

Education of the Literature Chemist for Abstracting and Indexing Services*

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The speakers today have demonstrated that the literature chemist employed in Abstracting and Indexing Services occupies a unique position in the chemical fraternity: first, because the special skills required to perform these tasks are so diversified, and, second, because of the problems created by the tremendous explosion in numbers of scientific publications, the chemical documentalist plays an increasingly important role on the research team. The Abstracting and Indexing services today are cooperating with their fellow scientists in the laboratory and information departments to cover literature in broad areas and in interdisciplinary fields. The very nature of the services provided by these large organizations is such that the problems confronting these groups are multiplied at least twenty times over those of organizations serving a single discipline.

We have already heard about the basic requirements for the chemical documentation specialist in industry. Now let us consider for a moment the major educational requirements for personnel to carry out such diverse operations in abstracting and indexing services. Actually with the exception of the research and administrative departments, these can be described by three general statements: (1) personnel must have a good working knowledge of chemistry, and if possible some training in related areas such as basic medical sciences, physics and mathematics; (2) personnel must be completely at ease with the English language; in short, they must have a good command of all basic principles of English grammar and usage in order to permit accurate communication of research results to all areas of the world and (3) personnel must know linguistics and have some foreign language facility. A scientific reading knowledge of two foreign languages is a minimum requirement.

One additional requirement dictated by tremendous expansion in publication is knowledge of new mechanical electronic aids and techniques. Mere numbers of material to be processed alone are forcing all information services to adopt mechanical methods for processing abstracts and indexes wherever possible.

Having reviewed briefly the background necessary for work in the information field, I would like to consider the educational opportunities available *today* for training documentation scientists for the abstracting and indexing services and suggest possible areas where curricula could be set-up. The facts as they stand today are that there are few if any schools offering a complete curriculum which provides adequate training for persons desiring to work in the abstracting fields. However, for many chemists formal training begins and ends with one course in chemical literature. In all fairness, I should also point out that the tremendous growth of these services has taken place within the last ten years. Prior to that time

there was not sufficient demand for documentation scientists to warrant setting up separate curricula. Today, however, the scientific literature specialist and documentalist are important members of the research team whether employed by abstracting services or in industry. The problems of handling an expanding diversified scientific literature could be solved much more quickly and efficiently if the profession had available personnel trained in the techniques of documentation. Consider the fact that scientists in abstracting and indexing today are being trained in the techniques of documentation on the job. They come to the services with degrees in chemistry, biology, physics, engineering, medicine, *etc.*, hopefully with some knowledge of foreign language, perhaps an undergraduate course in chemical literature and an interest in working with the literature. The abstracting and indexing services take it from there; for example, it usually requires four to five years to train a good indexer for *Chemical Abstracts*.

I would like to offer for your consideration some suggestions to alleviate and improve this situation. Initially, set up a program at graduate level leading to a master's degree in scientific documentation. This could best be accomplished in several large universities which now offer course work in all areas of science and which are located in areas where large abstracting and indexing services are centered. Students from all biological and physical sciences could then take the same basic courses in documentation techniques, and continue their studies in their own subject. Additional courses in linguistics and foreign language could be provided as electives. The universities could invite skilled staff members from the abstracting and indexing services to teach specialized courses and could invite visiting lecturers to participate in seminar courses. Students might also receive "on the job training" by working part-time for the abstracting services and be assigned as research projects current problems in documentation. Upon completion of this training they would then be in a position to move forward immediately on projects to solve the literature crisis which exists today.

In conclusion, I would like to address myself to those of you who are considering the area of science in which you will specialize. One fact I can attest to—having experience in both laboratory and literature research—the problems to be solved in the scientific literature field today are equally as challenging as those in the laboratory, and the satisfaction gained in solving them is as satisfying as the successful completion of a difficult organic synthesis—and is more so in one respect—solution of our literature problems will help save many man-hours and at the same time lighten the tasks of thousands of laboratory researchers so that they can move more quickly toward the answers to important research problems. Chemical problems today are solved by teamwork between the laboratory researcher and literature researcher, and each contributes equally to the effort.

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