

The Information Explosion and a New Way of Assessing Publications

Under the caption "Coping with the information explosion" the editor of the American journal *Science*, Philip M. Abelson (¹), has pointed up the problem of "retrieval" of information from the world's 50,000 scientific journals, and noted some of the current efforts to make that information available to scientific investigators. In actual practice no investigator makes

any serious attempt to deal with such a volume of material, and most investigators, as Abelson says, "gamble that their proposed research will not closely duplicate existing work."

Various programs have been set up by governmental bodies, philanthropic foundations, and scientific organizations, to condense the vast amount of material annually published, through abstract services or mere accurate listing and indexing of authors and titles. A commercial firm, the

¹Abelson, P. H. Editorial. Coping with the information explosion. *Science* **154** (1966) 75.

Institute for Scientific Information, of Philadelphia, however, has recently entered the field with new ideas, based on computer tape coverage of 1,500 of the world's leading scientific journals, which in a year print more than 300,000 articles by 576,000 authors, more than 3 million reference citations and titles containing more than 2 million words, all adding up to an annual total of some 10 million stored index items pertaining to the articles listed.

Needless to say, no single person can make use of more than a small fraction of this vast assemblage, but he can, with reasonable convenience, keep abreast of what is new within a limited field. More than that, he can keep in touch indirectly with individuals working in his own field.

And here is where a novel idea comes in. Aside from mere altruistic motivations, an investigator must publish his results if he is to become known and receive recognition for his daily work. Indeed it may be a simple matter of bread and butter in his early years. "Publish or perish" is an old adage that cannot be ignored. Thus arise, however, a vast number of

minor publications, often dubbed disparagingly as "pot-boilers," which have the principal merit of adding to an author's pile of reprints.

Sheer numbers of published articles have often been used in assessing an investigator's scientific output. The new system of the Institute for Scientific Information, however, through a bulky *Citation Index*, achieves a different and perhaps more useful purpose, viz., an exact record of the frequency with which papers by one author are cited by others. The *Citation Index* may seem an expensive and somewhat cumbersome way of indicating the impact of certain publications on progress within a scientific field. Then, too, a time comes when an accomplishment becomes everybody's knowledge and the original author's papers are no longer cited. But there is reason to believe that for a time, at least, the influence of an investigator's papers can be measured with more precision by the frequency with which they are quoted than by the frequency with which they are published.

—E. R. LONG