The Role of Colleges and Universities in the Instruction of Literature Chemists*

By Carleton C. Conrad
Textile Fibers Department, E. I. du Pont de Nemours & Company, Wilmington, Delaware
Received January 25, 1962

As we examine the topic of education for the literature chemist, it would seem that we in industry are really asking ourselves four questions: (1) What does industry want literature chemists to do? (2) What are the opportunities for chemical literature work in industry? (3) Who is concerned at the college and university level with the problem of education for scientific literature work? (4) If, in answering the previous questions it is concluded that improved education for chemical literature work is both necessary and desirable, then what is to be done to accomplish such objectives?

The papers presented by the speakers in the preceding symposium on "The Literature Chemist in the Chemical Industry" have given much help in outlining both the needs and opportunities existing in industry for chemical literature work. From the remarks of these speakers, there is little doubt that substantial demands and challenges exist in the specific activities of translating, patent liaison, technical writing and editing, abstracting and indexing, literature studies, the preparation of critical and evaluative summaries of the literature, and in documentation research activities. In effect, real and challenging opportunities exist on every front in industry for top quality chemical literature scientists. The fundamental problem appears to be that of getting industry's challenges and opportunities more widely disseminated and understood by the teaching as well as by the chemistry professions.

Looking now at the question of who at the college level is interested in improved training for literature chemists, there is considerable opinion that this area is one that is receiving inadequate attention. The general feeling prevails that no efforts are underway to set up standards of training nor is there unanimity of agreement that these are desirable. Although many schools offer some type of training for this field, far too often the subject receives only minor emphasis and handling is on an informal basis. These are serious challenges and ones over which those of us who are active in the literature field should have a real concern.

In a recent survey by a joint committee of the ACS Divisions of Chemical Literature and Chemical Education[1,2] it was found that of 330 schools teaching chemistry and chemical engineering who replied to the committee's questionnaire, 96% gave some kind of instruction in chemical literature. About 40% of these schools gave instruction in formal courses. Those having no formal courses used a variety of approaches such as specific assignments, projects, and similar methods. Of the schools giving formal courses, 94% rated their course as receiving two hours or less credit. Of the 6% granting more than two hours credit, the courses were combined in most cases with other subjects, such as technical writing, history of chemistry, and related topics. It is probably true that most of us would accept that some instruction in chemical literature is better than none at all. However, the general lack of broad and standardized instruction found by the ACS survey does not indicate that adequate training is being given in the areas of full-time employment that exist in the chemical literature field. Our present college and university courses for the most part appear to be directed to training in chemical literature as a tool for personal use by the chemist himself. This is certainly desirable. At least one of the survey participants has told me that he has often received letters from former students telling of the high value his course in chemical literature had been to them in their professional chemical work. These courses are undoubtedly worthwhile and should be encouraged, but there is a growing concern that they do not provide adequate training for chemists who hope to do professional work in the technical information, chemical documentation, editing, and other areas of chemical literature where current opportunities exist in industry.

There appears to be much informal opinion, of a type that does not get into our formal surveys, that both an awareness of potential current opportunities in chemical literature and the insistence on a high degree of competence in the field, are lacking. In my own experience in interviewing people to work in the field of chemical literature during the past ten years or so, I have found very few applicants who were interested in this kind of work, and of those who were, only a few had more than superficial formal training for the field.

My previous remarks do not mean that there is not some resurgent interest concerning these problems of the chemical literature field. Actually, today there is a growing belief in many quarters that something needs to be done and that the instruction in chemical literature may have slipped or at least may not be keeping pace with current demands. We are now beginning to see an evaluation of what might be done and steps are underway on how to accomplish what is needed. In England, the "Institute of Information Scientists"[3,4] has been established. It is the intention of the Institute "to promote educational courses in information work, based on a syllabus ... and to hold examinations for the certificate of the Institute." A study by Leonard Cohan and Kenneth Craven sponsored by the Modern Language Association of America has examined the importance of the various backgrounds of scientific discipline, librarianship, foreign language ability, and information work in the education of science information personnel.[5] Their report outlines existing as well as entirely new programs

* Presented at the Fourth Delaware Valley Regional Meeting, American Chemical Society, January 25, 1962, Philadelphia, Pa..

of instruction that might prepare science as well as language majors for professional work in the science information or chemical literature fields. The Division of Chemical Literature, jointly with the Division of Chemical Education, sponsored at the 141st National ACS Meeting in Washington, D. C., March 21, 1962, a seminar on the Education of Literature Chemists.

It appears then that we must recognize that: (1) There is a current lack of wide interest in many chemistry programs in both the need and desirability of instruction in chemical literature work as a professional pursuit, and (2) To counterbalance this tendency, there is beginning to emerge the feeling by others that there is need for more and better courses and improved education in scientific literature activities at the college and university level—it is these people who are attempting to do something about the problems they see.

REFERENCES

(1) Anon., "Majority of Schools Teach Chemical Literature," *Chem. and Eng. News*, **39**, No. 20, 118 (1961).

(2) Anon., "Report of Committee on Status of the Teaching of Chemical Literature," *J. Chem. Ed.*, **38**, 273 (1961).

(3) G. Malcolm Dyson and Jason E. L. Farradane, "The Aims of the Institute of Information Scientists Ltd.," *J. Chem. Doc.*, **2**, 72–74 (1962).

(4) G. Malcolm Dyson and Jason E. L. Farradane, "Education in Information Work: The Syllabus and Present Curriculum of the Institute of Information Scientists Ltd.," *J. Chem. Doc.*, **2**, 74–76 (1962).

(5) Leonard Cohan and Kenneth Craven, "Science Information Personnel," (1961). Modern Language Association of America, Science Information, P.O. Box 624, Radio City Station, New York 19, N. Y.