

The Teaching of General Botany in Liberal Arts Colleges for Women

Sister Mary Therese, B.V.M.

Mundelein College, Chicago, Illinois

It has frequently been declared that the poorest teaching is to be found in colleges and that college teachers as a group have little sympathy for the science of education and no time for considering methods of scientific procedure in teaching.

Confident that these charges are unwarranted, members of the botany department of Mundelein College recently undertook a survey of "*The Teaching of General Botany in Liberal Arts Colleges for Women*". Unusual interest was manifested in a questionnaire which was sent to 132 colleges located in 32 States. These institutions were chosen because they were listed as fully accredited colleges in the 1936 directory of American Universities and Colleges. Of this number 107, or 81%, responded. In not a few cases letters accompanied the returned questionnaires from department heads soliciting a copy of the survey when published. These facts, of themselves, may be taken to indicate professional interest.

The purpose of this survey was to secure scientific data concerning the present status of general botany as it is taught in liberal arts colleges for women. Information bearing on this problem was not readily available and therefore, a questionnaire was resorted to. In order to avoid undue length the questionnaire was limited to salient points. However, much supplementary information was offered by many of the colleges.

With 32 States represented in the returns, it was considered of interest to arrange the colleges territorially and to observe whether or not the teaching of botany varies in the colleges according to location in the New England group, the South Atlantic, the South Central, the North Central, the Western, or the Pacific States. A summary of the results follows:

With many college administrators it is frequently debatable whether a year course in General Botany can, without undue loss to the students, be shortened to that of a semester, or a semester course be profitably extended to that of a year. Many factors such as the teaching load, class registration and laboratory equipment, to mention only a few, must necessarily be considered. Of those offering general botany, 61% of the colleges have chosen the year course, and 36% the semester course. According to territorial rating the distribution is general.

Regarding the choice of method of conducting lecture and laboratory work 13% of the institutions use the combined lecture-laboratory method, and 87% employ separate lecture periods and laboratory periods. In the former group the average time is from six to eight hours per week; in the latter, two lecture periods.

Not infrequently the question is raised: "Should students be required to make their own laboratory drawings or should they be allowed to label prepared drawings?". Ninety per cent of the colleges are in favor of having each student make her own drawings.

Regularly established quizzes to systematically follow up laboratory work are used in 93% of the colleges. Tests of various types are employed including written and oral, objective and standardized forms here listed in the order of their popularity with instructors. The remaining 7% of the institutions have not established the custom of laboratory testing.

Contrary to common opinions, instructors in botany enrich their courses with the aids to visual education, guest lectures and radio programs. These, along with the usual laboratory variety of equipment of charts and models, are in frequent use in 92% of the colleges.

The students' interest is further stimulated and allowed expression through the medium of projects which are carried on outside of regular class periods in 51% of the institutions. The list of topics compiled from examples offered by colleges exceeded fifty in number and could be conveniently grouped into suitable seasonal studies.

Without any doubt field trips are considered an essential supplement to theory, and are included in the general botany courses of 86% of the colleges, the average number of trips being 2 or 3 during the semester. Together with this approach to a comprehensive course may be mentioned the use made of college greenhouses where students have the opportunity of cultivating plants and of watching them grow.

Of all the questions proposed for consideration the one that evoked the greatest diversity of opinion was that concerning the time evaluation placed upon the study of Plant Physiology and the four main divisions of the plant kingdom, regardless of the order or method of development followed in the course. For example, quoting the lowest and highest rating for each division we have: *Thallophytes* from 0 to 40% of the course time; *Bryophytes* 0 to 22%; *Pteridophytes* 0.9 to 40%; *Spermatophytes* 3.6 to 83.3%; *Plant Physiology* 0 to 91%. The average evaluations are: *Thallophytes* 19% of the course time; *Bryophytes* 10%; *Pteridophytes* 11%; *Spermatophytes* 37%, and *Plant Physiology* 23%. The North Central States approach nearest the average in all five estimates.

One might hastily conclude that this diversity in time allotments reflects the opinions of authors whose textbooks are employed. However, we meet considerable uniformity in textbook selection which indicates that responsibility for the evaluation of these divisions is assumed not by the author but by the individual instructor. Here the geographical locations of the colleges and hence their natural resources also play a part.

Concerning textbook selection it is reported that 40% of the colleges employ the same text. Contending for second place are two other textbooks each receiving a patronage of 10%. The remaining 40% of the colleges place their selection with one of 16 others serving the same field. Among laboratory manuals mimeographed sheets prepared by the department or the instructor are almost unanimously preferred.

That courses are scientifically as well as systematically planned and executed may be deduced from the personnel responsible for such planning. For example, in 70% of the institutions the head of the department together with his associates outlines the courses of study with the approval of the administration. Other practises vest authority in the instructors of the courses or in a Committee on Studies. Direct correlation with other departments is sought by the botany departments of 74% of the colleges. Home Economics, Chemistry, Social Service, Physical Education, Physics and Education head the list of 25 correlated departments.

Student guidance, so popularly advocated today, receives staunch support from botany professors in 88% of the institutions. Many instructors require students to come for conferences regularly but the majority prefer extending such assistance only to students doing work below par or to students who voluntarily seek assistance.

Usually the demand for a subject can conveniently be used as a criterion of success. Judging courses in general botany from this evidence, 72% of the colleges answering this question reported an increased demand among their students, and 26% reported a decline. Others had no estimate or reported no apparent change.

In conclusion, based upon the results of this survey, a typical course in General Botany in a Liberal Arts College for Women, (1) is a year in length, (2) is conducted in separate lecture and separate laboratory periods, (3) requires students to make their own laboratory drawings, (4) includes laboratory quizzes, (5) requires student projects and field trips, (6) is supplemented with various aids to teaching, (7) is outlined by the head of the department with his associates, (8) correlates with other departments and (9) allows instructors time for student conferences.