

respect to maintenance and so on, but must also yield enough income to retire any bonded indebtedness incurred in connection with its construction.

The reason we ask for legislation now is because it is needed in the event we determine to put the completed project before the city for further action.

Tentative plans call for a planetarium similar to the Adler Planetarium in Chicago. It would seat 600 persons. Though admission would be charged until the bonds have been paid, school children would be admitted free at specified times, when they attended as part of their classroom work.

WEATHER STATION ON MT. WACHUSETT

ON this isolated peak in central Massachusetts, 2,018 feet above sea-level, a new meteorological station has been established under the auspices of Blue Hill Observatory, Harvard University, in connection with the work of the International Polar Year. Unlike the Mt. Washington Observatory, however, there will not be resident observers. A meteorograph, designed and built by Professor S. P. Fergusson to run two or three months without attention, is keeping the record of wind direction and velocity, atmospheric pressure, temperature and humidity.

According to a news release of Science Service, permission to install the apparatus in the fire lookout's tower on the top of the hotel on Mt. Wachusett was granted by Everett W. Needham, superintendent of the Wachusett State Reservation. The meteorograph and the exposed elements were prepared and adapted by F. B. Towle and his son, Philip, of Holden, Massachusetts, who will also look after the station weekly.

The wind vane and three-cup anemometer, loaned by the U. S. Weather Bureau, are exposed a few feet above the top of the tower and are connected to the pens which record the wind direction and velocity on the large drum of the meteorograph in the fire-lookout room. Under the eaves of the summit-house tower, the temperature and humidity elements are exposed in a louvered box to protect them from the full force of the gales that beset this summit. A coil of brass and steel is indicating the temperature, while a bundle of 150 strands of child's hair, prepared by Clifford L. Davis, of Worcester, operates the humidity recorder. The motion of these elements is transmitted several feet to the pens on the recorder by means of 100-year-old light wooden connecting rods from an old church organ which are hung on sewing machine needles.

Mt. Wachusett stands alone and is exposed to more or less frequent high winds. Mt. Washington, 127 miles away, is sometimes visible in extremely clear weather, and Blue Hill, 45 miles distant, is also in sight. Ice storms occur quite often. At the beginning of this month, the east side of the hotel was

plastered with almost solid ice, two to three inches thick.

Mt. Wachusett is characterized by a strong edition of the typical ever-changing New England weather. It is intermediate between the arctic character of Mt. Washington and the more temperate weather of Blue Hill, where are the other two mountain and hill top stations of New England. These three stations will help to show how sudden weather changes progress over New England.

ANNUAL REPORT OF THE BROOKLYN BOTANIC GARDEN

THE twenty-second Annual Report of the Brooklyn Botanic Garden records the facts that the garden closed the year without a deficit and with more than \$11,400 added to its permanent endowment fund and with the 1933 budget balanced. The director points out that this accomplishment has been made possible only by the most rigid economies.

During 1932, there was a registered attendance of 1,307,964, which was an increase of more than 200,925 over the preceding year. The registered attendance for May (232,737) was nearly half the attendance for the entire year of 1924. The week-end attendance of May 14 and 15 was 38,804.

4,555 packets of seeds of American wild flowers were supplied to more than 120 gardens in more than 20 foreign countries. The request for these packets of seeds was about 500 in excess of the garden's ability to respond.

During the year, lectures, addresses, informal talks and class exercises reached a total number of 1,762. 780 adults were enrolled in classes and 597 children. Teachers from the public schools brought more than 41,000 pupils to the garden for instruction, and 6,105 teachers were supplied with living plant material and sterilized agar for class work for the instruction of 257,527 pupils. 740 potted plants were placed in the classrooms of public schools and more than 670,000 packets of seeds were supplied to pupils for planting in school and home gardens. The school service of the Brooklyn Garden now extends to all five boroughs of Greater New York.

Progress in the research program of the garden is also recorded covering the subjects of plant pathology, genetics and plant breeding, forest pathology, ecology and systematic botany. Eight research students were registered during the year. Progress in the development and beautifying of the grounds is also recorded.

The library of the garden now has more than 17,450 volumes and more than 30,900 bound pamphlets. The library of the American Fern Society is now deposited there. In contrast to the experience of many organizations and many institutions, the garden re-

ports an increase of new members for 1932 of 97, or 9.3 per cent.

The report includes an urgent plea for an addition of not less than one million dollars to the endowment of the garden in order to care for the increased service which it is being called upon to render to the general public and to botanical science and education.

FELLOWSHIPS OF THE CHARLES LATHROP PACK FOREST EDUCATION BOARD

MAKING its fourth annual award of fellowships for training leaders in forestry, the Charles Lathrop Pack Forest Education Board announces its selection of three American and two Canadian fellows for the year 1933. The fellowships were established to encourage men to obtain advanced training to better qualify them for leadership in forestry and in the forest industries. The successful candidates are:

Walter U. Garstka, instructor in forestry, Penn State Forest School. To make organic analysis of leaf litter, immediately after its fall in the autumn, collected from forests growing on podzolized and brown-earth soils.

Harold R. Hay, graduate student, University of Wisconsin. To make a study of changes in the physical properties and chemical constituency of wood subjected to steam treatments.

John Edward Liersch, junior forester, British Columbia Forest Service. To continue a demonstration begun under Charles Lathrop Pack Fellowship awarded in 1932 regarding the practicability of economic selection in the Douglas fir region.

Nicholas T. Mirov, graduate student, University of California. To make a study of transpiration by different forest cover species with reference to precipitation and to moisture content of the soil.

Louis René Scheult, graduate student, University of Toronto, Toronto. To make a regional study of forest development.

This is the fourth award of fellowships by the board. They are available to Americans and Canadians for further training in the general practice of forestry, in the forest industries, in the teaching of forestry, in forest research, or in the development of public forest policy.

The directors of the board are: Henry S. Graves, dean, Yale Forest School; Samuel T. Dana, dean, School of Forestry and Conservation, University of Michigan; John Foley, forester, Pennsylvania Railroad; William B. Greeley, secretary-manager, West Coast Lumbermen's Association; Arthur Newton Pack, director, Charles Lathrop Pack Forestry Trust; E. O. Siecke, director, Texas Forest Service; Ellwood Wilson, acting professor of silviculture, New York State College of Agriculture; Hugo Winkenwerder, dean, College of Forestry, University of Washington, and Raphael Zon, director, Lake States Forest Experiment Station.

The offices of the board are at 1214 Sixteenth Street, N.W., Washington, D. C., and correspondence should be addressed to Tom Gill, secretary.

SCIENTIFIC NOTES AND NEWS

DR. HENRY NORRIS RUSSELL, research professor of astronomy and director of the observatory at Princeton University, president this year of the American Association for the Advancement of Science, will deliver the Halley Lecture at the University of Oxford on June 1. His subject will be "The Composition of the Stars."

DR. ROBERT A. MILLIKAN, of the California Institute of Technology, has accepted the invitation of Oberlin College to deliver the Centennial Commencement address on June 20. Dr. Millikan was recently reelected alumni trustee for a term of six years; he has served on the Board of Trustees since 1918.

DR. IRVING LANGMUIR, of the General Electric Company, Schenectady, New York, will be made an honorary member of the School of Engineering Alumni Association of Columbia University at the annual dinner on April 26. Dr. Langmuir and Dr. Michael I. Pupin will be the principal speakers.

DR. WALDEMAR LINDGREN, Rogers professor of economic geology and head of the department of geology

at the Massachusetts Institute of Technology, will retire at the end of the academic year.

THE Paris faculty of medicine has conferred the degree of doctor, *honoris causa*, on Professor Sanarelli, director of the Hygienic Institute of the University of Rome.

THE Bessemer Gold Medal of the British Iron and Steel Institute has been awarded to Dr. W. H. Hatfield, director of research in the firm of Messrs. Thos. Firth and John Brown, Ltd., in recognition of his distinguished services in the advancement of metallurgical science.

THE Gold Medal of the British Institution of Mining and Metallurgy, the highest distinction in its power to confer, has been awarded to Sir John Cadman in recognition of his work in the advancement of technical education and the development of the mineral industries, and of his distinguished public services. The following awards have also been made: The Consolidated Gold Fields of South Africa Gold Medal to Mr. Charles Arthur Banks for his paper on