

## MEDICAL PERIODICAL LITERATURE \*

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The presidential address for an organization such as the Institute of Medicine should be devoted to a discussion of a scientific subject in which at least a majority of its members are interested. When I cast about for such a subject I realized that, if I attempted to select one of such character, I might flounder and get beyond my depth. But, as former presidents selected subjects related to their particular lines of practice or work, I have done the same. An intimate acquaintance of nearly thirty years with medical journalism has perhaps given me an exaggerated idea of its importance; my subject, however, is closely related to the advancement of medical science, and this would be my apology, if an apology were necessary, for selecting such a dry and prosaic subject as Medical Periodical Literature.

### MEDICAL JOURNALS

In its earlier years, the American Medical Association conducted its scientific work through committees. In 1848, Dr. Oliver Wendell Holmes, who that year was chairman of a committee on medical literature, read a report which concerned medical journals and medical books, rather than medical literature itself, in which he said:

In the course of half a century from the establishment of the first of the medical journals, their number has been gradually rising, until at the present time, at least twenty are known to be in existence.

What *would* Dr. Holmes say today! It is difficult to trace the growth of medical journals from 1848 until the early seventies; from that time it can be done roughly from newspaper and medical directories. During the period from 1870 to 1900, at least 450, probably nearer 500, medical journals were started, many leading an ephemeral existence of but a few months or years. The peak was reached in 1903, when there were a little over 230.

Seeking an explanation of the twenty periodicals of 1848, Dr. Holmes said:

Some principle in addition to the wants of the reading community must exist to account for such inordinate fecundity in this particular department. This is to be found in the homely fact that a medical journal is a convenient ally and advertising medium for public institutions and publishing establishments.

He says nothing, it will be noted, regarding the medical journal's position as a convenient ally and advertising medium for proprietary

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medicines. The reason is simple: The proprietary medicine business, as we know it, did not exist; it developed and flourished during the thirty-five year period ending in 1905; and it was during this period that the truth of the saying, "Whose bread I eat, his song I sing" had a practical demonstration in both the reading and the advertising pages of the vast majority of the journals.

The number of medical journals began to decrease in 1905, and today there are approximately 120, as against 230, sixteen years ago. Not only has there been a decrease in number, but an entirely different class of journals has appeared—purely scientific journals unhampered by, and free from, selfish commercialism. I refer to such publications as the *Journal of Medical Research*, the *American Journal of Anatomy*, the *Journal of Infectious Diseases*, the *Journal of Biological Chemistry*, the *Journal of Bacteriology*, the *American Journal of Physiology*—to mention a few. Prior to 1900, only one of this class of journals existed: the *Journal of Experimental Medicine*.

About this time, also, state medical associations began to substitute monthly journals for their annual transactions. Today there are thirty state journals, representing thirty-six state societies.

My subject, however, is not medical journals nor medical journalism. I make this brief retrospect simply as a background for the main theme.

#### MEDICAL ARTICLES

There is a distinct change in the type of papers appearing in medical journals today as compared with twenty years ago. The therapeutic article of the past, replete with favorite prescriptions, often proprietary in character, has given way to scientific contributions on therapeutic methods, on pharmacology, on pathology, on etiology, on methods of diagnosis, on prophylaxis. The difference between then and now in this regard can be appreciated only by those who were in practice eighteen or twenty years ago, or by those who take the trouble to compare the journals of that period with the publications of today.

While there has been a decrease in the number of medical journals, there has been no decrease in the number of medical articles. During the first eleven months of the present year—up to December 1—there were voluntarily submitted for publication in *The Journal of the American Medical Association* 1,335 manuscripts. To the 1,335 must be added 285 section papers, making a total of 1,620 for the eleven months, or approximately 1,750 manuscripts during the year. This is about the average for the last four or five years. A fair percentage of these papers were excellent, both in matter and in manner of presentation; many were valueless as scientific contributions, and not creditable as

literary compositions. Between these two extremes was a greater number deficient either in matter or in manner—and more often the deficiency was in the manner of presentation.

We estimate that three fifths of the manuscripts voluntarily offered to *The Journal* for publication are returned. Why? What are the principal reasons for their rejection? With such a large number of papers, one would naturally suggest "lack of space" as the principal reason. And this would be partially, but not entirely, correct. No matter how many may be on hand, a well-prepared paper on a timely and practical subject—one that will appeal to a fair proportion of readers, especially to general practitioners—is accepted. A paper that is informative, that presents new facts or practical information, if fairly well written, is not returned.

Naturally, there are various causes for rejecting manuscripts, aside from lack of space: One is a plethora of material on one question, with the peril of devoting too much space to a given subject. This is likely to happen when a new treatment is introduced, a new theory advanced, or during and immediately after epidemics. The introduction of arsphenamin was followed by an ever-increasing lot of papers on the subject, all optimistic; Wright's opsonins and opsonic index produced a flood of articles of varying character; focal infection, long since threshed out, is still a live subject, judging from papers received, few of which contain new facts or new scientific evidence; the tonsils and tonsillectomy, and especially instruments for doing tonsillectomies, have been sadly overdone. After the armistice came a deluge of papers based on war experience, and the stream is not entirely dried up.

But, no matter how much a subject may have been discussed, or how much space may have been devoted to it, it is not overdone so long as new, worth-while facts, or new, scientific evidence, are forthcoming.

#### FANCIES VS. FACTS

Naturally, too, there are offered productions of theorists who, without scientific knowledge, have solved problems that are puzzling research workers and scientists. The number of physicians who have the courage to discuss scientific problems, concerning the fundamental and elementary principles of which they are entirely ignorant, is larger than many imagine. Such papers usually are returned with the suggestion, circumspectly phrased, that an ounce of fact is worth a ton of theory.

That every physician has a right to express his opinions, to advance theories, and to make known his discoveries, is an accepted principle, and he should not be denied these rights by an editor without a good reason. But the reader has his rights also, and they should be paramount. He has the right to demand that the editor shall not publish

fiction for fact or fallacies which he—the reader—is not qualified to detect. The editor is supposed to have knowledge of the author and of his dependability that the reader cannot have. The reader certainly may expect that the editor will comb out such material as is obviously false.

A few years ago a well-known physician sent for publication a paper in which he claimed that he had discovered a bacterial causative agent for a not uncommon, apparently noninfectious disease. The discovery, if true, was epoch making. The average reader, especially if he had not been trained in bacteriology, might easily have been deceived and have accepted the author's statements as dependable evidence. To the bacteriologist, the organism was reminiscent of a common contaminator in careless work. But the author was a man of well-earned national repute and a frequent contributor to medical literature. Recognizing that the judgment of great men may be warped by overenthusiasm, the editor was, nevertheless, influenced by the author's reputation; he felt that the responsibility in this instance should rest on the author and the paper was accepted. In this case, therefore, the paramount rights of the reader were overlooked.

Recently a manuscript was submitted in which the author advanced the theory that both the cause and the cure of cancer were matters of diet. The evidence submitted, however, was not convincing and, in spite of the fact that this author also was nationally well known, the paper was returned. Shortly afterward it appeared in an eastern journal. Its publication has done incalculable harm.

Not long since, an article entitled "The Etiology and Elimination of Tuberculosis" appeared in a medical weekly. It was full of fallacy and misstatements. For instance: "The vaccine as employed against smallpox contains syphilis and is the primary cause of the white plague"; "syphilis is the primary lesion that allows the development of tuberculosis." Further on the reader was told, as by one of authority, that syphilis is the cause of cancer. Undoubtedly the readers of the journal in question sent some emphatic protests. Instead of apologizing, the editor justified his action in publishing the article by saying: "As it was written by a physician practicing medicine we decided that it should come to light, in spite of its weird conclusions. We believed that it should be presented before the medical profession and cause a healthy discussion." This editor was not true to his readers. The two papers just referred to are being used by faddists and enemies of scientific medicine. Far more harm is done in the publication of such fallacious matter than in procrastinating with or rejecting a dozen papers offering new theories and new evidence which may be of value but which are not thoroughly convincing.

## SOCIETY PAPERS

Papers read before medical societies often are not of a character to elevate the tone of periodical literature, or to add to the sum total of our knowledge of scientific medicine; as a rule, they are not well thought out or as carefully written as are those prepared especially for printing. And this is excusable. Such papers are written from a sense of duty. The author may have something that he is anxious to present to his fellows; more likely he has not, but selects his subject somewhat haphazardly. After all, the principal object of such papers, especially those read before local societies, is to bring out a discussion.

Then there is the specialist or consultant from the city who is invited by a society to visit it and to present a paper. Papers by such men are more likely to be well worked up than in the former case. The visitor is anxious to make a good impression; he will try to enlighten his hearers on the subject he presents. He thus brings profit not only to others but also to himself. Quite often, however, such papers may rightly be dubbed "pot boilers." They too are usually written for reading, not for printing.

A society paper may be ideal for the purpose for which it is written, and yet not at all suitable for publication. It may be ungrammatical, discursive or verbose, or poorly organized without sequence in argument or arrangement of the subject. And yet the author's presentation, his inflections and, above all, his personality, will carry over, not only without the audience discovering any fault, but with applause as he reads and congratulations at the end.

If the author is to be the only speaker, his anxiety will not be how briefly he can present his subject, but, rather, that he must fill the time he is expected to occupy. Brevity, conciseness, the elimination of unnecessary details, and the avoidance of branching off into unrelated and irrelevant subjects will give him no concern. He will consider as appropriate and proper the relating of unimportant incidents in his experience, as, for instance, a case report, an occasional aside, making personal allusions and using colloquial language. And he will be right. But he will not be right if he submits his article for publication without modifying it. Common courtesy compels his audience to remain and listen until he is through; but if his paper is prolix or rambling, it will have few readers; the personal equation does not enter in, and the courtesy of the listener has vanished; it is now cold type. There used to be a monthly medical journal that had this standing notice:

Articles read before societies will not be accepted. Only those written for this journal will be printed.

I sometimes wish the rule were general. I am underestimating when I say that 10 per cent. of manuscripts have been returned

because they had been prepared for reading before a society and were then submitted without revision. To a great extent it is these papers that overburden our periodical literature. A manuscript that is fit to read is sometimes fit to print, but a manuscript which is fit to print is always fit to read.

#### LENGTH

An occasional reason for the return of a manuscript is its length. But, like Einstein's theory as to space and time, length in this case is a matter of relativity. A paper of five hundred words may be long; one of five thousand may be short. The primary point is not length, but whether the material justifies the length. Usually manuscripts are unnecessarily long because of easily avoidable faults in construction, such as rambling, verbosity, prolixity or diffuseness.

RAMBLING, a most common fault, is the result of writing without planning. It can be overcome by organizing and by systematically laying out or plotting the subject at the beginning, as in the ordinary textbook on medicine, in which the formula is: definition, etiology, pathology, diagnosis, prognosis and treatment. Each phase of the subject is completed under its own caption. Systematic organization not only prevents rambling—going a long way round to get to a given point—but also promotes a complete discussion, without repetition. Naturally, not all subjects lend themselves to this procedure; those of any length always do. Scientific literature is a record of facts and, therefore, style is of minor importance; but to record facts as they should be recorded, it is necessary to sort and then to arrange them in logical order. This is an important factor in style so far as medical papers are concerned.

Center heads break up solid type pages which repel the reader. They have an added advantage in aiding the author to present his subject logically and concisely. It is to be regretted that center heads are not more commonly used in medical journals.

VERBOSITY is a blemish in the writings of most of us, and one that makes reading tedious, mars diction and wastes space. This fault can be overcome easily, but in most instances, efficiently only after the paper has been written. Unless one has tried it, one will be astonished at the number of words, phrases, clauses, sentences, and, occasionally, paragraphs that can be deleted without affecting the meaning in the slightest degree. The process always improves the grammatical construction and style of expression.

Quiller-Couch, in "The Art of Writing," devotes a chapter to the use of unnecessary verbiage. Here is one of his illustrations:

A clerk of a Board of Guardians had to record a minute relative to the burial of a pauper. The minute reads:

"In the case of John Jenkins, deceased, the coffin provided was of the usual character."

Sir Arthur pulls it to pieces. First, it is superfluous to tell us that Jenkins is deceased; the fact that he needs a coffin is sufficient evidence. Then, "in the case of" is superfluous, for Jenkins did not have a case; he had, and needed, only a coffin. Further, the coffin was not "of the usual character," for coffins have no character. The clerk of the Board of Guardians should have said: "John Jenkins was provided with the usual coffin."

Let us take some specimens from real life—from manuscripts submitted to *The Journal of the American Medical Association*. Here is one:

I do not hesitate to say that in my opinion the gland in this case should not have been removed.

The first seven words are space takers; the author makes his statement and the reader cares not whether he hesitated or did not hesitate in making it. In any event, "I do not hesitate to say that" was bracketed and deleted, and the better and shorter sentence, "In my opinion the gland in this case should not have been removed" was printed. "In my opinion" might have been deleted.

This from another author:

It has been a mooted question in the minds of microbiologists whether the gonococcus possesses a capsule.

What difference there is in this case between a mooted question and one that is not mooted I do not know; "mooted" was deleted. "In the minds of microbiologists" carries the idea that only microbiologists are concerned. The sentence was improved by divesting it of unnecessary verbiage, and, when printed, it read:

It has been a question whether the gonococcus possesses a capsule.

The purist would have modified this still more and given the microbiologist a show, making it read: "Microbiologists question whether the gonococcus possesses a capsule."

This from another article describing an apparatus:

Physicians who have been using radium needles will readily appreciate the difficulties encountered in threading them.

"Who have been," "will readily" and "encountered" were deleted, and the sentence read:

Physicians using radium needles appreciate the difficulties in threading them.

PROLIXITY OR DIFFUSENESS—that is, tedious discussion of non-essential details and particularizing on trivialities—is not necessarily a fault in style or diction; it is a failure in discrimination as to what should be included. The temptation to all of us is to spread ourselves. Prolixity is especially noticeable in exhaustive analyses of previous work on the subject the author is presenting. Ambitious to make a complete and exhaustive review of the literature, he includes long abstracts of material of minor importance and irrelevant or only distantly related to his subject. Reports of postmortem examinations usually are too detailed, and contain material of no direct bearing on the subject in hand. Sometimes such a report is practically the transcript of the stenographer's record, dictated as the examination progresses. Reports on research work and laboratory investigations often are lumbered with unnecessary details. Our German confrères, noted for their attempts at encyclopedic detail, have been inclined to elaboration and prolixity, and American physicians, especially the younger men, in the past have been prone to follow their example. Set addresses, foundation and commemorative lectures, must necessarily be long—the occasion and the time to be occupied, if not the subject, require it. Unusually long and elaborate papers cannot be avoided in treating some subjects satisfactorily. I would repeat: It is not the actual length, but whether the subject-matter justifies the length.

#### CASE REPORTS

The foundation of clinical medical literature is the case report, a species now becoming, for some unknown reason, almost extinct. One cause given by the editor of a Swedish medical periodical is the fact that the scientific level of our profession has risen so much in recent years that a physician hesitates to report an interesting case simply as a case report; he thinks he must make an exhaustive survey of the literature. Instead of a brief, practical report he submits an exhaustive review which few, if any, care to read, and which is unnecessary. Often a mass of detail, including unimportant, irrelevant and negative findings, is presented without regard to clearness of expression. Never a week passes that *The Journal* does not receive papers of this character. Usually if the historical review appears to be unnecessary and the case is an interesting one, the author is asked to permit the publication of the case report without the review. Clinical reports made with judgment and with the correct appreciation of relative values are always welcomed by both editor and reader.

#### BEGINNING

Let us now touch on one or two minor points: The beginning of an article often is the most difficult part to write; yet the difficulty is



easily overcome. A good rule is, go right to the subject without preliminaries; begin in the middle, if necessary. When the paper is written, it is easy to go back and write the beginning, although nine times out of ten it will be found that this is unnecessary—the beginning has already been written. The majority of manuscripts reflect the struggle the author had in getting started. He flounders round and writes about matters that have little to do with his theme, and, finally, after spoiling a page of manuscript, gets down to his subject. In such cases, deleting the introductory paragraphs remedies the trouble. It is well not to have chaff at the beginning; the reader may conclude there is no wheat, and skip to the next article.

#### TITLES

If an author desires his contribution to become a part of the literature on the subject, he must give it a name that will identify it—a title that is descriptive. Thousands of papers lie buried because their titles did not designate the subjects. Titles should be short, but inclusiveness should not be sacrificed for brevity. Often a long title may seem necessary, although usually it can be made short and clear by using a main title and a subtitle.

This was the original title of a section paper—it is a mouthful: "To Obtain Graphs Showing the Rapidity and Degree of Decrease in Temperature in the Eye and Orbit Produced by the External Application of a Given Degree of Cold over a Given Area for a Given Time, and a Numerical Expression, at Least Approximate, of the Relation of These Variables to Each Other." What can the poor indexer or cataloguer do with such a title? It became, with the author's permission, "On the Coefficient of Thermal Conductivity of Eye and Orbit Measured with Cold Applications."

Misleading titles should be avoided. "A New Chloroform Danger" was the caption of a recent manuscript. This would have been misleading, for any one looking up the literature on the dangers of anesthesia would have been attracted by the title and would have discovered that he had been misled. The title became: "Danger in Similarity of Ether and Chloroform Containers," which exactly stated the subject of the communication. First impressions are lasting: A catchy title catches readers. The title ought to be carefully thought out; it should give a clear indication of what is to come.

#### DIGEST AND CONCLUSIONS

A brief digest of a long article in the introductory paragraph often will stimulate some to read the article who otherwise would not. Conclusions at the end are of special value, particularly as they lend to

wider publicity. Conclusions are "fat" for abstractors and for editors who are looking for "fillers." If an author is anxious to have his conclusions reproduced by other journals, they should be rigidly condensed, yet clearly reflect his premises and deductions.

#### BIBLIOGRAPHIC REFERENCES

"Bibliographies," says Gould, "often are the veriest shams, appended to give a show of erudition, and their indifferences and imperfections are self-confessions of the fact." This was written twenty years ago; it applies today. Bibliographic references are of value only when the references cited (1) amplify or illuminate the subject, and (2) are accurate and complete. To include references to articles that are worthless in themselves, to those that have no bearing on the subject, and to such that duplicate or rehash papers already referred to in the bibliography is a common fault. Inaccurate and incomplete references are altogether too common. When one procures a book or journal indicated by a reference, often at much trouble and possibly expense, it is irritating to discover that one has been sent on a fool's errand—that the article wanted is not there. References to articles that have no special bearing on the subject in mind, and inaccurate and incomplete references indicate that (1) the author has been careless, that he himself has not seen the articles and hence does not know whether they are worth referring to or whether the references are correct; or (2) that he has "lifted" his references from an index or from another author. It is often possible to detect filching: if references vary in style, one giving volume and page; another, year, month and page, and still another, page, volume, month and year, it is pretty good evidence that some, if not all, of the references have been "lifted."

References should follow a definite style. Naturally, we regard the style used in the *Quarterly Cumulative Index* and in the other publications of the Association as best. It is the style used by the *Reader's Guide* (the standard cumulative index for lay publications and general literature), the *Industrial Arts Index*, which includes architectural and similar literature, the *Agricultural Index* and others. This style requires that the data shall be arranged in the following order: (1) author's surname and initials; (2) title of article; (3) name of periodical, abbreviated; (4) volume, in bold-face Arabic numerals, indicated in the manuscript by a wavy line under the numeral; (5) page; (6) month—day of month if a weekly—and (7) the year. This style is inclusive, yet brief and simple.

#### CHARTS; ILLUSTRATIONS

Illustrations such as charts, photographs, photomicrographs, roentgenograms, tables and diagrams are vital factors in some articles. Yet few authors seem to have any conception of the problems connected

with their reproduction and printing. They send charts made on paper with the horizontal or vertical lines ruled in blue, which are lost in reproduction, since blue takes white when the engraver photographs it. Or there are many fine lines in red or some other color that photographs black, so that when the chart is reduced in size these lines run together. Often the temperature, pulse, respiration and other curves are indicated by different colors instead of different forms. Contrast should be obtained by the use of solid, broken or dotted lines, or such forms as stars or circles. The point to be emphasized is that the use of colors in charts should be avoided. Charts should be made on white paper ruled in black, and the tracings also should be black. Photographs are too often of the amateurish type, reflecting credit on neither the author nor the journal in which his article appears; and usually they do not illustrate. Tables are cumbersome and unwieldy because the author includes more columns than are required and does not know the importance of condensation in tabulating material. Scores of manuscripts have been unavailable because the illustrations were unsatisfactory.

#### MANUSCRIPTS

It is unwise to ignore the fact that the general appearance of a manuscript has a psychologic effect on an editor. A manuscript carelessly arranged, without pagination, with sheets of various sizes, with additions written on slips pinned or clipped to the side, with corrections made without regard to neatness or clarity, may prejudice the reader who is to pass on its merits. Even the serene and gentle editor of the *British Medical Journal* was compelled recently to give voice to his trouble: "It is common," he said, "for a surgeon to send in a bundle of sheets of paper of various sizes, fixed together with a safety pin, and containing, mixed up with the text, rough diagrams and bedside charts, perhaps sprinkled with notes and defaced by blots and corrections." Such slovenliness is inexcusable. Some men are habitually slovenly with their manuscripts, just as others are slovenly in their dress. Slovenliness has caused the return of hundreds of manuscripts which otherwise might have been accepted.

The size of the paper, while a small matter, is worth mentioning. The standard size adapted to the ordinary typewriter, the linotype machine and filing case is 8 to 8½ by 11 inches. At least 90 per cent. of the manuscripts received by *The Journal* are of this size. The other 10 per cent. vary from small note sizes to foolscap or worse.

Submitting a carbon, rather than the original, copy of a paper may have a bad effect; the editor may think the original has been sent to some other journal—at least he will think that the journal he represents has not been treated courteously. Some editors are sensitive on this

point. There are practical reasons why editors prefer good, clean—the original—copy: each manuscript is read by at least one editor; then, in turn, by the copy editor, the linotype operator, and the proof reader or copy holder. Except the editor, each of these must note the spelling of every word, every punctuation mark and capital letter. The wise author, however, will retain a carbon copy and thus be able to compare it with the proof and see what, if any, liberties have been taken with his manuscript. In this manner he may discover some faults in his writing and indirectly secure criticism which will aid him in the future.

A manuscript typed in single—that is, close—space is objectionable: no matter how well written, how carefully prepared, the keen eye of the copy editor may find typographic errors, misspelled words, grammatical slips, or what not, that require interlineation. These and other corrections are made with difficulty on closely typed manuscripts. It is as easy to have a manuscript typed in double, as in single, space; it merely requires a little more paper.

The unforgivable crime is the carbon copy, single spaced. So far as our journal is concerned, such manuscripts are returned.

#### INCORRECT USAGE OF WORDS

As bricks are the individual elements that form the structure of the house, so words are the individual elements in the structure of an article. Words poorly chosen or wrongly used, like cracked or discolored brick, may destroy the pleasing effect of an otherwise perfect edifice. The right and wrong use of words is too large a subject to discuss here, but I want to mention a few solecisms which I regard as abominations.

CASE.—“Case” is the incidence of a disease, the totality of the symptoms and of the pathologic and other conditions; “patient” is the human being, the man himself. “The case had quite a temperature,” “I put the case to bed,” “This case was taken ill three weeks ago,” “I sent the case out for a walk”—these and similar expressions are found continually in manuscripts; the error nearly always is in using “case” for “patient,” seldom the reverse.

TO OPERATE.—A flagrant disregard of the rules of grammar is the deplorable misuse of the verb “to operate,” which has gradually developed among a small group of American surgeons. “Operate” means, and is synonymous with, “to work”; the terms nearly always may be used interchangeably. The surgeon who would hesitate to say, “I worked this patient,” says without a blush, “I operated this patient.” A search of every available dictionary has failed to reveal any indication of an excuse for this abuse of the word “operate.” This solecism is limited to a group that represents one in seven hundred of our population—the medical profession—and, to only a small proportion of that

group—thoughtless surgeons. It is also limited to this country. American surgeons who justify themselves by saying that general usage makes correct usage should realize that “operate” is a word in general use wherever the English language is spoken; it is not limited to medicine. Men operate on the board of trade, but no one, not even our surgeons, refers to them as “operating” the board of trade. Our linotype “operators” cannot operate “on” the linotype machines; the unions will not permit it. We are compelled to employ a machinist “to operate” on the machines. Even if the term were limited to medicine good usage is not that of the majority, but that of the educated majority. The pity of it is that certain teachers in our medical schools—professors of surgery—instead of setting an example to their students in the proper use of this verb, are responsible for the spread of its improper use.

But the language of the surgeon is progressing; here is a quotation from a recent manuscript:

It was decided that the patient should be explored with the expectation of finding an acute appendix.

The decision made, our surgeon did not hesitate; he explored the patient. Another surgeon was not so courageous: “We have contemplated having some of our inoperable cases collapsed by thoracoplasty,” he says, “but have delayed.” And finally, *horribile dictu*, in a manuscript for the *American Journal of Diseases of Children*, the author says: “In a case in which I obstetricated at birth.” And so we “operate,” “collapse,” “explore,” and “obstetricate” our patients. This use of intransitive verbs in the transitive sense has no justification in the laws of grammar. Even less justification exists for transposing an ordinary common noun into a verb that does not exist: Astronomers never telescope the sky; bacteriologists never microscope their slides; but the urologist cystoscopes his patient. And in the same way, the bacteriologist who would not microscope his slides will Schick one patient, or Wassermann another. Certain rules of language and grammar are fundamental, and the canons of good writing and correct speaking govern medical, as well as other, literature. There is no place in scientific writing or speaking for such jargon or ungrammatical monstrosities.

My comments have been based chiefly on manuscripts submitted for publication in *The Journal* and in the other publications of the American Medical Association. Before printing, manuscripts pass through the copy-editing room, in which they are corrected so far as may be and prepared for the printer; hence some of the faults to which I have referred will not be found in the printed matter. “Cases” are not “sent for a walk,” nor are patients “operated,” “collapsed,” “explored,” “Schicked,” or “obstetricated,” in the articles as printed.

Case reports are worked into fairly understandable English, crude charts are remade, and compound comminuted sentences are corrected.

But modifications by the printer should be unnecessary, not alone because the author should be responsible for his own productions, but also because modifications by another may change the meaning. Further, and particularly, every writer has a style of his own, and that style should be respected if it conforms to the ordinary rules of rhetoric and grammatical construction. Surely the percentage of physicians without educational qualifications for grammatical writing is small nowadays. The trouble is, few medical writers do their best or take the matter of authorship seriously. Any one who can write an ordinary, logical letter can write a paper acceptable to any journal, if he will take the time and trouble to do so. But writing—whether a letter or an essay—is an art. And to become proficient in any art requires work—practice. This applies to writing as much as it does to music, to painting, to sculpture and to the other arts. Perfection in any of these is reached only by practice. The fundamental principles on which good writing is based are taught in schools and colleges; yet little time is given to applying these principles by actual practice. There are schools for sculpture, painting and music, in which these arts are practiced, but I know of no school for writing. Here and there little coteries of writers are formed for mutual assistance. I have often wondered why such groups are never formed in medical schools by students who have some ambitions for authorship and who could in this way mutually aid one another. Such an arrangement was initiated twelve or thirteen years ago in the Harvard Medical School by Dr. Burrell, professor of surgery. He described the general plan to me and later sent a proof of a circular for his students, outlining the course. How far he carried it out I do not know—not far, I fear, because of his illness, which incapacitated him for some time before his death. The plan would be ideal in hospitals in which there are a number of interns.

#### REVISION

I have said that writing is an art and requires practice. But the busy physician has neither the time nor the inclination to practice writing simply to improve his style. Writing is neither his vocation nor his avocation; it is a means to an end. What, then, should he do that his contributions to the literature of his profession may be creditable? The answer is: Revise, revise, and again revise his manuscript before submitting it for printing.

Few of us can write a paper of any length suitable for publication without revising and rewriting at least once. And yet I am sure that more than half the manuscripts I read have not been revised, according to the meaning of the term. Webster's definition is: "To review,

to reexamine, to look over with care for corrections, as to revise a writing." This means something more than an uncritical, superficial reading of a manuscript to determine how it sounds. Such reading may satisfy the ear, but it does not satisfy the mind.

Consider how the average manuscript is written! The doctor surrounds himself with some textbooks, reprints, a few periodicals and some penciled notes, and starts to write his paper, probably in longhand. After more or less worry, and possibly some sleepless nights, he breathes a sigh of relief, thanks Heaven that is finished, and has it typewritten. He may read the typewritten copy and make one or two corrections before sending it to a medical journal; more likely, he reads it before a society and then, without any revision worthy of the name, sends it in. Not a few manuscripts submitted for publication bear evidence that the only reading given was that of the typist, and she frequently has not corrected her own misspelling. "To have a manuscript typewritten," said an editorial writer in the *British Medical Journal* recently, "and then to send it in for publication without revision is a crime comparable to operating with unwashed hands."

Let me presume to give a little advice to those young men who are anxious that their printed productions shall be creditable: After the manuscript is typewritten and you have given it an ordinary, careful reading, to see that it sounds all right, give it not less than two critical readings. Read it first to see whether you have included all the facts or arguments you intended to include, whether their sequence is logical or whether rearrangement of certain paragraphs would be an improvement. Now have it retyped, for this will be necessary if you have made the first critical reading as it should have been made. The second critical reading is more important; while both require close application, the second requires also concentration. The object now is to improve the style, to eliminate unnecessary verbiage, and to correct slips in grammar and in construction. The matter may be forgotten; the manner of presentation is to the fore. Our copy editors go through a manuscript scarcely knowing the subject; they read it as a composition to be corrected. This is what you should do when revising your manuscript. By the time you have gone through the copy a second time, it will be so marked up that you will be compelled to have it retyped. After the two critical readings, it is quite likely that you will have become more interested and probably you will read it the third time and indicate more corrections, making it necessary again to have it retyped. What of it? The expense is small; the big thing is that you are now practicing in a most practical manner "the art of writing." And it is the only way in which the average physician can, or will, practice the art.

Sir Clifford Allbutt, in that excellent book, "Notes on the Composition of Scientific Papers," tells us that in writing an article he jots

down on slips of paper ideas and facts as they come to him, which, after being arranged in logical order, form the basis for what he describes as "a hasty, first draft." "This first draft finished," Sir Clifford continues, "the work may now be regarded as half done. I usually make four drafts at least before the manuscript is finished." "After the second draft," he says, "I delete redundant words, phrases, sentences and paragraphs." On the third draft, "the composition is submitted to still closer revision; but the main work of this stage is to recast paragraphs and sentences until they run logically." Lastly, before the final revision, he lets a week at least elapse, "in order," he says, "that the final reading may be done with refreshed attention." Sir Clifford Allbutt is regarded as one of the greatest among modern English medical writers. In view of his method of writing, is the fact surprising?

While in Oxford, last August, I saw the Osler Library—a remarkable collection of books, pamphlets and manuscripts. Osler's own annotations and an elaborate index are being completed preparatory to the transfer of the library to his alma mater, McGill, to which he bequeathed the collection. Accidentally, my attention was called to some of Sir William's manuscripts. They reveal the man. We have all regarded Osler as one of our best medical authors. His first textbook on medicine was ideal in its concise and graphic descriptions, in its compact grouping of facts in clear, simple English. As Dr. Finney, in his Osler oration, says:

Of Dr. Osler's literary style it has been well said that his own estimate of some of the old writers may, with equal truth, be applied to him: "A rare quaintness, a love of odd conceits, and the faculty of apt illustration." There is a clarity of diction, a charm of expression, an epigrammatic style in all his writings that stamp them with a certain individuality that must leave a lasting impression on medical literature.

Some, no doubt, have envied Osler his easy command of English; but the manuscripts soon to be available in Montreal tell the true story. There were notes on paper of various kinds—backs of envelopes, for instance—evidently written on trains and at opportune moments; these form the foundation. The manuscript of the article I particularly noticed consisted of: (1) a rough outline in longhand; (2) the first typewritten copy, with interlineations, transpositions and deletions; (3) the second typewritten copy, which also had been considerably modified, and (4) the third typewritten copy that evidently had been used for printing. This final typewritten copy had three or four minor corrections.

We have all read Osler's tribute to that little word which he regarded so reverently—"work." If Sir Clifford Allbutt and Sir William Osler—the latter even in his riper years—found it necessary to revise their manuscripts three or four times, what about the rest of us?



We are leading the world in medical research, in medical progress; our profession at least equals that of any other nation in educational qualifications, both academic and professional, and in scientific attainments. Let us be an exception to the charge made by Sir James Barry, when he says: "The man of science appears to be the only man who has something to say just now, and the only man who does not know how to say it."