

reported that it would be a highly desirable location for the establishment of a central oyster laboratory for the area. The transfer was accordingly requested by the Bureau of Fisheries.

With the completion of special studies on the mortality of oysters in Apalachicola Bay, a temporary laboratory which was set up in 1935 on the shores of Indian Pass, about twenty-eight miles from the city of Apalachicola, has been moved to Pensacola. Indian Pass was found to be unsatisfactory for general studies of oyster culture because of the extreme variations in the salt content of the water and the large amount of silt.

Pensacola Bay provides especially favorable conditions for oyster cultural studies because the water is clear and there are no fresh-water streams in the vicinity so that the salinity may be expected to remain fairly constant. Under the direction of Dr. A. E. Hopkins the reactions of oysters to natural conditions in the Gulf area will be investigated, and various methods of culture will be tested on natural beds and in selected areas where conditions can be controlled. At some future time experimental beds may be established in other bays along the Florida coast for local testing of principles developed at the central laboratory. It is expected that the findings at the Pensacola station will be of practical application along the entire eastern Gulf area.

The new biological station may also be used as headquarters for investigations of other branches of the marine fisheries, including shrimp, shore fishes and the important reef fisheries.

GRANTS FOR RESEARCH ON INFANTILE PARALYSIS

A REPORT by Keith Morgan, national treasurer of the birthday ball celebrations of President Roosevelt that were initiated on behalf of the work of the Georgia Warm Springs Foundation, Inc., for infantile paralysis, is summarized in *The New York Times*. It is stated that the foundation has benefitted to the extent of \$1,350,030 since the first birthday ball was held.

Mr. Morgan reported that in 1934 the birthday balls and other benefits yielded \$1,003,030, which was given to the Georgia Warm Springs Foundation and was divided by the President into three funds.

A fund of \$100,000 was established to stimulate and further meritorious work in the field of infantile paralysis elsewhere than at Warm Springs. Of the 1934

total, \$650,000 was given to the Warm Springs Foundation to further its work. A fund of \$253,030 was set aside for building, maintenance and contingencies of the foundation.

The Georgia Warm Springs Foundation received none of the receipts of 1935 which were divided on a basis of 70 per cent. remaining in the local communities where it was raised and 30 per cent., amounting to about \$241,000, granted to fourteen universities and one research laboratory for poliomyelitis research investigation.

This fund was used to finance work on serums, nasal sprays, experiments with vitamin C and sex hormone feeding and other methods of protecting the public against infantile paralysis. It allocated on recommendations of a medical advisory committee, consisting of Dr. George W. McCoy, of the United States Public Health Service; Dr. Donald Armstrong, of the Metropolitan Life Insurance Company; Dr. Max M. Peet, professor of neurological surgery at the University of Michigan, and Dr. Thomas M. Rivers, of the Rockefeller Institute. The grants were as follows:

Stanford University (Professor E. W. Shultz), \$30,000; University of Southern California (Dr. John F. Kessel), \$25,000; University of California (Dr. Karl F. Meyer), \$10,000; University of Chicago, Department of Surgery (Dr. Paul Harmon), \$8,000; University of Chicago (Dr. Edwin H. Lennette), \$3,000; Yale University (Dr. John R. Paul and Dr. James D. Trask), \$10,000; Harvard University (Dr. W. Lloyd Aycock), \$17,800; University of Michigan Medical School (Dr. Max M. Peet), \$2,000; the Johns Hopkins University (Dr. Lewis H. Weed), \$15,000; Long Island College of Medicine (Dr. Sidney D. Kramer), \$20,000; New York University (Dr. William H. Park), \$64,000; College of Physicians and Surgeons (Dr. Claus W. Jungeblut), \$5,000; Health Research, Inc., Bureau of Laboratories, New York City (Dr. Ralph S. Muckenfuss), \$10,000; University of Pennsylvania (Dr. Joseph Stokes, Jr.), \$12,500; Western Reserve University (Dr. John A. Toomey), \$2,100; University of Wisconsin Medical School (Dr. Paul F. Clark), \$6,600.

The fund of \$241,000 has now been expended. In New York City 70 per cent. of the total amount for 1936 was distributed among twelve hospitals, orthopedic institutions and other charitable organizations. In 1937 the sum of \$51,319 was given to New York City, the national committee received \$28,476, and \$22,843 was retained for local distribution.

SCIENTIFIC NOTES AND NEWS

THE annual meeting of the British Association for the Advancement of Science will be held at the University of Cambridge from August 17 to 24, under the presidency of Lord Rayleigh. The following sectional

presidents have been appointed: Mathematical and Physical Sciences, Dr. C. G. Darwin; Chemistry, Professor C. S. Gibson; Geology, Professor H. H. Swinerton; Zoology, Dr. S. W. Kemp; Geography, Pro-

fessor T. Griffith Taylor; Economics, R. F. Harrod; Engineering, Professor R. V. Southwell; Anthropology, Professor V. Gordon Childe; Psychology, Dr. R. H. Thouless; Botany, Professor W. Stiles; Education, John Sargent; Agriculture, Professor R. G. Stapledon.

DR. FRANK BALDWIN JEWETT, president of the Bell Telephone Laboratories and vice-president of the American Telephone and Telegraph Company, will receive the Washington Award of the Western Society of Engineers for 1938. This award has been given annually since 1919 to "the engineer whose work has contributed most to human progress." Previous recipients include Herbert Hoover, Michael Pupin, Orville Wright and F. G. Cottrell.

PORTRAITS were unveiled at Columbia University on January 13 of Dr. Herbert E. Hawkes, since 1910 professor of mathematics and since 1918 dean of Columbia College, and of Dr. Cassius J. Keyser, who retired in 1927 with the title of Adrain professor of mathematics emeritus. The paintings were accepted by President Nicholas Murray Butler on behalf of the university. The portrait of Dean Hawkes, painted by Kendall Saunders and donated by a group of his friends, was formally presented by Dr. Frederick P. Keppel, president of the Carnegie Corporation. Dr. Harry J. Carman, professor of history, representing the donors, gave a small replica of the painting to Dean Hawkes. The presentation of the portrait of Professor Keyser, painted by Mrs. H. E. Ogden-Campbell, was made by Dr. George B. Pegram, dean of the Graduate Faculties. It was the gift of Mrs. Keyser.

A DINNER meeting in honor of Professor Russell H. Chittenden, emeritus professor of physiological chemistry at Yale University and director of the Sheffield Scientific School from 1898 to 1922, will be given during the fifth annual meeting of the American Institute of Nutrition to be held at the Southern Hotel, Baltimore, on March 30. Officers of the society for 1937-38 are: Mary Swartz Rose, *president*; E. V. McCollum, *vice-president*; G. R. Cowgill, *treasurer*; I. G. Macy, *secretary*; C. A. Elvehjem, P. E. Howe and L. A. Maynard, *councillors*.

A DINNER in honor of the eightieth birthday of Dr. Bernard Sachs, neurologist of New York City, which occurred on January 2, was given on January 8 by John S. Burke, president of the Altman and Friedsam Foundations. The guests included the trustees of the two foundations and representatives of the Academy of Medicine, Mount Sinai Hospital and civic organizations with which Dr. Sachs has been connected. Dr. Foster Kennedy was toastmaster, and speeches were made by Dr. William E. Grady, associate superintendent of schools; Dr. John H. Finley, editor of *The New York Times*, George Blumenthal and Mr. Burke,

who presented to Dr. Sachs an engrossed testimonial autographed by the guests.

DR. FRANK M. ANDREWS, of the department of botany of Indiana University, has been named the fifth patron of the American Society of Plant Physiologists. The Charles Reed Barnes life membership in the society, awarded annually to "an outstanding plant physiologist," was given to Dr. H. L. Shantz, formerly president of the University of Arizona, now with the U. S. Department of Agriculture.

W. G. A. ORMSBY GORE has been elected president of the National Museum of Wales for the next five years, succeeding the Earl of Plymouth.

THE Genetics Society of America elected the following officers at the Indianapolis meeting: *President*, L. J. Stadler, U. S. Department of Agriculture and the University of Missouri; *Vice-president*, M. Demereč, Carnegie Institution of Washington, Cold Spring Harbor; *Secretary-Treasurer*, E. W. Lindstrom, Iowa State College.

OFFICERS of the Philosophical Society of Washington for 1938 have been elected as follows: *President*, N. H. Heck; *Vice-presidents*, F. G. Brickwedde and R. E. Gibson; *Corresponding Secretary*, W. G. Brombacher; *Recording Secretary*, H. E. McComb; *Treasurer*, H. F. Stimson.

At the December meeting of the Sigma Xi Club of the University of Denver, Dr. Clarence M. Knudson, professor of chemistry, was elected president, and Dr. Margaret Fuller Boos, associate professor of geology, was elected secretary-treasurer.

DR. CARL R. FELLERS, research professor of food technology at the Massachusetts State College, has been elected president of the newly organized chapter of the Society of the Sigma Xi at the college. Other officers are: Dr. Walter S. Ritchie, head of the department of chemistry, *vice-president*; Dr. Henry VanRoekel, chief of the laboratory for poultry disease control, *secretary*, and Dr. Charles P. Alexander, acting head of the department of entomology, *treasurer*. The nominating committee consists of Fred J. Sievers, director of the Experiment Station; Dr. J. E. Fuller, research professor of bacteriology; Dr. W. H. Davis, assistant professor of botany; Dr. C. E. Gordon, head of the division of physical and biological sciences, and Dr. C. R. Fellers, *ex-officio*.

DR. ALDO CASTELLANI has been appointed visiting professor in the newly established department of preventive medicine and public health in the School of Medicine of the State University of Louisiana.

THE board of trustees of Princeton University has appointed incumbents of two newly established endowed professorships, in each instance of present

members of the faculty. Professor Clodius Harriss Willis has been made Arthur LaGrand Doty professor of electrical engineering, and Associate Professor Allen Goodrich Shenstone has been promoted to the 1909 professorship of physics.

DR. ROBERT A. MILLIKAN, of the California Institute of Technology, has been appointed chairman of the board of trustees of the Huntington Library and Art Gallery at Marino, Calif. He succeeds the late Henry M. Robinson, a banker of Los Angeles. An advisory committee has been formed to assist in administering the affairs of the library. Besides Dr. Millikan, the present trustees of the library and gallery are Herbert Hoover, Archer M. Huntington, George Ellery Hale and William B. Munro.

At the annual meeting of the Board of Trustees of the American Museum of Natural History, Robert Woods Bliss, formerly United States Ambassador to Argentina, and Dr. William Procter, Bar Harbor, Me., president of the Biological Survey of the Mount Desert Region, were elected trustees. The present officers of the museum were reelected. These are: Dr. F. Trubee Davison, *president*; J. P. Morgan, *first vice-president*; Cleveland E. Dodge, *second vice-president*; E. Roland Harriman, *treasurer*, and Mr. Hay, *secretary*.

DR. GERALD WENDT, director of the American Institute of the City of New York, has been appointed by Grover A. Whalen, president of the New York World's Fair Corporation, to draw up a plan for coordinating the scientific displays. Mr. Whalen is reported to have said: "We do not intend to tell one chapter of the story of science in one single building. Rather we intend to disclose the whole story of modern scientific research, as far as is practicable, by adding a working scientific display in connection with every major exhibit."

DR. RALPH W. G. WYCKOFF, of the department of animal and plant pathology of the Rockefeller Institute of Medical Research at Princeton, N. J., has accepted a position with the Lederle Laboratories at Pearl River, New York.

DR. LEWIS A. CONNER, professor of clinical medicine at the Cornell University Medical College, New York, has retired as editor of the *American Heart Journal* after having served since the establishment of the journal in 1925. Dr. Fred M. Smith, professor of the theory and practice of medicine of the College of Medicine of the State University of Iowa, will succeed him. Associate editors are: Drs. Horace M. Korns, Iowa City; Hugh McCulloch, St. Louis, and Irving S. Wright, New York.

DR. THOMAS DOWNING KENDRICK has been appointed keeper of the Department of British and

Medieval Antiquities at the British Museum, London, in succession to Reginald Allender Smith, who retired on January 4.

SCIENCE SERVICE reports that delegates to the Supreme Soviet of the Union of Soviet Socialist Republics include the biochemist, A. N. Bakh, a member of the Academy of Sciences of the U.S.S.R., elected from the Stalinogorsk electoral area of the Tula region; Professor Nikolai N. Burdenko, surgeon, already a member of the Moscow Soviet; T. D. Lysenko, plant scientist representing the Novo-Ukrainsky electoral area; Alexey Stakhanov, inventor of the production-rationalization system that bears his name, from a district in the Donetsk Basin; Ivan Dmitrievich Papanin, chief of the four Russians camped on a Polar ice floe, elected from the Petrozavodsk electoral area in Karelia.

Nature reports that Dr. B. L. Bhatia, formerly assistant professor of zoology at the Government College, Lahore, later principal of the Government College, Hoshiarpur, and author of works on Ciliophora and Sporozoa in the Fauna of British India series, has established "The Science Press of India" as a science news agency for the daily press in that country.

DOUGLAS MARSLAND, of the department of biology of New York University, has leave of absence beginning on February 1. He plans to work at the Naples Zoological Station.

DR. JOHN FITCH KING, formerly of Munich, head of the department of chemistry of Williams College, has received a grant from the Oberlaender Trust and is now in Germany studying methods of training for the professional fields of science and the newer scientific work being done in Germany. Dr. King will carry on work chiefly at the Kaiser Wilhelm Institute for Chemistry at Berlin-Dahlem.

THE address of the retiring president of the Philosophical Society of Washington was delivered on January 15 by Dr. Frank Wenner, physicist of the National Bureau of Standards. His subject was "Time Measurements."

DR. E. V. COWDRY, professor of cytology at Washington University, St. Louis, lectured on January 12 at the Faculty Woman's Club of the Iowa State College on "Science Shapes the Future" and before the Graduate Faculty of the college on "Cellular Pathology." On February 7 he will speak at the Naval Medical School, Washington, D. C., on "The Problem of Leprosy."

DR. GEORGE H. ASHLEY, state geologist of Pennsylvania, gave an illustrated lecture before the Lancaster, Pa., Branch of the American Association for the Ad-

vancement of Science on the evening of January 20. The title of his lecture was "How Old is Man?"

PROFESSOR EMIL T. WITSCHI, of the department of zoology of the State University of Iowa, will be the guest of the Iowa State College Chapter of Sigma Xi on January 26. He will address the society on "Hormones in Development and Evolution."

THE two hundred and nineteenth regular meeting of the American Physical Society will be held at Columbia University on Friday and Saturday, February 25 and 26, as a joint meeting with the Optical Society of America. The preliminary arrangements of the program include a joint session with the Optical Society of America in a symposium on "The Optical Properties of Metals" at which the speakers will be Professor L. A. DuBridge, University of Rochester; Professor J. B. Nathanson, Carnegie Institute of Technology, and Professor H. A. Bethe, Cornell University. In addition there will be a lecture on "The Debt of the

World to Optical Science" by Dr. Harlow Shapley, director of the Harvard College Observatory. This lecture will initiate the Adolph Lomb memorial lecture-ship established by the Optical Society of America. A meeting on April 28 to 30 will be at Washington, D. C., and the June meeting will be on the Pacific coast.

A \$500,000 trust endowment for agricultural research has been established for the Michigan State College by the Horace H. Rackham and Mary A. Rackham fund. The first utilization of the fund will be the financing of study in the development of industrial uses for farm waste products. A board of trustees to administer the fund consists of Dr. Robert S. Shaw, president of the college; V. R. Garner, director of the Experimental Station; Hudson McCarroll, head of the chemical and metallurgical laboratories of the Ford Motor Company at Dearborn; Michael M. Gorman, editor of the *Flint Journal*, and Dexter Horton, of Ann Arbor.

DISCUSSION

POVERTY OF HUMAN REQUISITES IN RELATION TO INHIBITION OF PLANT DISEASES

THE writer spent the early spring to late fall of 1936 in Turkey (Asia Minor), exploring for certain plants under the auspices of the Division of Plant Exploration and Introduction, U. S. Department of Agriculture. In connection with seed collecting, surveys of vegetable plant diseases were made in different parts of the country. While making these notes it was interesting to find a marked absence of certain plant diseases in gardens of some villages. Occasionally it was possible to repeat visits to the same localities a number of times, and in places additional information was secured from Europeans and Americans living there. The conclusions reported in this paper are the result of only one season's observations, but it is believed they deserve to be published.

Diseases of cultivated vegetables occurred commonly in some localities, while in others they were apparently rare. In a few districts because of the nature of the terrain, gardening was possible only in restricted areas where irrigation and cultivation could be carried on, so that the garden spots were very old. Wild plants growing outside of disease-free gardens were found with leaf spots and other fungus and bacterial infections, which indicated that some condition other than climate was probably effective in the phenomenal freedom from plant diseases in the gardens.

It appeared that, in general, the vegetables most nearly disease-free were growing in regions where there was a serious lack of certain natural resources. This was, of course, reflected as human poverty result-

ing in a vicious circle which in turn put its stamp on gardening operations. Places where healthy vegetables were so commonly produced were, for example, in sections where, judging from findings of archeological students, ancient civilizations had once flourished but had long since become much reduced. In such regions sufficient crops to support life for a limited number of human beings had been grown since prehistoric times. In many instances the mode of life of the growers was very simple and the material possessions minimized, a condition which the present Turkish government is evidently taking steps to alleviate. Apparently this economy of scarcity had become a stabilized condition that had existed for so long that it was taken as "the Will of Allah" by the peasantry, and they governed their living practices accordingly.

It appeared that people living under the difficulties obtaining in certain regions planned to produce their own seeds, to eat everything they grew and to feed their camels and asses every possible green leaf that was grown but not fit for human consumption. Fuel was at a premium in a number of the regions, and manure of animals was collected and dried for this purpose. In village gardens, workers were observed digging roots of harvested vegetables, which then were dried for fuel or fodder. The common method of fertilization of the gardens was the use of night soil mixed with ashes from the cooking and heating fires of dried animal dung.

Since rainfall was slight in many of the sections and water available for irrigation with primitive methods was meager and somewhat seasonal, the smallest amount was required to go the longest way. These