Letters

Needless Pains Caused by Heedless Editors

Among the policies and practices of editors of scientific publications are two trivial ones that have the singular quality of being able to cause maximum pain to authors with a minimum of effort by editors. These are (i) the passing on to authors of sanctimonious, snide, and picayunish alterations and criticisms made by referees and (ii) frequent changes in the format of bibliographies.

I suppose no one questions the need for referee editors, although it is a question whether they should remain anonymous or not. Most of us object when referee editors use their office as a means of venting their bad humor and aggressiveness on a hapless author. I have seen many, many letters which have been passed on to authors that are little more than scurrilous personal diatribes, thinly veiled as scientific criticism. When an editor receives such criticisms from a referee, he should extract the scientifically valid comments, clean them up, and consign the rest to the wastebasket. The habit of sending the author an unedited carbon copy of the referee's remarks is deplorable. It is traumatic enough for authors to receive rejection slips, and heaven knows many of them should, but there is no need to be brutal.

On the other hand, an author should be deeply grateful for the time and effort some referees give to trying to improve his manuscripts. It is a time-consuming and exacting job, for which the referee should either be thanked or paid. I favor paying him. Refereeing could quite as reasonably be put down as a publication expense as, say, copy editing.

My second class of trivial practices is that of the small, pesky, arbitrary changes in bibliographic format demanded by different journals and by the same journals at different times. Bibliographic citation has been made chaotic by the practices of various journals. The time lost by authors on such trivia can be enormous, yet, I suppose, few editors think much about it and thus may be likened to authors who waste the time of conscientious editors by carelessness and slovenliness.

Bibliographic reference is important in manuscript construction, because proper citation not only gives readers vital information and keeps continuity in the body of knowledge but also tends to keep authors honest. But the modern trend in some journals, ostensibly to save space, is to reduce references to a number arrived at by some wholly arbitrary guess, or "from experience." The saving is so trivial that this argument can be easily dismissed. Then there is the directive that all references must have inclusive pagination, which means that many of us who have collected references and abstracts for many years must again spend time in the library to obtain the number of the last page. The reasons given for this change are either trivial—for instance, that it provides another check on accuracy—or frivolous—that it tells the reader whether the article cited is long or short. I am not sure whether the short or the long article is the desirable one to read. Under any circumstances, to make the change is very time consuming. Until a year or two ago, this was not a usual or standard kind of reference.

Then comes another directive, that authors' names in the list of references be alphabetized. Anyone who has ever written a paper using this system knows what trouble really is. Forget one reference beginning with A and the entire bibliography and all the reference numbers in the text must be changed. In practice, one usually tries to find a way of leaving the references out rather than going to all this trouble. And may I ask of what use it is anyway? The only one I have found is to be able quickly to determine whether an author has referred to any of my papers. If he hasn't, the paper is obviously suspect!

The crowning blow in the category of editorial trivia is the use of *et al.*, to which McCubbin and I have referred [*Circulation Res.* **3**, 547 (1955)]. Very recently Carl Dragstedt has inquired [*Arch. Surg.* **88**, 905 (1964)] whether the world should cite the writers of musicals as "Rodgers *et al.*" instead of "Rodgers and Hammerstein." Use of *et al.* guarantees that the authors first in line are the only ones to be recognized; the rest could well remain in that great and anonymous group called *et al.* for the rest of their lives.

Millions of man hours could be saved by the adoption of a uniform, simple system of bibliographic reference used by all scientific journals in the world. A start in that direction has been made in the *Style Manual for Biological Journals* (American Institute of Biological Sciences, Washington, D.C., 1964). We are all in the debt of the committee that prepared this almost flawless manual (it is unfortunate that it recommends inclusive pagination).

The present capricious systems are a constant drain on one of our most valuable commodities, time, and a great strain on investigators' dispositions. This is needless and, I fear, heedless as well. We can all do better.

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Desalination Research in California

In the editorial "Desalination of water" (18 Dec. 1964, p. 1533), the author attributes to the Office of Saline Water of the Department of the Interior sponsorship of the development of a reverse-osmosis desalination process giving promising results. This development was only partially sponsored by that agency. Chronologically, the facts are these:

In 1957, Reid and Breton, at the University of Florida and under the sponsorship of the Office of Saline Water, disclosed that cellulose acetate is semipermeable to sea water salts (*1*). However, their membranes, made by standard casting methods, gave such low fluxes of desalinized water as to be uneconomical, and were too thin to be readily handled.

In 1960, Loeb and Sourirajan, at the University of California, Los Angeles, announced a technique for fabricating relatively thick (0.01 cm) cellulose acetate desalination membranes in such a way as to have the

flux mentioned in the editorial, about 400 liters per square meter day (*2*). Various U.C.L.A. reports and journal publications followed, describing the technique in detail (*3*), and two patents were granted in 1964 (U.S. 3,133,132 and 3,133,137). All of this work was sponsored only by the California State Legislature. The flux obtained is sufficiently high that the technique is being given serious consideration both by contractors of the Office of Saline Water and by several private organizations.

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References

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2. S. Loeb and S. Sourirajan, *Chem. Eng. News* **38**, No. 15, 64 (1960).
3. ———, "Sea water demineralization by means of an osmotic membrane," in *Proc. Am. Chem. Soc. Symp., 1962*, p. 117–132 (*Advan. Chem. Ser.* **38**); "Sea water demineralization by means of a semipermeable membrane," *U.C.L.A. Dept. Eng. Progr. Rept. 60–60, 61–42, 62–26, 62–41, 62–52, 63–22, 63–32, 63–37.*

No Quarter for Humanities

Scientists who write in support of the cause of the humanities lend new empirical substantiation to the hypothesis that the road to Hell is paved with good intentions. Wolfle's editorials (20 March and 31 July 1964) favor formation of a National Humanities Foundation; and an article by Seaborg (5 June 1964, p. 1199) is entitled "Science and the humanities: a new level of symbiosis."

Well, I certainly question that science should encourage support of the humanities. Seaborg's article is very badly misnamed; his fascinating illustrations reflect not a new level of symbiosis, but the gradual replacement of "humanistic scholarship" by scientific techniques. It may be true that, since Thomas Huxley's time, science in general has, in public prestige, surpassed the humanities. At any rate, contemporary scientists are persuaded that science, as a good winner, ought to help the humanities to their feet. They assume that the humanities, once upright again, will not deliver to science a stinging blow. They must believe that the two can grow together. In my opinion, it would be more correct to view science and the humanities as cut-throat competitors.

I do not expect my argument to convince many natural scientists; they long since have won their major battles with the humanists. They can afford a permissive attitude.

The situation with respect to certain social sciences, however, is very different. Still the underdog, social science is in a fierce competition with the humanities—and only the fitter will survive.

In view of this circumstance, Wolfle's editorials, by implying it false that much of what the humanities claim as theirs is the rightful territory of the social sciences, represent not merely an implicit (and doubtless inadvertent) insult to these social sciences; these editorials also, by aiding a competitor, damage the prospects of the social sciences. Many social scientists will disagree with my position. The entire January 1964 *Journal of Social Issues* is dedicated to patching up the quarrel between social scientists and humanists. The editor of the issue, Warren G. Bennis, finds this antagonism "bizarre because the social sciences and the humanities seem to have so much in common" (p. 4). A domineering husband and a domineering wife may also have much in common. Does that mean their marriage will prove a happy one?

Come the day of reckoning, history will be devoured by sociology, and *applied science* will occupy that territory which today is called the arts'. Conclusion: Help stamp out art!

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Supply of Telescopes

The recent report of the National Academy of Sciences entitled *Ground Based Astronomy, A Ten-Year Program* (see *Science*, 18 Oct. 1964, p. 899; 25 Dec. 1964, p. 1641) is excellent in its coverage, attitude, and the moderation with which it approaches the problems. However, I should like to add a few comments on a problem that I think it does not properly cover.

There are in the United States a fairly large number of astronomers who are members of the faculties of universities and colleges of medium or small size. In many instances there is only one astronomer at the institution. Usually these men and women have large numbers of students but are able to devote their summers to research. Until the last dozen years they were able on occasion to visit large observatories in the summer to obtain observational material. But because of the serious shortage of observing time, which the report so ably points out, they are no longer able to do so and to continue to make their modest but important contributions to astronomy. Very few of these astronomers are associated with institutions which have even the most elementary research facilities in the way of telescopic equipment. A good many are at the point of being forced to retire from even a modest research program.

Any telescope with an aperture smaller than 36 inches seems to be regarded in the report as a teaching telescope and not a research instrument. I cannot believe that the committee's attitude is as rigid as this (see page 49 of the report). I am sure that many astronomers would agree with me that a 24-inch telescope devoted to photometric programs can obtain highly significant data on a wide variety of problems.

There are within reach of a 24-inch telescope several hundred eclipsing binaries for which there are no good light curves. In addition there are large numbers of intrinsic variables which deserve study. This work may not be on the very frontier of astronomy, but the results that could be obtained would be basic to the whole field. Telescopes of this size could also serve as training instruments for undergraduates and perhaps first-year graduate students who might well go on to other institutions for more advanced work. In many areas such instruments would serve to attract astronomers to the many schools which now do not have any on their faculties.

The cost of such an installation is not high. A good telescope of aperture of 24 inches plus photometer and associated electronic equipment and including the dome and a suitable building would cost little more than $100,000—a rather modest sum. Twenty of these installations at suitable colleges and universities in the United States could easily produce results of value far out of proportion to the relatively modest investment. These installations would serve to take some of the heavy pressure off of the large, established graduate schools of astronomy and would serve to keep astronomy alive in areas where it is now in danger of dying.

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