

DISCUSSION GROUPS - 1964 MACTLAC MEETING

1. USE OF COMPUTERS IN THE UNDERGRADUATE CHEMISTRY CURRICULUM

Discussion Leader: William Deskin, Cornell College
Resource Person: Richard Bayer, Carroll College

Electronic computers are becoming increasingly available on liberal arts college campuses. Even colleges which cannot afford to have a computer on the campus frequently have access within a reasonable distance to computing facilities at larger institutions or in industry. It becomes relevant, therefore, to examine whether there are ways in which computer calculations can and should be introduced into undergraduate chemistry courses.

At one level computers may be used simply to provide data for class use which would otherwise be difficult to obtain. At another level, the major objective may be to train students in methods of computer programming. It is hoped that participants will share whatever experience they have had with the use of computers, including the kinds of problems they have worked on, how the problems have been brought into their teaching, and the relative advantages of different types of computers.

2. ROLE OF BIOCHEMISTRY IN THE UNDERGRADUATE CURRICULUM

Discussion Leader: Richard J. Morath, College of St. Thomas

A trend seems to be developing in biochemistry courses towards molecular biochemistry involving physical-organic concepts and away from the more traditional physiological chemistry with its corresponding medical implications. With the more sophisticated courses in organic chemistry (Morrison and Boyd, Cram and Hammond, Shirley) and in physical chemistry (Moore, Sheehan), the student should be able to apply these concepts to his study of biochemistry.

The role of the laboratory part of the course - if one even is given - would depend upon the type of course and the facilities available.

It would appear to be fruitful to discuss these trends with people teaching biochemistry courses.

3. CONTENT OF THE ADVANCED INORGANIC COURSE

Discussion Leader: Earle Scott, Ripon College

As the elementary courses become more closely allied to physical chemistry, and as qualitative analysis is attenuated and quantitative analysis is dispersed, the role of the so-called "Advanced Inorganic" course also changes. Where the indicated trends are well advanced, the title of the course is probably a misnomer in that it is not preceded by any other formal presentation of inorganic chemistry. Consequently, the content of the Advanced Inorganic course cannot be discussed without reference to other parts of the curriculum. The following general questions seem pertinent. (1) Can we establish objectives in inorganic chemistry which should be met by the entire undergraduate curriculum? (2) Can we identify those objectives which are unique to inorganic chemistry and which could, therefore, represent the core of various Advanced Inorganic courses? (3) Can we define limits which will help in establishing a balance between experimental observations (classical descriptive chemistry), experimental techniques, and theoretical interpretations? (4) Can we identify the specific advantages implied by the A.C.S. requirement that Advanced Inorganic be taught after physical chemistry?

not done

4. FACULTY AND STUDENT RESEARCH IN LIBERAL ARTS COLLEGES

Discussion Leader: Richard Ramette, Carleton College
Resource Person: Quentin Petersen, Wabash College

Over the past ten years the quantity of scientific research in the small colleges has greatly increased, and it is almost axiomatic that this is "good". But some things about research may be "not good", and we should be careful to identify the kinds of scholarly work which enhance our effectiveness as teachers, and we should be clear in affirming that teaching, not research, is our primary responsibility. Is it true, for example; that (1) intensive experimental work by a college professor will likely sap his energies but provide a very small net gain in his general competence?, that (2) the desire for renewed financial support has unnaturally influenced the choice of research work to lead more surely to the published paper?, that (3) even the student assistants, who should be learning principles, find their time sacrificed to narrow aspects of a problem to be consistent with a "plan"?, that (4) a far better way for a college professor to do scholarly work is to read, and to study and to evaluate and to translate into teaching practice the literature which already exists?, that (5) college professors do not have the time, and are continually losing the ability to do research which is truly worthwhile as a contribution to the literature? The members of this discussion group should be prepared to take a stand on these and related questions.

5. USE OF PAPERBACKS IN TEACHING CHEMISTRY

2nd class

Discussion Leader: Theodor Benfey, Earlham College
Resource Person: Harry Sister, University of Florida

Within the last two years there has been a dramatic increase in the number of paperback volumes in chemistry. Most notable is the appearance of several series of monographs written for first year college students. Some of the questions which merit discussion are the following: (1) What paperbacks are now available? (2) What are the appropriate uses? Are they best used primarily in place of a text, as remedial reading, or as enrichment to supplement a text? (3) What problems are associated with the coverage, depth, continuity, etc. of the volumes now available? (4) What paperbacks need to be written? (5) What can we do to encourage quality in chemistry paperbacks? (6) Is the era of the comprehensive text near its end?

6. OPEN ROUNDTABLE DISCUSSION

Discussion Leader: Martin Allen, College of St. Thomas

In a sense this discussion section is a reversion to the spirit of the earliest MACTIAC meetings when the program was informally drawn up at the beginning of the meeting. A substantial number of members has regretted the disappearance of this spirit.

If you have problems, "pet" ideas, or "wild" suggestions, here is an opportunity for you to discuss topics, ideas, and experiences not included in the other discussion groups. Bring along your thoughts and questions, and have them discussed in a friendly and informal manner.

If the response to this session is encouraging, it is planned to continue the Open Roundtable at future meetings.