and equipment not normally available on the farms within the districts. During the year, Soil Conservation Service demonstration work on privately owned land was continued and expanded. Operations were started on 18 new projects, and 59 demonstration projects were placed on a maintenance basis. At the close of the year, regular operations were being carried forward in 55 demonstration areas. In 111 other areas, erosion control measures were being maintained for continued demonstrations.

These projects, together with the erosion control work areas adjacent to Civilian Conservation Corps camps under technical direction of the Soil Conservation Service, comprised approximately 11½ million acres of privately owned land, and involved the cooperation of over 61,000 farmers and ranchers. Under terms of the cooperative agreements between the farmers and the service, more than 850,000 acres of land originally in cultivation will be converted eventually to uses less conducive to erosion. By the end of the year, 490,000 acres in the demonstration areas had been retired from cultivation and were being developed as permanent pasture, meadow or woodland.

Another development was the extensive spread of erosion control practices from service demonstration areas to outlying farms. Such soil-defence measures as strip cropping, contour tillage and winter cover cropping were adopted on a far wider scale than in any previous year. Land protection by terracing gained support in virtually every state. The service continued to direct an extensive erosion-control and land management program on four large western watershed projects where nearly 80 per cent. of the land is in public ownership. Efforts to reestablish the range cover in these areas were continued. During the year, conservation nurseries furnished 145 million trees and shrubs, mainly for use in demonstration areas; although some were supplied to Federal and state agencies cooperating in erosion control. Over two million pounds of field-crop and grass seed were furnished to cooperating farmers and agencies.

The service continued its program of basic research. By the close of the year, sixteen experiment stations were developing and testing principles and measures for combatting wind and water erosion. A new experimental watershed project was established near Hastings, Nebr., and work was continued at two similar projects near Coshocton, Ohio, and Waco, Texas. At these three watershed research projects, rainfall and stream flow over relatively large areas are being studied in relation to soil erosion and flood control.

EXPANSION OF FACILITIES AT THE WORCESTER POLYTECHNIC INSTITUTE

THE trustees of the Worcester Polytechnic Institute have recently authorized a $1,000,000 building program. However, expansion of the facilities at the college does not mean any increase in the restricted enrolment. The freshman class each year is limited to 180 students.

The first building to be erected will be a student activity center to cost $350,000, including a library and auditorium with a seating capacity of 975. Funds have been given the college as a memorial to a man prominent in the early development of the institute and his name will be given to the building at the time of its dedication. It will be erected on the west campus adjacent to Sanford Riley Hall, the freshman dormitory. Ground will be broken before commencement and the building should be completed by June, 1940.

The program also embraces an addition to Salisbury laboratories, now in construction, and remodeling of the old building, at a cost of $100,000; erection and equipment of a mechanical engineering building, $400,000; refitting the old mechanical engineering laboratories for the civil engineering department, $65,000; erection of a footbridge connecting the east and west campus, relocation of the tennis courts, development of a quadrangle on the west campus and remodeling of Boynton Hall for the use of the department of mathematics and construction of a faculty lounge, $85,000.

Plans for the mechanical engineering laboratory are being prepared and it is expected construction will be started within a year. Erection of this building has been made possible by bequests in the wills of Willard L. Ames, of New York, who was graduated in 1882, and Moses B. Kaven, of Worcester, who received his degree in 1885. Trustees and alumni propose to obtain additional funds for endowment and equipment. It is expected that the entire program will be completed by the opening of the fall semester in 1942.

LABORATORIES OF THE DELAMAR INSTITUTE OF PUBLIC HEALTH AT COLUMBIA UNIVERSITY

THE new laboratories and classrooms of the DeLamar Institute of Public Health of Columbia University will occupy the top three floors of the seven-story city health and teaching center nearing completion at the Presbyterian-Columbia Medical Center, 168th Street and Broadway. The building has been erected through an agreement by the Presbyterian Hospital, the trustees of Columbia University and the Department of Health of the City of New York. Its facilities will enable medical students at Columbia to receive practical training in public health similar to that which they receive in medicine. The laboratories and courses will also be open to physicians, dentists, nurses and graduate students. The plan has been worked out under the general direction of Dr.

John L. Rice, commissioner of health, and has the hearty endorsement of the university.

The first four floors of the building will be used by the city as headquarters for maternal care, child welfare, nursing and other public health services. The center will be one of the few to offer treatment to both tuberculosis and venereal disease patients.

The laboratories and research rooms above will be so equipped that they may be used for any field of research in public health. A model classroom, built to comply with the standard requirements of a public-school classroom in the city of New York, is situated in the southeast corner of the seventh floor. Besides being used for lectures, the room will provide opportunity for research into procedures necessary to protect the health of school children. The fifth floor will contain a laboratory designed specifically for research into diseases caused by industrial occupations and a statistical office where a complete record of the number, kinds and occurrences of various diseases may be kept. The general laboratory for students and research workers will be situated on the sixth floor.

The seventh floor will also house an air laboratory equipped for the study of the various sources of contamination of air in public places. A bacteriological laboratory, on the same floor, will contain all the modern equipment necessary for the study of bacteriology. The offices of Dr. Haven Emerson, executive officer of the institute, and his staff will be connected with individual laboratories completely furnished with chemical, physical and bacteriological facilities for private research. A water laboratory, a sterile room, a machine shop and three laboratories for general research complete the arrangements for the top floor.

There will also be a library, a student lounge and staff accommodations. The ground floor will contain an auditorium and exhibit hall where public health education will be carried on under the direction of the institute and of the Department of Health.

SYMPOSIA IN PHYSICS AT THE UNIVERSITY OF CHICAGO

Two symposia of interest to physicists are to be held at the University of Chicago from June 23 to 30, as follows:

I. *Symposium on Liquids and Polyatomic Molecules,* a joint symposium of the chemistry and physics departments, to be held on June 23 and 24 and on June 26 and 27.

The first part of the symposium is devoted to the liquid state (structure of liquids, viscosity, condensation of liquids, the fusion process, two-dimensional liquids, infrared absorption and hydrogen bonding). The second part includes discussion of visible and ultra-violet spectra of complex molecules, the color of dyes, refractivity, optical activity and liquid and molecular viewpoints in nuclear structure. The speakers include K. F. Herzfeld, B. E. Warren, J. G. Kirkwood, O. K. Rice, F. A. Ogg, Jr., J. E. Mayer, H. Eyring, W. D. Harkins, W. H. Rodebush, L. Pauling, R. S. Mulliken, E. Teller, J. Franck, T. R. Hogness.

II. *Symposium on Cosmic Rays,* June 27 to 30. The subjects to be discussed include:

The Intensity and Absorption of Cosmic Rays.
Geographic and Geomagnetic Effects.
Time Variations of Cosmic Rays.
Composition of Cosmic Rays.
Energy Distribution of Cosmic Rays.
Showers and Bursts.
Mesotrons and Other Heavy Particles.

The expected participants include:

P. Auger from Paris; W. Bothe and W. Heisenberg from Germany; P. M. S. Blackett and B. Rossi from England; J. Clay from Holland; G. Herzog from Switzerland; C. Anderson, V. F. Hess, T. H. Johnson, R. A. Millikan, W. F. G. Swann and M. S. Vallarta from elsewhere in the United States, and A. H. Compton, W. P. Jesse, M. Schein and V. Wilson from Chicago.

SCIENTIFIC NOTES AND NEWS

FIVE members of the Rockefeller Institute for Medical Research, all of them members of the National Academy of Sciences and two of them Nobel laureates, having reached or passed the age of sixty-five years, are retiring from active work. These are Dr. Alexis Carrel, who announced his retirement a year ago; Dr. Florence R. Sabin, who retired early this year; Dr. Karl Landsteiner; Dr. Phoebus A. Levene and Dr. Winthrop J. V. Osterhout. The mandatory retirement rule is being enforced in all organizations with which the Rockefeller foundations are connected. It is stated that pensions will be given and that every laboratory facility will be provided to enable those who retire to continue their research work on their own responsibility if they desire to do so.

PORTRAITS of ten past presidents of the Explorers Club, New York City, were unveiled on April 9. These were Rear Admiral Robert E. Peary, General A. W. Greely, Dr. Frederick A. Cook, General David L. Brainard, Carl E. Akeley, Vilhjalmur Stefansson (present president), George G. Heye, James B. Ford, Roy Chapman Andrews and Dr. Walter Granger.

A NEW Hall of Optical Science, part of the Division of Light, Vision and Optics, was opened on April 20 at the New York Museum of Science and Industry in