

The MACTLAC Cooperative Physical Chemistry

Laboratory Manual Project

History

At the 1957 meeting of MACTLAC at Park College a lively discussion of the role of the laboratory in Physical Chemistry took place. Stimulated by this discussion, W. C. Oelke rose at the end of the meeting and asked that those interested in cooperatively developing better laboratory experiments for physical chemistry meet for a few minutes in the hall. About ten persons responded and agreed to meet for further discussion at the 1958 meeting.

The schedule of the 1958 meeting at Beloit College left little time for extra sessions, but a group of 18 met for about an hour on Friday and again for a short time on Saturday. The formation of a steering committee was proposed. W. C. Oelke of Grinnell was elected chairman, J. P. Huselton of William Jewell volunteered as secretary.

The discussion centered around laboratory procedures, laboratory manuals in use at the various schools, and the desirability of developing better experiments. A need was indicated for:

1. A certain number of experiments of the routine type because of the spread of backgrounds of students.
2. Many projects of a semi-research nature, or experiments which were "open ended" giving the students an opportunity to show initiative in a research type of experience.
3. A section containing reference and background material of a more general nature.

The suggestion was made that the reference material be bound as a unit, with the directions for experiments assembled in loose leaf form. This idea received favorable discussion.

Action was taken on various motions as follows:

1. That the group proceed with the development of a manual.
2. That Oelke and Huselton, as chairman and secretary respectively, be elected for the following year with the mandate to clarify ideas and proceed in the general direction indicated by the discussion.
3. That these officers organize a steering committee

to consist of the officers and three additional members. A. L. Hanson of St. Olaf, R. M. Rosenberg of Lawrence, and P. M. Wright of Wheaton were selected as the additional members.

In 1959, at Valparaiso University, twenty MACTLAC members attended the one meeting of the group held Saturday morning. It was moved, seconded, and passed that the steering committee be continued and empowered to add other members as necessary.

Oelke presented an "Introduction" to the manual and a suggested "Table of Contents" for discussion. The comments were generally favorable, although several additions and changes were suggested. Several members felt that the plans for a complete reference section were too ambitious and that for the present the group should concentrate on the development of experiments. Discussion time was short but important progress was made.

Several areas of physical chemistry were mentioned where good experiments were needed, especially of the "open end" or research type. It was agreed that where experiments required special apparatus, the source of such apparatus should be given or detailed directions supplied for its construction.

Several members (see minutes of October 24, 1959) volunteered to work on various experiments and portions of the reference section of the manual.

It was decided that suggestions for experiments and write ups already prepared should be sent to Professor Oelke, Grinnell College, Grinnell, Iowa for editing and duplication by the steering committee. These were to be distributed for testing and criticism, after which they were to be revised into final form for eventual publication.

It was suggested that the following year the Physical Chemistry Manual Group be listed on the program as one of the scheduled discussion groups.

For the first time, at the 1960 meeting at St. Paul, our group had two full periods for discussion with 17 initially present. Because of the location of the meeting near the border of our territory many old faces were absent. However it was our good fortune to add many new members to the group and a good portion of the Friday period was used to review past progress for their benefit.

Directions for five experiments of widely different types were distributed in mimeographed form to those present. These had been selected from several received by Oelke during the year and brought into uniform format by him. He pointed out that these were in tentative form for testing and discussion. While they could be considered prototypes of later experiments they were certainly open to radical

revision based upon suggestions from the group. In general the form of these prototypes was endorsed.

Oelke reported that several well known publishers were interested in our project. Various designs and formats suggested by publishers' representatives were discussed. The idea of having the experimental section in loose form continued to appeal to those present.

Financial problems were discussed on Saturday by a small group but no definite action was taken. The steering committee was reelected.

At the business meeting of MACTLAC, the Physical Chemistry Manual group, heretofore an "off the record" effort, was given status as a part of the MACTLAC organization. This has many advantages in terms of business dealings with publishers, the acquiring of copyrights, holding of funds, and in formalizing our organization. Some one suggested that a similar project be undertaken for organic chemistry.