Every year the two major general medical journals in this country, the *Lancet* and the *British Medical Journal*, each receive over 2,000 original articles for publication. Of these no more than about a quarter are published. The rejection rate for the 100 or so specialist journals published here is lower, but probably over a third of the articles sent to them go back to their authors. Today, of course, almost any doctor can get his article published somewhere, even if this means eventually his medical school gazette. Apart from the kudos in having a paper published and the attention it draws to its author, most doctors write primarily to communicate facts and opinions to their fellows. If they fail to do so effectively their articles are often unread. They begin to wonder why. Why was the article not accepted by the journal for which it was intended? Was the content unsuitable? Was the style or presentation at fault? To indicate what may have gone wrong it is necessary to outline how the *British Medical Journal* selects its articles, and, secondly, to consider the structure of a medical article in some detail. What follows is a personal account of experience mainly with one journal, but, from talking to other medical editors in Britain and elsewhere, most seem to work on the same principles.

**CRITERIA FOR PUBLICATION**

Virtually every article that is submitted to the *British Medical Journal* is read by at least three doctors. One of these is an expert in the field of the article, chosen from a large panel of advisers. He reads it after the medical editor in charge of the "originals section" has read it. Apart from his general impressions he is asked four questions. Is the article original? Is it scientifically sound? Is it clinically important? Are the ethical aspects beyond reproach?

*Originality* is often a question of degree. Is this the first report of a new syndrome? Or does it in some other way add something of value to the literature? The importance of an article—whether as a reminder or as a review of an extensive or lifelong experience—may outweigh its lack of originality, and we invite the referee to say this. Under *scientific reliability* is included comments on the design of the trial or the experiments, the statistical treatment of the results, and the ethical aspects. *Clinical importance* refers to its immediate or potential relevance to the problems of patients, and to doctors in everyday practice. As regards *ethical aspects*, any article should now conform to the principles laid down by the World Medical Association in the Declaration of Helsinki. If the work has involved experiments on volunteers or patients the text of the article should contain a statement saying that "informed" consent was obtained for the procedures.

**SYSTEM OF REFEREEING**

Once an article comes back from the assessor it is read again by another medical editor. The decision to publish or not can usually be taken by the editor in charge of the "originals section", based on the reports of the three readers, though sometimes he has to discuss the article with his colleagues or ask another expert about a particular point. This system sounds more complicated than it is in practice. It is true that it takes time—of both the editor and his advisers—but it is only fair to an author that his work should be assessed as objectively as possible. In many cases the assessor suggests what facts should be added or deleted, or whether and how the article can be pruned. This explains the average delay of three weeks before an author is told whether the *B.M.J.* would like to publish his article or not. Bearing in mind that many assessors are busy men at the top of their specialties, often with...
many outside commitments, we do not think that this delay is unreasonable.

In practice this refereeing system indicates fairly clearly that roughly half the articles are unsuitable for the B.M.J., either because they do not meet the criteria or because they are too specialized for a general journal. Even so, there remains the other half, of which only half again can be published if the journal is to maintain a reasonably quick turn-round and keep a balance between original and other articles. It is the selection of these articles for publication which really stretches the editor's mind—and makes the job so worthwhile. Editors do not like rejecting articles, particularly when they are borderline. Sometimes they can offer to take up the author's article as the theme for a leading article when it appears in a specialist journal.

SPECIALIST OR GENERAL JOURNAL?
Editorial processes have been described in some detail because authors should take them into account before starting to write their articles. There are two main factors in writing any article for publication—what the author wants to say and where he wants to send it—and clearly the two are interdependent. If the subject is really of interest only to people working in the field the article should be written for a specialist journal from the beginning. Obviously the borderline between specialist and general interest is an individual decision, but most articles reporting very preliminary work in animals, most lengthy and detailed single-case reports, most articles in a particular field that report no new findings, and most review articles should be submitted to a specialist journal. Writing for the latter means that the author can usually assume that his readers know something of the subject, so that he can omit the preliminary explanations which might be necessary for general readers. In a specialist journal full data will be expected and the discussion and references should be comprehensive; thus in general an article in a specialist journal may be rather longer than one in a general journal.

NEED FOR FORMAL STRUCTURE
Despite Medawar's (1965) plea that the present structure of the scientific paper is outdated and that, logically, articles should be written in the order in which the events occur, most people still believe that some sort of framework helps both the writer and the reader. The advantages to the average doctor, untrained in writing techniques, are obvious—a convenient mould which he can rely on to give shape to a mixture of facts, deductions, and speculations. Many readers who have not the time to read the whole article skim through the summary and the discussion; others who do read it and then refer back to it later may merely want to compare the author's results with their own, or to use a method described. To do this quickly would be virtually impossible in a paper without a formal structure.

SECTIONS OF THE ARTICLE
These customarily are, in order, Summary, Introduction, Material and Methods, Results, and Discussion, Acknowledgements and References. From the reader's point of view the most important part of any article is the Summary. Most summaries are very bad; often too long, they rarely include the three essentials of a good summary—why the work was done, how it was done, and what it means. Phrases which tantalize the reader such as "the importance is discussed", "suggestions are made" abound. In the worst instances it is impossible to find out what the article is about. For this reason a summary is often rewritten when the article is being edited, though this is really the author's job.

The next section in order, the Introduction, is again almost always too long. Most authors confuse the introduction with the Discussion section, presenting in chronological sequence much of the previous work on the subject, before getting to their own studies. But the purpose of the Introduction is merely to introduce. In most cases three or four sentences are enough, just to say why the work was done. The only exceptions to this rule are the occasional review journals which give the author the opportunity to present his account in an extended way, rather like a slightly curtailed M.D. thesis.

The Material and Methods section is usually straightforward, but here again a little thought can keep its length to the minimum. Authors should avoid giving details of the methods used if these are standard or are readily available in
books or journals; if new, but very long and involved, they should consider whether they cannot be printed as an Appendix to the article or even duplicated and made available to those who write and ask for them. If experiments on patients are involved, this is the place to mention that informed consent was obtained for the procedures. Under Results, too many authors cannot resist the temptation to refer to previous work of their own or of others, or to what they expected to find. All that is usually necessary in this section is a simple record of the findings. This can be in the text, in tables, or in figures, but duplication should be avoided, as it takes up valuable space. Each figure should stand with its caption on its own and no reference to the text should be necessary for its comprehension. For most results tables are to be preferred, as they enable the interested reader to recalculate the conclusions for himself. Most editors will resist the pleas made by many authors to have a few histograms or graphs which duplicate the tables because "they improve the look of the page". If people want to read an article, they will read it whatever its appearance in print. Elegance in presentation does not depend entirely on visual gimmicks.

It is worth emphasizing the importance of avoiding excessive length in the Discussion section. Some authors seem determined to leave no point untouched, with the result that the average reader is bewildered by the time he gets to the end of the discussion, having forgotten perhaps the main point of the article. Alternatively, he may give up. Since the discussion, apart from the summary, is the most important part of the article for the general reader, it must have a logical structure. Probably the simplest way is to sum up the main findings in three or four sentences at the beginning and then discuss each in turn in separate paragraphs. But avoid dragging in everybody who has ever worked on the subject; if their work is considered bad, it should be ignored, unless the present study has some new and direct bearing on it. Again, this advice does not necessarily apply to the review journals. A good rule is that the discussion section should rarely be over half the length of the entire article.

The final sections are the Acknowledgements and the References. Expressions of thanks should be adequate, not over-effusive. Care should be taken to refer to all those who really helped, including your patients or the volunteers in an experimental study. Only those references which are really relevant to the article should be included, and these should be checked for accuracy, preferably by a librarian. With an article that is expected to go the round of several journals it is a good idea to stick to a full bibliography, and offer to alter it according to the style of the journal that accepts the article.

If a paper is being written jointly with colleagues, each may share in the writing of it, or one may be asked to make a rough draft which can then be passed round for comment and alteration. There are two important points. Firstly, the order of the authors' names must be decided on. Most journals have no rules about this, though a few insist on alphabetical order. The latter may be a convenient way out of a difficult situation, though it bears hardly on those with names at the end of the alphabet; alternatively, the name of the person who has done most of the work or of the most junior member of the team can be put first. The second point is that each member of the team should approve of the final manuscript and the actual proof. This avoids the embarrassing situation of an author writing to disclaim any responsibility for statements in an article because he was not given the opportunity of seeing them.

**IMPORTANCE OF LUCIDITY**

The single most important feature of any article is lucidity. Useful guidelines are to write in fairly short sentences, keeping the words and phrases as simple as possible. Reading the article aloud is a good way of discovering how intelligible it is and some authors normally write their initial drafts by using a tape recorder. It is also helpful to read articles written by masters of medical style, such as Richard Asher and William Boyd. The *Archives of Internal Medicine* has a section in every issue on “Good Scientific Writing”, in which articles that it considers models are reprinted.

A lucid style may also be achieved by breaking up the discussion and summary into fairly short sections, using informative headings. Devoting each section to a different aspect of the topic is a
good discipline and helps to prevent the introduction of irrelevant material. Every article should be intelligible to a doctor whose native language is not English, or to a doctor not working in the field. For this reason the frank opinion of several colleagues not working in the specialty can be valuable. It is also helpful to put the article away for a couple of weeks and reread it with a fresh, unprejudiced eye. As I have emphasized, excessive length will impair the readability of any article. The author should go over his manuscript again and again with the object of pruning it.

GOOD MANNERS

If an author is genuinely puzzled about why his article has been rejected, he may always write to the editor and ask his reasons. Quite possibly the editor may send him a copy of the referee’s report, and if the author thinks he has been misunderstood or that the critique is a poor one most editors are willing to get a second opinion. But, conversely authors should meet good manners with good manners. It should hardly be necessary to say that doctors should be as polite to editors of medical journals as they are to other colleagues. Unfortunately, this is not always the case. Some authors try to browbeat the editor by asking for a quick decision or early publication, or by failing to modify their article in the way that has already been agreed on. They may query every criticism made by an expert referee and try to start an angry correspondence with him, using the editor as an embarrassed intermediary. They may even submit the article simultaneously to another journal or have it read at a conference without telling the editor.

Good manners should apply as much to the manuscript as to personal relationships. Most authors do not think enough about their articles before they send them to the editor; they may be far too long (it is not unusual for the B.M.J. to receive an article which, if printed, would occupy about three-quarters of the space available for all articles in one week); they may be written in virtually incomprehensible English; they may be grubby, with dog-eared pages and covered in tea stains.

THE WRITER’S BOOKSHELF

No writer can do his job properly without several reference books by his desk, and doctors are no exception. The first necessity is a dictionary, such as the Shorter Oxford or the Concise Oxford Dictionary. A manual on style, such as Fowler’s Modern English Usage, revised by Sir Ernest Gowers, or Gowers’ Complete Plain Words, besides preventing many mistakes, will often supply a short everyday equivalent for a longer, more pompous word. When so many articles concern clinical trials or the use of statistics, books such as Bradford Hill’s Medical Statistics or Witts’ Clinical Trials may help the author to interpret on paper what his statistician has told him. As regards “house style” in the article, the Royal Society’s Notes on the Preparation of Scientific Articles and the stylesheet prepared by the Biochemical Journal give advice about preparing tables and figures and the use of abbreviations and symbols.

Finally, until recently there have been no up-to-date books devoted to writing scientific and medical articles. In the last two years, however, two works have been published on this subject. Scientific Writing for Graduate Students, edited by F. P. Woodford (Macmillan, 1968), though principally designed for teachers of scientific writing, contains a valuable series of articles on writing a journal article and related topics which anybody can read with profit. Better Medical Writing, by Charles Thorne (Pitman Medical, 1970), covers much the same ground, though exclusively in a medical context; it also deals with the initial selection of the actual type of work or research which is most likely to yield a good harvest of articles for publication.

REFERENCES


