Critical Reviews: Introductory Remarks*

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Critical reviews are examined in terms of the quality and quantity of their present production and the measure of their value and utility to scientists in meeting information needs. The papers present the viewpoints of user, sponsor, author, and editor, and discuss present problems and possible future solutions.

The subject of critical reviews is one well within the scope of interests of the Division of Chemical Literature. We have, over the years, directed our attention to problems attendant upon the effective use of scientific and technical information from a number of points of view: publication policies, dissemination procedures, analysis and indexing operations, storage and retrieval methods, and the like. Our interest has run the gamut from that of author to user, from that of manager to customer of information services. We have examined ways for improving the generation, processing, and utilization of information to provide scientific productivity, increase management effectiveness, and enhance professional competence.

Implicit in these interests and in this attention has been our awareness of needs for newer approaches to information handling. By newer approaches, we mean not only use of automatic equipment wherever it might prove helpful, but also the redesign of technical literature forms and services. This latter subject will be treated broadly in a symposium scheduled for this year's Fall meeting of the ACS in Atlantic City. Here we examine one aspect of the subject, one form of technical literature products and services, the critical review.

Critical reviews, evaluations, or appraisals, are a distillation, so to speak, of a large volume of research literature into a more compact, accessible form. Reviews should include some history, should emphasize new ideas, and should provide both synthesis and prediction. We exclude from our discussion here the popular, noncritical review and the type of review known as the annotated bibliography.

Critical reviews are, of course, not a new form of technical literature. Early technical journals contained criticisms and reviews of current work and publications; today's journals also contain reviews, critical evaluations, and abstracts with critical comments added. In addition, there are many publications today that are devoted exclusively to critical reviews and evaluation articles. We are familiar with *Chemical Reviews*, whose editor, Professor Hart, is one of our authors. *Accounts of Chemical Research*, which started publication this past January, publishes "concise, critical reviews of research areas currently under active investigation," to quote its frontispiece. Most of us know the *Annual Review of Information Science and Technology*, sponsored by the American Society for Information Science. Its articles are reviews of various subjects in the information sciences, with varying degrees of critical evaluation.

Our purpose here is to examine the value and the volume of critical reviews, and to explore ways to improve both, if that be necessary and useful. One reason to question the necessity and utility is the fact that appreciation of the need for critical reviews is usually accompanied by appreciation of the amount of effort required for their preparation. Visscher put it this way in 1954: "Reviews covering a thousand scientific papers cannot be made without the expenditure of several thousands of hours... As the labor becomes more arduous than it is at present, the problem of finding suitable authors for critical reviews will become more and more difficult."[1] More recently, Fishenden said: "There is a wide demand for more and better reviews, but no satisfactory arrangements exist for coordinating and financing their production."[2] And Cottrell suggested: "A systematic and massive attack on the problem of critical and qualitative review of information and state of the art reporting appears to be warranted..."[3]

Problems in the preparation of reviews include the rapid pace of today's research efforts, which discourages workers in a given field to step out of the laboratory to write a review; insufficient ability on the part of potential authors in the critical and experimental faculty, the process of distinguishing between fact and assumption; and the lack of adequate rewards for review efforts, which should include intellectual satisfaction as well as monetary support.

The papers in this symposium address themselves to the subject of critical reviews in the various facets we have outlined: the value and utility of reviews, the problems of finding people who can write reviews and finding support for them during the process, the actual preparation and subsequent dissemination of reviews. The papers present the particular viewpoints of user, sponsor, author, and editor, and discuss problems and possible solutions, or approaches to solutions, for this important aspect of scientific and technical information handling.

LITERATURE CITED

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(2) Fishenden, R. M., "Information Use Studies, Part 1–Past Results and Future Needs," *J. Doc.* **21**, 163–168 (1965).
(3) Cottrell, N. E., "The Role of the Engineering Societies in a National Information System," p. 35–42 in "Toward a National Information System," M. Rubinoff, Ed., Washington, D. C., Spartan Books, Inc., 1965.

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