops* are fifty people.

Don't say *point of view* when you mean *view* or *opinion*. The phrase *point of view* is now and then both accurate and useful, but it should be employed sparingly.

Don't say *sociological* when you mean *social*, *psychological* when you mean *mental* or *psychical*, *biological* when you mean *organic* or *vital*, or *physiological* when you mean *physical*.

Don't overwork *hence*.

Don't begin as many as ninety-five per cent of your sentences with *thus*.

Don't say *startling fact*, *downward path*, or *step by step*. These phrases are stigmata of the exhorter.

Don't say *I will* or *I would* when you mean *I shall* or *I should*, and don't say *you shall*, *you should*, *he shall*, or *he should* when you mean *you will*, *you would*, *he will*, or *he would*.

Don't split infinitives.

Don't separate an auxiliary verb from its verb or participle unless you are using more than one auxiliary with one verb. Don't say, "This should never happen," although it is true. "This never should happen" is equally true and is also correct. But you may say, "This should never have happened," if you like it better than "This never should have happened."

Don't forget that skipping about from tense to tense—

commingling past, present, and future—in one time and paragraph, has not even a Bergsonian justification. It is blasphemous, ungrammatical, and annoying.

Don't forget that a sentence into which you have put more than fifty words is probably awkward and unclear.

Don't fail, after you have written a sentence, to look it over and translate it into ideas (if you can), and decide whether or not it tells the reader anything.

Don't fail to go over your pages diligently; relentlessly "thin out" words. A good writer takes a hint from a good gardener.

Don't think that atrocities are pardonable and may be imitated if they are committed in books written by Presidents of the United States who are known as "stylists" or "authors." Abraham Lincoln would have said something brief and appropriate about "stylists" if he had been called one. He wrote well because he had something to say and wanted to be understood. A good writer addresses persons who have to comprehend, to decide, and to act. "Stylists" write for publishers, posterity, and chautauqua circles.¹²

Don't use exclamatory and interrogative sentences when the declarative sentence can be made to serve. It is only in the rarest cases that these variant forms are really effective.

Don't rise to poetic heights except when describing genuinely poetic subject matter.

Don't pile up adjectives and adverbs. There is no more justification for being a spendthrift with these descriptive coins than there is for any other sort of extravagance.

Don't use, or at any rate don't abuse, the weak intensives, such as *certainly*, *surely*, *veritably*, and so on.⁷

Form the habit of using correct words. The reader should not be obliged to guess your meaning.

Study the style of your paper quite as carefully as the subject matter. The hackneyed excuse for bad English, "individual style," will not be accepted by conscientious editors.

Do not use language that may be understood; use language that must be understood.

CHAPTER VIII

SUBJECT MATTER: LENGTH OF PAPERS

Few men are experienced and wise enough to form large generalizations, and few large generalizations are true enough or definite enough to be valuable.—*Manly and Powell.*

While the chosen audience determines, not only the subject, but the phase, and the method and scope of its development, it is conversely true that the chosen subject determines the audience and the journal in which the paper should be published. This is especially the case when it is desirable to announce without delay a new method or discovery. The custom of publishing miscellaneous articles in journals purporting to cover only special subjects, and of publishing special articles in journals covering a miscellaneous field, is not only wasteful of the reader's time, but it is very often an annoyance to the reviewer compiling data on a particular topic.

The writer should choose his topic from the most available subjects of which he has made some original study, and, what is of greater importance, he should choose it from material of which he may have an opportunity to make

further studies and investigations. Too often the young physician overlooks this point or considers it impractical; and in his haste to appear in print he prepares the first of a series of widely disconnected papers which result in waste and misdirection of his energy, and assist only in further encumbering with unrelated data an already overburdened medical literature. The writer should early appreciate the fact that, not only the surest means of recognition by his professional associates, but also his greatest assurance of ultimately adding somewhat to the sum total of scientific knowledge, lies in the thorough and persistent study of a single subject rather than in desultory studies of many subjects. In a series of articles giving the results of continued observations on the same topic, material already published should not be repeated. The writer should particularly guard against this practice. A brief summary, or a reference to previous articles is quite sufficient for the intelligent reader.

It might be supposed that anyone who wished to write would know what he wished to write about. But many merely wish to write. To recommend that such a person choose a subject which he knows well, is not so superfluous as

it seems. What is well known seems commonplace, and only the unfamiliar allures. But obviously the unfamiliar must be left to someone to whom it is familiar.

The very process of limiting the subject to manageable size will inevitably result in suggesting something to say about it. The ideas suggested may arise very disconnectedly and in very crude form. The first thing to make sure of is that you catch and fix them all.¹⁶

LENGTH OF PAPERS

A paper should be brief and clear, demanding only enough of the time and patience of the reader to permit the presentation to him of the essential points. The practice in some of our medical societies of reading only abstracts of articles, thus giving more time for discussion, might well be adopted more generally. It is worthy of note that an abstract will usually be found to contain all the essential facts of the original article. Orations for special occasions may occupy more time; but, even under such circumstances, it is better to err on the side of brevity. Special papers not intended to be placed before an audience may contain observations, results of investigations, and descriptions of interesting cases more in detail. However, should a journal article necessarily extend beyond five thousand words, it may be wise to publish it serially or in a monograph.

If it is published serially, an opportunity is also afforded for more complete investigation of the subject.

There is a vast amount of effete and worthless material in the literature of medicine, and it is increasing rapidly. Our literature is in fact something like the inheritance of the golden dustman, but with this important difference, namely, that when the children raked a few shells or bits of bone from the dustman's heap, and, after stringing them together and playing with them a little while, threw them back, they did not thereby add to the bulk of the pile; whereas our preparers of compilations and compendiums, big and little, acknowledged or not, are continually increasing the collection, and for the most part with material which has been characterized as superlatively middling, the quintessential extract of mediocrity.⁵

Avoid miscellaneous topics.

Choose a subject, (1) of which original study has been made, and (2) on which further investigations may be made.

Give a brief summary of personal observations on the topic previously published.

Review literature briefly.

Make papers brief and clear.

Present to an audience only abstracts of long papers.

Publish long papers serially.

CHAPTER IX

ARRANGEMENT: THE BEGINNING AND THE END

Good organization comes, not by inspiration, but by careful thinking. Even men of genius arrange and organize their work with care. Native talent or long practice may greatly abridge the process, but the process is necessary. Bad organization and confused arrangement have caused as many failures as has poverty of thought.—*Manly and Powell.*

Accurate thinking and accurate expression are a preliminary to good organization. The practice of reading a few good articles carefully, and of thoroughly analyzing and fixing in mind their substance, is excellent mental training and far more useful than a superficial review of many articles. Of equal importance is the ability to select from the vastness of literature and of science, subjects worthy of special study, and to preserve through such study a certain personal mental balance, thus broadening the writer's conception, and stimulating his imagination.

In the plan of the construction of a paper the end should be considered with the beginning, and in the course of the work both should be kept in view for purposes of assimilation and logical finality. The practiced writer may not find it necessary to confine himself

to any fixed rule in the matter of beginning and ending, but the inexperienced writer should adopt the safe course, that is, state his problem, his observations, and his deductions briefly and clearly and then stop without hesitation.

Undoubtedly one of the greatest impediments to a graceful beginning is the writer's self-consciousness. Instead of trying to remember how others have written he should, for the time, clear his mind of precedents and take honest account of his own store. He should then, with dignity, introduce that and no more. One fixed rule should be adhered to: Begin promptly.

Aside from the summary, the end of a paper should, if possible, reach the climax of the argument and then end, leaving a sense of completeness and not redundancy in the mind of the reader.

Many writers pay little serious attention to their introductions, but whatever needs to be done in the way of defining the subject for the reader should be carefully done. At no time is bewilderment more fatal for the reader than at the start. If he gets into a subject with a thorough understanding, he is able to surmount more serious difficulties; but starting is as much more difficult than continuing for a reader as it is for a locomotive attached to a heavy train.¹¹

All writers, even the most skillful, are, in the degree of their skill, at some care how to begin. An unpractised writer, for

sheer helplessness at the outset, may never begin; he may abandon his work in despair. A witty beginning is something of a liberty; for an emphatic beginning, the reader is not yet attuned; nor is he attuned to a ponderous introduction. To begin naturally and interestingly is no mean art.

We shall not begin with a crude or heavy lump of our matter, yet we shall try to touch the keynote of the subject and to engage in the argument easily but directly. We have seen that the beginnings of great writers are direct; we shall not begin, then, with apologies, with wayward or fanciful approaches, nor with any kind of skirmishing.

Of ends, authors of theses, and others, seem to be too careless; yet how telling a place is the end of a paper for a weighty reflection or a summary view of the field. Of ends, I will only say, "Do not end anyhow; let your leave-taking be easy, gracious, and impressive in proportion to the theme, not ponderous, pompous, epigrammatic, or austere."¹

Practice thinking accurately before transcribing ideas.

Avoid superficial reading. Read good articles carefully and make selections therefrom.

After reading, analyze and summarize all data to be used.

Avoid time-worn introductions.

Begin promptly.

Bring the argument to a climax at the end of the paper.

Summarize briefly.

End promptly.

CHAPTER X

THE OUTLINE

The subject chosen, facts must be collected, inferences formulated, and the whole presented with due proportion in its several parts, and in language as nervous and lucid as the author can command.—*Allbutt*.

In reviewing the literature of a subject, the writer should make notes on cards or sheets. These should be arranged first under main headings and then under minor headings, in logical working order. For greater convenience the cards, if used, may be placed in a special compartment file; they may then be added to or rearranged as the study advances. Some writers make satisfactory progress by writing the first drafts of their papers on cards.

The next step is to build a definite framework on which to construct the body of the paper. The importance of making a complete outline will always be appreciated after it has once been done. While outlines must be varied according to the subject under discussion, in general the following may be adapted to almost any scientific subject:

I. *Introduction*.—This should give the object of the paper, the character and extent of the

original data to be discussed, and the sequence of the article if it is one of a series.

2. *Historical notes.*—The literature of the subject should be reviewed. The writer, when possible, should summarize the views of contemporary workers in the same field and then restate briefly his own previous studies if any. "It would save us hours of unnecessary misery were we to make ourselves acquainted with the views of prominent men of former times who felt as we and talked as foolishly."

3. *Materials and methods.*—Here should be included an exact statement of the character and amount of material investigated, of the old and new methods of investigation, and of the operations, devices, and so forth, used.

4. *Results.*—This should embody a detailed discussion of the results of the investigation, operative procedures, or experimentation. While findings which prove the author's working hypothesis may properly be given first place in the argument, other findings of a negative character and those of no apparent significance should also be stated.

5. *Summary and conclusions.*—This should consist of a brief review of the work done and of the conclusions which may properly be drawn

therefrom. The writer should have in mind that this portion of the paper is usually not only the first portion read, but that it may be the only portion read. Further, if properly made, the summary and conclusions may serve as a most desirable form of abstract to be published by other journals.

6. *Bibliography*.—Bibliographies should give the writer's name and initials, the title of the article, the name of the periodical in which it appeared, the year of publication, the volume number, and the inclusive paging.

The outline completed, the first draft of the paper should be made. If possible it should be dictated to a stenographer who is familiar with medical terms. Should it be necessary to write it by hand, care should be taken to write legibly, leaving wide margins and wide spacing to permit changes and notes of instruction. The use of the dictaphone is obviously more rapid than writing by hand, and perhaps no more difficult, when once learned, than dictating to a stenographer, since both methods require practice. A quiet place with sufficient space to spread out notes and papers should be selected for dictating or writing. All available precautions should be taken against interruption, which is

clearly detrimental to inspiring or consecutive thought. In writing or dictating from classified notes and references the outline of the paper should be closely followed. Dictating from memory leads to inaccuracies in statements and to faulty construction.

Experience has shown that if the writer will test his production to see if it is in accord with four rules (which may be readily applied to the synopsis form), he will be able to detect all important defects of structure.

The facts should be presented in an order which is logical for the reader.

The structure should be divided, first, into main divisions, then into such minor divisions as will bring out fully all important relations of the separate facts.

All the parts of each division should be, in fact, strictly coördinate.

The sum of all parts of each division should equal the whole of that division, no more and no less.¹¹

Make accurate notes on separate cards.

Arrange notes under subject headings.

File cards alphabetically.

Make a complete outline.

Follow the outline in writing the paper.

Select a quiet place for writing, with ready access to cards and references.

Write legibly. Remember that the manu-

script may be copied by someone who is not familiar with the medical vocabulary.

Make a draft of the paper, revise it, and then put it aside.

After many days revise with a new understanding.

CHAPTER XI

CONSTRUCTION

Finally, it has been well said that the style of writing is an echo of the man's own soul. A blatant, didactic style is the work of the egotist; a simple, reserved style, the sign of a conservative thinker; a careless, rambling style, evidence of a slipshod worker.—*Editorial Journal American Medical Association.*

The successful writer on medical topics is the one who molds his writings in such manner and of such material as will interest and, incidentally, please the reader. Often, however, the reverse of this is true, the writer obviously being so intent on saying what he wishes to say that he does not consider the impression he may leave in the minds of his readers.

If the writer whose sole object, for various reasons, is a desire to appear in print, and the writer whose ideas are tiresome and unconvincing because of his complacent belief in his own omniscience, are left out of consideration, there remain, among others, those who are actuated by the hope that their work will prove of some value. The writings of the latter will be characterized by:

1. A careful avoidance of exaggerating his personal observations and of minimizing the observations of others.

2. A precision in the use of words, which alone may convince the reader that careful thinking has preceded.

3. A dignified orderliness of construction in arranging clauses, sentences, and paragraphs, and in making all statements brief and clear.

4. A logical sequence in the statement of facts, theories, and deductions, which will stimulate and inspire in the reader a desire for further investigation of the same subject.

To those who have taken lifelong thought of how to write, who have striven painfully with the craft of this supreme art, the view of it as a happy gift seems flippancy. Let the candidate be assured that an easy and interesting style, like easy cricket, implies hard practice.

In nature there is no great and small; the careful precision, even of a word, often so bites into the matter as to lead the author to revise or enlarge his thought; slovenly writing is not only for the most part slovenly thinking, but slovenly habits of expression corrode the very substance of the thought.

The reader must be carried along in a quick and equable current. It vexes him to have to return upon sentence after sentence in order to revise the author's particular meanings by the general tenor of his argument; yet in reading current prose this vexation is so continual that we scarcely realize the burden and tax of it. A sentence, as it stands, bears a certain meaning; the author, however, retorts testily, "Oh, you know I did not mean that"; but he has written it, and it is not fair for an author to think in the rough, to scribble, unchastened, whatsoever comes into his head, so that, as Erasmus said, "Apollo only could discern his meaning," and to throw

the control and revision upon the vigilance of the reader. In few theses, even of plain matter enough, have I not to prop up maimed or rickety conceptions, to dissect conventional phrases or equivocal words, and to sweep aside page after page of loose vesture which nowhere fits the thought closely, nor moves freely with it.

By disorderly writing, we fall into worse things than muddle: we blunt the probity of our minds; we slur over difficulties and cover up ignorance. Content to be bunglers, we lose our respect for truth and blunt our consciences. On the other hand, when in an author's prose we perceive unobtrusive scruples and feel that his conscience is tender for the rightness of things, we are disposed to give him credit in greater issues for the rectitude which he exhibits in the less.

The essayist, seeing his design as with the eye, will describe his vision precisely, cogently, and clearly; and if he will then reduce his words and clauses to their simplest and shortest forms, rejecting not exuberances and superfluities only but also matter alien in that place, however interesting in another, he will find that, in the main, sound matter so conceived makes sound style, and original matter original style. Force, lucidity, unity, simplicity, and economy of expression are virtues which we may all attain, originality will be as God pleases.¹

When a writer appears to be trying very hard to avoid obscurity in any way, as when he introduces long footnotes to explain his allusions, or translates his Latin or German quotations in parentheses, he at once suggests the very thing that he tries to avoid. No one can attain lucidity in this way.

The clearest style is generally the simplest. The writer whose meaning is so plain it never gives us a thought, and whose diction is so simple and ordinary that it seems easy, until we try to imitate it, is, so far as this quality of style is concerned, the one who makes the most successful contribution to literature.⁶

Every paragraph and every sentence in your paper should receive careful and *repeated* consideration, first, as to whether

it tells the exact truth; second, as to whether it is absolutely clear, that is, will convey the same meaning to all as to yourself (try it on your friends, if they will submit to it); third, as to whether it is complete, or requires various additions or qualifications—science is an eternal qualification; fourth, as to whether the sentences in it are entirely logical and move convincingly toward your final conclusions. These things can be determined only by repeated readings and much pondering. . . . Occasionally there is a person who can write a thing as it should be the first time trying, but I have known only one or two such persons. Generally, easy writing is hard reading. Darwin sometimes recast his paragraphs a dozen times, and most of us may expect to reach a good style, if at all, only by dint of much labor and repeated re-writing. Yet who can doubt that it is an end worth all it may cost?²⁰

THE SPOKEN ADDRESS

Much that is desirable in the written address may be applied with emphasis to the oration or extemporaneous speech, but with the difference that the choice of a topic and the manner of delivery are the most important considerations. The speaker gains an advantage by his opportunity to emphasize with tone and gesture certain words and passages; he loses by the inability of his audience to review mentally what he has already said while he is still speaking. Ideas, facts, and hypotheses, therefore should be presented with only enough embellishment to make them convincing. Important issues lose force—may even fail to

reach the mark—when surrounded with padding in the form of vague conjectures and generalities.

Paucity of language is a common defect of extemporaneous speech, and a stenographic report of several speeches delivered by the same person will exhibit this defect in a mortifying manner when, in response to the requests of those who have heard them, the orator attempts to collect them for publication. It is then difficult for him to believe his vocabulary so meager, the forms of his sentences so similar, that so many phrases often recur, and that there seems to be an irresistible tendency to use the same words, even when other words express the shade of meaning which he endeavors to communicate, with greater accuracy than the familiar terms which go so trippingly over his lips. Excess of repetition in the same speech is a serious evil and sufficient to account for the lack of success which attends many who are nobly endowed in voice and figure and not destitute of a rich and expressive vocabulary.²¹

Write on topics that will instruct and interest the reader.

In writing, keep in mind the reader's possible point of view and knowledge of the subject.

Avoid hazy construction and hypothetical conjectures.

Avoid exaggeration; adhere to facts and verify them.

Keep in mind the importance of logical, clear, and brief construction. A good style is direct, plain, and simple.

Follow the outline.

CHAPTER XII

CASE HISTORIES, ABSTRACTS, AND ABRIDGMENTS

No matter how trifling the matter on hand, do it with a feeling that it demands the best that is in you, and when done, look it over with a critical eye, not sparing a strict judgment of yourself.—*Osler*.

Often in composing medical papers the writer neglects or mutilates the case history. It would seem that no two writers even by chance select the same form of construction, and further, that few of them follow a uniform style for their own consecutive histories.

The case history is usually much longer than is necessary. Clearness rather than length is desirable. It should not be transcribed in the telegraphic style of the original records; complete sentences should be made if possible. Negative data bearing no relation to the case should be omitted.

The following illustrative examples not only show the absurdities which sometimes appear in print, but they also define the editor's and the publisher's attitude toward such construction.

CASE REPORTS

A case report should tell its story in clear, unambiguous narrative style. It should not be transcribed *verbatim et*

literatim from the original records, hastily jotted down at the time the various events occurred. The jerky, telegraphic style of the record sheet may result in actual padding. The following is an example of this style:

Patient, Giuseppe Roverano. Age, 35. Color, white. Nationality, Italian. Occupation, laborer. Condition, married. Complaint, inflammatory rheumatism. Entered Brown Hospital, Jan. 15, 1909.

All the important data are given in the following sentence:

G. R., an Italian laborer, aged thirty-five years, entered Brown Hospital, January 15, 1909, complaining of inflammatory rheumatism.

Negative findings.—Space should not be devoted to unimportant findings, or those which have no bearing on the subject under consideration. Negative findings are of value in few instances. They should be cited only when the author is convinced that they add to the force of the argument he is making.

Confusion of time.—A common fault in case reports is illustrated in the following:

Case 3. A.D., Feb. 8, 1912. Hairpin in the bladder and renal infection. Girl 22 years old, first seen three years ago. . . . Two years ago her kidney was explored. . . . A year ago this patient went to the city hospital. . . . Soon after this I heard of her as a patient with marked polyuria. . . . From the early part of the summer until August she had retention of urine and had to be catheterized. . . . We took her in on this account. . . . At one time while she was in the hospital she attempted to catheterize herself. . . . Five weeks ago she allowed a friend . . . to attempt catheterization. . . . The friend told her the next day that she had allowed to slip into the bladder a hairpin that had been used to stiffen the catheter. . . . I saw her three weeks ago and found the hairpin. . . . I was not then allowed to remove it. . . . On February 3 she told me that the day before she had pain in

the left renal region. . . . Examination next day showed marked cystitis. The pin was removed. . . . Within four days . . . the patient was discharged.

January, 1913. Two weeks after leaving the hospital another pin was found in the bladder.³

Comment.—The foregoing is typical of many case histories actually offered for publication. The confusion of dates and time, and the liberal use of the word *ago* in this case, are bewildering and absurd.

Coined abbreviations.—Another fault is the use of original or coined abbreviations, often quite unintelligible to the reader, such as "W. D. & N." for "well developed and nourished," "H. & L. O. K." for "heart and lungs normal," and "L. L. L. N. R." for "left lower lobe no râles." Abbreviations not in dictionaries and ordinary textbooks are permissible only in tables, and then they must be explained in footnotes or be obviously self-explanatory.

Tenses.—These should be used consistently. If the present tense is used for the sake of vividness in reporting clinical examinations or pathologic findings, it should be maintained throughout the paragraph. The simplest way usually is to use the past tense, at least in the narrative portions of the report.³

ABSTRACTS

In making abstracts of papers the writer is often too nonchalant, too regardless of the appearance and the comprehensiveness of his work. Abstracts are to be found in almost

every medical journal hopelessly mixed as to tense, person, number, concord, and so forth; this in spite of the many suggestions and printed rules which are sent out willingly and patiently by editors and publishers of medical papers.

Form of abstract.—Unless a direct quotation is made, abstracts should be made in the third person. The exact title of the original article, the name of the journal in which it is published, the year, volume, and page should be given.

In the first paragraph the general scope of the article should be given, that is, whether the work is original, a description of technic, case reports, or a review of the literature with conclusions.

If the author's work is original, his results and views should be emphasized. If it is a technical description of an operation or apparatus, the various steps or parts should be enumerated in just enough words to convey the author's idea. If it consists of reports of cases the important points, with conclusions, should be summarized. Similar cases should not be duplicated. If the work is a review of literature and reports of cases, the conclusions only should be given and the cases omitted. The value of the article should not be commented on.

ABRIDGMENTS

In abridgments more or less of detail is omitted, but the general sense and unity of the original articles are retained. This is usually done by deleting certain paragraphs or sentences.

Do not overlook the importance of an intelligible case history.

Do not say *case* when you mean *patient*, and vice versa.

Do not mix hopelessly time, person, and number in writing case histories and abstracts. Follow publishers' rules, suggestions, and outlines.

CHAPTER XIII

CHAPTER, PARAGRAPH, AND SENTENCE

If he forgets paragraph and chapter, the author makes the way less easy for us; but if his sentences are awkward, shapeless, and perplexed, his ore must be very precious if we are to toil on with him. Is there not a certain arrogance in the author who cares little, or not at all, for unseemliness; who will put us out of step without apology?—*Allbutt.*

It is expected that the practical writer will know best how to arrange his own material into chapters, paragraphs, and sentences. Though little versed in the craft of writing, some writers, with intuitive art, select the most advantageous and at the same time the most attractive form of presentation. Others, however, must take definite thought in order to secure clearness, sequence, and unity; it may even be necessary for them to return to the study of formal rules. But if they would remember that the paragraph should carry the thought in a wave of increasing emphasis, and always with directness, until the climax is reached, there would be little danger of the discussion drifting into unprofitable channels.

Many a big book could have been boiled down to a few chapters, and in some cases to a few sentences, or to nothing at all, had its author been possessed of *clear ideas*. As a means of compression, learn to think. This is too much to

expect of every one, but not too much to insist upon for the man of science. Whatever is worth doing at all is worth doing well. Clarity is the soul of truth, and especially in science there should be an idea behind every expression, and this idea should be stated as clearly as language permits. To read the dictionary is usually considered in the light of a joke, but I doubt if any student could do better, and that, too, through a long series of years. If he does not continually thumb grammar and dictionary, and persistently read the best authors, he will seldom acquire a luminous and persuasive style, than which, exclusive of a single-minded devotion to the truth, nothing is more to be desired. There are various ways of saying things, but only one best way. Nevertheless, to read the contributions of many scientific men one would suppose they must think any method of expression sufficient, even the most clumsy and ambiguous. Yet such is not the case. In spite of this motley array of bad writers, it is best that subject and predicate should agree, that one should avoid split infinitives, and especially that each statement should be susceptible of but one interpretation!²⁰

A chapter consists of sections, visible or invisible, and on the order and content of the sections much of the lucidity even of the chapter depends: a mechanical order is better than none; an organic order—an order of thought—is better still.

On turning now to the paragraph, I find in too many papers that this feature has a precarious existence, or none. Not infrequently indeed, in page after page, sentences are treated as paragraphs, or the paragraphs, if any there be, do not correspond with natural parts of the argument, but are fragments or hunks of the body of the thesis rather than limbs of it, merely mechanical parcels, like a string of sausages. Now we must bear in mind that a paragraph, unless it be in a summary or emphatic position, is more than a sentence; it is a group of sentences, one bearing on another, and thus compassing a wider meaning than the sentence; it has accordingly

its own subject and unity, though of a scope far narrower than that of the chapter. A careful portioning of the matter into paragraphs, all sufficient and various enough to contain the several limbs of the argument, but none too long for the reader to grasp at once, is a great assistance to him; but thus to isolate mere sentences and to hop by paragraphs, as it were upon stepping-stones, is almost as fatiguing as it is, on the other hand, to trudge over lengths of stuff without beginning, middle, or end, and without those pauses and recoveries on the way that the slender faculties of man require.¹

There is no one rule for constructing paragraphs, as there is none for constructing chapters or sentences. Efforts to formulate a single rule are successful only when they exclude from consideration, as bad, all examples that do not conform to the rule. The principal qualities to aim at are unity, coherence, clearness, and emphasis. Unity is largely dependent upon excluding inappropriate ideas; coherence depends upon arrangement and sentence connection; clearness is a function of organization, connection, sentence structure, grammar, and vocabulary; emphasis is usually a matter of climax, but even without climactic arrangement the end of the paragraph is, for purely mechanical reasons, the most emphatic position.

The essentials of the sentence are good connection, sound organization, and correct grammar. To the untrained writer sentences are hard, crystallized affairs. When once a thought has taken form in words, it seems practically impossible to change it. The experienced writer knows that a sentence is as easy to manipulate as a lump of putty. He can change its shape, twist it about, divide it, join it with another, do what he will with it. For style, for effectiveness, skillful organization of the sentence is even more important than correct grammar. The intelligent reader can usually correct faults of grammar with little effort; badly constructed sentences can be cured only by rewriting.¹⁶

Having trained your ear on good prose, turn your sentences this way and that before you pass your revise for press, and fix them in the form which reads best; the rules you may read afterwards.

In prose, then, for breadth of conception, dignity, or impressiveness, the ear and the understanding are willing to be constrained by suspension; but mere drags, delays, or inversions, without such rewards, they resent.¹

A unit of thought should not be scattered through two or more sentences; neither should a sentence contain less than one complete thought.

Long compound sentences consisting of many statements strung together with *and's* and *but's* are peculiarly crude.

Avoid abrupt change in the point of view within a sentence.

Do not make many sentences in a composition or a passage monotonously alike in construction. This principle is often violated (a) by beginning many sentences near each other with *after*, with *this* or *these*, or with *there is* or *there are*; (b) by using with noticeable frequency a compound sentence with two members of about equal length joined by *and* or *but*; (c) by using participial or absolute phrases with noticeable frequency; and (d) by the habitual use of *so* as a connective.

The opening sentences of a formal composition should be self-explanatory; they should be clear to the reader without reference to the title of the composition.

Paragraphing, if properly employed, gives the reader as much assistance in understanding a whole composition as punctuation gives him in understanding a sentence. Parts of a composition that are distinct in topic may, by paragraphing be made distinct to the eye also,—an effect that decidedly promotes clearness.

A passage that serves as an introduction or a conclusion to a composition consisting of several paragraphs should be paragraphed separately, even if it consists of only one or two sentences.

The beginning of a new paragraph naturally leads the reader to think that the discussion of a new topic is beginning. Therefore, to begin a new paragraph where the discussion of a new topic does not begin, misleads the reader.

See that every paragraph has one central topic, under which all the statements in the paragraph logically fall.

A sentence or a short passage which the writer wishes to make especially emphatic may be paragraphed separately.

A composition more than 300 words long should not be written without paragraphing.

A composition no longer than 150 words should **usually** be written without any paragraph divisions.

Do not paragraph with needless frequency and without good reason.²²

Incoherence in paragraphs is usually due to the absence or misuse of connective words; therefore, however, moreover, finally, and thus should be used freely.

Study the construction of chapters, paragraphs, and sentences.

Study particularly rules on the construction of sentences, and apply the rules in practice until you acquire confidence in your own manipulation of words.

Make clear cut, clean sentences.

CHAPTER XIV

REFERENCES

There is hardly any one detail of a well prepared and well written article that will give a better and clearer idea of a writer's methods, or foster a greater confidence in the accuracy and soundness of his views, than well chosen, well arranged, absolutely correct reference.—*Journal of the American Medical Editors' Association.*

While writers differ in their methods of taking and making notes, there can be no question as to the necessity for accuracy. The simplest and most business-like method is to place comments, exact quotations, accurate abstracts, and so forth, on separate cards at the time of reading. The value of doing this will be fully realized only when it is found necessary to refer to the original article, which may no longer be accessible, in order to correct carelessly made notes and references. In this connection it may be suggested also that when only an abstract has been read, the writer, in referring to it, should, in all fairness, make reference to the abstract rather than to the original article from which entirely different conclusions might have been drawn. Definiteness, accuracy, and uniformity in references cannot be too strongly urged. The too confident or careless writer would not be

flattered if he should happen to overhear the comments of librarians and editors after they have searched vainly for one of his inaccurate references. The data for a complete and useful reference are: (1) the author's name and initials, (2) the title of the article, (3) the properly abbreviated name of the periodical in which it appeared, (4) the year of publication, (5) the volume number, and (6) the inclusive paging. Emphasis should be placed on the inclusive paging, as it is a matter of considerable importance to the reviewer to know the length of an article.

The following are examples of correct references:

1. Cannon, W. B., and Washburn, A. L.: An explanation of hunger. *Am. Jour. Physiol.*, 1912, xxix, 441-454.
2. Faber, K., and Lange, G.: Die Pathogenese und Aetiologie der chronischen Achylia gastrica. *Ztschr. f. klin. Med.*, 1908, lxvi, 247-276.
3. Pavlov, I. P.: The work of the digestive glands. Ed. 2, London, Griffin, 1910, 90 pp.

The author who places a proper estimate on the importance of having his references correct can always, by due and

proper diligence and effort, prevent the occurrence of typographical errors. The printer, poor devil, has much to answer for here and hereafter, but errors in an author's references invariably tell more eloquently of the writer's neglect than of the printer's mistakes.⁴

A common fault lies in taking a reference from another's bibliography as though it were thereby Gospel truth itself. Faith may remove mountains, but in science ye are known by your works. "If the great Schmidt gives this reference, it is good enough for me." That is where trouble begins—or is continued; for the possibilities—nay, the probabilities—are that Professor Dr. Geh. Schmidt allowed an inexperienced assistant to round up the references; that another, equally untried, omitted to verify them in any way, and in copying, altered this one unconsciously; while a third let the printer still further maltreat it. The result, fair without but false within, may mean nothing even to Fetlock Jones or Doctor Swatson. Take no reference for granted. Verify the reference that your best friend gives you. Verify the reference that your revered chief gives you. Verify, most of all, the references that you yourself found and jotted down. To err is human, to verify is necessary.¹⁷

Verify all references; be positive that they are complete and accurate.

Index all articles when reading or abstracting.

Refer to original articles. Do not give references from previous references.

If an abstract is referred to, state the fact that it is an abstract.

CHAPTER XV

REVISION

The mania to "tell it all" hinders clearness and precision and unity and emphasis. Moreover, a composition that empties the writer rarely fills the reader; and the lees of any subject are bitter to the palate.—*Manly and Powell.*

The writer who appreciates his own limitations and the fact that nothing has ever been done so well that it cannot be done better, will be his own most severe critic, and in thus criticizing will find ways and means to improve his work.

The inexperienced writer, in particular, should not ignore the importance of a careful revision of his manuscript before submitting it for publication, and such a revision should not be done hastily. Few emergencies arise in which it is not possible to prepare an article and then put it aside for a brief period, when it may be reviewed with clearer vision. In several careful readings of a clean typewritten draft of the paper with wide margins and spacing, the following points should be given special attention:

1. Changes in the arrangement of material.

If the outline has been properly made and faithfully followed, few changes will be necessary.

2. Proper placing of illustrations, tabulations, and subheads, and the following of a uniform order of arrangement of bibliographic references.

3. The addition of data, ideas, missing links in the argument, and so forth. The writer cannot be too careful in this portion of his work in eliminating inaccuracies, in expanding incomplete statements, in verifying data and statistics, and in correcting proper names, dates, numbers, and bibliographic references.

In the final review of the diction careful discrimination must be exercised in the choice of words, in the arrangement of phrases, and, in general, in the consideration of the impression which will be conveyed to the hearer or the reader. For example, if the writer will put himself in the place of the reader or the audience he will be quick to note that invariably a strong point is weakened by repetition. A speaker may safely drive his point home by repeating once, while a second repetition is always fatal. A writer may not effectively repeat, save in other words.

For many it is extremely difficult to acquire the art of "boiling down." If the structure of the writing is carefully

made out, much may be done at the start by the exclusion of all unnecessary ideas and by the brief statement of the ideas which, being subordinate, need not be given full expression. In writing the final draft, many words may be saved by guarding against sentence structure which is faulty or which entails the use of needless circumlocutions. In speaking we often get well into a sentence before we have considered how we can end it; consequently we are compelled to use extra words for lack of proper sentence planning. There is no such excuse for verbosity in writing.¹¹

Do not hesitate, either now or later, to sacrifice any idea or material not strictly germane to your purpose. It takes courage and hardness to do this, but the sacrifice will be rewarded. Excellence lives by sacrifice. Partiality to one's own ideas, unwillingness to omit what seems to have been well thought or well said is a main cause of deformed, disproportioned writing.¹⁶

Again, excogitate matter and argument as we may before beginning to write, yet, as we write, thought develops, and may develop considerably; thus the later part of the first draft proceeds on larger lines, and is fuller in thought than the earlier part. In the second draft, therefore, the writer has to consider the earlier part in the light of the later, and has to remodel the narrower conception of that part on the broader conception proper to the whole. This is the toughest of the tasks of revision, for it may be necessary to break up and reconstruct the piece.

On the third draft the composition is submitted to a still closer revision; but the main work of this stage is to recast paragraphs and sentences until they run logically, and bear but one meaning, and this inevitably: perverse constructions and equivocal or defective words give way to their betters. Ornamental and figurative passages also undergo purgation: in scientific papers purgation should generally go to expurgation; yet our writing should be lively as well as true, and some

happy allusions, if distilled to their essence, may be carried in upon an adjective, or upon a noun coloured by an apt association.¹

Revise manuscript carefully several times; put it aside and then revise it again.

Verify statistical data, charts, illustrations, legends, and references.

Eliminate inaccuracies in the discussion and in names, dates, and so forth.

CHAPTER XVI

THE TITLE

The four rules for the preparation of an article for a journal will then be: (1) Have something to say. (2) Say it. (3) Stop as soon as you have said it. (4) Give the paper a proper title.—*Billings*.

The title of a paper should set forth the character and if possible the extent of the article, not only to enlist the attention of the interested reader, but also for the convenience of future reviewers and bibliographers. Valuable material is often hidden under a casual or irrelevant title. If only a limited phase of the subject is to be discussed, the limitation should be indicated.

In recording experimental findings it is very important to indicate in the title, the type and the extent of the experiment. The title should be a concise and brief index of the material under discussion. This is a matter which should not only be emphasized but enforced. When it is overlooked or neglected by the writer, the editor should be inflexible in his insistence that a comprehensive title is supplied. The writer who fails to provide a proper title has no just reason to complain or even to feel injured when

his article is omitted from references or from an important review of the subject.

First impressions are strong impressions; a title ought therefore to be well studied and to give, as far as its limits permit, a precise indication of what is to come.¹

In behalf of the readers and bibliographers of the future, I would appeal to authors, and more especially to editors, to pay more attention than many of them do to the matter of titles and indexes. The men to whom your papers are most important, and who will make the best use of them provided they know of their existence, are for the most part hard workers, busy men, who have a right to demand that their library tables shall be provided with properly prepared materials and not with shapeless lumps.⁵

Select a title which may be correctly classified in general indexes.

Indicate in the title the contents and scope of the article.

Avoid generalizations; be brief and clear.

CHAPTER XVII

VOLUME OF OUTPUT

There is a dead medical literature, and a live one. The dead is not all ancient, the live is not all modern. There is none, modern or ancient, which, if it has no living value for the student, will not teach him something by its necropsy. But it is with the live literature of his profession that the medical practitioner is first of all concerned.—*Billings*.

There should be a determined effort among writers, editors, and publishers to standardize and classify material for publication in order to decrease the enormous output of medical books and journals. Besides the fact that many of the journals now in existence are a discredit to the medical profession, there is also the deplorable fact that their doubtfully valuable contents must be included in our already overcrowded indexes.

In the disposition of material submitted to them, editors should not be dependent either on tradition or existing conditions. In the acceptance or rejection of articles publishers should not be dependent on, or influenced by, the yearly subscription list or the influential patron. If a uniformly high standard of

publication cannot otherwise be maintained, the medical editor and the medical publisher should perform separate functions. It may be difficult for the owner and publisher of a journal to reject manuscript; an independent editor need not be thus hampered.

A large medical library is in itself discouraging to many inquirers, and I have become quite familiar with the peculiar expression of mingled surprise, awe, and despair, which is apt to steal over the face of one not accustomed to such work, when he finds himself fairly in the presence of a mass of material which he wishes to examine for the purpose of completing his ideal bibliography of—let us say epilepsy, or excision, or the function of the liver.

Let such inquirers, as well as those who regret that they have no access to large libraries, and must therefore rely on the common textbooks and current periodicals for bibliography, console themselves with the reflection that much the larger part of all of our literature which has any practical value belongs to the present century, and, indeed, will be found in the publications of the last twenty years.⁵

It is always painful for the medical editor to reject a manuscript, not only because it may mean the loss of a valued subscriber but because he always dislikes to hurt a colleague's feelings. It cannot be denied, however, that occasionally it affords the medical editor almost vindictive pleasure to liberally blue pencil some of the articles that come to his desk. As a matter of fact, few realize the amount of earnest effort and painstaking labor which a conscientious editor bestows upon many a paper to make it readable and worth while. Looking backward, it must be freely conceded that the articles

nowadays published in the leading medical journals are superior both from a scientific and literary standpoint to those in the past, but still there is much room for improvement. Indeed one can only wonder at times why some articles have been written at all, since they are neither original nor instructive. Certain writers seem to labor under the delusion that an imposing array of citations from the general literature on the subject discussed, invests their own papers with additional importance in the eyes of others and gives them the stamp of erudition. It would be a wholesome surprise to these gentlemen to learn how near some of their contributions were to rejection by reason of their prosy uninteresting character. Many of us will remember the old time puzzle that consisted of placing a trivial object in a small box and this in turn in a larger one and so on until the whole package had reached formidable proportions. Too many articles seem to be constructed upon this very plan, for it is necessary to do a lot of unraveling before the real object is reached. Most readers have neither the time nor patience to do this; life is too short. Consequently many a paper goes unread. On the other hand, there is the writer who is afflicted with an excess of brevity, and therefore omits much that would have contributed materially to the value and completeness of his contribution. Again, we meet with the apologetic writer, who prefaces his paper with several pages of explanation of the motives which prompted his effort, his realization of the honor conferred upon him by the request to contribute, and other bombastic platitudes. Can you blame the editor if he liberally blue pencils such copy? Then there is the author who is addicted to what might be termed medical slang, such as "acute and chronic abdomen," "acute and chronic appendix," "hematogenous kidney," who does a "knee joint" or an "elbow joint," and whose patients, marvelous to relate, "have a temperature."⁴

Do not write unless you have something original or instructive to contribute.

Publish special articles in journals devoted to that subject.

Do not always select the so-called popular journal as a medium of publication.

CHAPTER XVIII

THE MANUSCRIPT

Now there are kinds of form which all literary works must possess, and there are, in addition, rules to which each work must conform when it is written according to some special formula.—*Bostwick.*

Manuscript should be typewritten on one side of a good grade of white paper, with double space between the lines. A margin of from one to two inches should be reserved on the left of the page on which to make notations and corrections. A carbon copy on thinner paper should be retained by the author to safeguard against accident to, or loss of, the original, and with which to compare the publisher's proof. The original copy should always be sent to the publisher.

At the top of the first page, in large capitals, should be the title of the article. Centered underneath, in small capitals, should be the author's full name, his degrees, any positions he may hold, and his address. At the bottom of the first page should be a footnote giving the name of the society before which the paper is read, and the time and place of presentation, or, if the paper is not read, the date of submitting it for publi-

cation. The name of the author and the number of the page should be written in the upper right hand corner of each sheet, for identification. Headings should be placed in the order of their importance; for example, large capitals for main headings, small capitals for center headings, and bold face type, or italics for subordinate or side headings. Tables, bibliographies, explanations of figures, and all notes should be written under their individual headings on separate sheets for the convenience of the printer. The conclusion or summary should also be written on separate sheets, and in this form may often be used as an abstract for publication in journals, or as an outline for the author's memorandum. Consecutive paging, however, should be maintained throughout the article. If a page is omitted, or an insert is made, it should be clearly marked (p. 1½ or p. 1 a).

Bibliographic references should be given "only when the articles cited amplify and illuminate the subject, when the references have actually been utilized by the author, and when they are scrupulously exact and complete."

Bibliographies should be arranged alphabetically, according to authors, and numbered consecutively. The numbers should be placed

in the text only when an author is referred to more than once, or when his name is not mentioned in the text, thus avoiding the annoyance of numerous reference numbers on the printed page.

Illustrations should be numbered from one up and their numbers placed in the text consecutively. All necessary identification data should be written on the backs of illustrations; that is, the indication of top or bottom, the figure number, the name and address of the author, and the title of the article. This writing should be done lightly with a soft pencil in order not to disfigure the face of the picture. The legends should be written on manuscript paper, numbered to correspond to the illustrations, and attached to the manuscript, not to the illustrations. The amount of reduction should be marked on drawings so that their dimensions will not exceed the printed page. Drawings should be made at least twice the diameter of the reproduction. Reduction by photography permits refinement of line and fine shading without excessive care in making the original. All illustrations should be studied carefully with reference to reduction or cutting. This may mean not only a great saving in the cost of reproduction, but will enhance the value of the illustration by empha-

sizing important details. Photographs, photomicrographs, and roentgenograms should be printed on glossy paper.

In the publication of photographs of patients it is customary to mask the face. It is preferable, however, to obtain permission from the patient to publish the photograph unmasked, as masking sometimes obscures details of the lesions.

If a special arrangement is desired, that cannot be designated by serial numbers, the outlines of the illustrations may be traced on sheets of paper and forwarded with the drawings or photographs.

The number of illustrations to be used and the date on which the article is presented for publication should be noted on the title page.

Manuscript should not be rolled or folded; it should be mailed in a flat envelope, sealed. If illustrations are inclosed, they should be guarded by sheets of cardboard placed inside the envelope. They should not be mounted.

Do not submit manuscript for publication until it has been made as perfect as possible.

Number pages correctly.

Place the author's name on each page.

Place tables, bibliography, legends, and summary or conclusions on separate sheets, with consecutive paging.

Compare the illustrations with the legends and with the figure numbers in the text.

Mark reductions on illustrations. Eliminate, by trimming, all unnecessary details from photographs and photomicrographs before sending them for reproduction. A convenient size for photomicrographs is 5 by 6 cm.

Mark the top of the picture.

Send the typewritten manuscript (not a carbon copy) to the publisher; do not roll or fold it.

Retain a duplicate copy of the manuscript.

CHAPTER XIX

THE PROOF

Remember that changes in type cost money. The omission of a single word in the middle of a paragraph may necessitate resetting the whole of this from that point on; and if such alteration is made in the page proof it may further involve repaging the entire article or chapter.—*Manual of Style, University of Chicago Press.*

The author, in reading proof, should compare it carefully with the carbon copy of his manuscript. All changes from the original should be observed, not alone for the purpose of detecting errors of interpretation and of type, but to note for future use changes made in the punctuation, general construction, and so forth. If the manuscript has not been carefully edited before being sent for publication, the author will find it to his advantage painstakingly to check the proof with the carbon copy of the original manuscript and later to check the corrected proof with the printed article. This practice, persistently followed, will in time enable the author to anticipate the idiosyncrasies of different editors and publishers, and he may even become proficient in meeting their varied requirements; at the same time he will acquire discrimination in the use of certain rules

and regulations, and hence, more confidence in his own methods.

Corrections and changes should be made on the margin of the proof in legible handwriting by means of the signs and marks employed by proofreaders. It should be remembered that most journals do not submit page proof, and corrections and inserts should, therefore, be written legibly. The printer should not be required to decipher carelessly written inserts. Proof should be corrected with ink. Pencil marks become blurred and are often unintelligible by the time the proof reaches the printer.

Proof should be read and returned to the publisher without delay. The original manuscript should always be returned with the proof. If reprints are desired, the order blank provided by the publisher should be filled out and attached to the proof. If such a blank is not provided, a written order should be attached to the proof. In either case a copy or memorandum of the order should be retained.

If it is found necessary to change or add a word or phrase, an effort should be made to substitute new matter equal in length to that deleted, or to add matter which will fill one or more complete lines.

The necessity for many changes may be avoided if the author will exercise a little care to decide *in advance* what he wishes done and will mark his copy accordingly. Lack of

PROOF READER'S MARKS

<i>Δ</i>	Dele, or delete: take Δ out.
<i>Ⓙ</i>	Take out letter and close up.
<i>⓪</i>	Letter reversed—turn.
<i>#</i>	Put in space.
<i>⌒</i>	Clo <u>⌒</u> se up—no space.
<i>∨</i>	Bad <i>∨</i> spacing: <i>Δ</i> space <i>∨</i> more <i>Δ</i> evenly.
<i>wf</i>	Wrong font: character of wrong size or style.
<i>tr</i>	Transpose letters <i>tr</i> words <i>tr</i> .
<i>tr#</i>	Transpose the space.
<i>¶</i>	<i>Δ</i> Make a new paragraph.
<i>no¶</i>	Do not paragraph.
<i>□</i>	<i>Δ</i> Indent; or, put in an em-quad space.
<i>[</i>	<i>[</i> Carry to the left.
<i>]</i>	<i>]</i> Carry to the right.
<i>┘</i>	<u>Depress.</u>
<i>┘</i>	<u>Elevate</u>
<i>X</i>	<u>Imperfect</u> type—Correct.
<i>↓</i>	Space shows <i>↓</i> between words—push down.
<i>//</i>	<u>Straighten crooked line.</u>
<i> =</i>	<u>Straighten alignment.</u>
<i>stet</i>	Restore or retain words crossed out.
<i>~</i>	Print (<i>æ</i> , <i>fi</i> , etc.) as a ligature.
<i>out-see copy</i>	Words are omitted from, or in <i>Δ</i> copy.
<i>?</i>	Query to author: Is <u>this</u> correct?
<i>caps</i>	Put in capitals .
<i>sc</i>	Put in SMALL CAPITALS .
<i>lc</i>	Put in LOWER CASE .

<i>rom</i>	Put in roman type.
<i>ital</i>	Put in italie type.
<i>bf</i>	Put in bold face type.
⊙	Period.
∨	Superior number [^] (reference number ¹).
∧	Inferior number (chemical formula, H ₄ O).
∨	Insert an apostrophe.
∧	Insert a comma.
or/⊙	Insert a word, letter, mark of punctuation [^]
center	Put in center of page or line.
(/)	Put in parentheses.
[/]	Put in brackets.

sufficient thought at the right time is responsible for many later changes which would be avoided by a careful writer and which prove highly expensive.

An additional reason for care and decision at the right time—more potent than that of expense—is that eleventh-hour additions or changes are often made in such a manner as to be out of harmony with the context, or inconsistent in matter of style with the rest of the work, and, when too late arise to plague the author, the publisher, the proofreader, and the reading public.

Marks or queries made by the proofreader should never merely be erased by the author. If for any reason the author does not agree with the mark, he should draw a line through it, substituting his own mark for it. If such queries or marks are erased, the proofreader is likely to repeat them at a later stage, or even to make a correction on his own responsibility which may not be desired. This can be obviated if the author will pay attention to all such marks as they are encountered *on the galley proofs*.

Do not draw a line around corrections made in the margin, for printers are trained to regard such a mark as indicating that the matter so inclosed is not to be set up.

Page-proofs.—All preliminary questions having been settled, the type is next "made up" into pages, and a "page-proof" is sent to the author, accompanied by the marked galley proofs. At this stage it is dangerous and expensive to make any further changes or additions. The addition or deletion of a single line may mean that every following page may have to be made over to the end of the chapter, since every page must be exactly the same length as every other page. On the other hand, the page-proofs should be read carefully by the author to see (1) that the appropriate running-heads and folios are in position, (2) that no lines are transposed or omitted, especially at the top or at the foot of pages, (3) that footnotes are in place on their appropriate pages, (4) that alterations indicated on galley proofs have been correctly made, (5) that letters or punctuation marks have not been dropped from the ends of lines.

Read and return proof without delay.

Compare proof with the carbon copy of the manuscript.

Note whether statistical data, legends, references, and the spelling of proper names and of unusual words are correct.

Answer questions written on the margin of proof.

Make corrections definite and legible on the margin of the galley or page proof.

Return original manuscript with proof O. K. with signature.

Avoid alterations.

Order reprints.

CHAPTER XX

QUOTED MATERIAL, INDEX, AND COPYRIGHT

If you fail to find anything you want in your library, the chances are a hundred to one that you fail, not because what you seek is not there, but because you do not understand the apparatus that has been made ready to your hand for that purpose.—*Utter*.

Complete reference should be given for quoted matter, and the quotations should be exact. If copyrighted matter is used, except in brief quotations, consent to publish it should be obtained.

Expressed in untechnical language, infringement may be described as copying, in whole or in part, the copyrighted work of another with intent to evade the law. And this applies not only to the complete work but to any part of it—just how large or how small a portion has never yet been defined with any satisfactory exactness. . . . It can therefore be regarded as the well settled rule that if any considerable passage of a copyrighted work is to be made use of in a new work, the consent of the owner of the copyright must first be obtained.¹⁶

The making of an index is a craft in itself. Usually the author does not find it desirable to learn this craft, and arranges to have the index made by someone who understands this work.

The author may assist the indexer by providing a title that is a clear index of the contents

of the article, by grouping material in orderly sequence, and by dividing it with main headings and subheadings.

An index, unlike the book itself, can scarcely be too prolix or liberal. The index, unlike the text, is not *read*. It is *referred to*, and only those "catch-words" actually needed are read at any one time. Hence every word which will aid in directing the reader to the subject he seeks should appear in the index. To determine what are such words, the compiler should frequently ask himself: "If I *myself* needed information on this subject, what are the words or sub-subjects under which I *myself* should be likely to look for it in another man's work?" This point of view will often assist him in covering the needs of "the other man" who will use *his* work.¹⁶

Be exact in copying quotations.

Be exact in giving credit for ideas and material obtained from others.

Conform to standard rules for publishing quoted material.

Give a title that will reveal the content of the article.

Make a liberal index.

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STANDARD ABBREVIATIONS FOR MEDICAL JOURNALS*

- Abhandl. a. d. Augenh. u. ihr. Grenzgeb. Abhandlungen aus der Augenheilkunde und ihren Grenzgebieten. (Beihefte zur Zeitschrift für Augenheilkunde.) Berlin.
- Abhandl. a. d. Kinderh. Abhandlungen aus der Kinderheilkunde und ihren Grenzgebieten, Berlin.
- Abhandl. a. d. Neurol., Psychiat., Psychiol. u. i. Grenzgeb. Abhandlungen aus der Neurologie, Psychiatrie, Psychologie und ihre Grenzgebieten, Berlin.
- Abhandl. d. k. preuss. Akad. d. Wissensch. Abhandlungen der königlich preussischen Akademie der Wissenschaften, Berlin.
- Abstr. Bacteriol. Abstracts of Bacteriology, Baltimore.
- Acta chir. Scandin. Acta chirurgica Scandinavica, Stockholm.
- Acta dermat.-ven. Acta dermato-venereologica, Stockholm.
- Acta gynecol. Scandin. Acta gynecologica Scandinavica, Helsingfors.
- Acta med. Scandin. Acta medica Scandinavica, Stockholm.
- Acta obst. et gynec. Scandin. Acta obstetricia et gynecologica Scandinavica, Stockholm.
- Acta ophth. Acta ophthalmologica, Copenhagen.
- Acta oto-laryngol. Acta oto-laryngologica, Upsala.
- Acta Pædiat. Acta Pædiatrica, Upsala.
- Acta path. et microbiol. Scandin. Acta pathologica et microbiologica Scandinavica, Copenhagen.
- Acta psychiat. et neurol. Acta psychiatrica et neurologica, Kopenhagen.
- Acta Radiol. Acta Radiologica, Stockholm.
- Acta scholæ med. univ. imp. Kioto. Acta scholæ medicinalis universitatis imperialis in Kioto, Tokyo.
- Acta tuberc. Scandin. Acta tuberculosea Scandinavica, Kopenhagen.
- Actinoterapia. Actinoterapia, Napoli.
- Aerztl. Ber. d. k. k. allg. Krankenh. zu Wien. Aerztliche Berichte des kais.-königlichen allgemeinen Krankenhauses zu Wien.
- Aerztl. Cor.-Bl. f. Böhmen. Aerztliches Correspondenzblatt für Böhmen, Prag.
- Aerztl. Vereinsbl. f. Deutschl. Aerztliches Vereinsblatt für Deutschland, Dresden.
- Aesculape. Aesculape; revue mensuelle illustrée, Paris.
- Aichi Jour. Exper. Med. Aichi Journal of Experimental Medicine, Nagoya, Japan.
- Alabama Med. Jour. Alabama Medical Journal, Birmingham.
- Albany Med. Ann. Albany Medical Annals, Albany, New York.

* Journals are alphabetized according to the complete title.

- Alger. méd.....Alger médical, Alger.
 Alienist and Neurol.....Alienist and Neurologist, St. Louis.
 Alkoholfrage.....Die Alkoholfrage, Dresden.
 Allg. med. Centr.-Ztg.....Allgemeine medicinische Central-Zeitung, Berlin.
 Allg. statist. Arch.....Allgemeines statistisches Archiv, Tübingen.
 Allg. Wien. med. Ztg.....Allgemeine Wiener medizinische Zeitung, Wien.
 Allg. Ztschr. f. Psychiat.....Allgemeine Zeitschrift für Psychiatrie und psychisch-gerichtliche Medizin, Berlin.
 Allg. Ztg. f. Chir.....Allgemeine Zeitung für Chirurgie, innere Heilkunde und ihre Hilfswissenschaften, Augsburg.
 Allg. Ztg. f. Mil.-Aerzte.....Allgemeine Zeitung für Militär-Aerzte, Braunschweig.
 Allm. sven. Läkartidn.....Allmänna svenska Läkartidningen, Stockholm.
 Am. Ann. Deaf.....American Annals of the Deaf, Washington.
 Am. Anthropol.....American Anthropologist, Washington.
 Am. Chem. Jour.....American Chemical Journal, Baltimore.
 Am. Dent. Surg.....American Dental Surgeon, Chicago.
 Am. Druggist.....American Druggist, New York City.
 Am. Heart Jour.....American Heart Journal, St. Louis.
 Am. Jour. Anat.....American Journal of Anatomy, Philadelphia.
 Am. Jour. Care Cripples.....American Journal of Care for Cripples, New York City.
 Am. Jour. Clin. Med.....American Journal of Clinical Medicine, Chicago.
 Am. Jour. Dis. Child.....American Journal of Diseases of Children, Chicago.
 Am. Jour. Electroth. and Radiol.....American Journal of Electrotherapeutics and Radiology, Baltimore.
 Am. Jour. Hyg.....American Journal of Hygiene, Monographic series, Baltimore.
 Am. Jour. Insan.....American Journal of Insanity, Utica, New York.
 Am. Jour. Med. Sc.....American Journal of the Medical Sciences, Philadelphia.
 Am. Jour. Nursing.....American Journal of Nursing, Philadelphia.
 Am. Jour. Obst.....American Journal of Obstetrics and Diseases of Women and Children, New York City.
 Am. Jour. Obst. and Gynec.....American Journal of Obstetrics and Gynecology, St. Louis.
 Am. Jour. Ophth.....American Journal of Ophthalmology, Chicago.
 Am. Jour. Orthop. Surg.....American Journal of Orthopedic Surgery, Philadelphia.
 Am. Jour. Path.....American Journal of Pathology, Boston.
 Am. Jour. Pharm.....American Journal of Pharmacy, Philadelphia.
 Am. Jour. Phys. Anthropol.....American Journal of Physical Anthropology, Washington.
 Am. Jour. Physical Therapy.....American Journal of Physical Therapy, Chicago.
 Am. Jour. Psychol.....American Journal of Psychology, Ithaca, N. Y.
 Am. Jour. Physiol. Optics.....American Journal of Physiological Optics, Southbridge, Massachusetts.
 Am. Jour. Physiol.....American Journal of Physiology, Baltimore.
 Am. Jour. Psychiat.....American Journal of Psychiatry, Baltimore.

- Am. Jour. Pub. Health.....American Journal of Public Health, Chicago.
 Am. Jour. Roentgenol. and Radium Therap.....American Journal of Roentgenology and Radium Therapy, New York City.
 Am. Jour. School Hyg.....American Journal of School Hygiene, Worcester, Mass.
 Am. Jour. Surg.....American Journal of Surgery, New York City.
 Am. Jour. Syphilis.....American Journal of Syphilis, St. Louis.
 Am. Jour. Trop. Dis. and Prev. Med.....American Journal of Tropical Diseases and Preventive Medicine, New Orleans.
 Am. Jour. Trop. Med.....American Journal of Tropical Medicine, Baltimore.
 Am. Jour. Urol.....American Journal of Urology, New York City.
 Am. Med.....American Medicine, Philadelphia.
 Am. Physician.....American Physician, Rahway, N. J.
 Am. Quart. Roentgenol.....American Quarterly of Roentgenology, Pittsburgh.
 Am. Rev. Tuberc.....American Review of Tuberculosis, New York.
 Am. Vet. Rev.....American Veterinary Review, New York; continued as Journal American Veterinary Medical Association.
 An. de cien. med.....Anales de ciencias medicas, Madrid.
 An. de Fac. de med., Lima.....Anales de la Facultad de medicina, Lima.
 An. de Facul. de med.....Anales de la Facultad de medicina, Universidad de Montevideo.
 An. d. Inst. mod. clín. méd.. Anales del Instituto modelo de clínica médica, Buenos Aires.
 An. hosp.....Anales hospitalarios, Lima.
 An. de oftal.....Anales de oftalmología, México.
 An. r. Acad. de med.....Anales de la real Academia de medicina, Madrid.
 An. Soc. ginec. españ.....Anales de la Sociedad ginecologica española, Madrid.
 Anat. Hefte.....Anatomische Hefte. Referate und Beiträge zur Anatomie und Entwicklungsgeschichte. Erste Abteilung: Arbeiten aus anatomischen Instituten, Wiesbaden. (See also *Ergebn. d. Anat. u. Entwcklungsgesch.*)
 Anat. Rec.....Anatomical Record, Philadelphia.
 Anat. Anz.....Anatomischer Anzeiger, Jena.
 Ann. d. Chem.....Annalen der Chemie (Liebig's), Leipzig.
 Ann. d. Geburtsh.....Annalen der Geburtshülfe überhaupt und der Entbindungsanstalt zu Marburg insbesondere, Leipzig und Mannheim.
 Ann. f. d. ges. Heilk.....Annalen für die gesammte Heilkunde, Karlsruhe.
 Ann. d. Phys. u. Chem.....Annalen der Physik und Chemie, Leipzig.
 Ann. d'anat. pathol. méd.-chir.....Annales d'anatomie pathologique médico-chirurgicale, Paris.
 Ann. chim. anal.....Annales de chimie analytique appliqué à l'industrie, à l'agriculture, à la pharmacie, et à la biologie, et revue de chimie analytique reunies, Paris.
 Ann. de chim. et de phys....Annales de chimie et de physique, Paris.
 Ann. clin. de Montpellier...Annales cliniques de Montpellier, Montpellier.

- Ann. de dermat. et de syph.. Annales de dermatologie et de syphiligraphie, Paris.
- Ann. de gynéc. et d'obst. Annales de gynécologie et d'obstétrique, Paris.
- Ann. d'hyg. pub..... Annales d'hygiène publique et de médecine légale, Paris.
- Ann. de l'Inst. chir. de Bruxelles..... Annales de l'Institut chirurgical de Bruxelles, Bruxelles.
- Ann. de l'Inst. Pasteur..... Annales de l'Institut Pasteur, Paris.
- Ann. d. mal. de l'oreille du larynx..... Annales des maladies de l'oreille, du larynx et des organes connexes, Paris.
- Ann. d. mal. de la peau..... Annales des maladies de la peau et de la syphilis, Paris.
- Ann. d. mal. vén..... Annales des maladies vénériennes, Paris.
- Ann. de méd..... Annales de médecine, Paris.
- Ann. de méd. et chir. inf.... Annales de médecine et chirurgie infantiles, Paris.
- Ann. de méd. lég..... Annales de médecine légale, de criminologie et de police scientifique, Paris.
- Ann. de méd. et de pharm. colon..... Annales de médecine et de pharmacie coloniales, Paris.
- Ann. de méd. phys..... Annales de médecine physique, Anvers.
- Ann. méd.-psychol..... Annales médico-psychologiques, Paris.
- Ann. d'ocul..... Annales d'oculistique, Bruxelles.
- Ann. de parasitol..... Annales de parasitologie humaine et comparée, Paris.
- Ann. de roentgenol. et radiol. Annales de roentgenologie et radiologie, Paris.
- Ann. Soc. d'hydrol. méd. de Paris..... Annales de la Société d'hydrologie médicale de Paris.
- Ann. sc. Univ. Jassy..... Annales scientifiques de l'Université de Jassy, Jassy.
- Ann. d'ig..... Annali d'igiene, Roma.
- Ann. d'ig. sper..... Annali d'igiene sperimentale, Roma.
- Ann. d. Ist. Maragliano p. la cura d. tuberc..... Annali dell'Istituto Maragliano per lo studio e la cura della tubercolosi e di altre malattie infettive, Genova.
- Ann. ital. di chir..... Annali italiani di chirurgia, Napoli.
- Ann. di clin. med..... Annali di clinica medica, Palermo.
- Ann. di med. nav..... Annali di medicina navale, Roma.
- Ann. di nevrol..... Annali di nevrologia, Torino and Palermo.
- Ann. di ostet..... Annali di ostetricia e ginecologia, Milan.
- Ann. di ottal..... Annali di ottalmologia, Pavia.
- Ann. di ottal. e clin. ocul.... Annali di ottalmologia e clinica oculistica, Pavia.
- Ann. Applied Biol..... Annals of Applied Biology, London.
- Ann. Clin. Med..... Annals of Clinical Medicine, Baltimore.
- Ann. Gynæc. and Pædiat.... Annals of Gynæcology and Pædiatry, Philadelphia and Boston.
- Ann. Int. Med..... Annals of Internal Medicine; continued as Annals of Clinical Medicine, Baltimore.
- Ann. Int. Med..... Annals of Internal Medicine, University of Michigan, Ann Arbor, Michigan.
- Ann. Med. History..... Annals of Medical History, New York.

- Ann. Med.....Annals of Medicine, Hagerstown, Md.
 Ann. Ophth.....Annals of Ophthalmology, St Louis.
 Ann. Otol., Rhinol., and Laryngol.....Annals of Otology, Rhinology, and Laryngology, St. Louis.
 Ann. Pickett-Thomson Research Lab.....Annals of the Pickett-Thomson Research Laboratory, London.
 Ann. Surg.....Annals of Surgery, Philadelphia.
 Ann. Trop. Med. and Parasitol.....Annals of Tropical Medicine and Parasitology, Liverpool.
 Anthropol.....Anthropologie, Paris.
 Apoth.-Ztg.....Apotheker-Zeitung, Berlin.
 Arb. a. d. Geb. d. path. Anat. Inst. zu Tübingen.....Arbeiten auf dem Gebiete der pathologischen Anatomie und Bacteriologie aus dem pathologisch-anatomischen. Institut zu Tübingen, Braunschweig, Leipzig.
 Arb. a. d. k. Gsundtsamte ..Arbeiten aus dem kaiserlichen Gesundheitsamte, Berlin.
 Arb. a. d. neurol Inst. a. d. Wien. Univ.....Arbeiten aus dem neurologischen Institute ander Wiener Universität, Leipzig and Wien.
 Arb. a. d. neurobiol. Lab. d. Gesellsch. d. Wissensch...Arbeiten aus dem neurobiologischen Laboratorium der Gesellschaft der Wissenschaften in Warschau, Berlin.
 Arb. a. d. path. Inst. zu Helsingfors.....Arbeiten aus dem pathologischen Institute zu Helsingfors (Finland), Jena.
 Arb. a. d. Reichsgsundtsamte.Arbeiten aus dem Reichsgesundheitsamte, Berlin.
 Arb. a. d. Staats- Inst. f. exper. Therap.....Arbeiten aus dem Staatsinstitut für experimentelle Therapie und dem Georg Speyer-Hause zu Frankfurt a.M., Jena.
 Arch. f. Anat.....Archiv für Anatomie, Leipzig.
 Arch. f. Anat. Physiol. u. wissensch. Med.....Archiv für Anatomie, Physiologie und wissenschaftliche Medicin, Leipzig.
 Arch. f. Anat. u. Physiol....Archiv für Anatomie und Physiologie, Berlin und Leipzig.
 Arch. f. Anthropol.....Archiv für Anthropologie, Braunschweig.
 Arch. f. Augenh.....Archiv für Augenheilkunde, Wiesbaden.
 Arch. di biol.....Archiv di biologia applicata alla patologia alla clinica e all'igiene, Genova.
 Arch. f. Dermat. u. Syph..Archiv für Dermatologie und Syphilis, Berlin.
 Arch. f. Entwcklngsmechn. d. Organ.....Archiv für Entwicklungsmechanik der Organismen, Leipzig.
 Arch. f. exper. Path. u. Pharmakol.....Archiv für experimentelle Pathologie und Pharmakologie, Leipzig.
 Arch. f. Frauenk. u. Eugenik.Archiv für Frauenkunde und Eugenik, Würzburg.
 Arch. f. d. ges. Physiol.Archiv für die gesamte Physiologie des Menschen und der Tiere, Berlin.

- Arch. f. Gesch. d. Med..... Archiv für Geschichte der Medizin, Leipzig.
 Arch. f. Gynæk..... Archiv für Gynækologie, Berlin.
 Arch. f. Hyg..... Archiv für Hygiene, München und Berlin.
 Arch. f. Kinderh..... Archiv für Kinderheilkunde, Stuttgart.
 Arch. f. klin. Chir..... Archiv für klinische Chirurgie, Berlin.
 Arch. f. Laryngol. u. Rhinol.. Archiv für Laryngologie und Rhinologie, Berlin.
 Arch. f. mikr. Anat..... Archiv für mikroskopische Anatomie, Bonn.
 Arch. f. mikr. Anat. u. Entwicklungsmechn..... Archiv für mikroskopische Anatomie und Entwicklungsmechanik, Berlin.
 Arch. f. Ohrenh..... Archiv für Ohrenheilkunde, Leipzig.
 Arch. f. Ohren-, Nasen-, u. Kehlkopfh..... Archiv für Ohren-, Nasen-, und Kehlkopfheilkunde, Leipzig.
 Arch. f. Ophth..... Archiv für Ophthalmologie, Berlin.
 Arch. f. Orthop..... Archiv für Orthopädische und Unfall-Chirurgie mit besonderer Berücksichtigung der Frakturen lehre und der orthopädisch-chirurgischen Technik, München und Berlin.
 Arch. d. Pharm..... Archiv der Pharmazie, Berlin.
 Arch. f. phys.-diätet. Therap. Archiv für physikalisch-diätetische Therapie in der ärztlichen Praxis, Berlin.
 Arch. f. Physiol..... Archiv für Physiologie, Leipzig.
 Arch. f. Protistenk..... Archiv für Protistenkunde, Jena.
 Arch. f. Psychiat..... Archiv für Psychiatrie und Nervenkrankheiten, Berlin.
 Arch. f. Rassen- u. Gesellsch.-Biol..... Archiv für Rassen- und Gesellschafts-Biologie, einschliesslich Rassen- und Gesellschafts Hygiene, Berlin.
 Arch. f. Schiffs u. Tropen-Hyg..... Archiv für Schiffs und Tropen-Hygiene, unter besonderer Berücksichtigung der Pathologie und Therapie, Leipzig.
 Arch. f. Verdauungskr..... Archiv für Verdauungs-Krankheiten, Berlin.
 Arch. f. Zellforsch..... Archiv für Zellforschung, Leipzig.
 Arch. d'anat., d'histol. et d'embryol..... Archives d'anatomie, d'histologie et d'embryologie, Strasbourg.
 Arch. d'anat. micr..... Archives d'anatomie microscopique, Paris.
 Arch. de biol..... Archives de biologie, Liège.
 Arch. Dermat..... Archives of Dermatology, New York and Philadelphia.
 Arch. Dermat. and Syph.... Archives of Dermatology and Syphilology, Chicago.
 Arch. Diagnosis..... Suspended publication.
 Arch. Dis. Childhood..... Archives of Disease in Childhood, London.
 Arch. d'élect. méd..... Archives d'électricité médicale, Paris.
 Arch. franç. de path. gén. et expér..... Archives françaises de pathologie générale et expérimentale et d'anatomie pathologique, Paris.
 Arch. franco-belges de chir... Archives franco-belges de chirurgie, Brussels.
 Arch. gén. de chir..... Archives générales de chirurgie, Paris.
 Arch. gén. de méd..... Archives générales de médecine, Paris.

ABBREVIATIONS FOR MEDICAL JOURNALS 131

- Arch. d. Inst. Pasteur de l'Afrique du Nord.....Archives des Instituts Pasteur de l'Afrique du Nord; see Archives de l'Institut Pasteur d'Algerie and Archives Institut Pasteur de Tunis.
- Arch. Inst. Pasteur d'Algerie.....Archives de l'Institut Pasteur d'Algerie, Alger.
- Arch. Inst. Pasteur de Tunis.....Archives de l'Institut Pasteur de Tunis.
- Arch. Int. Med.....Archives of Internal Medicine, Chicago.
- Arch. internat. de chir.....Archives internationales de chirurgie, Gand.
- Arch. internat. de laryngol.....Archives internationales de laryngologie, de rhinologie et d'otologie, Paris.
- Arch. internat. de méd. expér.....Archives internationales de médecine expérimentale, Liège.
- Arch. internat. de neurol.....Archives internationales de neurologie, Paris.
- Arch. internat. de pharmacod.....Archives internationales de pharmacodynamie et de thérapie, Gand et Paris.
- Arch. internat. de physiol.....Archives internationales de physiologie, Liège et Paris.
- Arch. ital. d. biol.....Archives italiennes de biologie, Roma e Torino.
- Arch. d. mal. de l'app. digestif.....Archives des maladies de l'appareil digestif et de la nutrition, Paris.
- Arch. d. mal. du cœur.....Archives des maladies du cœur, des vaisseaux, et du sang, Paris.
- Arch. d. mal. d. org. gén.-urin.....Archives des maladies des reins et des organes génito-urinaires, Paris.
- Arch. de méd. d. enfants.....Archives de médecine des enfants, Paris.
- Arch. de méd. expér. et d'anat. path.....Archives de médecine expérimentale et d'anatomie, pathologique, Paris.
- Arch. de méd. et pharm. mil.....Archives de médecine et de pharmacie militaires (publiées par ordre du Ministre de la guerre), Paris.
- Arch. Med. Hydrol.....Archives of Medical Hydrology, London.
- Arch. méd. d'Angers.....Archives médicales d'Angers, Angers.
- Arch. méd. belges.....Archives médicales belges, Bruxelles.
- Arch. méd. de Toulouse.....Archives médicales de Toulouse, Toulouse.
- Arch. med.-chir. de l'app. respir.....Archives medico-chirurgicales de l'appareil respiratoire, Paris.
- Arch. mens. d'obst. et de gynéc.....Archives mensuelles d'obstétrique et de gynécologie, Paris, formerly Obstétrique.
- Arch. néerl. de physiol.....Archives néerlandaises de physiologie de l'homme et des animaux, La Haye.
- Arch. de neurol.....Archives de neurologie, Paris.
- Arch. Neurol. and Psychiat.....Archives of Neurology and Psychiatry, Chicago.
- Arch. Occupat. Therap.....Archives of Occupational Therapy, Baltimore.
- Arch. de oftal. hispano-am.....Archives de oftalmología hispano-americanos, Madrid.
- Arch. d'opht.....Archives d'ophtalmologie, Paris.
- Arch. Ophth.....Archives of Ophthalmology, New York City.

- Arch. Otolaryngol..... Archives of Otolaryngology, Chicago.
 Arch. Otol..... Archives of Otology, New York City.
 Arch. de parasitol..... Archives de parasitologie, Paris..
 Arch. Path. and Lab. Med.. Archives of Pathology and Laboratory Medicine, Chicago.
 Arch. Pediat..... Archives of Pediatrics, New York City.
 Arch. Physical Therapy..... Archives of Physical Therapy, x-Ray, Radium, with International Abstract, Omaha.
 Arch. de physiol. norm. et path..... Archives de physiologie normale et pathologique, Paris.
 Arch. Radiol. and Electroth. Archives of Radiology and Electrotherapy; continued as British Journal Radiology, London.
 Arch. Roentg. Ray..... Archives of the Roentgen Ray, London.
 Arch. d. sc. biol..... Archives des sciences biologique, Petrograd.
 Arch. suisses d'anthrop. gén. Archives suisses d'anthropologie générale, Geneva.
 Arch. Surg..... Archives of Surgery, Chicago.
 Arch. urol. de la Clin. de Necker..... Archives urologiques de la Clinique de Necker, Paris.
 Arch. ital. di laringol..... Archivi italiani di laringologia, Napoli.
 Arch. di antrop. crim..... Archivio di antropologia criminale, psichiatria, medicina legale e scienze affini, Torino.
 Arch. ed atti d. Soc. ital. di chir..... Archivio ed atti della Società italiana di chirurgia, Roma e Napoli.
 Arch. clin. ital..... Archivio clinico italiano, Roma.
 Arch. di farmacol. sper..... Archivio di farmacologia sperimentale e scienze affini, Roma.
 Arch. di fisiol..... Archivio di fisiologia, Firenze.
 Arch. gen. di neurol. e psichiat..... Archivio generale di neurologia e psichiatria, Napoli.
 Arch. internaz. di med. e chir..... Archivio internazionale di medicina e chirurgia, Napoli.
 Arch. ital. di anat. e di embriol..... Archivio italiano di anatomia e di embriologia, Florence.
 Arch. ital. di chir..... Archivio italiano di chirurgia, Bologna.
 Arch. ital. di dermat., sif..... Archivio italiano di dermatologia, sifilografia e venereologia, Bologna.
 Arch. ital. di otol., rinol, e laringol..... Archivio italiano di otologia, rinologia, e laringologia, Napoli.
 Arch. ital. di sc. med. colon.. Archivio italiano di scienze mediche coloniale, Tripoli.
 Arch. ital. di urol..... Archivio italiano di urologia, Bologna.
 Arch. di ortop..... Archivio di ortopedia, Milano.
 Arch. di ottal..... Archivio di ottalmologia, Palermo and Napoli.
 Arch. di pat. e clin. med.... Archivio di patologia e clinica medica, Bologna.
 Arch. di radiol..... Archivio di radiologia, Napoli.
 Arch. per le sc. med..... Archivio per le scienze mediche, Torino.

- Arch. di sc. biol.....Archivio di scienze biologiche (fisiologia, farmacologia, patologia sperimentale), Napoli.
- Arch. de anat.....Archivo de anatomia e de anthropologia, Lisbon.
- Arch. brasil. de med.....Archivos brasileiros de medicina, Rio de Janeiro.
- Arch. brasil. de psychiat....Archivos brasileiros de psiquiatria, neurologia, e ciencias afines, Rio de Janeiro.
- Arch. de cardiol. y hematol..Archivos de cardiologia y hematologia, Madrid.
- Arch. españ. de pediat.....Archivos españoles de pediatria, Madrid.
- Arch. latino-am. de pediat...Archivos latino-americanos de pediatria, Buenos Aires.
- Arch. de neurobiol.Archivos de neurobiología. Madrid.
- Arch. Rio-Grand. de med...Archivos Rio-Grandenses de medicina, Porto Alegre, Brazil.
- Arizona Med. Jour.....Arizona Medical Journal, Phoenix.
- Army and Navy Jour.....Army and Navy Journal, Washington.
- Ars Medici.....Ars Medici, Wien.
- Arte ostet.....Arte ostetrica, Milano.
- Atlanta Jour.-Rec. Med....Atlanta Journal-Record of Medicine, Atlanta, Georgia.
- Atlantic Med. Jour.....Atlantic Medical Journal, Harrisburg, Pa.
- Atti d. r. Accad. d. Lincei ..Atti della reale Accademia dei Lincei, Roma.
- Attività med. ital.....Attività medica italiana, Pisa.
- Attualità med.....Attualità medica, organo scientifico e di classe dell' Associazione sanitaria milanese, Milano.
- Australian Jour. Exper. Biol. and Med. Sc.....Australian Journal of Experimental Biology and Medical Science, Adelaide.
- Australas. Med. Gaz.....Australasian Medical Gazette, Sydney.
- Avenir méd.....Avenir (L') médical, Paris.
- Balneol. Centralztg.....Balneologische Centralzeitung, Berlin.
- Beihefte z. Arch. f. Schiffs- u. Tropen-Hyg.....Beihefte zum Archiv für Schiffs- und Tropen-Hygiene, Leipzig.
- Beihefte z. Ztschr. f. ang. Psych.....Beihefte zur Zeitschrift für angewandte Psychologie und psychologische Sammel-forschung, Leipzig.
- Beitr. z. Anat., Physiol., Path. u. Therap. d. Ohres..Beiträge zur Anatomie, Physiologie, Pathologie und Therapie des Ohres, der Nase und des Halses, Berlin.
- Beitr. z. chem. Phys. u. Path.....Beiträge zur chemischen Physiologie und Pathologie, Braunschweig. (Merged in Biochemische Zeitschrift.)
- Beitr. z. exper. Therap.....Beiträge zur experimentellen Therapie, Berlin.
- Beitr. z. Geburtsh. u. Gynäk..Beiträge zur Geburtshilfe und Gynäkologie, Berlin.
- Beitr. z. gerichtl. Med.....Beiträge zur gerichtlichen Medizin, Leipzig und Wien.
- Beitr. z. Klin. d. Tuberk....Beiträge zur Klinik der Tuberkulose, Berlin.
- Beitr. z. klin. Chir.....Beiträge zur klinischen Chirurgie, Berlin und Wien.

- Beitr. z. path. Anat. u. z. allg. Path..... Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie, Jena.
- Beitr. z. Physiol..... Beiträge zur Physiologie, Berlin.
- Beitr. z. d. Tuberk..... Beiträge zur der Tuberkulose und spezifischen Tuberkulose-Therapie.
- Ber. ü. d. Versamml. d. deutsch. ophth. Gesellsch.. Bericht über die Versammlung der deutschen ophthalmologischen Gesellschaft, München und Wiesbaden.
- Ber. d. deutsch. chem. Gesellsch..... Berichte der deutschen chemischen Gesellschaft, Berlin.
- Ber. d. deutsch. pharm. Gesellsch..... Berichte der deutschen pharmaceutischen Gesellschaft, Berlin.
- Ber. ü. d. ges. Gynäkol. u. Geburtsh..... Berichte über die gesamte Gynäkologie und Geburtshilfe, Berlin.
- Ber. ü. d. ges. Physiol..... Berichte über die gesamte Physiologie (Neue Folge des Zentralblatts für Biochemie und Biophysik), Berlin.
- Ber. d. Gsundtsrath. in Zürich..... Berichte des Gesundheitsrathes an die hohe Regierung in Zürich, Zürich.
- Berl. Klinik..... Berliner Klinik, Berlin.
- Berl. klin. Wchnschr..... Berliner klinische Wochenschrift, Berlin.
- Bibliog. ortop..... Bibliografia ortopedia, Bologna.
- Bibliot. d. ges. med. Wissensch..... Bibliothek der gesammten medicinischen Wissenschaften, Wien und Leipzig.
- Bibliot. f. Laeger..... Bibliothek für Laeger, Kjöbenhavn.
- Biochem. Bull..... Biochemical Bulletin, New York City.
- Biochem. Jour..... Biochemical Journal, London.
- Biochem. Ztschr..... Biochemische Zeitschrift, Berlin.
- Biochim. e terap. sper..... Biochimica e terapia sperimentale, Milano.
- Biol. Bull..... Biological Bulletin, Woods Hole, Massachusetts.
- Biol. generalis..... Biologia generalis, Wien and Baltimore.
- Biol. Centralbl..... Biologisches Centralblatt, Erlangen und Leipzig.
- Biometrika..... Biometrika, Cambridge, Eng.
- Birth Control Rev..... Birth Control Review, New York City.
- Bl. f. Gesundtsfürs..... Blätter für Gesundheitsfürsorge, München.
- Bl. f. Gsundtspflg..... Blätter für Gesundheitspflege, Zürich.
- Bol. d. Cons. sup. de salub. Boletin del Consejo superior de salubridad, México.
- Bol. d. inst. patol..... Boletin del instituto patológico, México.
- Bol. de med. y cirug..... Boletin de medicina y cirugía, Madrid.
- Boll. chim. farm..... Bolletino chimico farmaceutico, Milano.
- Boston Med. and Surg. Jour..... Boston Medical and Surgical Journal, Boston.
- Brain..... Brain: A Journal of Neurology, London.
- Bratisl. lekar. listy..... Bratislavske lekárske listy, Bratislava, Czechoslovakia.
- Brauer's Beitr..... Brauer's Beiträge: See Beiträge zur Klinik der Tuberkulose, Würzburg.
- Brazil-med..... Brazil-medico, Rio de Janeiro.

- Bristol Med.-Chir. Jour. Bristol Medico-Chirurgical Journal, Bristol.
 Brit. and Colon. Druggist British and Colonial Druggist, London.
 Brit. Dent. Jour. British Dental Journal, London.
 Brit. Jour. Actinotherapy British Journal of Actinotherapy, London.
 Brit. Jour. Anæsthesia British Journal of Anæsthesia, Manchester.
 Brit. Jour. Child. Dis. British Journal of Children's Diseases,
 London.
 Brit. Jour. Dent. Sc. British Journal of Dental Science, London.
 Brit. Jour. Dermat. and Syph. British Journal of Dermatology and Syphilis,
 London.
 Brit. Jour. Exper. Biol. British Journal of Experimental Biology,
 Edinburgh.
 Brit. Jour. Exper. Path. British Journal of Experimental Pathology,
 London and Toronto.
 Brit. Jour. Inebr. British Journal of Inebriety, London.
 Brit. Jour. Med. Psychol. British Journal of Medical Psychology, London.
 Brit. Jour. Psychol. See under Brit. Jour. Med. Psychol.
 Brit. Jour. Ophth. British Journal of Ophthalmology, London.
 Brit. Jour. Radiol. Röntg.
 Soc. Section. British Journal of Radiology, London. (Con-
 tinues Jour. of Röntgen Society.)
 Brit. Jour. Radiol. B. A. R. P.
 Section. British Journal of Radiology, London and
 New York. (Continues Arch. Radiol. and
 Electrotherapy.)
 Brit. Jour. Surg. British Journal of Surgery, Bristol.
 Brit. Jour. Tuberc. British Journal of Tuberculosis, London.
 Brit. Jour. Vener. Dis. British Journal of Venereal Diseases, London.
 Brit. Med. Jour. British Medical Journal, London.
 Bruns' Beitr. Bruns' Beiträge: See Beiträge zur klinische
 Chirurgie, Tübingen.
 Bruxelles-méd. Bruxelles-médical, Bruxelles.
 Budapesti orv. ujság. Budapesti orvosi ujság (Budapest Medical
 News), Budapest.
 Buffalo Med. Jour. Buffalo Medical Journal, Buffalo.
 Bull. de l'Acad. de méd. Bulletin de l'Académie de médecine, Paris.
 Bull. de l'Acad. roy. de
 Belgique. Bulletin de l'Académie royals des sciences, des
 lettres et des beaux-arts de Belgique,
 Bruxelles.
 Bull. Am. Acad. Med. Bulletin of the American Academy of Medi-
 cine, Easton, Pennsylvania.
 Bull. Acad. roy. de méd. de
 Belgique. Bulletin de l'Académie royale de médecine
 de Belgique, Bruxelles.
 Bull. de l'Assn. franç. p.
 l'étude du cancer Bulletin de l'Association française pour
 l'étude du cancer, Paris.
 Bull. Buffalo Gen. Hosp. Bulletin of the Buffalo General Hospital,
 Buffalo, N. Y.
 Bull. Carmichael Med. Coll. Bulletin of the Carmichael Medical College,
 Belgachia, Calcutta.
 Bull. Chicago Munic. Tu-
 berc. Sanit. Bulletin City of Chicago Municipal Tubercu-
 losis Sanitarium, Chicago.
 Bull. Chicago School San.
 Instruct. Bulletin Chicago School Sanitary Instruction,
 Chicago.

- Bull. Comité nat. de défense
contre la tuberc..... Bulletin du Comité national de défense contre
la tuberculose, Paris.
- Bull. Dep. Health and Sani-
tat..... Bulletin Department of Health and Sanita-
tion, Seattle.
- Bull. d. eidgen. Gesundheits-
amtes..... Bulletin des eidgenössischen Gesundheit-
samtes, Bern.
- Bull. El Paso Co. Med. Soc.. Bulletin of El Paso County Medical Society, El
Paso, Texas.
- Bull. Fellowship Med. and
Post-Grad. Med. Assn.... Bulletin of the Fellowship of Medicine and
Post-Graduate Medical Association, Lon-
don.
- Bull. gén. de thérap..... Bulletin général de thérapeutique médicale
et chirurgicale, Paris.
- Bull. d'histol..... Bulletin d'histologie, Paris.
- Bull. d'histol. appliq. à la
physiol..... Bulletin d'histologie appliquée à la physiologie
et à la pathologie et de technique micro-
scopique, Lyon.
- Bull. Hyg. Lab., U. S. P. H. S.. Bulletin Hygienic Laboratory, United States
Public Health Service, Washington, D. C.
- Bull. de l'Inst. Pasteur..... Bulletin de l'Institut Pasteur, Paris.
- Bull. Johns Hopkins Hosp... Bulletin of the Johns Hopkins Hospital,
Baltimore.
- Bull. Los Angeles County
Med. Assn..... Bulletin of the Los Angeles County Medical
Association, Los Angeles.
- Bull. Lying-in Hosp..... Bulletin of the Lying-in Hospital of the City
of New York, New York City.
- Bull. Manila Med. Soc..... Bulletin of the Manila Medical Society,
Manila.
- Bull. Mass. Dep. Ment. Dis.. Bulletin of the Massachusetts Department of
Mental Diseases, Boston.
- Bull. Med. and Chir. Faculty,
Maryland..... Bulletin of the Medical and Chirurgical
Faculty of Maryland, Baltimore.
- Bull. méd..... Bulletin médical, Paris.
- Bull. méd. de Quebec..... Bulletin médical de Quebec, Quebec.
- Bull. et mém. Soc. de radiol.
méd. de Paris..... Bulletins et mémoires de la Société de ra-
diologie médicale de Paris, Paris.
- Bull. Moses Taylor Hosp.... Bulletin of the Moses Taylor Hospital, Scrant-
on, Pa.
- Bull. New York Acad. Med.. Bulletin of the New York Academy of Medi-
cine, New York.
- Bull. off. Soc. franç. d'élec-
trothér. et de radiol..... Bulletin officiel de la Société française
d'électrothérapie et de radiologie, Paris.
- Bull. Ophthalmol. Soc. Egypt. Bulletin of the Ophthalmological Society of
Egypt, Cairo.
- Bull. d'oto-rhino-laryng.... Bulletin d'oto-rhino-laryngologie et de bron-
cho-œsophagoscopie, Paris.
- Bull. Porto Rico Med. Assn.. Bulletin of the Porto Rico Medical Associa-
tion, San Juan, P. R.

ABBREVIATIONS FOR MEDICAL JOURNALS 137

- Bull. Soc. anat. de Par..... Bulletin de la Société anatomique de Paris, Paris.
- Bull. Soc. belge de gynéc. et d'obst..... Bulletin de la Société belge de gynécologie et d'obstétrique, Bruxelles.
- Bull. Soc. chim. biol..... Bulletin de la Société de chimie biologique, Paris.
- Bull. Soc. chim..... Bulletin de la Société chimique de France, Paris.
- Bull. Soc. clin. de méd. ment..... Bulletin de la Société clinique de médecine mentale, Paris.
- Bull. Soc. franç. de dermat. et de syph..... Bulletin de la Société française de dermatologie et de syphiligraphie, Paris.
- Bull. Soc. franç. d'hist. de la méd..... Bulletin de la Société française d'histoire de la médecine, Paris.
- Bull. Soc. franç. d'urol..... Bulletin de la Société française d'urologie, Paris.
- Bull. Soc. Med. History, Chicago..... Bulletin of the Society of Medical History of Chicago, Chicago.
- Bull. Soc. d'Obstét. et. Gynéc..... Bulletin de la Société d'Obstétrique et de Gynécologie de Paris, Paris.
- Bull. Soc. d'opht. de Paris... Bulletin de la Société d'ophtalmologie de Paris, Paris.
- Bull. Soc. de path. exot..... Bulletin de la Société de pathologie exotique, Paris.
- Bull. Soc. de pédiat. de Par.. Bulletin de la Société de pédiatrie de Paris, Paris.
- Bull. Soc. de pharm. de Par.. Bulletin de la Société de pharmacie de Paris, Paris.
- Bull. soc. d. sc. méd. et biol. de Montpellier..... Bulletin de la Société des sciences médicales et biologiques de Montpellier et du Languedoc méditerranéen, Montpellier.
- Bull. Soc. d. sc. d'Alger..... Bulletin de la Société des sciences physiques, naturelles, et climatologiques d'Alger, Alger.
- Bull. d. trav. Soc. de pharm. de Bordeaux..... Bulletin des travaux de la Société de pharmacie de Bordeaux, Bordeaux.
- Bull. Soc. Med. Hist..... Bulletin of the Society of Medical History of Chicago, Chicago.
- Bull. e Atti d. r. Accad. med. di Roma..... Bullettino e Atti della reale Accademia medica di Roma, Roma.
- Bull. et mém. Soc. anat. de Par..... Bulletins et mémoires de la Société anatomique de Paris, Paris.
- Bull. et mém. Soc. de chir. de Par..... Bulletins et mémoires de la Société de chirurgie de Paris, Paris.
- Bull. et mém. Soc. med. d. hôp. de Bucarest..... Bulletins et mémoires de la Société médicale des hôpitaux de Bucarest, Bucarest.
- Bull. et mém. Soc. med. d. hôp. de Par..... Bulletins et mémoires de la Société médicale des hôpitaux de Paris, Paris.

- Bull. et mém. Soc. de méd. et chir. de Bordeaux..... Bulletins et mémoires de la Société de médecine et de chirurgie de Bordeaux, Paris and Bordeaux.
- Bull. et mém. Soc. nat. d. chir..... Bulletins et mémoires de la Société Nationale de chirurgie, Paris.
- Bull. et mém. Soc. radiol. méd. de France..... Bulletins et mémoires de la Société de radiologie médicale de France, Paris.
- Caducée..... Caducée: Journal de chirurgie et de médecine d'armée, Paris.
- Cairo Sc. Jour..... Cairo Scientific Journal, Giza and Alexandria.
- Calcutta Med. Jour..... Calcutta Medical Journal, Calcutta.
- Caledon. Med. Jour..... Caledonian Medical Journal, Glasgow.
- Calif. Med. and Surg. Reporter..... California Medical and Surgical Reporter, Los Angeles.
- Calif. State Jour. Med..... California State Journal of Medicine, San Francisco.
- California and West. Med... California and Western Medicine, San Francisco.
- Canada Lancet..... Canada Lancet, Toronto.
- Canada Med. Rec..... Canada Medical Record, Montreal.
- Can. Jour. Med. and Surg... Canadian Journal of Medicine and Surgery, Toronto.
- Can. Jour. Ment. Hyg..... Canadian Journal of Mental Hygiene, Toronto.
- Can. Med. Assn. Jour..... Canadian Medical Association Journal, Toronto.
- Can. Pract. and Rev..... The Canadian Practitioner and Review, Toronto.
- Cancer, Bruxelles..... Cancer, Bruxelles.
- Cancer Control..... Cancer Control, Chicago.
- Cancer, New York..... Cancer, New York.
- Cancer..... Cancer, Philadelphia.
- Cancer Rev..... Cancer Review, London and Bristol.
- Čas. lék. česk..... Časopis lékařův českých, Prague.
- Centralbl..... Centralblatt. See Zentralblatt.
- Centralbl. f. allg. Path. u. path. Anat..... Centralblatt für allgemeine Pathologie und pathologische Anatomie, Jena.
- Centralbl. f. Bakteriolog..... Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, Jena.
- Centralbl. f. d. Grenzgeb. d. Med. u. Chir..... Centralblatt für die Grenzgebiete der Medizin und Chirurgie, Jena.
- Centralbl. f. d. Krankh. d. Harn- u. Sex.-Org..... Centralblatt für die Krankheiten der Harn- und Sexual-Organen, Leipzig.
- Centralbl. f. d. med. Wissensch..... Centralblatt für die medicinischen Wissenschaften, Berlin.
- Centralbl. f. Nervenheilk. u. Psychiat..... Centralblatt für Nervenheilkunde und Psychiatrie, Coblenz und Leipzig.

Centralbl. f. Stoffwechsel u. Verdauungs Kr.....	Centralblatt für Stoffwechsel- und Verdauungs-Krankheiten, Göttingen.
Charité-Ann.....	Charité-Annalen, Berlin.
Charlotte Med. Jour.....	Charlotte Medical Journal, Charlotte, North Carolina.
Chem. Abstr.....	Chemical Abstracts, Easton, Pennsylvania.
Chem. News.....	Chemical News, London.
Chem. Rev.....	Chemical Reviews, Baltimore.
Chem.-Ztg.....	Chemiker-Zeitung, Göttingen.
Chem. Centrbl.....	Chemisches Centralblatt, Leipzig.
Chicago Med. Recorder.....	Chicago Medical Recorder, Chicago.
China Med. Jour.....	China Medical Journal, Shanghai.
Chinese Jour. Physiol.....	Chinese Journal of Physiology, Peking.
Chir. dell' ernia.....	Chirurgia dell' ernia, Napoli.
Chir. d. org. di movimento..	Chirurgia (La) degli organi di movimento, Bologna.
Chron. méd.....	La Chronique médicale, Paris.
Cincinnati Jour. Med.....	Cincinnati Journal of Medicine.
Cleveland Med. Jour.....	Cleveland Medical Journal, Cleveland.
Cleveland Med. and Surg. Reporter.....	Cleveland Medical and Surgical Reporter, Cleveland.
Clifton Med. Bull.....	Clifton Medical Bulletin, Clifton Springs, N. Y.
Clin. Chir.....	Clinica chirurgica, Milano.
Clin. ed ig. infant.....	Clinica ed igiene infantile, Torino.
Clin. Med.....	Clinical Medicine, Chicago.
Clin. med. ital.....	La Clinica medica italiana, Milano.
Clin. mod.....	Clinica moderna, Firenze.
Clin. ostet.....	Clinica ostetrica, Roma.
Clin. pediat.....	Clinica (La) pediatrica, Modena.
Clin. Jour.....	Clinical Journal, London.
Clinique, Chicago.....	The Clinique, Chicago.
Clinique, Montréal.....	La Clinique, Montreal.
Clin. opht.....	La Clinique ophtalmologique, Paris.
Clinique, Paris.....	La Clinique, Paris.
Cluj. med.....	Clujul medical, Bucuresti.
Colorado Med.....	Colorado Medicine, Denver.
Colorado Med. Jour.....	Colorado Medical Journal, Denver.
Columbus Med. Jour.....	Columbus Medical Journal, Columbus, Ohio.
Compt.-rend. Acad. roy. de méd. de Belg.....	Compte-rendu des travaux de l'Académie royale de médecine de Belgique, Bruxelles.
Compt. rend. Acad. d. sc....	Comptes rendus hebdomadaires des séances de l'Académie des sciences, Paris.
Compt.-rend. Soc. de biol....	Comptes rendus des séances et mémoires de la Société de biologie, Paris.
Cong. franç. de chir.....	Congrès français de chirurgie, Paris.
Cong. Soc. internat. de chir..	Congrès de la Société internationale de chirurgie, Bruxelles.
Contrib. Peking Union Med. Coll.....	Contributions from the Peking Union Medical College, Peking.
Cornell Univ. Med. Bull....	Cornell University Medical Bulletin, New York City.
Cornell Vet.....	Cornell Veterinarian, Ithaca.

- Cor.-Bl. f. schweiz. Aerzte... Correspondenz-Blatt für schweizer Aerzte, Basel.
- Critic and Guide..... Critic and Guide, New York City.
- Crón. méd..... Crónica médica, Lima.
- Crón. méd. mexicana..... Crónica médica mexicana, México.
- Crón. méd..... Crónica (La) médica, Valencia.
- Crón. méd.-quir. de la Habana..... Crónica médico-quirúrgica de la Habana.
- Cultura med. mod..... Cultura (La) medica modera, Palermo.
- Current Res. Anesth. and Anal..... Current Researches in Anesthesia and Analgesia, Elmira, N. Y.
- Delaware State Med. Jour... Delaware State Medical Journal; continued as Atlantic Medical Journal, Harrisburg, Pa.
- Dementia Præcox Stud.... Dementia Præcox Studies, Chicago.
- Dental Cosmos..... Dental Cosmos, Philadelphia.
- Dental Digest..... Dental Digest, Chicago.
- Dental Items Int..... Dental Items of Interest, New York City.
- Dental Rec..... Dental Record, London.
- Dental Rev..... Dental Review, Chicago.
- Dental Sum..... Dental Summary, Toledo, Ohio.
- Denver Med. Times and Utah Med. Jour..... Denver Medical Times and Utah Medical Journal, Denver.
- Dermat. Wchnschr..... Dermatologische Wochenschrift, Leipzig.
- Dermat. Ztschr..... Dermatologische Zeitschrift, Berlin.
- Dermosifilografo..... Il dermosifilografo. Gazzetta di dermosifilografia per il medico pratico, Torino.
- Detroit Med. Jour..... Detroit Medical Journal, Detroit.
- Deutsch. Dent..... Deutsche Dentist, Berlin.
- Deutsch. Klin..... Deutsche Klinik, Berlin und Wien.
- Deutsch. med. Wchnschr.... Deutsche medizinische Wochenschrift, Leipzig und Berlin.
- Deutsch. mil.-ärztl. Ztschr.. Deutsche militair-ärztliche Zeitschrift, Berlin.
- Deutsch. Monatschr. f. Zahnheilk..... Deutsche Monatsschrift für Zahnheilkunde, Leipzig.
- Deutsch. zahnärztl. Wchnschr..... Deutsche zahnärztliche Wochenschrift, Wiesbaden.
- Deutsch. Ztschr. f. Chir.... Deutsche Zeitschrift für Chirurgie, Leipzig.
- Deutsch. Ztschr. f. d. ges gerichtl. Med..... Deutsche Zeitschrift für die gesamte gerichtliche Medizin, Berlin.
- Deutsch. Ztschr. f. Nervenheilkunde, Leipzig.
- Deutsch. Arch. f. klin. Med. Deutsches Archiv für klinische Medizin, Leipzig.
- Dietary Admin. and Therap. Dietary Administration and Therapy, Cleveland.
- Dietet. and Hyg. Gaz..... Dietetic and Hygienic Gazette, New York City.
- Dingler's polytech. Jour.... Dingler's polytechnisches Journal, Stuttgart.
- Dominion Dent. Jour..... Dominion Dental Journal, Toronto.
- Dominion Med. Month..... Dominion Medical Monthly, Toronto.
- Drug. Circ..... Druggist's Circular, New York City.
- Dublin Jour. Med. Sc..... Dublin Journal of Medical Science; continued as Irish Journal of Medical Science, Dublin.

Écho méd. du nord.....	Écho médical du nord, Lille.
Eclect. Med. Jour.....	Eclectic Medical Journal, Cincinnati.
Eclect. Rev.....	Eclectic Review, New York City.
Edinburgh Med. Jour.....	Edinburgh Medical Journal, Edinburgh.
Encéphalé.....	Encéphalé, Paris.
Endocrinol. e patol. constit...	Endocrinologia e patologia costituzionale, Roma.
Endocrinology.....	Endocrinology, Los Angeles.
Epilepsia.....	Epilepsia, Hamburg.
Ergebn. d. all. Path. u. path. Anat.....	Ergebnisse der allgemeine Pathologie und pathologischen Anatomie, Wiesbaden.
Ergebn. d. Anat. u. Entwickl.	Ergebnisse der Anatomie und Entwicklungsgeschichte München und Berlin.
Ergebn. d. Chir. u. Orth....	Ergebnisse der Chirurgie und Orthopädie, Berlin.
Ergebn. d. ges. Med.....	Ergebnisse der gesamten Medizin, Berlin und Wien.
Ergebn. d. Hyg. Bak. Immunitsf. u. exp. Therap...	Ergebnisse der Hygiene, Bakteriologie, Immunitätsforschung, und experimentellen Therapie, Berlin.
Ergebn. d. Immunitätsf.....	Ergebnisse der Immunitätsforschung. Continued as Ergebnisse der Hygiene, Bakteriologie, Immunitätsforschung, und experimentellen Therapie, Berlin.
Ergebn. d. inn. Med. u. Kinderh.....	Ergebnisse der innere Medizin und Kinderheilkunde, Berlin.
Ergebn. d. med. Strahlenforsch.....	Ergebnisse der medizinischen Strahlenforschung (Röntgendiagnostik, Röntgen-Radium- und Lichttherapie), Leipzig.
Ergebn. d. Physiol.....	Ergebnisse der Physiologie, Wiesbaden.
Eugenics Rev.....	Eugenics Review, London.
Evolution méd.-chir.....	Evolution médico-chirurgicale, Paris.
Eye, Ear, Nose, and Throat Month.....	Eye, Ear, Nose, and Throat Monthly, Chicago.
Fermentforschung.....	Fermentforschung, Leipzig.
Folha med.....	A Folha medica, Rio de Janeiro.
Folia Anat. Japon.....	Folia Anatomica Japonica, Tokyo.
Folia gynæc.....	Folia gynæcologica, Pavia.
Folia hæmatol., Arch.....	Folia hæmatologica. Internationales Magazin für klinische und morphologische Blutsforschung, Archiv, Leipzig.
Folia hæmatol., Zentral-organ.....	Folia hæmatologia. Internationales Zentralorgan für Blut- und Serumforschung. Continued as Internationales Magazin für morphologische und klinische Blutsforschung, Leipzig.
Folia serolog.....	Folia serologica. II (serologischer) Teil der Internationalen Zentralorgan für Blut- und Serumforschung, Leipzig.
Folia med.....	Folia medica, Napoli.
Folia urolog.....	Folia urologica. Internationales Archiv für die Krankheiten der Harnorgane, Leipzig.

- Förh. Svens. Läk.-Sällsk. Sammank..... Förhandlingar vid Svenska Läkare-Sällskapets Sammankomster, Stockholm.
- Forh. kirurg. foren..... Forhandlingar i den kirurgiske forening Kristinia, Oslo.
- Fortschr. a. d. Geb. d. Röntgenstrahlen..... Fortschritte auf dem Gebiete der Röntgenstrahlen, Hamburg.
- Fortschr. d. Med..... Fortschritte der Medizin, Berlin.
- Fortschr. d. Psychol..... Fortschritte der Psychologie und ihrer Anwendungen unter Mitwirkung von Privatdozent Dr. Wilhelm Peters, Leipzig und Berlin.
- Fort Wayne Med. Jour.-Mag. Fort Wayne Medical Journal-Magazine, Fort Wayne, Indiana.
- Franco-British Med. Rev.... Franco-British Medical Review, London.
- Frankfurter Ztschr. f. Path.. Frankfurter Zeitschrift für Pathologie, München.
- Fukuoka-Ikwadaigaku-Zasshi..... Fukuoka-Ikwadaigaku-Zasshi.
- Gac. med. de México..... Gaceta medica de México, México City.
- Gac. med. de Caracas..... Gaceta medica de Caracas, Caracas, Venezuela.
- Gann..... Gann Japanese Journal of Cancer Research, Tokyo.
- Gaz. lek..... Gazeta lekarska, Warszawa.
- Gaz. med. da Bahia..... Gazeta medica da Bahia, Bahia
- Gaz. hebd. de méd..... Gazette hebdomadaire de médecine et de chirurgie, Paris.
- Gaz. hebd. d. sc. méd. de Bordeaux..... Gazette hebdomadaire des sciences médicales de Bordeaux.
- Gaz. d. hôp..... Gazette des hôpitaux civils et militaires (La Lancette française), Paris.
- Gaz. d. mal. infant..... Gazette des maladies infantiles, Paris.
- Gaz. méd. belge..... Gazette médicale belge, Liège.
- Gaz. méd. de Par..... Gazette médicale de Paris, Paris.
- Gazz. chim. Ital..... Gazzetta chimica Italiana, Roma.
- Gazz. internaz. med.-chir... Gazzetta internazionale medico-chirurgica, Napoli.
- Gazz. d. osp..... Gazzetta degli ospedali e delle cliniche, Milano.
- Gazz. med..... Gazzetta medica, Milano.
- Gazz. med..... Gazzetta medica (Medical Gazette), New York City.
- Gazz. med. ital..... Gazzetta medica italiana, Torino.
- Gazz. med. lomb..... Gazzetta medica lombarda, Milano.
- Gazz. med. napolet..... Gazzetta medica napoletana, Napoli.
- Gazz. med. di Roma..... Gazzetta medica di Roma, Roma.
- Gazz. med. sicil..... Gazzetta medica siciliana. Giornale pratico di medicina, chirurgia, igiene e farmacia; per medici, ufficiali sanitari, farmacisti, Catania.
- Gazz. med. di Torino..... Gazzetta medica di Torino, Torino.
- Geneesk. Tijdschr. v. Belgie. Geneeskundig Tijdschrift voor Belgie, Antwerpen.

Genetica.....	Genetica: Nederlandsch tijdschrift voor erfelijkheids-en afstammingsleer, La Haye.
Ginecologia.....	Ginecologia, Firenze.
Gior. di batteriol. e immunol.....	Giornale di batteriologia e immunologia, Torino.
Gior. di clin. med.....	Giornale di clinica medica, Parma.
Gior. ital. di dermat. e sifil.....	Giornale italiano di dermatologia e sifilologia, Milano.
Gior. ital. d. mal. ven.....	Giornale italiano delle malattie veneree e della pelle, Milano.
Gior. di med. ferrov.....	Giornale di medicina ferroviaria, Prato.
Gior. di med. mil.....	Giornale di medicina militare, Roma.
Gior. d. med. prat.....	Giornale del medico pratico, Livorno.
Gior. di ocul.....	Giornale di oculistica, Napoli.
Gior. p. la morfol. d. uomo.....	Giornale per la morfologia dell' uomo e dei primati, Pavia.
Gior. d. r. Accad. di med. di Torino.....	Giornale della reale Accademia di medicina di Torino, Torino.
Gior. d. r. Soc. naz. vet.....	Giornale della reale Società nazionale veterinaria, Torino.
Glasgow Med. Jour.....	Glasgow Medical Journal, Glasgow.
Good Health.....	Good Health, Battle Creek, Michigan.
Grace Hosp. Bull.....	Grace Hospital Bulletin, Detroit.
Graefe's Arch.....	Graefe's Archiv: See Archiv für Ophthalmologie, Leipzig.
Grèce méd.....	Grèce médicale, Athènes, Grèce. French section of Istriké Pródos.
Guy's Hosp. Gaz.....	Guy's Hospital Gazette: a Student's Journal of Hospital News, Medicine, and Surgery, London.
Guy's Hosp. Rep.....	Guy's Hospital Reports, London.
Gynækol. Helvet.....	Gynækologia Helvetica, Genève.
Gynäk. Rundschau.....	Gynäkologische Rundschau, Berlin und Wien.
Gynécol.....	Gynécologie, Paris.
Gynéc. et obstét.....	Gynécologie et obstétrique, Paris.
Gyógyászat.....	Gyógyászat, Budapest.
Gyógyszéreszi hetil.....	Gyógyszéreszi hetilap, Budapest.
Hæmatologica.....	Hæmatologica: Archivio italiano di ematologia e sierologia, Napoli.
Hahneman. Month.....	Hahnemannian Monthly, Philadelphia.
Heart.....	Heart: A Journal for the Study of the Circulation, London.
Hereditas.....	Hereditas, Lund.
Hildebrand's Jahresb.....	Hildebrand's Jahresberichte: See Jahresberichte über die Fortschritte auf dem Gebiete der Chirurgie, Wiesbaden.
Hofmeister's Beitr.....	Hofmeister's Beiträge: See Beiträge zur chemischen Physiologie und Pathologie, Braunschweig.
Hoppe-Seyler's Ztschr.....	Hoppe-Seyler's Zeitschrift: See Zeitschrift für physiologische Chemie, Strassburg.
Hospital.....	The Hospital, London.
Hosp. Management.....	Hospital Management, Chicago.
Hosp. Prog.....	Hospital Progress, Milwaukee, Wisconsin.
Hosp. Social Service.....	Hospital Social Service, New York City.
Hospitalstidende.....	Hospitalstidende, Kjöbenhavn.

- Hot Springs Med. Jour..... Hot Springs Medical Journal, Hot Springs, Arkansas.
- Hufeland's Jour..... Hufeland's Journal: See Journal der practischen Arzneykunde und Wundarzneykunst, Jena und Berlin.
- Hygea..... Hygea, Karlsruhe.
- Hygeia..... Hygeia, Chicago.
- Hygiea..... Hygiea, Stockholm.
- Hyg. gén. et appliq..... Hygiène générale et appliquée, Paris.
- Hygiene..... Hygiene, London.
- Hyg. mod..... Hygiène moderne, Paris.
- Hyg. Bl..... Hygienische Blätter, Berlin.
- Hyg. Rundschau..... Hygienische Rundschau, Berlin.
- Iatriké próodos..... Iatriké próodos, Athens, Greece: See Grèce Médicale.
- Idrol. e climat..... Idrologia e climatologia e la terapia fisica, Torino and Firenze.
- Igiene mod..... Igiene moderna, Genova.
- Igiene d. scuola..... Igiene della scuola, Genova.
- Igiene e vita..... Igiene e la vita, Roma.
- Illinois Biol. Monog..... Illinois Biological Monographs, Urbana.
- Illinois Med. Jour..... Illinois Medical Journal, Chicago.
- Incurabili..... Incurabili, Napoli.
- Indép. méd..... Indépendance médicale, Montreal.
- Indian Jour. Med. Res..... Indian Journal of Medical Research, Calcutta
- Indian Jour. Med..... Indian Journal of Medicine, Calcutta.
- Indian Med. Gaz..... Indian Medical Gazette, Calcutta.
- Indian Med. Rec..... Indian Medical Record, Calcutta.
- Indiana Med. Jour..... Indiana Medical Journal, Indianapolis.
- Indianapolis Med. Jour..... Indianapolis Medical Journal.
- Industrial and Engineering Chem..... Industrial and Engineering Chemistry, Washington.
- Informateur d. Aliénistes et d. Neurol..... Informateur (L') des Aliénistes et des Neurologistes, Paris. (Supplement to Encéphalé.)
- Intercolonial Med. Jour. Australas..... Intercolonial Medical Journal of Australasia, Melbourne.
- Internat. Abstr. Surg..... International Abstract of Surgery (with Surgery, Gynecology, and Obstetrics).
- Internat. Assn. Med. Mus. Bull..... The International Association of Medical Museums Bulletins, Ann Arbor, Michigan.
- Internat. Clin..... International Clinics, Philadelphia.
- Internat. Dent. Jour..... International Dental Journal, New York City and Philadelphia.
- Internat. Jour. Gastro-Enterol..... Suspended publication.
- Internat. Jour. Med. and Surg..... International Journal of Medicine and Surgery, Burlington, Vt., and New York. (Continues International Journal of Surgery.)
- Internat. Jour. Orthodontia..... International Journal of Orthodontia and Oral Surgery, St. Louis.

- Internat. Jour. Psycho-Anal-
ysis..... International Journal of Psycho-Analysis,
London and Boston.
- Internat. Jour. Pub. Health.. International Journal of Public Health,
Geneva.
- Internat. Jour. Surg..... International Journal of Surgery, New York
City.
- Internat. Rev. Sc. and Pract.
Agric..... International Review of the Science and
Practice of Agriculture, Rome.
- Internat. Survey Current
Prac. Med..... International Survey of Current Practical
Medicine, New York.
- Internat. Survey Gastro-En-
terol..... International Survey of Gastro-Enterology,
New York.
- Internat. Survey Gynec. and
Obstet..... International Survey of Gynecology and Ob-
stetrics, New York.
- Internat. Survey Med..... International Survey of Medicine, New York.
- Internat. Survey Ophthal.,
Otol., and Rhinol..... International Survey of Ophthalmology, Otol-
ogy, and Rhinology, New York.
- Internat. Survey Roentgenol.
and Radiotherap..... International Survey of Roentgenology and
Radiotherapy, New York.
- Internat. Survey Surg..... International Survey of Surgery, New York.
- Internat. Survey Urol. and
Venerol..... International Survey of Urology and Vener-
ology, New York.
- Internat. Monatschr. f. Anat.
u. Phys..... Internationale Monatsschrift für Anatomie
und Physiologie, Leipzig.
- Internat. Monatschr. z. Er-
forsch. d. Alkoholismus... Internationale Monatsschrift zur Erforschung
des Alkoholismus und Bekämpfung der
Trinksitten, Basel.
- Internat. Rev. d. ges. Hydro-
biol. u. Hydrograph..... Internationale Revue der gesamten Hydro-
biologie und Hydrographie, Leipzig.
- Internat. Ztschr. f. ärztl.
Psychoanal..... Internationale Zeitschrift für ärztliche Psy-
choanalyse. Leipzig, Wein.
- Internat. Centralbl. f. d. ges.
Tuberk.-Forsch..... Internationales Centralblatt für die gesamte
Tuberkulose-Forschung, Würzburg.
- Internat. Zentralbl. f. Ohrenh. Internationales Zentralblatt für Ohrenheil-
kunde, Leipzig.
- Interstate Med. Jour..... Interstate Medical Journal, St. Louis.
- Irish Jour. Med. Sc..... Irish Journal of Medical Science, Dublin.
- Italia med..... Italia medica, Pisa.
- Italia san..... Italia sanitaria, Milano.
- Jahrb. f. Kinderh..... Jahrbuch für Kinderheilkunde und physische
Erziehung, Berlin.
- Jahrb. d. prakt. Med..... Jahrbuch der praktischen Medizin, Ber-
lin.

- Jahrb. f. Psychiat. u. Neurol. Jahrbücher für Psychiatrie und Neurologie, Leipzig und Wien.
- Jahrb. f. sex. Zwischenstufen. Jahrbücher für sexuelle Zwischenstufen, Leipzig.
- Jahresb. ü. d. Ergebn. d. Immunitätsforschung. Jahresbericht über die Ergebnisse der Immunitätsforschung, Stuttgart.
- Jahresb. ü. d. Fortschs. d. Anat. u. Entwicklgs. gesch. Jahresbericht über die Fortschritte der Anatomie und Entwicklungsgeschichte, Jena.
- Jahresb. ü. d. Fortschr. d. animal. Physiol. Jahresbericht über die Fortschritte der animalischen Physiologie, München und Wiesbaden.
- Jahresb. ü. d. Fortschr. d. Chem. Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften, Braunschweig.
- Jahresb. ü. d. Fortschr. a. d. Geb. d. Chir. Jahresbericht über die Fortschritte auf dem Gebiete der Chirurgie, Wiesbaden.
- Jahresb. ü. d. Fortschr. d. ges. Med. Jahresbericht über die Fortschritte der gesamten Medicin, Erlangen.
- Jahresb. ü. d. Fortschr. d. Thierchem. Jahresbericht über die Fortschritte der Thierchemie, Wiesbaden.
- Jahresb. ü. d. ges. Chir. u. ihre Grenzgeb. Jahresbericht über die gesamte Chirurgie und ihre Grenzgebiete, München und Berlin.
- Jahresb. ü. d. ges. Ophth. . . . Jahresbericht über die gesamte Ophthalmologie, Berlin.
- Jahresb. ü. d. Leistung. u. Fortschr. i. d. Anat. u. Physiol. Jahresbericht über die Leistungen und Fortschritte in der Anatomie und Physiologie, Berlin.
- Jahresb. ü. d. Leistung. u. Fortschr. i. d. ges. med. . . . Jahresbericht über die Leistungen und Fortschritte in der gesamten Medizin (Fortsetzung von Virchow's Jahresbericht), Berlin.
- Jahresb. ü. d. Leistung. d. Vet.-Med. Jahresbericht über die Leistungen auf dem Gebiete der Veterinär-Medicin, Berlin.
- Jahresb. d. schles. Gesellsch. f. vaterl. Kult. Jahresbericht der schlesischen Gesellschaft für vaterländische Kultur, Breslau.
- Janus. Janus, Leyden.
- Japan Med. World. Japan Medical World, Tokyo.
- Japan. Ztschr. f. Dermat. u. Urol. Japanische Zeitschrift für Dermatologie und Urologie, Tokyo.
- Japan. Ztschr. f. Verdauungs-Krankh. Japanische Zeitschrift für Verdauungs-Krankheiten, Tokyo.

- Johns Hopkins Hosp. Rep... Johns Hopkins Hospital Reports, Baltimore.
 Jour. Am. Dietet. Assn.... Journal of the American Dietetic Association, Baltimore.
 Jour. Abnorm. Psychol..... Journal Abnormal and Social Psychology, Albany.
 Jour. Abnorm. Psychol..... Journal of Abnormal Psychology, Boston.
 Jour. Advanc. Therap..... Journal of Advanced Therapeutics, New York City.
 Jour. Agr. Res..... Journal of Agricultural Research, Washington, D. C.
 Jour. Am. Chem. Soc..... Journal of the American Chemical Society, Easton, Pennsylvania.
 Jour. Am. Dent. Assn..... Journal of the American Dental Association, Chicago.
 Jour. Am. Inst. Homœop.... Journal of the American Institute of Homœopathy, New York City.
 Jour. Am. Med. Assn..... Journal of the American Medical Association, Chicago.
 Jour. Am. Pharm. Assn..... Journal of the American Pharmaceutical Association, Columbus, Ohio.
 Jour. Am. Pub. Health Assn. Journal of the American Public Health Association, Columbus, Ohio.
 Jour. Am. Soc. for Psych. Research..... Journal of the American Society for Psychical Research, New York City.
 Jour. Am. Vet. Med. Assn... Journal of the American Veterinary Medical Association, Detroit, Michigan.
 Jour. de l'anat. et de la physiol..... Journal de l'anatomie et de la physiologie normales et pathologiques de l'homme et des animaux, Paris.
 Jour. Anat..... Journal of Anatomy, London.
 Jour. Anat. and Physiol.... Journal of Anatomy and Physiology, London.
 Jour. Arkansas Med. Soc.... Journal of the Arkansas Medical Society, Little Rock.
 Jour. Bacteriol..... Journal of Bacteriology, Baltimore.
 Jour. Biochem..... Journal of Biochemistry, Tokyo.
 Jour. Biol. Chem..... Journal of Biological Chemistry, New York City.
 Jour. Bone and Joint Surg... Journal of Bone and Joint Surgery, Boston. (Continues Jour. Orthop. Surg.)
 Jour. Boston Soc. Med. Sc.. Journal of the Boston Society of Medical Sciences, Boston.
 Jour. Cancer..... Journal of Cancer, Dublin.
 Jour. Cancer Res..... Journal of Cancer Research, Baltimore.
 Jour. Ceylon Br. Brit. Med. Assn..... Journal of the Ceylon Branch of the British Medical Association, Colombo.
 Jour. Chem. Soc. London... Journal of the Chemical Society of London, London.
 Jour. de chim. phys..... Journal de chimie physique, Geneva and Paris.
 Jour. de chir..... Journal de chirurgie, Paris.
 Jour. d. Chir. u. Augenh.... Journal der Chirurgie und Augenheilkunde, Berlin.
 Jour. Clin. Investigation.... Journal of Clinical Investigation, Baltimore.
 Jour. Comp. Neurol..... Journal of Comparative Neurology, Philadelphia.

- Jour. Comp. Path. and Therap..... Journal of Comparative Pathology and Therapeutics, Edinburgh and London.
- Jour. Comp. Psychol..... Journal of Comparative Psychology, Baltimore.
- Jour. Cutan. Dis..... Journal of Cutaneous Diseases; continued as Archives of Dermatology and Syphilology, Chicago.
- Jour. Dent. Res..... Journal of Dental Research, New York City.
- Jour. Exper. Med..... Journal of Experimental Medicine, New York City.
- Jour. Exper. Psychol..... Journal of Experimental Psychology, Lancaster, Pa., and Princeton, N. J.
- Jour. Exper. Zool..... Journal of Experimental Zoology, Philadelphia.
- Jour. Eye, Ear, and Throat Dis..... Journal of Eye, Ear, and Throat Diseases, Baltimore.
- Jour. Florida Med. Assn..... Journal of the Florida Medical Association, Jacksonville.
- Jour. Gen. Physiol..... Journal of General Physiology, Baltimore.
- Jour. Genetics..... Journal of Genetics, Cambridge, Eng.
- Jour. Helminthol..... Journal of Helminthology, London.
- Jour. Hered..... Journal of Heredity, Washington.
- Jour. Hyg..... Journal of Hygiene, London.
- Jour. Immunol..... Journal of Immunology, Baltimore.
- Jour. Indiana State Med. Assn..... Journal of the Indiana State Medical Association, Fort Wayne.
- Jour. Indust. and Engin. Chem..... Journal of Industrial and Engineering Chemistry, Easton, Pennsylvania.
- Jour. Indust. Hyg..... Journal of Industrial Hygiene, Boston.
- Jour. Inebr..... Journal of Inebriety, Boston.
- Jour. Infect. Dis..... Journal of Infectious Diseases, Chicago.
- Jour. Iowa State Med. Soc... Journal of the Iowa State Medical Society, Des Moines.
- Jour. Kansas Med. Soc..... Journal of the Kansas Medical Society, Topeka.
- Jour. f. Kinderkr..... Journal für Kinderkrankheiten, Berlin und Erlangen.
- Jour. Lab. and Clin. Med... Journal of Laboratory and Clinical Medicine, St. Louis.
- Journal-Lancet..... Journal-Lancet, Minneapolis.
- Jour. Laryngol. and Otol.... Journal of Laryngology and Otology, Edinburgh.
- Jour. Laryngol., Rhinol., and Otol..... Journal of Laryngology, Rhinology, and Otology, London.
- Jour. Maine Med. Assn..... Journal of the Maine Medical Association, Portland, Maine.
- Jour. de méd. de Bordeaux.. Journal de médecine de Bordeaux, Bordeaux.
- Jour. de méd., de chir., et de pharmacol..... Journal de médecine, de chirurgie, et de pharmacologie, Bruxelles.
- Jour. de méd. et de chir. prat. Journal de médecine et de chirurgie pratiques, Paris.
- Jour. de méd. de Lyon..... Journal (Le) de médecine de Lyon.

Jour. de méd. de Par.....	Journal de médecine de Paris, Paris.
Jour. Med. Assn. Georgia...	Journal of the Medical Association of Georgia, Augusta.
Jour. méd. franç.....	Journal (Le) médical français, Paris.
Jour. Med. Res.....	Journal of Medical Research; superseded by American Journal of Pathology, Boston.
Jour. Med. Soc. New Jersey..	Journal of the Medical Society of New Jersey, Orange.
Jour. Med.....	Journal of Medicine, Cincinnati.
Jour. Ment. Path.....	Journal of Mental Pathology, New York City.
Jour. Ment. Sc.....	Journal of Mental Sciences, London.
Jour. Metabol. Res.....	Journal of Metabolic Research, Morristown, N. J.
Jour. Mich. State Med. Soc.	Journal of the Michigan State Medical Society, Detroit.
Jour. Minn. Med. Assn.....	Journal of the Minnesota State Medical Association, and Northwestern Lancet, Minneapolis.
Jour. Missouri State Med. Assn.....	Journal of the Missouri State Medical Association, St. Louis.
Jour. Morphol.	Journal of Morphology, Philadelphia.
Jour. Nat. Dent. Assn.....	Journal of the National Dental Association, Chicago.
Jour. Nat. Med. Assn.....	Journal of the National Medical Association, Tuskegee, Alabama.
Jour. Nerv. and Ment. Dis...	Journal of Nervous and Mental Diseases, New York City.
Jour. de neurol. et d'hypnol..	Journal de neurologie et d'hypnologie, Paris.
Jour. Neurol. and Psycho-path.....	Journal of Neurology and Psychopathology, London.
Jour. New Mexico Med. Soc.	Journal of the New Mexico Medical Society, Albuquerque.
Jour. Obst. and Gynæc. Brit. Emp.....	Journal of Obstetrics and Gynæcology of the British Empire, Manchester.
Jour. Oklahoma State Med. Assn.....	Journal of the Oklahoma State Medical Association, Muskogee.
Jour. Ophth. and Oto-Laryngol.....	Journal of Ophthalmology and Oto-Laryngology, Chicago.
Jour. Ophth., Otol., and Laryng.....	Journal of Ophthalmology, Otology, and Laryngology, Philadelphia.
Jour. Oral.....	Journal of Oralogy, New York.
Jour. Organotherap.....	Journal of Organotherapy, New York City.
Jour. Oriental Med.....	Journal of Oriental Medicine, Dairen, South Manchuria.
Jour. Orthop. Surg.....	Journal of Orthopædic Surgery, Lincoln, Nebraska.
Jour. Outdoor Life.....	Journal of the Outdoor Life, Trudeau, New York.
Jour. Parasitol.....	Journal of Parasitology, Urbana, Illinois.
Jour. Path. and Bacteriol...	Journal of Pathology and Bacteriology, Edinburgh and London.
Jour. de pharm. et de chim...	Journal de pharmacie et de chimie, Paris.

- Jour. Pharmacol. and Exper. Therap..... Journal of Pharmacology and Experimental Therapeutics, Baltimore.
- Jour. Philippine Islands Med. Assn..... Journal of the Philippine Islands Medical Association, Manila.
- Jour. de physiol. expér..... Journal de physiologie expérimentale et pathologique, Paris.
- Jour. de physiol. et de path. gén..... Journal de physiologie et de pathologie générale, Paris.
- Jour. Physiol..... Journal of Physiology, London and Cambridge.
- Jour. Phys. Chem..... Journal of Physical Chemistry, Ithaca.
- Jour. de physique et radium. Journal (Le) de physique et radium, Paris.
- Jour. d. pract. Arznk. u. Wundarznk..... Journal der practischen Arzneykunde und Wundarzneykunst, Jena und Berlin.
- Jour. f. prakt. Chem..... Journal für praktische Chemie, Leipzig.
- Jour. Prev. Med..... Journal of Preventive Medicine, Chicago.
- Jour. f. Psychol. u. Neurol... Journal für Psychologie und Neurologie, Leipzig.
- Jour. de psychol. norm. et path..... Journal de psychologie normale et pathologique, Paris.
- Jour. radiol. et d'électrol..... Journal de radiologie et d'électrologie, Paris.
- Jour. Radiol..... Journal of Radiology, Iowa City.
- Jour. Radiol..... Journal of Radiology, Omaha.
- Jour. Röntg. Soc..... Journal of the Röntgen Society, London.
- Jour. Roy. Anthropol. Inst. Gr. Brit. and Ireland..... Journal of the Royal Anthropological Institute of Great Britain and Ireland, London.
- Jour. Roy. Army Med. Corps. Journal of the Royal Army Medical Corps, London.
- Jour. Roy. Micr. Soc..... Journal of the Royal Microscopical Society, London.
- Jour. Roy. Nav. Med. Serv. Journal of the Royal Naval Medical Service, London.
- Jour. d. sc. méd. de Lille..... Journal des sciences médicales de Lille, Lille.
- Jour. Sexol. and Psychanal.. Journal of Sexology and Psychanalysis, New York City.
- Jour. Soc. Hyg..... Journal of Social Hygiene, New York. (Continues Social Hygiene, Baltimore.)
- Jour. Soc. Chem. Ind..... Journal of the Society of Chemical Industry, London.
- Jour. Sociol. Med..... Journal of Sociologic Medicine, Easton, Pennsylvania.
- Jour. S. Carolina Med. Assn. Journal of the South Carolina Medical Association, Greenville.
- Jour. State Med..... Journal of State Medicine, London.
- Jour. Surg., Gynec., and Obst..... Journal of Surgery, Gynecology, and Obstetrics, New York City.
- Jour. Tennessee State Med. Assn..... Journal of the Tennessee State Medical Association, Nashville.
- Jour. Trop. Med..... Journal of Tropical Medicine and Hygiene, London.

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Jour. d'urol. méd. et chir.	Journal d'urologie médicale et chirurgicale, Paris: formerly Annales des maladies des organes génito-urinaires.
Jour. Urol.	Journal of Urology, Baltimore.
Kansas City Med. Index-Lancet.	Kansas City Medical Index-Lancet, Kansas City.
Kansas City Med. Rec.	Kansas City Medical Record, Kansas City.
Kekkaku.	Kekkaku (Tuberculosis), Tokyo.
Kentucky Med. Jour.	Kentucky Medical Journal, Bowling Green.
Kindertuberk.	Kindertuberkulose, München.
Kitasato Arch. Exper. Med.	Kitasato, Archives of Experimental Medicine, Tokio.
Klin. Beitr. z. Gynäk.	Klinische Beiträge zur Gynäkologie, Breslau.
Klin. Monatsbl. f. Augenh.	Klinische Monatsblätter für Augenheilkunde, Stuttgart.
Klin. Wchnschr.	Klinische Wochenschrift, Berlin.
Klin.-therap. Wchnschr.	Klinisch-therapeutische Wochenschrift, Wien.
Knapp's Arch.	Knapp's Archiv: See Archiv für Augenheilkunde, Wiesbaden.
Kobenh. med. Selsk. Forh.	Kobenhavenske medicinske Selskabs Forhandler, Copenhagen.
Kolloidchem. Beihefte.	Kolloidchemische Beihefte, Dresden und Leipzig.
Kolloid-Ztschr.	Kolloid-Zeitschrift, Dresden und Leipzig.
Kong.-Zentralbl. f. d. ges. inn. Med.	Kongresszentralblatt für die gesamte innere Medizin und ihre Grenzgebiete, Berlin.
Kor.-Bl. d. allg. ärztl. Ver. v. Thüringen.	Korrespondenz-Blätter des allgemeinen ärztlichen Vereins von Thüringen, Jena.
Krankheitsforschung.	Krankheitsforschung, Leipzig.
Kyoto Igaku Zassi.	Kyoto Igaku Zassi, Kyoto.
Lancet.	Lancet, London.
Lancet-Clinic.	Lancet-Clinic, Cincinnati.
Lancette franç.	Lancette française: See Gazette des hôpitaux civils et militaires, Paris.
Langenbeck's Arch.	Langenbeck's Archiv: See Archiv für klinische Chirurgie, Berlin.
Laryngoscope.	Laryngoscope, St. Louis.
Leucocyte.	Leucocyte, Detroit.
Liebig's Ann.	Liebig's Annalen: See Annalen der Chemie, Leipzig.
Liverpool Med.-Chir. Jour.	Liverpool Medico-Chirurgical Journal, Liverpool.
London Med. Rec.	London Medical Recorder, London.
Long Island Med. Jour.	Long Island Medical Journal, Brooklyn.
Louisville Month. Jour. Med. and Surg.	Louisville Monthly Journal of Medicine and Surgery, Louisville, Kentucky.
Lyon chir.	Lyon chirurgical, Paris.
Lyon méd.	Lyon médical, Lyon.
Malariologia.	Malariologia, Napoli.
Maly's Jahresb.	Maly's Jahresbericht: See Jahresbericht über die Fortschritte der Thierchemie, Wiesbaden.
Marseille méd.	Marseille médical, Marseille.

Maryland Med. Jour.....	Maryland Medical Journal, Baltimore.
Massachusetts Med. Jour...	Massachusetts Medical Journal, Boston.
Médecine.....	Médecine, Paris.
Médecine.....	Médecine (La), Paris.
Méd. inf.....	Médecine (La) infantile, Paris.
Méd. internat.....	Médecine (La) internationale, Paris.
Méd. mod.....	Médecine moderne, Paris.
Méd. prat.....	Médecine (La) pratique, Paris.
Med. Advance.....	Medical Advance, Batavia, Illinois.
Med. Brief.....	Medical Brief, St. Louis.
Med. Bull.....	Medical Bulletin, Philadelphia.
Med. Chron.....	Medical Chronicle, Manchester, England.
Med. Clin. Chicago.....	Medical Clinics of Chicago, Philadelphia. Continued as Medical Clinics of North America.
Med. Clin. N. Amer.....	Medical Clinics of North America, Philadelphia.
Med. Council.....	Medical Council, Philadelphia.
Med. Critic.....	Medical Critic and Guide, New York City.
Med. Era.....	Medical Era now combined with St. Louis Medical Review in Medical Review, St. Louis.
Med. Exam. and Pract.....	Medical Examiner and Practitioner, New York City.
Med. Fortnightly.....	Medical Fortnightly, St. Louis.
Med. Gaz.....	Medical Gazette, New York City.
Med. Herald.....	Medical Herald, St. Joseph, Missouri.
Med. Jour. Australia.....	Medical Journal of Australia, Sydney.
Med. Jour. and Rec.....	Medical Journal and Record, New York. (Continues New York Medical Journal.)
Med. Jour. South Africa....	Medical Journal of South Africa, Johannesburg, M.
Med. Libr. and Hist. Jour...	Medical Library and Historical Journal, Brooklyn.
Med. Life.....	Medical Life, New York.
Med. Mag.....	Medical Magazine, London.
Med. News.....	Medical News, London.
Med. Notes and Queries....	Medical Notes and Queries, Lancaster, Pennsylvania.
Med. Pickwick.....	Medical Pickwick, St. Louis, Mo.
Med. Press and Circular....	Medical Press and Circular, London.
Med. Prog.....	Medical Progress, Louisville.
Med. Rec.....	Medical Record. Continued as Medical Journal and Record, New York.
Med. Rec. and Ann.....	Medical Record and Annals, San Antonio, Texas.
Med. Recorder.....	Medical Recorder, Shreveport, Louisiana.
Med. Rev.....	Medical Review, St. Louis, incorporating Medical Era and St. Louis Medical Review.
Med. Rev. of Rev.....	Medical Review of Reviews, New York City.
Med. Science.....	Medical Science, New York. (Discontinued.)
Med. Sc. Abstr. and Rev...	Medical Science, Abstracts and Reviews, London.
Med. Sentinel.....	Medical Sentinel, Portland, Oregon.
Med. Standard.....	Medical Standard, Chicago.
Med. Summary.....	Medical Summary, Philadelphia.
Med. and Surg. Rep. City Hosp.....	Medical and Surgical Reports of the City Hospital of the City of Boston, Boston.

Med. Times.....	Medical Times, New York City.
Med. Times and Gaz.....	Medical Times and Gazette, London.
Med. Woman's Jour.....	Medical Woman's Journal, Cincinnati.
Med. World.....	Medical World, Philadelphia.
Med. e chir. d. med. prat....	Medicina e chirurgia del medico pratico, Napoli.
Med. iberica.....	Medicina (La) iberica; revista semanal de medicina y cirugía, Madrid.
Med. ital.....	Medicina (La) italiana, Milano.
Med. nuova.....	Medicina nuova, Roma.
Med. Practica.....	Medicina (La) Practica, Napoli.
Med. soc.....	Medicina (La) sociale, Napoli.
Medicine.....	Medicine, Baltimore.
Medicine.....	Medicine, Detroit.
Med. and Surg.....	Medicine and Surgery, St. Louis.
Med. Bl.....	Medizinische Blätter: See Wochenschrift für die gesammte Heilkunde, Wien.
Med. Monatschr.....	Medizinische Monatsschrift, New York City.
Med. Rev.....	Medicinsk revue, Bergen, Norway.
Med.-Chir. Jour.....	Medico-Chirurgical Journal, Philadelphia.
Med.-Leg. Jour.....	Medico-Legal Journal, New York City.
Med. Weekbl.....	Medisch Weekblad, Amsterdam.
Med. Rev.....	Medische Revue, Haarlem.
Med. Obozr.....	Meditsinskoye Obozrenie, Moscow.
Med. Klin.....	Medizinische Klinik, Berlin.
Med. Kor.-Bl. f. Württemberg.....	Medizinisches Korrespondenz-Blatt für Württemberg (würtembergischen ärztlichen Landesvereins), Stuttgart.
Mém. Acad. imp. d. sc. de Petrograd.....	Mémoires de l'Académie imperiale des sciences de Petrograd, Petrograd.
Mem. r. Acad. d. cien. y artes de Barcelona.....	Memorias de la real Academia de ciencias y artes de Barcelona, Barcelona.
Mem. do Inst. Oswaldo Cruz.....	Memorias do Instituto Oswaldo Cruz, Rio de Janeiro.
Mem. d. r. Accad. d. sc. d. Ist. di Bologna.....	Memorie della reale Accademia delle scienze dell' Istituto di Bologna, Bologna.
Memphis Med. Month.....	Memphis Medical Monthly, Memphis, Tennessee.
Mental Hyg.....	Mental Hygiene, Albany, N. Y.
Meyer Bros. Drug.....	Meyer Brothers' Druggist, St. Louis.
Midi méd.....	Midi médical, Toulouse.
Middlesex Hosp. Jour.....	Middlesex (The) Hospital Journal, London.
Midland Drug. and Pharm. Rev.....	Midland Druggist and Pharmaceutical Review, Columbus, Ohio.
Militärarzt.....	Militärarzt (Der), Wien.
Mil. Surgeon.....	Military Surgeon, Washington, D. C.
Minerva med.....	Minerva medica, Torino.
Minneapolis Dis. Dent. Jour.....	Minneapolis District Dental Journal, Minneapolis.
Minn. Med.....	Minnesota Medicine, St. Paul.
Mississippi Med. Month.....	Mississippi Medical Monthly, Vicksburg.

- Mitt. d. anthrop. Gesellsch.
in Wien..... Mitteilung der anthropologischen Gesell-
schaft in Wien.
- Mitt. ü. allg. Path. u. path.
Anat..... Mitteilungen über allgemeine Pathologie und
pathologische Anatomie, Sendai, Japan.
- Mitt. der deutsch. Gesellsch.
z. Bekämpf. d. Geschlecht-
skr..... Mitteilungen der deutschen Gesellschaft zur
Bekämpfung der Geschlechtskrankheiten,
Leipzig.
- Mitt. d. Gesellsch. f. inn.
Med. u. Kinderh..... Mitteilungen der Gesellschaft für innere
Medizin und Kinderheilkunde in Wien,
Wien.
- Mitt. a. d. Grenzgeb. d. Med.
u. Chir..... Mitteilungen aus den Grenzgebieten der
Medizin und Chirurgie, Jena.
- Mitt. a. d. med. Fakult. d. k.
Univ. zu Tokyo..... Mitteilungen aus der medizinischen Fakultät
der kaiserlichen Universität zu Tokyo,
Tokyo.
- Mobile Med. and Surg. Jour. Mobile Medical and Surgical Journal, Mobile.
- Mod. Hosp..... Modern Hospital, Chicago.
- Mod. Med..... Modern Medicine, Chicago.
- Mois méd.-chir..... Mois médico-chirurgical, Paris.
- Monatsh. f. prakt. Dermat.. Monatshefte für praktische Dermatologie,
Hamburg und Leipzig.
- Monatschr. f. Geburtsh. u.
Gynäk..... Monatsschrift für Geburtshilfe und Gynä-
kologie, Berlin.
- Monatschr. f. Kinderh..... Monatsschrift für Kinderheilkunde, Leipzig.
- Monatschr. f. Ohrenh..... Monatsschrift für Ohrenheilkunde, Berlin.
- Monatschr. f. Ohrenh..... Monatsschrift für Ohrenheilkunde und Laryn-
go-Rhinologie, Berlin und Wien.
- Monatschr. f. Psychiat. u.
Neurol..... Monatsschrift für Psychiatrie und Neurologie,
Berlin.
- Monatschr. f. Unfallheilk... Monatsschrift für Unfallheilkunde mit be-
sonderer Berücksichtigung der Mechano-
therapie und der Begutachtung Unfallver-
letzter, Leipzig.
- Monde méd..... Monde médical, Paris.
- Monde méd., Barcelona.... Monde (Le) médical (Spanish edition), Barce-
lona.
- Month. Cycl. Pract. Med... Monthly Cyclopedia of Practical Medicine,
Philadelphia.
- Montpellier méd..... Montpellier médical, Montpellier and Paris.
- Montreal Med. Jour..... Montreal Medical Journal, Montreal.
- Morgagni..... Morgagni, Milano.
- Morph. Jahrb..... Morphologisches Jahrbuch, Leipzig.
- München. med. Wchnschr... Münchener medizinische Wochenschrift,
München.
- Nashville Jour. Med. and
Surg..... Nashville Journal of Medicine and Surgery,
Nashville, Tennessee.
- Nat. Med. Jour. China..... National Medical Journal of China, Shanghai.

ABBREVIATIONS FOR MEDICAL JOURNALS 155

Nat. Tuberc. Assn. Tr.....	National Tuberculosis Association, Transactions, New York.
Nation's Health.....	Nation's Health, Chicago.
Nebraska State Med. Jour..	Nebraska State Medical Journal, Norfolk, Neb.
Nederl. Maandschr. v. Geneesk.....	Nederlandsch Maandschrift voor Geneeskunde, Leiden.
Nederl. Tijdschr. v. Geneesk.	Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam.
Nederl. Tijdschr. v. Verlosk. en Gynæc.....	Nederlandsch Tijdschrift voor Verloskunde en Gynæcologie, Haarlem.
Néoplasmes.....	Néoplasmes, Paris.
Neurol. Bull.....	Suspended publication.
Neurol. Centralbl.....	Neurologisches Centralblatt, Berlin und Leipzig.
Neurotherapie.....	Neurotherapie, Amsterdam.
New England Med. Month..	New England Medical Monthly, Danbury, Connecticut.
New Mexico Med. Jour.....	New Mexico Medical Journal, Las Cruces.
New Orleans Med. and Surg. Jour.....	New Orleans Medical and Surgical Journal, New Orleans.
New York Med. Jour.....	New York Medical Journal. Continued as Medical Journal and Record, New York.
New York Med. Jour. and Obst. Rev.....	New York Medical Journal and Obstetrical Review, New York City.
New York Med. Press. . .	New York Medical Press, New York City.
New York State Jour. Med..	New York State Journal of Medicine. New York City.
New Zealand Med. Jour...	New Zealand Medical Journal, Wellington.
Nippon Gankwa Gakukwai Zasshi.....	Nippon Gankwa Gakukwai Zasshi (Gazette of the Society of Oculists of Japan), Tokyo.
Nipiologia.....	Nipiologia, Napoli.
Nord. Hyg. Tidsskr.....	Nordisk Hygienisk Tidsskrift, Lund.
Nord. med. Ark.....	Nordiskt medicinskt Arkiv, Stockholm.
Normandie méd.....	Normandie médicale, Rouen.
Norsk Mag. f. Lægevidensk.	Norsk Magazin for Lægevidenskaben, Oslo.
Norsk Tidsskr. f. Mil.-Med.	Norsk Tidsskrift for Militærmedicin. Udgivet af det militærmedicinske selskab i Kristiania, Oslo.
N. Am. Jour. Homœop.....	North American Journal of Homœopathy, New York City.
North Am. Vet.....	North American Veterinarians, Chicago.
Northwest Med.....	Northwest Medicine, Seattle.
Nourrison.....	Nourrison. Revue d'hygiène et de pathologie de la première enfance, Paris.
Nouv. iconog. de la Salpêtrière.....	Nouvelle iconographie de la Salpêtrière, Paris.
Obozr. psikhiat., nevrol.....	Obozrienige psikhiatrii, nevrologii i eksperimentalnoi psikhologii, Petrograd.
Obsh.-san. obozr.....	Obshtshestvenno-sanitarnoye obozrieniye, Petrograd.

- Obstétrique.....L'Obstétrique: See Archives mensuelles d'obstétrique et de gynécologie, Paris.
- Occup. Therap.....Occupational Therapy and Rehabilitation, Baltimore.
- Odontologie.....Odontologie (L') et la revue internationale d'odontologie, Paris.
- Ohio State Med. Jour.....Ohio State Medical Journal, Columbus.
- Old Dominion Jour. Med. and Surg.....Old Dominion Journal of Medicine and Surgery, Richmond, Virginia.
- Ophth. Lit.....Ophthalmic Literature, Chicago.
- Ophth. Lit.....Ophthalmic Literature, Denver.
- Ophth. Rec.....Ophthalmic Record, Chicago.
- Ophthalmology.....Ophthalmology, Seattle.
- Oral Health.....Oral Health, Toronto.
- Oral Hyg.....Oral Hygiene, Minneapolis.
- Orient. Jour. Dis. Infants...Oriental Journal of Diseases of Infants, Kyoto, Japan.
- Orvosi hetil.....Orvosi hetilap, Budapest.
- Osp. maggiore.....Ospedale maggiore, Milano.
- Otchet o dīeyateln. khirurg. klin. v. Mosk.....Otchet o dīeyatelnosti khirurgicheskoi kliniki Iverskoi Obshtshini Syoster Miloserdiyo v. Moskvie, Moskva.
- Oto-rhino-laringol. internat..Oto-rhino-laryngologie internationale, Lyons.
- Pacific Coast Jour. Homœop..Pacific Coast Journal of Homœopathy, San Francisco.
- Pacific Dent. Gaz.....Pacific Dental Gazette, San Francisco.
- Pacific Med. Jour.....Pacific Medical Journal, San Francisco.
- Parasitology.....Parasitology, London.
- Paris chir.....Paris chirurgial; publiant les comptes rendus de la Société des chirurgiens de Paris. Revue mensuelle, Paris.
- Paris méd.....Paris médical, Paris.
- Pathologica.....Pathologica. Revista quindicinale. Genova.
- Pediat. españ.....Pediatria española; revista mensual de higiene, medicina y cirugía infantil, Madrid.
- Pediatria.....Pediatria (La), Napoli.
- Pediatria.....Pediatria, Petrograd.
- Pediatrics.....Pediatrics, New York and London
- Pennsylvania Med. Jour....Pennsylvania Medical Journal. Continued as Atlantic Medical Journal, Harrisburg.
- Pensiero med.....Pensiero medico, Milano.
- Pest. med.-chir. Presse.....Pester medizinische-chirurgische Presse, Budapest.
- Petrograd. med. Ztschr.....Petrograder medizinische Zeitschrift, Petrograd.
- Pflüger's Arch.....Pflüger's Archiv: See Archiv für die gesamte Physiologie des Menschen und der Tiere, Bonn.
- Pharm. Era.....Pharmaceutical Era, New York City.
- Pharm. Jour.....Pharmaceutical Journal, London.
- Pharm. Zentralhalle.....Pharmaceutische Zentralhalle für Deutschland, Berlin und Dresden.
- Pharm. u. therap. Rundschau.....Pharmakologische und therapeutische Rundschau, Wien.

Pharm. Ztg.....	Pharmazeutische Zeitung, Berlin.
Philadelphia Med. Jour.....	Philadelphia Medical Journal, Philadelphia.
Philippine Jour. Sc.....	Philippine Journal of Science, Manila.
Philippine Jour. Trop. Med..	Philippine Journal of Tropical Medicine, Manila.
Phil. Tr. Roy. Soc. London..	Philosophical Transactions of the Royal Society of London, London.
Physical Therap.....	Physical Thereapeutics, Baltimore.
Physician and Surg.....	Physician and Surgeon, London.
Physiol. Abstr.....	Physiological Abstracts, London.
Physiol. Rev.....	Physiological Reviews, Baltimore.
Physiol. Stud.....	Physiological Studies, Aberdeen.
Plexus.....	Plexus, Batavia, Illinois.
Policlinico (sez. chir.).....	Policlinico, Il (sezione chirurgia).
Policlinico (sez. med.).....	Policlinico, Il (sezione medica).
Policlinico (sez. prat.).....	Policlinico, Il (sezione pratico).
Polyclinic.....	Polyclinic, London.
Pop. Sc. Month.....	Popular Science Monthly, New York City.
Post-Graduate.....	Post-Graduate, New York City.
Pract. Med. and Surg.....	Practical Medicine and Surgery, Austin, Texas.
Prat. méd. franç.....	Pratique médicale française, Paris.
Practitioner, Baltimore.....	Practitioner, Baltimore.
Practitioner, Lancaster, Pa..	Practitioner, Lancaster, Pennsylvania.
Practitioner, London.....	Practitioner, London.
Prag. med. Wchnschr.....	Prager medizinische Wochenschrift, Prag.
Prakt. Arzt.....	Praktische Arzt, Wetzlar.
Praxis.....	Praxis, Bern.
Prensa méd.....	Prensa (La) médica, Habana.
Prensa méd. Argentina.....	Prensa médica Argentina, Buenos Aires.
Prescriber.....	Prescriber (The), Edinburgh.
Presse méd.....	Presse médicale, Paris.
Presse therm. et climat.....	Presse thermal et climatique, Paris.
Proc. Am. Assn. Advancem. Sc.....	Proceedings of the American Association for the Advancement of Science, Salem, Mas- sachusetts.
Proc. Am. Assn. Phys. and Surg.....	Proceedings of the American Association of Physicians and Surgeons, Indianapolis.
Proc. Am. Pharm. Assn.....	Proceedings of the American Pharmaceutical Association, Scio, Ohio.
Proc. Chem. Soc.....	Proceedings of the Chemical Society, London.
Proc. Inst. Med. Chicago...	Proceedings of the Institute of Medicine of Chicago, Chicago.
Proc. New York Path. Soc...	Proceedings of the New York Pathological Society, New York City.
Proc. Path. Soc. Philadel- phia.....	Proceedings of the Pathological Society of Philadelphia, Philadelphia.
Proc. Philadelphia Co. Med. Soc.....	Proceedings of the Philadelphia County Medical Society, Philadelphia.
Proc. Roy. Med. and Chir. Soc.....	Proceedings of the Royal Medical and Chirur- gical Society of London, London.
Proc. Roy. Soc. Med.....	Proceedings of the Royal Society of Medicine, London.

- Proc. Soc. Exper. Biol. and Med.**..... **Proceedings of the Society for Experimental Biology and Medicine, New York City.**
- Proc. Staff Meetings of Mayo Clinic.**..... **Proceedings of the Staff Meetings of The Mayo Clinic, Rochester, Minnesota.**
- Proc. U. S. Nat. Mus.**..... **Proceedings of the United States National Museum, Washington, D. C.**
- Proctol. and Gastro-Enterol.**..... **Proctologist and Gastro-Enterologist, St. Louis.**
- Progrès méd.**..... **Progrès médical, Paris.**
- Progr. Med.**..... **Progressive Medicine, Philadelphia.**
- Providence Med. Jour.**..... **Providence Medical Journal, Providence.**
- Province méd.**..... **Province médicale, Paris.**
- Psychiat.-neurol. Wchnschr.**..... **Psychiatrisch-neurologische Wochenschrift, Halle.**
- Psychoanal. Rev.**..... **Psychoanalytic Review, Lancaster, Pennsylvania.**
- Psychol. Bull.**..... **Psychological Bulletin, Lancaster, Pennsylvania.**
- Psychol. Mon.**..... **Psychological Monographs, Lancaster, Pennsylvania.**
- Psychol. Rev.**..... **Psychological Review, Princeton, N. J.**
- Psychol. u. Med.**..... **Psychologie und Medizin, Stuttgart.**
- Psychol. Arb.**..... **Psychologische Arbeiten, Leipzig; Berlin.**
- Pub. Cornell Univ. Med. Coll.**..... **Publications of Cornell University Medical College, New York City.**
- Pub. Health Bull.**..... **Public Health Bulletin, Washington.**
- Pub. Health Jour.**..... **Public Health Journal, Toronto.**
- Pub. Health Rep.**..... **Public Health Reports, United States Public Health Service, Washington, D. C.**
- Quaderni di psichiat.**..... **Quaderni di psichiatria, Genova.**
- Quarderni di med. leg.**..... **Quarderni di medicina legale, Milano.**
- Quart. Med. Clin.**..... **Quarterly Medical Clinics, St. Louis.**
- Quart. Fed. State Med. Boards.**..... **Quarterly of the Federation of State Medical Boards of the United States, Easton, Pennsylvania.**
- Quart. Jour. Exper. Physiol.**..... **Quarterly Journal of Experimental Physiology, London.**
- Quart. Jour. Inebr.**..... **Quarterly Journal of Inebriety, Hartford, Connecticut.**
- Quart. Jour. Med.**..... **Quarterly Journal of Medicine, Oxford.**
- Quart. Jour. Micr. Sc.**..... **Quarterly Journal of Microscopical Science, London.**
- Quart. Rev. Biol.**..... **Quarterly Review of Biology, Baltimore.**
- Queen's Med. Quart.**..... **Queen's Medical Quarterly, Kingston, Canada.**
- Quinzaine therap.**..... **Quinzaine thérapeutique, Paris.**
- Radiology.**..... **Radiology, St. Paul.**
- Radiol. Rev. and Chicago Med. Rec.**..... **Radiological Review and the Chicago Medical Recorder, Chicago.**
- Radiol. med.**..... **Radiologica medica, Milano.**
- Radiol. Rev.**..... **Radiological Review, Quincy, Illinois.**
- Radium.**..... **Radium, Paris.**
- Radium.**..... **Radium, Pittsburgh.**

- Raggi ultraviol.....Raggi ultravioletti, Milano.
 Railway Surg. Jour.....Railway Surgical Journal. Continued as Sur-
 gical Journal, Chicago.
 Rassegna di clin., terap. e sc.
 aff.....Rassegna (La) di clinica, terapia e ciencias
 affini, Roma.
 Rassegna internaz. di clin. e
 terap.....Rassegna internazionale di clinica e terapia,
 Napoli.
 Rassegna d'ostet. e ginec....Rassegna (La) d'ostetricia e ginecologia, Na-
 poli.
 Recalled to Life.....Recalled to Life, London.
 Rec. d'opht.....Recueil d'ophtalmologie, Paris.
 Repert. de phar.....Repertoire de pharmacie, Paris.
 Repert. f. d. Pharm.....Repertorium für der Pharmacie, Berlin.
 Rev. Clin. Stomatology.....Review of Clincial Stomatology, New York.
 Rev. Asoc. méd. argent.....Revista de la Asociación médica argentina,
 Buenos Aires.
 Rev. Asoc. méd. mex.....Revista de la Asociación médica mexicana,
 Mexico.
 Rev. de cien. méd.....Revista de ciencias médicas, Buenos Aires.
 Rev. de criminol. psiquiat...Revista de criminología psiquiatria y medi-
 cina legal, Buenos Aires.
 Rev. cubana de obstet. y
 ginec.....Revista cubana de obstetricia y ginecología,
 Habana.
 Rev. cubana de oftal.....Revista cubana de oftalmología, Habana.
 Rev. españ. de med. y cirug. Revista española de medicina y cirugía,
 Barcelona.
 Rev. Filipina de med. y farm. Revista Filipina de medicina y farmacia,
 Manila.
 Rev. Ibero-Am. de cien. med. Revista Ibero-Americana de ciencias médicas,
 Madrid.
 Rev. ital. di neuropatol.,
 psichiat. ed elettroter.....Revista italiana di neuropatologia, psichiat-
 ria ed elettroterapia, Catania.
 Rev. méd.....Revista médica, México.
 Rev. med.-cirurg. do Brazil..Revista medica-cirurgica do Brazil, Rio de
 Janeiro.
 Rev. méd. Cub.....Revista médica Cubana, Habana.
 Rev. méd. del Rosario.....Revista médica del Rosario, Rosario, Ar-
 gentina.
 Rev. méd. d. Uruguay.....Revista médica del Uruguay, Montevideo.
 Rev. de med.....Revista de medicina, São Paulo.
 Rev. de med. y cirug.....Revista de medicina y cirugía, Barcelona.
 Rev. de med. y cirug. de la
 Habana.....Revista de medicina y cirugía de la Habana,
 Habana.
 Rev. de med. y cirug. práct.. Revista de medicina y cirugía prácticas
 Madrid.
 Rev. méd.-quir.....Revista médico-quirúrgica, Quito, Ecuador.
 Rev. de med. e hyg. mil.....Revista de medicina e hygiene militar, Rio de
 Janeiro.
 Rev. med.-cirurg. mil.....Revista medico-cirurgica militar, Rio de
 Janeiro.
 Rev. mexican. de biol.....Revista mexicana de biologia, Buenos Aires.
 Rev. de Radiol.-X.....Revista de Radiologia-X., Berlin.
 Rev. Soc. méd. arg.....Revista de la Sociedad médica argentina,
 Buenos Aires.

Rev. d'actinol.....	Revue d'actinologie—Luniere—Ultraviolet— Infra-rouge, Paris.
Rev. anthrop.....	Revue anthropologique, Paris.
Rev. de chir.....	Revue de chirurgie, Paris.
Rev. franç. de dermat. et de vénéreol.....	Revue française de dermatologie et de vénérologie, Paris.
Rev. franç. d'endocrinol.....	Revue française d'endocrinologie, Paris.
Rev. franç. de gynéc. et d'obstét.....	Revue française de gynécologie et d'obstétri- que, Paris.
Rev. franç. de pédiat.....	Revue française de pédiatrie, Paris.
Rev. gén. de clin. et de thérap.....	Revue générale de clinique et de thérapéu- tique, Paris.
Rev. gén. de méd. vét.....	Revue générale de médecine vétérinaire, Toulouse.
Rev. gén. d'opht.....	Revue générale d'ophtalmologie, Paris.
Rev. méd. franç.....	Revue médicale française, Paris.
Rev. d'oto-neuro-ocul.....	Revue d'oto-neuro-oculistique, Paris.
Rev. de gynéc. et de chir. abd.....	Revue de gynécologie et de chirurgie ab- dominale, Paris.
Rev. hebdom. de laryngol.....	Revue hebdomadaire de laryngologie, d'otol- ogie, et de rhinologie, Bordeaux.
Rev. d'hyg.....	Revue d'hygiène et de police sanitaire, Paris.
Rev. d'hyg. et de therap. ocul.....	Revue d'hygiène et de thérapeutique ocu- laires, Bruges, Angoulême, et Paris.
Rev. internat. de méd. et de chir.....	Revue internationale de médecine et de chirurgie, Paris.
Rev. de laryngol., d'otol., et de rhinol.....	Revue de laryngologie, d'otologie, et de rhinologie, Paris.
Rev. de méd.....	Revue de médecine, Paris.
Rev. méd., Paris.....	Revue médicale, Paris.
Rev. méd. de l'est.....	Revue médicale de l'est, Nancy, Paris.
Rev. méd. de la Suisse.....	Revue médicale de la Suisse romande, Lausanne.
Rev. de méd. et d'hyg. trop.	Revue de médecine et d'hygiène tropicales, Paris.
Rev. méd.-chir. d. mal. du foie.....	Revue médico-chirurgicale des maladies du foie, du pancreas et de la rate, Paris.
Rev. mens. de gynéc., d'ob- stét., et de pédiat.....	Revue mensuelle de gynécologie, d'obstét- rique, et de pédiatrie, Paris.
Rev. mens. d. mal. d l'enf....	Revue mensuelle des maladies de l'enfance, Paris.
Rev. neurol.....	Revue neurologique, Paris.
Rev. v neuropsychopath.....	Revue v neuropsychopathologii, therapii, veřejné hygiené a lékařství socialním, Prague.
Rev. d'orthop.....	Revue d'orthopédie, Paris.
Rev. de Phtisiol.....	Revue de Phtisiologie, Paris.

ABBREVIATIONS FOR MEDICAL JOURNALS 161

Rev. prat. de biol.....	Revue pratique de biologie appliquée à la clinique et à la thérapeutique, Paris.
Rev. prat. d'hyg. municip....	Revue pratique d'hygiène municipale, urbaine et rurale, Paris, Nancy.
Rev. prat. d. mal. d. pays chauds.....	Revue pratique des maladies des pays chauds, Paris.
Rev. prat. d'obst. et de gynec.....	Revue pratique d'obstétrique et de gynécologie, Paris.
Rev. de stomatol.....	Revue de stomatologie, Paris.
Rev. de therap. méd.-chir....	Revue de thérapeutique médico-chirurgicale, Paris.
Rev. de la tuberc.....	Revue de la tuberculose, Paris.
Rev. vet. mil.....	Revue vétérinaire militaire, Paris.
Rhode Island Med. Jour....	Rhode Island Medical Journal, Providence, R. I.
Ricerche di morfol.....	Ricerche di morfologia, Roma.
Riforma med.....	Riforma medica, Napoli.
Riv. di antrop.....	Rivista di antropologia, Roma.
Riv. di biol.....	Rivista di biologia, Roma.
Riv. di chir.....	Rivista di chirurgia, Torino.
Riv. clin. di Bologna.....	Rivista clinica di Bologna, Bologna.
Riv. di clin. pediat.....	Rivista di clinica pediatrica, Firenze.
Riv. crit. di clin. med.....	Rivista critica di clinica medica, Firenze.
Riv. d'ig. e san. pubb.....	Rivista d'igiene e sanità pubblica, Roma.
Riv. internaz. di terap. fis....	Rivista internazionale di terapia fisica, Roma.
Riv. ital. di neuropat.....	Rivista italiana di neuropatologia, psichiatria ed elettroterapia, Catania.
Riv. med.....	Rivista medica. Periodico mensile di medicina, terapia e d'igiene, Milano.
Riv. di med. leg.....	Rivista di medicina legale e di giurisprudenza medica, Milano.
Riv. osp.....	Rivista ospedaliera, Roma.
Riv. d'ostet. e ginec. prat....	Rivista d'ostetricia e ginecologia practica, Palermo.
Riv. di patol. nerv.....	Rivista di patologia nervosa e mentale, Firenze.
Riv. di psicol. applic. a pedagog.....	Rivista di psicologia applicata alla pedagogia ed alla psicopatologia, Bologne.
Riv. sper. di freniat.....	Rivista sperimentale di freniatria e di medicina legale in relazione con l'antropologia e le scienze giuridiche e sociali, Reggio-Emilia.
Russk. Klin.....	Russkaya Klinika, Moscow.
Russk. Arch. Patol., Klin. Med. i Bakteriolog.....	Russkiy Archiv Patologii, Klinicheskoi Meditsini i Bakteriologii, Petrograd.
Russk. Jur. Kozhn. i Ven. Boliezn.....	Russkiy Jurnal Kozhnikh i Venericheskikh Boliezn, Kharkov.
Russk. Vrach.....	Russkiy Vrach, Petrograd.
Samml. klin. Votr.....	Sammlung klinischer Vorträge, Leipzig.
Sang.....	Sang (Le), biologie et pathologie, Paris.
Sborn. klin.....	Sborník klinický. Časopis pěstování vědy lékařské. Praze.

- Schmidt's Jahrb. Schmidt's Jahrbücher der in- und ausländischen gesamten Medizin, Leipzig.
- Schweiz. Arch. f. Neurol. u. Psychiat. Schweizer Archiv für Neurologie und Psychiatrie, Zürich.
- Schweiz. med. Wchnschr. . . . Schweizerische medizinische Wochenschrift, Basel.
- Schweiz. Rundschau. f. Med. Science. Schweizerische Rundschau für Medizin, Bern. Science, New York City.
- Sc. Progr. Twentieth Cent. . . Science Progress in the Twentieth Century, London.
- Scient. Am. Scientific American, New York City.
- Scient. Rep. Invest. Imp. Cancer Research Fund Scientific Reports on the Investigation of the Imperial Cancer Research Fund, London.
- Scot. Med. and Surg. Jour. . . Scottish Medical and Surgical Journal. Continued as Edinburgh Medical Journal.
- Sei-i-Kwai Med. Jour. Sei-i-Kwai Medical Journal, Tokyo.
- Semaine gynéc. Semaine gynécologique, Paris.
- Semaine méd. Semaine médicale, Paris.
- Semana méd. Semana médica, Buenos Aires.
- Settimana med. d. Sperimentale Settimana medica dello Sperimentale, Firenze.
- Seuchenbekämpfung. Seuchenbekämpfung, Wien.
- Siglo méd. Siglo médico, Madrid.
- Sitzungsb. d. phys.-med. Soc. zu erlang. Sitzungsberichte der physikalisch-medizinischen Societät zu Erlangen, Erlangen.
- Skandinav. Arch. f. Phys. . . . Skandinavisches Archiv für Physiologie, Leipzig.
- Soc. Hyg. Social Hygiene, Menasha, Wisconsin.
- South African Med. Rec. . . . South African Medical Record, Cape Town.
- South. Calif. Pract. Southern California Practitioner, Los Angeles.
- South. Clin. Southern Clinic, Richmond, Virginia.
- South. Med. Jour. Southern Medical Journal, Birmingham, Alabama.
- South. Med. and Surg. Southern Medicine and Surgery, Charlotte, N. C.
- South. Med. and Surg. Southern Medicine and Surgery, Chattanooga, Tennessee.
- South. Pract. Southern Practitioner, Nashville, Tennessee.
- Southwest Jour. Med. and Surg. Southwest Journal of Medicine and Surgery, El Reno, Oklahoma.
- Southwestern Med. Southwestern Medicine, Phoenix, Ariz.
- Soziale Med. u. Hyg. Soziale Medizin und Hygiene, Hamburg.
- Sperimentale, Arch. di biol. . . Sperimentale (Lo): Archivio di biologia normale e patologica, Firenze.
- Spitalul. Spitalul, Bucuresce.
- St. Barth. Hosp. Rep. St. Bartholomew's Hospital Reports, London.
- St. Louis Clinique. St. Louis Clinique, St. Louis.
- St. Louis Cour. Med. St. Louis Courier of Medicine, St. Louis.
- St. Louis Med. Rev. St. Louis Medical Review. Now combined with Medical Era under title of Medical Review, St. Louis.
- St. Paul Med. Jour. St. Paul Medical Journal, St. Paul.
- St. Petersb. med. Wchnschr. . . St. Petersburger medicinische Wochenschrift. Continued as St. Petersburger medicinische Zeitschrift.

ABBREVIATIONS FOR MEDICAL JOURNALS 163

St. Petersb. med. Ztschr.	St. Petersburger medicinische Zeitschrift: See Petrograder medicinische Zeitschrift, Petrograd.
St. Thomas' Hosp. Rep.	St. Thomas' Hospital Reports, London.
State Hosp. Quart.	State Hospital Quarterly, New York State Hospital Commision, Albany.
Stomatol.	Stomatologia, Milano.
Strahlentherapie.	Strahlentherapie Mitteilungen aus dem Gebiete der Behandlung mit Röntgen- strahlen, Licht, und radioaktiven Sub- stanzen, Berlin.
Studium.	Studium; rivista di scienza medica, Napoli.
Surg., Gynec., and Obst.	Surgery, Gynecology, and Obstetrics, with International Abstract of Surgery, Chicago.
Surg. Clin. Chicago.	Surgical Clinics of Chicago, Philadelphia. Con- tinued as Surgical Clinics of North America.
Surg. Clin. N. Amer.	Surgical Clinics of North America, Philadel- phia.
Surg. Jour.	Surgical Journal, Chicago.
Svenska Läk.-Sällsk. Handl.	Svenska Läkaresällskapets Handlingar, Stockholm.
Svenska Läk.-Tidning.	Svenska Läkartidningen, Stockholm.
Taiwan Igakkai Zasshi.	Taiwan (The) Igakkai Zasshi, Journal of the Medical Association of Formosa, Japan.
Texas Cour.-Rec. Med.	Texas Courier-Record of Medicine, Fort Worth.
Texas Med. Jour.	Texas Medical Journal, Austin.
Texas Med. News.	Texas Medical News, Austin.
Texas State Jour. Med.	Texas State Journal of Medicine, Fort Worth.
Therap. Gaz.	Therapeutic Gazette, Detroit.
Therap. Halbmonatsh.	Therapeutische Halmonatshefte, Leipzig.
Therap. Monatsh.	Therapeutische Monatshefte, Berlin.
Therap. Neuheiten.	Therapeutische Neuheiten, Leipzig.
Therap. d. Gegenw.	Therapie der Gegenwart, Berlin und Wien.
Tidsskr. f. d. norske Lægefor.	Tidsskrift for den norske Lægeforening, Oslo.
Tijdschr. v. Vergelijk. Ge- neesk.	Tijdschrift voor Vergelijkende Geneeskunde, Leiden.
Tohoku Jour. Exper. Med. ...	Tohoku Journal of Experimental Medicine, Sendai, Japan.
Toledo Med. and Surg. Re- porter.	Toledo Medical and Surgical Reporter, Toledo, Ohio.
Tr. Am. Acad. Ophth. and Oto-Laryngol.	Transactions of the American Academy of Ophthalmology and Oto-Laryngology, Cleveland.
Tr. Am. Assn. Gen.-Urin. Surg.	Transactions of the American Association of Genito-Urinary Surgeons, New York City.
Tr. Am. Assn. Obst.	Transactions of the American Association of Obstetricians and Gynecologists, Phila- delphia.
Tr. Am. Dermat. Assn.	Transactions of the American Dermatological Association, New York City.

- Tr. Am. Gastro-Enterol Assn.....Transactions of the American Gastro-Enterological Association, Baltimore.
- Tr. Am. Gynec. Soc.....Transactions of the American Gynecological Society, Philadelphia.
- Tr. Am. Hosp. Assn.....Transactions of the American Hospital Association, Washington, D. C.
- Tr. Am. Med. Assn.....Transactions of the American Medical Association, Chicago.
- Tr. Am. Neurol. Assn.....Transactions of the American Neurological Association, New York City.
- Tr. Am. Ophth. Soc.....Transactions of the American Ophthalmological Society, New York City.
- Tr. Am. Orthop. Assn.....Transactions of the American Orthopædic Association, Philadelphia.
- Tr. Am. Otol. Soc.....Transactions of the American Otological Society, New Bedford, Massachusetts.
- Tr. Am. Pediat. Soc.....Transactions of the American Pediatric Society, Philadelphia.
- Tr. Am. Proctol. Soc.....Transactions of the American Proctologic Society, St. Louis.
- Tr. Am. Roentgen Ray Soc...Transactions of the American Roentgen Ray Society, Pittsburgh.
- Tr. Am. Surg. Assn.....Transactions of the American Surgical Association, Philadelphia.
- Tr. Assn. Am. Phys.....Transactions of the Association of American Physicians, Philadelphia.
- Tr. Assn. Res. and ex-Res. Physicians Mayo Clin.....Transactions of the Association of Resident and ex-Resident Physicians of the Mayo Clinic, Rochester, Minnesota.
- Tr. Chem. Soc.....Transactions of the Chemical Society, London.
- Tr. Chicago Path. Soc.....Transactions of the Chicago Pathological Society, Chicago.
- Tr. Chicago Soc. Int. Med...Transactions of the Chicago Society of Internal Medicine, Chicago.
- Tr. Clin. Soc. London.....Transactions of the Clinical Society of London, London.
- Tr. Edinburgh Obst. Soc...Transactions of the Edinburgh Obstetrical Society, published in Edinburgh Med. Jour.
- Tr. Internat. Dent. Cong...Transactions of the Sixth International Dental Congress, London.
- Tr. Med. Soc. New York...Transactions of the Medical Society of the State of New York, New York City.
- Tr. Medico-Chir. Soc. Edinburgh.....(Published in Edinburgh Med. Jour.)
- Tr. Nat. Assn. Prev. Consumpt. Transactions of the National Association for the Prevention of Consumption and other forms of Tuberculosis, London.
- Tr. New York Med. Assn...Transactions of the New York State Medical Association, New York City.
- Tr. Ophth. Soc. U. Kingdom. Transactions of the Ophthalmological Society of the United Kingdom, London.
- Tr. Path. Soc. London.....Transactions of the Pathological Society of London, London.
- Tr. Roy. Irish Acad.....Transactions of the Royal Irish Academy, Dublin.

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Tr. Roy. Med.-Chir. Soc....	Transactions of the Royal Medico-Chirurgical Society of Glasgow, Glasgow.
Tr. Roy. Soc. Trop. Med. and Hyg.....	Transactions of the Royal Society of Tropical Medicine and Hygiene, London.
Tr. Sect. Dermat. and Syphilol. Am. Med. Assn.....	Transactions of the Section on Dermatology and Syphilology of the American Medical Association, Chicago.
Tr. Sect. Dis. Child. Am. Med. Assn.....	Transactions of the Section on Diseases of Children of the American Medical Association, Chicago.
Tr. Sect. Gastro-Enterol. and Proctol., Am. Med. Assn..	Transactions of the Section of Gastro-Enterology and Proctology of the American Medical Association, Chicago.
Tr. Sect. Genito-Urin. Dis. Am. Med. Assn.....	Transactions of the Section on Genito-Urinary Diseases of the American Medical Association, Chicago.
Tr. Sect. Hosp. Am. Med. Assn.....	Transactions of the Section on Hospitals of the American Medical Association, Chicago.
Tr. Sect. Laryngol., Otol., and Rhinol. Am. Med. Assn.....	Transactions of the Section on Laryngology, Otology, and Rhinology of the American Medical Association, Chicago.
Tr. Sect. Nerv. and Ment. Dis. Am. Med. Assn.....	Transactions of the Section on Nervous and Mental Diseases of the American Medical Association, Chicago.
Tr. Sect. Obst., Gynec., and Abd. Surg. Am. Med. Assn.....	Transactions of the Section on Obstetrics, Gynecology, and Abdominal Surgery of the American Medical Association, Chicago.
Tr. Sect. Ophth. Am. Med. Assn.....	Transactions of the Section on Ophthalmology of the American Medical Association, Chicago.
Tr. Sect. Orth. Surg. Am. Med. Assn.....	Transactions of the Section on Orthopedic Surgery of the American Medical Association, Chicago.
Tr. Sect. Path. and Physiol. Am. Med. Assn.....	Transactions of the Section on Pathology and Physiology of the American Medical Association, Chicago.
Tr. Sect. Pharmacol. and Therap. Am. Med. Assn...	Transactions of the Section on Pharmacology and Therapeutics of the American Medical Association, Chicago.
Tr. Sect. Pract. Med. Am. Med. Assn.....	Transactions of the Section on Practice of Medicine of the American Medical Association, Chicago.

- Tr. Sect. Prev. Med. and
Pub. Health Am. Med.
Assn..... Transactions of the Section on Preventive
Medicine and Public Health of the American
Medical Association, Chicago.
- Tr. Sect. Radiol., Am. Med.
Assn..... Transactions of the Section on Radiology
of the American Medical Association,
Chicago.
- Tr. Sect. Stomat. Am. Med.
Assn..... Transactions of the Section on Stomatology
of the American Medical Association,
Chicago.
- Tr. Sect. Surg., Gen. and
Abd., Am. Med. Assn..... Transactions of the Section on Surgery,
General and Abdominal, of the American
Medical Association, Chicago.
- Tr. Sect. Urol. Am. Med.
Assn..... Transactions of the Section on Urology of
the American Medical Association, Chicago.
- Tr. South. Surg. and Gynec.
Assn..... Transactions of the Southern Surgical and
Gynecological Association. (Published in
various places.)
- Tr. West. Surg. and Gynec.
Assn..... Transactions of the Western Surgical and
Gynecological Association, Lincoln, Neb.
- Tribuna med..... Tribuna medica. Revista quinzenal de
medicina e cirurgia, Rio de Janeiro.
- Tribune méd., Am. ed..... Tribune médicale, American edition, New
York City.
- Tribune méd..... Tribune médicale, Paris.
- Trop. Dis. Bull..... Tropical Diseases Bulletin, London.
- Trudi i Protok. Imp. Kav-
kazsk. Med. Obsh..... Trudi i Protokoli Imperatorskavo Kavkazs-
kavo Meditsinskavo Obshtshestva, Tiflis.
- Tubercle..... Tubercle, London.
- Tuberculose..... Tuberculose, Gravenhage.
- Tuberculosi..... Tubercolosi, Roma.
- Tuberculosis..... Tuberculosis, Leipzig.
- Tuberculosis..... Tuberculosis, London.
- Tuberkulose..... Tuberkulose, München.
- Tumori..... Tumori, Roma.
- Ugesk. f. Læger..... Ugeskrift for Læger, Kjöbenhavn.
- Umbria med..... Umbria medica, rivista di medicina e scienze,
Terni.
- Ungar. med. Presse..... Ungarische medizinische Presse, Budapest.
- Union méd. du Canada..... Union médicale du Canada, Montreal.
- U. S. Nav. Med. Bull..... United States Naval Medical Bulletin, Wash-
ington, D. C.
- Univ. Calif. Pub. Physiol... University of California Publications, Physi-
ology, Berkeley.
- Univ. Med. Mag..... University Medical Magazine (edited by the
University of Pennsylvania), Philadelphia.
- Univ. Penn. Med. Bull..... University of Pennsylvania Medical Bulletin,
Philadelphia.

ABBREVIATIONS FOR MEDICAL JOURNALS 167

Upsala Läkaref. Förh.....	Upsala Läkareforenings Förhandlingar, Upsala.
Urol. and Cutan. Rev.....	Urologie and Cutaneous Review, St. Louis.
Urol. and Cutan. Rev., Tech. Suppl.....	Urologie and Cutaneous Review, Technical Supplement, St. Louis.
Utah Med. Jour.....	Utah Medical Journal, Denver.
Valsalva.....	Valsalva, Roma.
Verhandl. d. Cong. f. inn. Med.....	Verhandlungen des Congresses für innere Medicin, Wiesbaden.
Verhandl. d. deutsch. Gesellsch. f. Chir.....	Verhandlungen der deutschen Gesellschaft für Chirurgie, Berlin.
Verhandl. d. deutsch. Gesellsch. f. innere Med.....	Verhandlungen der deutschen Gesellschaft für innere Medizin, München und Wiesbaden.
Verhandl. d. deutsch. Kong. f. inn. Med.....	Verhandlungen des deutschen Kongresses für innere Medizin, Wiesbaden.
Verhandl. d. deutsch. path. Gesellsch.....	Verhandlungen der deutschen pathologischen Gesellschaft, Jena.
Verhandl. d. Gesellsch. deutsch. Hals-, Nasen- u. Ohrenärzte.....	Verhandlungen der Gesellschaft deutscher Hals-, Nasen- und Ohrenärzte, Leipzig.
Verhandl. d. Kong. f. inn. Med.....	Verhandlungen des Kongresses für innere Medizin, Wiesbaden.
Verhandl. d. Tag. u. Verdauungs- u. Stoffwechselkr.	Verhandlungen der Tagung über Verdauungs- und Stoffwechselkrankheiten, Berlin.
Verhandl. d. Ver. f. inn. Med. zu Berlin.....	Verhandlungen des Vereins für innere Medizin zu Berlin, Leipzig und Berlin.
Verhandl. d. Versamml. d. Gesellsch. f. Kinderh.....	Verhandlungen der Versammlung der Gesellschaft für Kinderheilkunde, Würzburg.
Vermont Med. Month.....	Vermont Medical Monthly, Burlington.
Vermont Med.....	Vermont Medicine, Rutland.
Verworn's Ztschr.....	Verworn's Zeitschrift: See Zeitschrift für allgemeine Physiologie, Jena.
Vet. Bull.....	Veterinary Bulletin; supplement to the Bulletin, S. G. O., for the Veterinary Corps Medical Department U. S. Army, Washington.
Vet. Jour.....	Veterinary Journal, London.
Vet. Med.....	Veterinary Medicine, Chicago.
Vet. Rec.....	Veterinary (The) Record, London.
Vet. Rev.....	Veterinary Review, Edinburgh.
Vie méd.....	Vie (La) médicale, Paris.
Vrtljschr. f. gerichtl. Med...	Vierteljahrsschrift für gerichtliche Medizin und öffentliches Sanitätswesen, Berlin.
Vrtljschr. f. prakt. Pharm...	Vierteljahrsschrift für praktische Pharmazie, Berlin.

- Virchow's Arch. f. path.
Anat. u. Physiol..... Virchow's Archiv für pathologische Anatomie und Physiologie und für klinische Medizin, Berlin.
- Virginia Clin. Rec..... Virginia Clinical Record, Richmond.
- Virginia Med. Month..... Virginia Medical Monthly, Richmond. Continued as Virginia Medical Semi-Monthly Richmond.
- Virginia Med. Semi-Month.. Virginia Medical Semi-Monthly, Richmond.
- Volkmann's klin. Votr.... Volkmann's klinische Vorträge: See Sammlung klinischer Vorträge, Leipzig.
- Volta Rev..... Volta Review, Washington.
- Vrach..... Vrach, Petrograd.
- Vrach, Gaz..... Vrachebnaya Gazeta, Petrograd.
- Washington Med. Ann.... Washington Medical Annals, Washington, D. C.
- West. Canada Med. Jour... Western Canada Medical Journal, Winnipeg.
- West. Dent. Jour..... Western Dental Journal, Kansas City, Missouri.
- West. Clin. Rec..... Western Clinical Recorder, Chicago.
- West. Druggist..... Western Druggist, Chicago.
- West. Med. Jour..... Western Medical Journal, Fort Scott, Kansas.
- West. Med. News..... Western Medical News, Regina, Can.
- West. Med. Rev..... Western Medical Review, Omaha.
- West. Med. and Surg. Gaz.. Western Medical and Surgical Gazette, Denver.
- West. Med. Times..... Western Medical Times, Denver.
- West London Med. Jour... West London Medical Journal, London.
- West Virginia Med. Jour... West Virginia Medical Journal, Wheeling.
- Wien. Arch. f. inn. Med.... Wiener Archiv für innere Medizin, Berlin und Wien.
- Wien. klin. Rundschau.... Wiener klinische Rundschau, Wien.
- Wien. klin. Wchnschr.... Wiener klinische Wochenschrift, Wien.
- Wien. med. Bl..... Wiener medizinische Blätter, Wien.
- Wien. med. Presse..... Wiener medizinische Presse, Wien.
- Wien. med. Wchnschr.... Wiener medizinische Wochenschrift, Wien.
- Wisconsin Med. Jour..... Wisconsin Medical Journal, Milwaukee.
- Wisconsin Med. Rec..... Wisconsin Medical Recorder, Janesville.
- Wchnschr. f. Therap. u. Hyg.
d. Auges..... Wochenschrift für Therapie und Hygiene des Auges, Breslau.
- Woman's Med. Jour..... Woman's Medical Journal, Toledo, Ohio.
- World's Health..... World's Health, Geneva.
- Wyandotte Co. Med. Jour.. Wyandotte County Medical Journal, Kansas City, Kansas.
- Yale Med. Jour..... Yale Medical Journal, New Haven, Connecticut.
- Ztschr. d. allg. österr. Apoth.-
Ver..... Zeitschrift des allgemeinen österreichischen Apotheker-Vereines, Wien.
- Ztschr. f. allg. Physiol..... Zeitschrift für allgemeine Physiologie, Jena.
- Ztschr. f. anal. Chem..... Zeitschrift für analytische Chemie, Wiesbaden.
- Ztschr. f. Anat. u. Entwickl.. Zeitschrift für Anatomie und Entwicklungsgeschichte, München und Berlin.

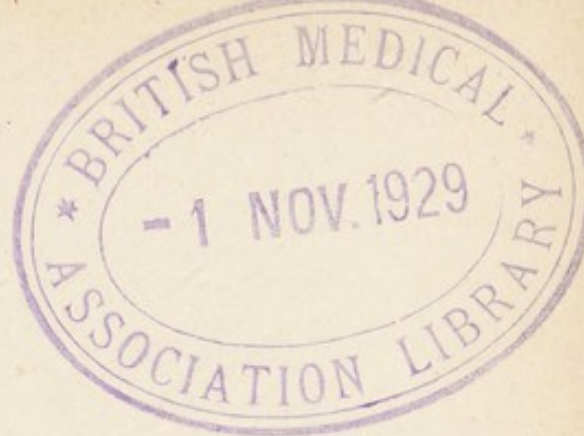
- Ztschr. f. ang. Anat..... Zeitschrift für angewandte Anatomie, Berlin.
 Ztschr. f. ang. Chem..... Zeitschrift für angewandte Chemie, Berlin.
 Ztschr. f. ang. Psychol..... Zeitschrift für angewandte Psychologie und
 psychologische Sammelforschung, Leipzig.
 Ztschr. f. anorg. Chem..... Zeitschrift für anorganische Chemie, Ham-
 burg.
 Ztschr. f. ärztl. Fortbild.... Zeitschrift für ärztliche Fortbildung, Jena.
 Ztschr. f. Augenheilk..... Zeitschrift für Augenheilkunde, Berlin.
 Ztschr. f. Balneol., Klimat... Zeitschrift für Balneologie, Klimatologie und
 Kurort-Hygiene, Berlin.
 Ztschr. f. Bekämpf. d. Gesch-
 lechtskrankh..... Zeitschrift für Bekämpfung der Geschlechts-
 krankheiten, Leipzig.
 Ztschr. f. Biol..... Zeitschrift für Biologie, München.
 Ztschr. f. Chemotherap.,
 Orig..... Zeitschrift für Chemotherapie und verwandte
 Gebiete, Teil I, Originale, Leipzig.
 Ztschr. f. Chemotherap.,
 Ref..... Zeitschrift für Chemotherapie und verwandte
 Gebiete, Teil II, Referate, Leipzig.
 Ztschr. f. diätet. u. physik.
 Therap..... Zeitschrift für diätetische und physikalische
 Therapie, Leipzig.
 Ztschr. f. exper. Path. u.
 Therap..... Zeitschrift für experimentelle Pathologie und
 Therapie, Berlin.
 Ztschr. f. Geburtsh. u. Gy-
 näk..... Zeitschrift für Geburtshilfe und Gynäkologie,
 Stuttgart.
 Ztschr. f. d. ges. Anat..... Zeitschrift für die gesamte Anatomie, Mün-
 chen und Berlin.
 Ztschr. f. Gewerbe-Hyg..... Zeitschrift für Gewerbe-Hygiene, Wien.
 Ztschr. f. d. ges. exp. Med... Zeitschrift für die gesamte experimentelle
 Medizin, Berlin. (Continues Ztschr. f. exp.
 Path. u. Therap.)
 Ztschr. f. d. ges. Neurol. u.
 Psychiat..... Zeitschrift für die gesamte Neurologie und
 Psychiatrie, Berlin.
 Ztschr. f. Hals-, Nasen-, u.
 Ohrenh..... Zeitschrift für Hals-, Nasen-, und Ohrenheil-
 kunde, München und Berlin.
 Ztschr. f. Heilk..... Zeitschrift für Heilkunde, Prague.
 Ztschr. f. Hyg..... Zeitschrift für Hygiene, Leipzig.
 Ztschr. f. Hyg. u. Infections-
 krankh..... Zeitschrift für Hygiene und Infektionskrank-
 heiten, Berlin.
 Ztschr. f. Immunitätsforsch.
 u. exper. Therap., Orig.... Zeitschrift für Immunitätsforschung und
 experimentelle Therapie. I Teil; Originale;
 Jena.
 Ztschr. f. Immunitätsforsch. u.
 exper. Therap., Ref..... Zeitschrift für Immunitätsforschung und
 experimentelle Therapie. Referate. Jena.
 Ztschr. f. Infektionskr..... Zeitschrift für Infektionskrankheiten, para-
 sitäre Krankheiten und Hygiene der
 Haustiere, Berlin.
 Ztschr. f. Kinderh..... Zeitschrift für Kinderheilkunde, Berlin.
 Ztschr. f. klin. Med..... Zeitschrift für klinische Medizin, Berlin.

- Ztschr. f. Konstit..... Zeitschrift für Konstitutionslehre, München und Berlin.
- Ztschr. f. Krebsforsch..... Zeitschrift für Krebsforschung, Berlin.
- Ztschr. f. Kreislau fforsch..... Zeitschrift für Kreislau fforschung zugleich Forts Fortsetzung von Zentralblatt für Herz- und Gefässkrankheiten, Dresden und Leipzig.
- Ztschr. f. Laryngol., Rhinol..... Zeitschrift für Laryngologie, Rhinologie und ihre Grenzgebiete, Würzburg.
- Ztschr. f. Med.-Beamte u. Krankh..... Zeitschrift für Medizinalbeamte und Krankenhausärzte, München und Berlin.
- Ztschr. f. med. Elektrol. u. Röntgenk..... Zeitschrift für medizinische Elektrologie und Röntgenkunde, Leipzig.
- Ztschr. f. Morphol. u. Anthrop..... Zeitschrift für Morphologie und Anthropologie, Stuttgart.
- Ztschr. f. Naturwissensch... Zeitschrift für Naturwissenschaften, Stuttgart.
- Ztschr. f. öffentl. Chem..... Zeitschrift für öffentliche Chemie, Plauen.
- Ztschr. f. Ohrenh..... Zeitschrift für Ohrenheilkunde, Wiesbaden.
- Ztschr. f. ophth. Optik..... Zeitschrift für ophthalmologische Optik mit Einschluss der Instrumentenkunde, Berlin.
- Ztschr. f. orthop. Chir..... Zeitschrift für orthopädische Chirurgie, Stuttgart.
- Ztschr. f. Oto-Rhino- u. Laryngol..... Zeitschrift für Oto-Rhino- und Laryngologie, Tokyo.
- Ztschr. f. pädagog. Psychol..... Zeitschrift für pädagogische Psychologie und experimentelle Pädagogik, Berlin.
- Ztschr. f. Pathopsychol..... Zeitschrift für Pathopsychologie, Leipzig.
- Ztschr. f. Pflanzenkr..... Zeitschrift für Pflanzenkrankheiten, Stuttgart.
- Ztschr. f. d. ges. phys. Therap..... Zeitschrift für die physikalische Therapie, Berlin. (Continues Ztschr. f. physik. u. diät. Therap.)
- Zeitschr. f. physik. u. diätet. Therap..... Zeitschrift für physikalische und diätetische Therapie, Leipzig.
- Ztschr. f. phys. Chem..... Zeitschrift für physikalische Chemie, Stöchiometrie und Verwandtschaftslehre, Leipzig und Berlin.
- Ztschr. f. physiol. Chem.... Zeitschrift für physiologische Chemie, Strassburg.
- Ztschr. f. Psychoth. u. med. Psychol..... Zeitschrift für Psychotherapie und medizinische Psychologie, Stuttgart.
- Ztschr. f. Psychol. u. Physiol. d. Sinnesorg..... Zeitschrift für Psychologie und Physiologie der Sinnesorgane, Leipzig.
- Ztschr. f. Säuglings- u. Kleinkinderschutz..... Zeitschrift für Säuglings- und Kleinkinderschutz, Berlin.
- Ztschr. f. sexual Wissensch... Zeitschrift für sexual Wissenschaft, Bonn.
- Ztschr. f. soziale Med..... Zeitschrift für soziale Medizin. Medizinalstatistik, Arbeitsversicherung, soziale Hygiene und die Grenzfragen der Medizin und Volkswirtschaft, Berlin.

ABBREVIATIONS FOR MEDICAL JOURNALS 171

- Ztschr. f. Stomatol..... Zeitschrift für Stomatologie, Wien und Berlin.
 Ztschr. f. Tuberk..... Zeitschrift für Tuberkulose, Leipzig.
 Ztschr. f. Tuberk. u. Heil-
 stättenw..... Zeitschrift für Tuberkulose und Heilstätten-
 wesen, Leipzig.
 Ztschr. f. Untersuch. d. Nah-
 rungs- u. Genussmittel.... Zeitschrift für Untersuchung der Nahrungs-
 und Genussmittel, Berlin.
 Ztschr. f. Urol..... Zeitschrift für Urologie, Berlin und Leipzig.
 Ztschr. f. urol. Chir..... Zeitschrift für urologische Chirurgie, Berlin.
 Ztschr. f. wissensch. Zoöl... Zeitschrift für wissenschaftliche Zoölogie,
 Leipzig.
 Ztschr. f. wissensch. Mikr. u.
 mikr. Technik..... Zeitschrift für wissenschaftliche Mikroskopie
 und mikroskopische Technik, Leipzig.
 Ztschr. f. Wundärzte u.
 Geburtsh..... Zeitschrift für Wundärzte und Geburtshelfer,
 Fellbach.
 Ztschr. f. Zellforsch. u. mikr.
 Anat..... Zeitschrift für Zellforschung und mikro-
 skopische anatomie, Berlin.
 Zentralbl.: See also Centralbl.
 Zentralbl. f. allg. Gsundht-
 spflg..... Zentralblatt für allgemeine Gesundheits-
 pflege, Bonn.
 Zentralbl. f. allg. Path. u.
 path. Anat..... Zentralblatt für allgemeine Pathologie und
 pathologische Anatomie, Jena.
 Zentralbl. f. Bakteriöl. Para-
 sitenk. u. Infektionskr.... Zentralblatt für Bakteriologie, Parasitenkunde
 und Infektionskrankheiten, Jena.
 Zentralbl. f. Biochem. u.
 Biophys..... Zentralblatt für Biochemie und Biophysik,
 Berlin.
 Zentralbl. f. Biochem..... Zentralblatt für Biochemie und Biophysik mit
 Einschluss der theoretischen Immunitäts-
 forschung, Leipzig.
 Zentralbl. f. Chir..... Zentralblatt für Chirurgie, Leipzig.
 Zentralbl. f. chir. u. mech.
 Orthop..... Zentralblatt für chirurgische und mechanische
 Orthopädie, Berlin.
 Zentralbl. d. exper. Med.... Zentralblatt der experimentellen Medizin,
 Berlin und Wien.
 Zentralbl. f. d. ges. Chir. u.
 i. Grenzgeb..... Zentralblatt für die gesamte Chirurgie und
 ihre Grenzgebiete, Berlin.
 Zentralbl. f. d. ges. Gynæk.
 u. Geburtsh..... Zentralblatt für die gesamte Gynækologie und
 Geburtshilfe sowie deren Grenzgebiete,
 Berlin.
 Zentralbl. f. d. ges. Hyg.... Zentralblatt für die gesamte Hygiene und
 ihre Grenzgebiete, Berlin.
 Zentralbl. f. d. ges. Kinder-
 heilk..... Zentralblatt für die gesamte Kinderheilkunde,
 Berlin.
 Zentralbl. f. d. ges. inn. Med.
 u. i. Grenzgeb..... Zentralblatt für die gesamte innere Medizin
 und ihre Grenzgebiete, Berlin.

- Zentralbl. f. d. ges. Ophth. u.
i. Grenzgeb. Zentralblatt für die gesamte Ophthalmologie
und ihre Grenzgebiete, Berlin.
- Zentralbl. f. d. ges. Physiol.
u. Path. d. Stoffwechs. Zentralblatt für die gesamte Physiologie und
Pathologie des Stoffwechsels mit Einschluss
der experimentellen Therapie, Berlin und
Wien.
- Zentralbl. f. d. ges. Neurol. u.
Psychiat. Zentralblatt für die gesamte Neurologie und
Psychiatrie, Berlin.
- Zentralbl. f. d. ges. Tuberk.-
Forsch. Zentralblatt für die gesamte Tuberkulosefor-
schung, Berlin.
- Zentralbl. f. Gynäk. Zentralblatt für Gynäkologie, Leipzig.
- Zentralbl. f. Haut- u. Gesch-
lechtskr. Zentralblatt für Haut- und Geschlechtskrank-
heiten sowie deren Grenzgebiete, Berlin.
- Zentralbl. f. Herz- u. Ge-
fässkr. Zentralblatt für Herz- und Gefässkrankheiten,
Dresden und Leipzig.
- Zentralbl. f. inn. Med. Zentralblatt für innere Medizin, Leipzig.
- Zentralbl. f. Nervenheilk. u.
Psychiat. Zentralblatt für Nervenheilkunde und Psy-
chiatie, Leipzig.
- Zentralbl. f. norm. Anat. u.
Mikrotech. Zentralblatt für normale Anatomie und
Mikrotechnik, Berlin und Wien.
- Zentralbl. f. physik. Therap.
u. Unfallk. Zentralblatt für physikalische Therapie und
Unfallheilkunde, Wien und Berlin.
- Zentralbl. f. Physiol. Zentralblatt für Physiologie, Leipzig und
Wien.
- Zentralbl. f. Roentgenstr. Zentralblatt für Roentgenstrahlen, Radium
und verwandte Gebiete, Wiesbaden.
- Zentralorg. f. d. ges. Chir. Zentralorgan für die gesamte Chirurgie und
ihre Grenzgebiete, Berlin.
- Ziegler's Beitr. Ziegler's Beiträge: See Beiträge zur patho-
logischen Anatomie und zur allgemeinen
Pathologie, Jena.
- Zoologica. Zoologica, Stuttgart.
- Zoöl. Anz. Zoölogischer Anzeiger, Leipzig.
- Zoöl. Zentralbl. Zoölogisches Zentralblatt, Leipzig.
- Zoölogist. Zoölogist, London.



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