

Summary of Discussion Groups

Group 1. New Approaches to the Four Year Curricula

Leader: Miller, Carleton; Secretary: Harris, Knox

There is a trend to place organic and physical chemistry earlier, analytical chemistry later in the curriculum. Undergraduate research is increasing.

Exchange of instructors, perhaps subsidized by NSF or Ford Foundation, could lead weak departments to greater productivity.

Unusually qualified freshmen given advanced standing in sophomore courses generally do better than those taking the normal sequence.

Combination physics-chemistry courses for first year can eliminate unnecessary duplication, but require unusual cooperation between participating departments.

Earlham and Brown plans were discussed in detail.

Group 2. What to Do About Inorganic Chemistry

Leader: Taube, University of Chicago; Secretary: Danforth, *Grinnell*

Grinnell

Six of twenty-five in the group offer advanced inorganic chemistry. Five used Gould.

Phases of inorganic chemistry which should be taught were listed and rated. Features of several textbooks in use were mentioned. Descriptive, factual material should be used to illustrate principles.

*Use of quantitative experiment was discussed.*



### Group 3. Educational Trends in Analytical Chemistry

Leader: Ramette, Carleton; Secretary, Grennan, Milwaukee-Downer.

A discussion of the recent symposium in Atlantic City brought out that in many schools organic chemistry is being taught before analytical, that there is concern that analytical courses do not teach enough analysis of organic compounds, and that there seems to be a trend toward the adoption of automatic balances.

Some variations on the scheduling of analytical courses and other curricular matters were considered.

Specific suggestions for modifications and new ideas for quantitative laboratory work were offered, including the possible development of a "lab practical" examination to test technique and general understanding of laboratory procedures.

There was discussion of the need for up-dating the lecture material in analytical courses, especially in the light of equilibrium researches in recent decades.

### Group 4. Radiochemistry in the Curriculum

leader: Busch, Ohio State

The group considered the following main topics:

- a. Reasons for incorporating a significant amount of radiochemistry into the liberal arts curriculum.
- b. Manner of incorporation in:
  1. general chemistry, 2. analytical chemistry, 3. physical chemistry, 4. organic and biochemistry, 5. undergraduate research, 6. advanced courses.

It was pointed out that a good deal of helpful literature is now available, and there was discussion of the opportunities now available for the training of faculty members in the use of radioisotopes.



Use of quantitative experiments was discussed.

Group 3. No report received.

Group 4. No report received.

Group 5. Modernization of Organic Chemistry

Leader: Petersen, Wabash; Secretary: Kaufman, Kalamazoo

About half of those present (from 26 colleges) offer organic in the sophomore year; none, except as part of a terminal course, in the freshman year. Two offer a more descriptive, less theoretical course for non-majors.

A diversity of opinion regarding a mechanistic approach was reflected in choice of more than ten texts greatly varying in approach.

Laboratory time was two three-hour periods weekly for about half, one period for the remainder of the group.

A number include devices to require use of library in connection with laboratory.

About half use semi-micro apparatus.

Colleges using all or part of second semester laboratory for qualitative organic analysis reported greater student stimulation.

Six of colleges use instrumentation, a larger number chromatographic techniques.

Advanced courses in 16 of the colleges are mainly qualitative organic analysis. Three reported a full year



of advanced organic.

Courses other than qualitative organic emphasized mechanistic approach.

Advisability of offering biochemistry was a matter of disagreement.

Senior research was considered valuable. To prevent qualitative organic from interfering, suggestion was offered to move organic and qualitative organic earlier.

Group 6. Advanced Standing and the Superior Student

Leader: Norton, Kenyon; Secretary: Scott, Macalester

Review of the College Boards program included the following points:

Of about 6000 high school students taking 9000 exams this year, most try to qualify in only one or two subjects.

Advanced standing should be based on actual course content, not mere passage of an exam.

Granting college credit was of concern to high school teachers, but may prevent students from making full utilization of course offerings because of credit limitations.

Partial advanced standing requiring a semester make-up course posed a problem of what to do with second semester.

High school teachers involved in college-level courses require special training and qualifications.

