cial attention to the completion of the reconstruction of the main observatory, the establishment of a new laboratory for the study of vitamins and their functioning in the growth of plants, and the addition of more than 45,000 specimens to the herbarium among the achievements of 1938.

Figures collected in various departments indicate that the public had made greater use of the garden in the past year than at any time in recent years. Record crowds have visited the plantings both outdoors and in the newly reopened conservatory, and more people than usual have registered for gardening courses and attended the free Saturday lectures. On a single holiday, for example, 8,500 people viewed the perennial border, while 2,000 strolled through the Thompson Memorial Rock Garden, many of them taking notes on the plants which especially interested them, and on the same day, 2,500 persons walked through the three houses which were then open in the conservatory, examining the collection of cacti and other succulents.

For next year's displays, 2,500 tulips have been planted in the conservatory court, and 7,600 biennials are being raised for later bedding effects there. One hundred new varieties of iris in bearded, bulbous, Japanese and Siberian types, besides 15 natural species, totaling nearly 2,000 plants, are being added. During the past year, the Thompson Memorial Rock Garden has been enriched by 1,300 plants which were propagated by the garden, plus 450 received from other sources. Five thousand new bulbs have been planted there for an additional spring display. In the glade 300 lilies and 150 other plants have been set out for naturalizing. These plantings mark the beginning of the flowering meadow being created there. East of the rock garden, in the woods, a native flower area is being developed, and to this 500 plants were added during the year.

The department of plant pathology, under Dr. B. O. Dodge, has succeeded during the past year in reducing the infections of the Japanese beetle, the gipsy moth and the Dutch elm disease at the garden. Other scientific work includes work in genetics being done under the direction of Dr. A. B. Stout, including the development, in collaboration with the New York Agricultural Experiment Station at Geneva, of hardy seedless grapes for the northeastern states. The work on vitamins and plant growth is being directed by Dr. Robbins himself.

The herbarium, which now numbers 1,933,506 specimens, has been used during the past year by visiting botanists from thirty-four institutions in this country and abroad. In addition, collections of plants have been identified for botanists in eleven foreign countries and thirteen states, and loans have been made for study to the extent of nearly 15,000 specimens, sent to institutions in twenty-one states and seven foreign countries.

The library, under Miss Elizabeth Hall, with Dr. J. H. Barnhart as bibliographer, has been consulted this year by botanists and horticulturists from more than thirty states, territories and possessions and from nineteen foreign countries representing every continent. In addition, students from more than a hundred schools, colleges and institutions have used the library during the year, some for only a day but others for several weeks or longer.

Officers of the New York Botanical Garden, all of whom were reelected at the annual meeting, are Joseph R. Swan, *president;* Henry de Forest Baldwin and John L. Merrill, *vice-presidents;* Henry de la Montagne, *secretary;* and Arthur M. Anderson, *treasurer.* Mrs. Harold I. Pratt was elected to the board on January 12. Dr. E. C. Auchter, chief of the U. S. Bureau of Plant Industry, became a member just before the close of the year.

A CENTER FOR MATHEMATICAL ANALYSIS AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

THE establishment of a center of mathematical analysis to direct the use of new types of calculating machines at the Massachusetts Institute of Technology has been made possible by a grant of $45,000 by the Carnegie Corporation of New York.

The center of mathematical analysis is being founded primarily for the purpose of encouraging and assisting technological advance in all fields by making available to scientific institutions and industry the means of carrying out intricate mathematical processes economically. The center will also carry out an active development program on new machines and the analytic methods of using them.

Recommended by the Committee on Scientific Aids to Learning of the National Research Council, the project includes the organization of a staff to operate the various machines developed at the institute. The program is to be centered in the department of electrical engineering in the new Rogers Building under the direction of Professor S. H. Caldwell.

As the scope of science and engineering has been developed and extended, the problems arising have increased in complexity and the associated mathematical labor has grown proportionately. Ordinary methods of analysis have either failed completely to keep up with this development or have given results only at the expense of much tedious routine computation. By means of the more recently developed types of machines, direct attack on problems is frequently possible and the routine labor is eliminated.

Equipment which will be available for use through

the center of mathematical analysis will include the original differential analyzer and a new, larger, faster and more accurate differential analyzer which is now under development at the institute, both of which make possible the solution of many difficult problems involving differential equations and integrations; the cinema-integraph; the network analyzer; the simultaneous calculator; a group of punched-card machines and miscellaneous types of commercial and special machines.

Organization of the center will be started at once and it is expected to be in operation next fall.

IN HONOR OF HAVELOCK ELLIS

THE following statement commemorating the eightieth birthday of Havelock Ellis on February 2 has been signed among others by Professor John Dewey, of Columbia University, and by Professor Adolf Meyer, professor of psychiatry of the Johns Hopkins University.

Havelock Ellis was born eighty years ago, on February 2, 1859, in Surrey, England, the son of a British seaman, and the last of a long line of English clergymen, mariners and merchants. Though Ellis is known for the wide range of his culture and interests, for his distinction as critic and writer, for his rare personal charm, and for his broad humanity, he will perhaps be best and longest remembered for the work to which, at an early age, he had dedicated his life and energy—that of bringing human sex psychology within the scope of science. His seven monumental volumes of "Studies in the Psychology of Sex" have probably served more than any other single work to bring sex out of the atmosphere of ignorance and prudery into the clear light of science, and will always remain an incomparable critical digest of the scientific knowledge of the subject up to contemporary times.

The scientific study of sex is nowadays accepted almost without question, but the destruction of the old taboos and prejudices was not accomplished without hardship and sacrifice. The appearance of Ellis's first volume of the Studies in 1897 was followed by a prosecution for the distribution of what the judge described as a "filthy publication." The sale of the book was suspended in England, but it is a matter of pride to American scientists that the Studies could thereafter be published in this country. "I am a student," wrote Ellis in his memorable Note on the Bedborough Trial, "and my path has long been marked out. I may be forced to pursue it under unfavorable conditions, but I do not intend that any consideration shall induce me to swerve from it." His life achievement is the best testimony to the success of this early resolve.

We hope that Havelock Ellis will for many years continue to exercise his great and good influence. His life and work remain an inspiration not only to us but to future generations as well.

AWARDS OF THE AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS

AT the annual dinner on February 15 of the American Institute of Mining and Metallurgical Engineers the William Lawrence Saunders Medal for distinguished achievement in mining was presented to Louis Shattuck Cates, copper-mining engineer and president of the Phelps Dodge Corporation. The award to Mr. Cates was "for signal accomplishment in the conception and application of superior mining technique and in the organization and administration of major mining and metallurgical enterprises."

The Robert Woolston Hunt Award was presented to Professor John Chipman, of the Massachusetts Institute of Technology, and Kenneth C. McCutcheon, of the American Rolling Mill Company, Ashland, Ky., for their paper on "Evolution of Gases from Rimming Steel Ingots."

The Institute of Metals Division Award for 1939 was presented to Assistant Professor Frederick N. Rhines and Robert F. Mehl, director of the metal research laboratory, both of the Carnegie Institute of Technology, Pittsburgh. The award was for their paper on "Rates of Diffusion in Alpha Solid Solutions of Copper."

The Alfred Noble Prize, for a paper by an author under 31 years old, was presented to Ralph J. Schilthuis, of the Humble Oil and Refining Company, Houston, Texas, for his paper on "Connate Water in Oil and Gas Sands."

Daniel Cowan Jackling, president of the institute, was toastmaster. Donald B. Gilles was inducted as president of the institute for 1939. The dinner was attended by approximately 1,200 persons.

SCIENTIFIC NOTES AND NEWS

THE seventy-sixth annual meeting of the National Academy of Sciences will be held in Washington on April 24, 25 and 26. The first lecture to be delivered in America under the Pilgrim Trust will be given by Sir William H. Bragg, president of the Royal Society, on Monday evening, April 24, at 8:30 P.M. Dr. Irving Langmuir, of the Research Laboratories of the General Electric Company, gave the corresponding lecture in London on December 28. The Pilgrim Trust, established in England by Edward S. Harkness, provides funds for the exchange of lecturers on alternate years between the National Academy of Sciences and the Royal Society.

DR. FRANK SCHLESINGER, director of the Yale University Observatory, has been elected foreign correspondent of the French Bureau des Longitudes, in succession to the late George Ellery Hale.