
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY

Editorial

The Place of a General Chemistry Journal in an Increasingly Specialized Research Environment

Modern science has been characterized by increasing specialization. Publishers in the field of chemistry have responded to this trend by creating new journals addressed to narrower and narrower audiences. Readers of these journals can find many papers of direct relevance to their work and apparently keep up with their field in the most efficient way. A chemist might ask "Why subscribe to and read a general chemistry journal like *JACS*? Is there a place for a journal in the modern chemical world that attempts to cover the best work in the broad field of fundamental chemistry?"

We believe the answer is "Yes!" Important discoveries are often made by combining concepts from widely different areas. Often progress on old problems depends upon introducing new instruments, theoretical treatments, or concepts to the field. In a recent talk at the annual meeting of the National Academy of Sciences, the president, Bruce Alberts, made this point in quoting the mathematician and philosopher Henri Poincaré who said "The most fertile [new ideas] will often be those formed of elements drawn from domains which are far apart." Even in a specialized age it is important for all chemists to be aware of developments at the frontiers of chemistry and, indeed, in other areas of science. The editors and editorial board of the *Journal of the American Chemical Society* believe *JACS* can help serve this purpose by publishing the best papers across a wide range of chemistry, presenting new methodologies applied to important problems, new synthetic methods, novel theoretical advances, and significant new results on structures and reactions.

A corollary to the idea of broad coverage is the need for papers in different areas to be intelligible to a broad readership with divergent scientific backgrounds and interests. The trend in the way articles are written, in *JACS* and elsewhere, however, appears to be in the opposite direction. A study published several years ago in *Nature* (1992, 356, 739) discussed the growing inaccessibility of science because of the difficulties nonspecialists have in understanding papers written by specialists for specialists. Based on the nature of the vocabulary used (scaled in difficulty from 0 for international English-language newspapers to 55.5 for a very specialized article in *Nature*),

papers in *JACS* were shown to have changed from a lexical difficulty of about 7 in 1900 to 11 in 1925 to 21 in 1950 and finally to 25 in 1990. Similar trends were seen in other science journals, with much more specialized vocabulary appearing in the biological sciences than in the physical sciences. Contributing to this problem is the overuse of jargon and abbreviations (often in an attempt to be brief) that are, ironically, often combined with an unnecessarily wordy style which masks the true motivation and import of the work and results in an overly long paper. In his talk Albert told of a biologist, Jared Diamond, who had difficulty understanding even the title of a paper in his field (and upon reading the rest of the paper said he still didn't know what it was about!). He rightly remarked "Research described incomprehensibly loses much of its value."

At its recent meeting, the editorial board of *JACS* recommended that a real effort be made to improve the clarity and broad appeal of papers. Papers in *JACS* should be written in a style addressed to a wider audience than papers in more specialized journals. If at least the introductory portion of a paper cannot be put in a form that is palatable and digestible by a broad audience, perhaps it is not appropriate for *JACS*. While decisions on publication will continue to be based on high quality and widespread interest, in addition editors will consider whether the author has succeeded in making the significance and meaning of the work reasonably clear to a wide audience of chemists. The editors recommend that the first paragraphs of a paper should explain what the motivation and import of the work is, where it fits in the development of the field and chemistry, and perhaps why it should be of interest to chemists in other areas. There is no need for extensive review; it should be possible to do this without excessively increasing the length of an article. Thoughtful use of schemes and diagrams (with well-composed captions) is recommended, so that even casual browsers can get an idea of the nature of the work. If we are successful in this, *JACS* will continue its role as a general journal of value to most chemists and the whole chemical community will benefit.

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