material totaled 34, of which seven were for microfiche and the rest photocopies.

For every page not carried in the printed journal the saving in printing, paper, and distribution costs varies from $60 to $100, depending on the circulation of the journal. From this must be subtracted the loss in page charge revenue. In the main, the material now being placed in the microfilm edition of the ACS journals would not have been carried in the journal. Thus, the saving in cost of production was not great this first year. But more important, the material would have been lost to the permanent record. There was one worthy exception. The journal *Inorganic Chemistry* placed about 80 pages of structure factor tables in the microfilm edition that would have previously been published in the printed journal. The resultant reduction in production costs was about $5000, less any lost page charge revenue.

In addition to the increasing usage by the editors, ACS journals are beginning to receive papers prepared for publication in two versions—a brief one for the printed journal and an expanded version to be carried only in the microfilm edition. Also, authors have begun to submit communications with additional material to be placed in the microfilm edition. A very small step by authors, but what may prove to be a very large step for the future of scientific journals.

To encourage the further development of this program the Board of Directors of the ACS has established a special committee to recommend guidelines for determining what kinds of scientific and technical information should be archived. The committee is to include representative editors of the Society's journals and advisors including representative readers and authors. Guidelines set up by this group will provide further stimulus to editors and authors in the selection of material in order to take fullest advantage of the microfilm edition for archival use.

The record of use during the first months of operation and the steady growth in the amount of material placed in the microfilm edition (2000 pages is the estimate for 1972) suggests that a useful addition to the journal system has been opened. As editors and authors see the system grow and prove useful, it is to be expected that they will be more and more encouraged to utilize it to its fullest potential—that is, to move toward more emphasis on current awareness in what is published in the printed journal and toward expanded use of the microfilm to provide as complete an archive of chemical information as possible. The over-all result will be a journal system significantly improved in terms of the efficiency of transmitting information from author to user and of lower costs of publication and distribution.

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Symposium on Wordage Problems—Amount, Languages, and Access*

INTRODUCTORY REMARKS

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The purpose of this symposium is to look into the three wordage problems of amount, languages, and access. These three problems seem to be the most pressing ones that we face today. More and more engineers, medical people, and scientists have come to realize that they are unable to keep up with their technical literatures. Quite simply put, we have come to know that we can no longer read all that we believe we should read, that we can read only a few per cent of the languages we know carry important messages, and that our access to information, documents, and surrogates is far from satisfactory.

In this symposium, we have stepped back from the canvas we have been busily painting for the past quarter century to view what has been accomplished and to see what we should do next. In my view, most of the canvas is untouched despite 25 years of intensive work. Parts of the picture completed are ingenious, brilliant, and useful. Other parts are muddy and in some places the paint has been scraped off. In short, we have done a lot of research and development. Now, observe closely what we have to show for it.

The 26 billion dollars invested in all kinds of R&D each year is still largely wrapped and buried in paper. Nobody is satisfied with the situation. Yet, I am convinced that even spectacular improvement can be made by application of the knowledge that we have already gained and with the investment of only one or two tenths of a per cent of the 26 billion dollars. Each participant in this symposium will probably view the three problems and their solutions differently. This is expected. It is time, however, that we take more positive action toward improved knowledge transfer. It is impossible to convert into action the reading that we cannot do because of amount, languages, and lack of access. The cost of "not knowing" is steadily rising. Lives, health, security, progress, and wealth are at stake. Information science is coming up for much closer scrutiny. Why has it not made more progress in the last 25 years of active research? Why have we not implemented the improved services and systems that we have developed? Answers to these and other questions may be given by the following papers.

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