

## ECONOMIC ASPECTS IN THE DISSEMINATION OF CHEMICAL KNOWLEDGE\*

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These remarks are my own. I am not speaking for the American Chemical Society Board, any of its Committees, or my company. After listening to the members of the A.C.S. Board and staff and others discussing the financial and other aspects of our publications program, and reading some of the related literature, I am fully convinced that there is a missing element in our A.C.S. system. The purpose of this informal talk is to seek your help to define what this element should be and to find the optimum form and mode of operation.

The charter of the A.C.S. says in part, "The objects of the incorporation shall be to encourage in the broadest and most liberal manner the advancement of chemistry in all of its branches; the promotion of research in chemical science and industry; the improvement of the qualifications and usefulness of chemists through high standards of professional ethics, education and attainments; the increase and diffusion of chemical knowledge; and by its meetings, professional contacts, reports, papers, discussions, and publications to promote scientific interests and inquiry, thereby fostering public welfare and education, aiding the development of our country's industries, and building to the material prosperity and happiness of our people."

Obviously, for the A.C.S. to diffuse or disseminate chemical knowledge, the A.C.S. must accept it first.

The United States patent system, which has survived all anti-monopoly drives, has as its principal object the placing of certain types of knowledge in the public domain, rather than leaving it in the realm of secrecy. A substantial reward is offered: a 17-year monopoly as defined by the claims. The Government secures the disclosure, places the knowledge in the organized literature, but the user must pay.

The principal A.C.S. activity concerned with the dissemination of chemical knowledge is the formal publication program. It centers around the serial journals and Chemical Abstracts Service. We offer no reward for disclosure other than the prestige and public relations

advantages. All accepted material is set in type, presses operated, and the journals mailed. The reader and his employer pay, members and corporations subsidize to a limited extent, and advertising revenue supports substantially in limited areas. Under this system, acceptance will be influenced by subscription income.

With the substantial growth in the literature, the capacity of the reader nearly constant, the increase in the number of information specialists, the rapid increase in the use of copying machines, and for other reasons, subscriptions have been falling off, relatively speaking. The reduction in subscription income due to copying is one of the things the copyright laws are designed to prevent. Yet, violation is common for rather practical reasons.

Now comes the page charge placed on the sponsor of the research reported. Whether we like it or not, I'm afraid it is coming, unless some major change is made in the literature system. This, in my opinion, is a backward step so far as our A.C.S. objectives are concerned. It adds more resistance to the offering step: financial (also the page charge adds a new cost, administrative costs); nuisance (budgeting, accounting, and paying); and psychological resistance (Why should I pay to give?).

Also, so far as I can tell, the research laboratories of our major industrial companies are placing in the formal literature only a part of the material potentially available and useful to others. They put in that which will reflect favorably on the organization and its people. They even have committees and experts to put each one in the best possible editorial shape, all of which costs a considerable sum of money for each paper. Other material they would be willing to give is not offered.

In view of what has been said so far and other impressions that I have gotten listening to other more closely involved people wrestling with the financial and other problems of our publications program, I am convinced that the time is long past when the A.C.S. should establish: (1) a system for handling what I will call for now the

\*Presented at the American Chemical Society's Division of Chemical Literature Luncheon, September 6, 1961, Chicago, Illinois.

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informal literature, and (2) a comprehensive copying service. This informal literature, presumably useful information, would be provided in manuscript form prepared to specifications such as those used for divisional preprints and generally meeting the standards of company reports and memoranda.

Tentatively, the system proposed would include:

1. Acceptance, docketing and permanent storing of this informal literature, including all of the papers offered at A.C.S. meetings, in manuscript form.
2. Preparation of lists including document number, title, author, and author's organization and sponsor if different.
3. Sell copies of manuscripts and lists of various types.
4. Sell copies of the formal literature and bibliographies (C.A. already gathers more formal literature in chemistry in one place than anywhere else -- C.A. used to provide photocopy service of this formal literature on a limited basis, but the Board put a stop to it for copyright reasons).
5. The price to the buyer would include royalties based on an article charge and a page charge to be paid: (a) to divisions for copying meeting preprints or manuscripts; (b) to individual A.C.S. journals when copied; (c) to other publications when copied.
6. Provide express services for additional fees (facsimile wire transmission, if necessary).
7. The system to be based on the best parts of modern order, credit, warehouse, and accounting systems. Use should be nearly as simple as making a telephone call.
8. The whole operation to be operated on: (a) break-even financial basis paid by the user, and (b) financially separate from other abstracts, searching and other services, present or future.

With this system established for accepting informal literature, copying it, as well as the formal literature, on order and paying royalties, it can compete with the formal literature system on a straight-forward and equitable basis. The A.C.S., then, will avoid getting into a situation where it could be charged with restricting scientific advance by rejecting chemical knowledge offered and can more effectively ask for royalties on A.C.S. material copied.

It is my contention that we must place ourselves in this strategic position, even if it should turn out that the informal system is used but little in or out. Until it is established, undesirable compromises have and will be made.

You can see how it pleased me to hear last week that the redesigned 1962 I. & E.C. will

sell copies of manuscripts prior to publication based on brief digests appearing in I.&E.C.

It should be apparent to you now why I have come to you today asking for help. While I once was responsible for the Information Division in our company (it was a long time ago), I have been a city office man for a good many years and I have lost touch with the work habits of individual research people at the bench level.

Am I correct in assuming that, on the average, the conversion of an otherwise perfectly satisfactory company report to a paper for publication is much more expensive than the publication and distribution of the paper by the Society? And that, therefore, with this informal literature system operating, various things would happen in varying degrees:

1. More material and data would be offered and placed in the "informal" literature system. Examples, specific analytical methods, spectra, etc.
2. Some reports, now converted to papers for publication, would be sent here instead.
3. Some papers would be highly condensed and the complete original company report deposited here. The condensed paper would carry the notice of the deposit and document number.
4. Documents and material now lost or practically inaccessible would be saved. Examples, mathematical derivations and shop drawings.

All of this would have the net effect of (a) less type being set or (b) there would be more, but briefer, papers for the same amount of type set, all for the broad audience, and more information available, for a fee, to the few that need it.

Am I correct in assuming that once a research man has located a reference, or a group of references, he would rather have copies for his work file than to have to go to the library each time he wants to locate it? Under this new system, his procedure would be to fill out a list of references wanted on a form designed for the purpose, indicate whether regular (air mail) or express (wire) service is desired. Subsequent billings would be of no more concern to him than are long distance telephone bills now. If the system designed is comprehensive and fast, he can order his requirements from one place, whether it be formal or informal literature, foreign or domestic. Libraries could reduce their binding, space and shelf requirements, even though they may take everything they take now for current awareness and company indexing systems.

Meeting attendees who couldn't move from one hotel to the other fast enough, and those who didn't get to go, could order copies of those

papers he wants to check promptly directly from the program listing in C.&E.N. and receive them shortly after the meeting in a form for insertion in his work files, all for a fee that contributes to defraying divisional and national meeting expense.

With this system established, the A.C.S. could properly expect all of those organizations and individuals who desire to give full support to the A.C.S. effort to acquire their A.C.S. copyrighted material either directly from the A.C.S. as the publication or from this new service, or to pay a royalty on all copying done.

Except for the author's personal reprint requirements, the widespread, time-consuming reprint request system, which has an adverse effect on subscription revenue, would be part of this system and be made to make its contribution as a source of revenue. It is important that he who uses pay.

In trying to design an improvement in A.C.S. operations for the acceptance and dissemination of chemical knowledge, the overall economic

aspects need to be considered. Included in this should be the matter of putting full weight on the cost of the research man's time, both as an author and as a user of the literature. For example, it costs the company about \$5.00 for a senior research chemist to go and return from a library 15 minutes away to check a reference.

Presumably among you, there are those who have looked at the dollars and cents side of this problem, or parts of it, as a means of deciding what's the best way to do things in your shop. Please contact me or others who are on the Board or Council Publications Committees and the staff people concerned about the problems as a whole or any part thereof. May we have your suggestions, information, and opinions concerning mechanics, ground rules, costs, red tape cutting at the buyer's end, probable extent of use, both in and out, effect, if any, on the formal literature, tie-in with future mechanized search and retrieval procedures, and tie-in with the employer's mechanics.

## BOOK REVIEW

Searching the Chemical Literature, Advances in Chemistry Series No. 30, American Chemical Society, Washington, D. C., 1961. 326 + vi pp. \$6.50.

The several volumes on chemical documentation in the Advances in Chemistry Series have proved to be best sellers. The first edition of "Searching the Chemical Literature," which appeared as No. 4 of this series, was particularly in great demand and went through four reprintings. It was based on a symposium held by the Division of Chemical Literature at the Detroit ACS National Meeting, April 16-20, 1950, and at the Atlantic City, ACS National Meeting, April 14-18, 1947. In order to bring the volume up to date and to improve the balance of subject matter, the Division of Chemical Literature programmed a symposium under this title, with Mr. T. E. R. Singer as symposium chairman, at the Atlantic City ACS National Meeting, September 16-21, 1956. Because of the lapse in time, Mr. Robert F. Gould, Editor of the Advances

series, had each of the authors revise the papers to a current basis.

Papers in this volume are grouped into the following general categories: use of indexes and abstracts; nomenclature and language problems; literature sources; searching techniques; and facilities of four libraries.

"Searching the Chemical Literature" is a valuable contribution to the literature of chemical documentation. Although several of the papers are "tales oft told," the majority reveals an expertness and approach of considerable knowledge and experience. Most of the papers are well written. As a unit in one volume, the papers constitute an excellent reservoir of the art and science of literature searching. The neophyte in chemical documentation will profit most from the reading of this book. Those experienced in chemical documentation will also find this book worth reading for the many new ideas several of the authors have introduced.