

HISTORY OF SCIENCE

Chairman: C. L. PORTER, Purdue University
M. S. MARKLE, Earlham College, was elected chairman for 1954

ABSTRACTS

Air-conditioned light rooms for growing plants. RAYMOND E. GIRTON, Purdue University.—As early as 1924 a completely air-conditioned light room (11 x 11 ft.) was constructed and in use at the Boyce Thompson Institute for Plant Research in Yonkers, New York. Incandescent lamps provided 400 f.c. light intensities at plant height. Temperature control was within 1 degree and humidity control within 2%. A much smaller (2 x 5 x 5 ft. high) and much less expensive light chamber installation was described by A. R. Davis and D. R. Hoagland in 1928. Here again, temperature control within 1 degree (C) was claimed but a much less rigid control of humidity was obtained. Light was supplied laterally by incandescent lamps at an intensity upon the plants of 2610 foot candles. Accurately predictable growth data could be obtained with wheat plants growing under these conditions.

More recently constructed light rooms have utilized fluorescent lamps as a more satisfactory illumination source. Fluorescent lamps produce an illumination quality more nearly comparable to sunlight and are much more efficient light sources than incandescent lamps. For these reasons the new light-room installations at Purdue University employ fluorescent lighting. The room in Peirce Conservatory measures 9 x 10 x 8 ft. high and is illuminated by fifty-eight 96-inch fluorescent lamps suspended above a triple-glass Thermopane screen. Intensities at plant height are of the order of 1,000 f.c. Temperature controls permit a temperature range of 50-85° F. $\pm$ 3° F. The humidity range is 30-85% (and higher) $\pm$ 5%. The four light rooms of the new Plant and Soils Laboratory Building are similarly illuminated with a maximum light intensity of about 2,000 f.c. Temperature control is within 2 degrees and over a range of 50-80° F. Humidities may be varied over a wide range with a control within limits of about 5%. Satisfactory plant growth has been obtained under fluorescent lighting in both of the Purdue buildings mentioned.

The history of science at DePauw University. WILL E. EDINGTON, DePauw University.—The history of science at DePauw University is probably very similar to that of other Indiana colleges founded before 1850: a struggle for the recognition of science as of equal value to the classics in education. Early instructors were ministers trained in the classics and sincere in their beliefs that an educated man must know Latin and Greek. Also the proper teaching of science requires apparatus and laboratories, which cost considerable money for both equipment and laboratory space. Enrollments were small and instructors generally taught several subjects. However, by 1848, DePauw was offering a two-year Scientific Course and German was taught. The first Medical School to

be associated with an Indiana college was set up in 1849 and ran until 1852. By 1853 the Scientific Course was extended to three years, and in 1858 a full four-years course was given leading to the B.S. degree, and students could substitute French or German for Latin. By 1869 a chemical laboratory for student use had been set up and one term of laboratory work required. Also the privilege of "elective courses" was permitted to a limited extent. In 1875 the possibility of specialization in mathematics was provided for in "extra-collegiate hours." By 1890 science was fully recognized and taught on a laboratory basis, and outstanding specialists were employed as instructors.

Among the great names associated with the early history of science at DePauw are Charles G. Downey, William C. Larrabee, Cyrus Nutt, Joseph Tingley, John W. Locke, Patterson McNutt, J. P. D. John, J. B. DeMotte, C. A. Waldo, J. P. Naylor, P. S. Baker, O. P. Jenkins, L. M. Underwood, W. W. Norman, W. V. Brown, Mel T. Cook and H. J. Banker. During the present century under the guidance of William M. Blanchard, T. G. Yuncker, B. H. Grave, O. H. Smith, Ernest Rice Smith, C. P. Hickman, F. D. Brooks and Will E. Edington, DePauw University has become one of the leading institutions in the United States in preparing and sending students in science to the graduate schools, where several hundreds of its graduates have earned Ph.D.'s in science and are now actively engaged in scientific work.

History of the Arthur Herbarium. GEORGE B. CUMMINS, Purdue University.—The Arthur Herbarium of the plant rust fungi had its beginning at Purdue University in 1887 when J. C. Arthur came to the institution bringing with him such collections as he had previously assembled. Until 1918 the herbarium was considered to be the private property of Dr. Arthur but in that year the herbarium was purchased by Purdue University and all collections of plant rusts received since that time have been considered to be the property of the University. The herbarium now consists of approximately 70,000 specimens from all parts of the world, including about 2,500 type specimens. The Arthur Herbarium is housed and maintained by the Department of Botany and Plant Pathology.

Two factors were of major importance in the early development of the herbarium. Firstly, Dr. Arthur was asked by the administration of the New York Botanical Garden to prepare the portion of the North American Flora which dealt with the Uredinales and, secondly, the rust research was given long continued financial support from funds appropriated under the Federal Adams Act in support of basic research in Agriculture. Since 1943 the work has been supported by Agricultural Experiment Station funds.