making optical glass since 1914, no task approaching the magnitude of the present one had ever been attempted.

After four unsuccessful attempts to obtain a disk of the size required a unique method was developed by the bureau's glass section. Cullet (broken glass of the same composition as the glass to be made) to the amount of 1,000 pounds and 4,600 pounds of sand and chemicals were melted in a single large pot in a gas-fired furnace.

The temperature of the glass when poured on May 7, 1927, was about 1,350° C. For one week the temperature was slowly lowered until it reached 600° C. The glass was held at this point for about four days to allow the temperature of the glass and furnace to become uniform throughout. At 600° C. this particular kind of glass (borosilicate crown) is quite rigid and yet sufficiently viscous to yield to cooling stresses without danger of cracking.

Beginning on May 18 the glass was allowed to cool slowly at an average rate of 2½° C. per day till 460° C. was reached. It was then annealed at this temperature for six weeks, during which time no variation greater than 1° C. was permitted. Final cooling was started on August 30, and room temperature was attained on January 16.

EXPERIMENT STATION OF THE GEORGIA STATE COLLEGE OF AGRICULTURE

THROUGH its president, Dr. Andrew M. Soule, the Georgia State College of Agriculture announces the establishment of an Experiment Station within the institution, this station to be supported *in toto* from the funds of the institution. For several years problems in farm management, fertilization of agronomical crops and fruit plants as well as ecological studies of the horticultural plants have been conducted. As soon after the first of January, 1928, as feasible, full-time research members of the staff will be appointed in the divisions of agricultural chemistry, agricultural engineering, animal husbandry, horticulture, poultry, marketing and home economics.

The experiment station will be in the hands of a committee of which President Andrew M. Soule is chairman. The responsibility for coordinating and general supervision of the experimental work will rest on the secretary of the research committee who has been designated for this position by the board of trustees.

The formation of the experiment station within the Georgia State College of Agriculture will be completed during the year of 1928. There will be ten full-time research members on its staff, and with these will be associated three Purnell workers already at the college in cooperation with the Georgia State Experiment Station.

It is with a great deal of pleasure that the announcement of this experiment station is made, for we feel that the agriculture of Georgia is certain to reap large benefits and profits from the work of these men who will be in a position to put their whole time on solving the problems of Georgia's farms and homes.

T. H. MCHATTON,
Secretary of Research

AWARD OF THE CHARLES REID BARNES LIFE MEMBERSHIP IN THE AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS

AT the recent Nashville meeting, the second award of the Charles Reid Barnes honorary life membership in the American Society of Plant Physiologists was made to Professor Francis E. Lloyd, MacDonald professor of botany in McGill University, Montreal. This form of honorary life membership was inaugurated at the Kansas City meeting, in 1925, in memory of Charles Reid Barnes, who died at Chicago on February 24, 1910, in the midst of an active life. All who worked with Barnes at the University of Wisconsin or at the University of Chicago remember him as an exceptionally inspiring teacher, a man of untiring industry and wonderful ability. Through his publications and especially through his editorial work on the staff of the *Botanical Gazette* from 1882 to the time of his death, as well as through the work of those who received their training in his laboratories, Barnes left a permanent and indelible imprint of his remarkably clear and precise thought upon the whole science of plant physiology.

A Charles Reid Barnes honorary life membership is awarded each year, at the annual meeting of the American Society of Plant Physiologists. The first award was made at the Philadelphia meeting last year, to Burton E. Livingston, professor of plant physiology of the Johns Hopkins University and permanent secretary of the American Association for the Advancement of Science.

Professor Lloyd, who now becomes the second Charles Reid Barnes life member of the American Society of Plant Physiologists, was born in Manchester, England. He attended Lafayette College and Princeton University, receiving the degrees of A.B. and A.M. at Princeton in 1891 and 1895, respectively. He was a student at Munich in 1898, and at Bonn in 1901. He was instructor in biology at Williams College, 1891–92; professor of biology and geology 1892–95, and of biology 1895–97, at Pacific University, Oregon; adjunct professor of biology in Teachers College, Columbia University, 1897–1906. In 1907 he

was connected for a brief period with Harvard University. He was a staff member of the Desert Laboratory, 1906; cytologist of the Arizona Agricultural Experiment Station, 1907; director of the department of investigation of the Continental-Mexican Rubber Co., 1907–08, and professor of botany in the Alabama Polytechnic Institute, 1908–12. Since 1912 he has held the MacDonald professorship of botany at McGill University. He has been a member of a number of scientific expeditions to Mexico, Puget Sound and Alaska, Dominica, Java and Sumatra.

For several years he was editor of *Plant World,* is now an associate editor of the *American Review of Tropical Agriculture,* and a member of the editorial board of *Plant Physiology,* the journal of the American Society of Plant Physiologists. Professor Lloyd has published many contributions in the field of botany, including the comparative embryology of the *Rubiaceae,* the morphology and physiology of the Mexican rubber plant guayule, the physiology of stomata, transpiration, tannin metabolism, fluorescent pigments, colloidal phenomena and the physiology of plant growth. His recent work, employing motion pictures to record the activity of conjugating cells of *Spirogyra* and the habits of *Vampyrella,* on which he has reported at recent meetings of the American Society of Plant Physiologists, has attracted much attention, and has thrown much light on the difficult field of protoplasmic physiology.

Professor Lloyd is a member of many scientific societies in this country and abroad, and is recognized as one of the most able and inspiring teachers and as one of the most distinguished investigators in American plant physiology. The American Society of Plant Physiologists expresses its appreciation of his important contributions in awarding to Professor Lloyd the second Charles Reid Barnes life membership in the society.

The Committee on the award of the first Charles Reid Barnes Life Membership of the American Society of plant Physiologists: Lee M. Hutchins, Walter F. Loehwing, Walter E. Loomis, James S. McHargue, Frank M. Andrews, chairman.

SCIENTIFIC NOTES AND NEWS

THE president and council of the Royal Society decided at their meeting on February 16 to recommend for election into the society the following fifteen candidates: Dr. Gleb V. Anrep, Professor Harry Bateman, Professor Carl Hamilton Browning, Mr. Stanley Smith Cook, Mr. William David Dye, Professor Clinton Coleridge Farr, Professor Major Greenwood, Dr. John William Heslop Harrison, Professor Walter Norman Haworth, Dr. David Keilin, Dr. Finlay Lorimer Kitchin, Dr. Francis Sowerby Macaulay, Professor Samuel Barnett Schryver, Professor Walter Stiles and Professor Robert Whytlaw-Gray.

IN connection with the tercentenary celebration by the College of Physicians of London of the publication of William Harvey's book, "De Motu Cordis," the Earl of Balfour, Sir Ernest Rutherford, Professors Ivan Petrovitch Pavlov and Karl Friedrich Wenckebach are to be made honorary fellows of the college.

DR. HENRY LE CHATELIER, honorary president of the French Society of Industrial Chemistry, has been made an honorary member of the American Society of Mechanical Engineers. The presentation was made on February 28 by Charles M. Schwab at a luncheon at the American Embassy in France.

DR. MICHAEL I. PUPIN, professor of electro-mechanics at Columbia University, was recently given the Washington award by the Western Society of Engineers at Chicago in recognition of his work on long-distance telephony and the radio.

PROFESSOR MAYNARD M. METCALF, of the department of biology of the Johns Hopkins University, has been elected a foreign member of the Société de Biogéographie de Paris.

DR. J. C. TH. UPHOF, professor of botany and head of the department of biology at Rollins College, Winter Park, Fla., has been elected a member of the Deutsche Botanische Gesellschaft.

DR. E. E. SLOSSON, director of Science Service, had conferred upon him the honorary degree of doctor of science at the founders' day exercises at Rollins College on February 20.

ON the occasion of the Washington Birthday celebration at the University of Pennsylvania, the honorary degree of fine arts was conferred upon Dr. R. Tait McKenzie, director of physical education at the university.

AT their annual meeting held on February 8, Dr. Charles Greeley Abbot, secretary of the Smithsonian Institution, was elected director of the Research Corporation of New York, to succeed the late Dr. Walcott.

JULIAN C. SMITH, vice-president and general manager of the Shawinigan Water and Power Company, Montreal, was installed as president of the Engineering Institute of Canada for 1928 at the institute's recent annual convention.

DR. LINSLEY R. WILLIAMS, former deputy commissioner of the State Department of Health, has been elected president of the New York Tuberculosis and Health Association to succeed Dr. James Alexander Miller, who retires after nine years' service.