work is expected to require about two months, ending in September.

THE AMERICAN ACADEMY OF ARTS AND SCIENCES

AT the annual meeting of the American Academy of Arts and Sciences, held on May 9, at its house in Boston, the following new members were elected in the scientific classes:

FELLOWS

Class I—Mathematical and Physical Sciences

Franzo Hazlett Crawford, Harvard University
Otto G. C. Dahl, Massachusetts Institute of Technology
Chester Laurens Dawes, Harvard University
Jacob Pieter Den Hartog, Harvard University
Griffith Conrad Evans, Rice Institute, Texas
Jerome Clark Hunsaker, Massachusetts Institute of Technology
Louis Williams McKeehan, Yale University
Donald Howard Menzel, Harvard University
Harry Rowe Mimno, Harvard University
Edward Leyburn Moreland, Boston
Philip McCord Morse, Massachusetts Institute of Technology
Leigh Page, Yale University
Leighton B. Smith, Massachusetts Institute of Technology
John Hasbrouck Van Vleck, University of Wisconsin
David Elbridge Worrall, Tufts College

Class II—Natural and Physiological Sciences

Edgar Anderson, Harvard University
Clarence Gordon Campbell, New York City
Sterling Price Fergusson, Blue Hill Observatory
Cyrus Hartwell Fiske, Harvard University
John Farquhar Fulton, Yale University
Hudson Hoagland, Clark University
Henry Jackson, Jr., Harvard University
Donald Forsha Jones, Connecticut Agricultural Station
Leroy Matthew Simpson Miner, Harvard University
Walter Harry Newhouse, Massachusetts Institute of Technology
William Carter Quinby, Harvard University
Alfred Newton Richards, University of Pennsylvania
Oscar Riddle, Cold Spring Harbor, N. Y.
Carl-Gustaf Arvid Rossby, Massachusetts Institute of Technology
Arthur Hiler Ruggles, Providence, R. I.
Edmund Ware Sinnott, Columbia University
Gilbert Morgan Smith, Stanford University

FOREIGN HONORARY MEMBERS

Ronald Aylmer Fisher, London
Archibald Vivian Hill, London
Arthur Holmes, Durham, England
Paul Janet, Paris
Luigi Lombardi, Rome
Richard Willstätter, Munich

The following officers were elected for the year 1934–1935:

President, George Howard Parker
Vice-President for Class I, James Flack Norris
Vice-President for Class II, Walter Bradford Cannon
Vice-President for Class III, Edwin Francis Gay
Vice-President for Class IV, Arthur Stanley Pease
Corresponding Secretary, Tenney Lombard Davis
Recording Secretary, Walter Eugene Clark
Treasurer, Ingersoll Bowditch
Librarian, Alfred Church Lane
Editor, Robert Payne Bigelow

THE MEDAL MEETING OF THE FRANKLIN INSTITUTE

THE medal meeting of the Franklin Institute was held on the afternoon of May 16 and in the evening a dinner was given in honor of the medalists.

Franklin Medals with certificates of honorary membership were presented to Dr. Henry Norris Russell, research professor of astronomy at Princeton University and director of the observatory, for his "pioneer work in the application of physical theories to astronomical problems," and to Dr. Irving Langmuir, associate director of the Research Laboratories of the General Electric Company at Schenectady, "in recognition of his investigations in physics and chemistry." Dr. Russell spoke on "The Atmospheres of the Stars" and Dr. Langmuir on "The Mechanical Properties of Monomolecular Oil Films."

The other awards were:

The Longstreth Medal, William Edwin Sykes, Buffalo, New York.

The Wetherill Medals, Dr. Johann B. Ostermeier, Augsburg, Germany; Dr. E. Newton Harvey, Princeton University, and Alfred Lee Loomis, Tuxedo Park, New York.

The Levy Medal, Dr. Kenneth T. Bainbridge, Cambridge, England.

The Potts Medal, Ernst Georg Fischer, Washington, D. C.

The Cresson Medals, Stuart Ballantine, Boonton, New Jersey; Union Switch and Signal Company, Swissvale, Pennsylvania.

Certificates of Merit, Albert Allen, Winchester, Massachusetts; Joseph Grundy Shryock, Philadelphia.

SCIENTIFIC NOTES AND NEWS

DR. GEORGE CARY COMSTOCK, director emeritus of the Washburn Observatory and professor of astronomy in the University of Wisconsin, formerly dean of the Graduate School, died on May 11 in his eightieth year.

DR. HARLOW SHAPLEY, of the Harvard College Observatory, delivered the George Darwin Lecture before the Royal Astronomical Society on May 11. At the conclusion of the lecture, Professor F. J. M. Stratton, professor of astrophysics at the University

of Cambridge, presented to Dr. Shapley the gold medal of the society for his work on "one of the major problems of the universe," and also for his earlier researches on variable stars. Dr. Edwin P. Hubble, of Mount Wilson Observatory, then reciprocated the honor paid to Dr. Shapley by presenting the Bruce Medal of the Astronomical Society of the Pacific to Dr. Alfred Fowler, professor of astrophysics at the University of London and Yarrow research professor at the Royal Institution. Dr. Hubble expressed the appreciation of American astronomers for Dr. Fowler's work on solar and stellar spectra.

THE medal of the American Institute of Chemists, presented annually "for noteworthy and outstanding service to the science of chemistry and the profession of chemistry in America," has been awarded this year to Dr. James Bryant Conant, president of Harvard University. The award is made in recognition of Dr. Conant's many contributions to the science of chemistry and for his eminence as a professional chemist. The medal will be presented to Dr. Conant at the annual meeting of the American Institute of Chemists, on May 21. Dr. Hans T. Clarke, professor of biological chemistry at Columbia University, has been selected to make the presentation. Dr. John H. Finley, of *The New York Times,* will be among the speakers of the evening.

THE Herty Medal, given annually by the Chemistry Club of the Georgia State College for Women at Milledgeville for "the most outstanding research in chemistry in the southeastern states" was awarded this year to Dr. Charles H. Herty, for his work on the use of Georgia slash pine in the manufacture of paper. The presentation took place on May 5, at a meeting of the Georgia Section of the American Chemical Society. Dr. J. Sam Guy, of Emory University, made the presentation to Dr. Herty, who responded. In his address in the evening Dr. Herty gave an account of the work on which the award was based.

AT the recent meeting of the American Mathematical Society in Chicago, the dinner program was in honor of Emeritus Professor Thomas F. Holgate, of Northwestern University, and Emeritus Professor Herbert E. Slaught, of the University of Chicago. Each had been secretary of the Chicago Section of the society for a ten-year period and each had served his university continuously for more than forty years. Professor Slaught had been made honorary president for life of the Mathematical Association of America, at its previous Cambridge meeting. Addresses were made by Professors F. R. Moulton, L. E. Dickson, D. R. Curtiss, G. A. Bliss and W. C. Graustein, and Professor Holgate and Professor Slaught responded.

JOSIAH K. LILLY, of Indianapolis, was elected honorary president of the American Pharmaceutical Association following the dedication of the new building of the association on May 9.

SIR RICHARD STAWELL, honorary consulting physician to the Melbourne Hospital and Children's Hospital, Melbourne, has been nominated as president of the British Medical Association for 1935–36. The annual meeting of the association will be held at Melbourne next year, and in 1936 at Oxford. An invitation has been received to hold a future annual meeting, preferably after 1940, in South Africa. Lord Dawson of Penn and Sir Henry Brackenbury, chairman of the council, have been elected vice-presidents of the association.

PROFESSOR GEORGE GAMOW, of the Leningrad Polytechnical Institute, will be the foreign visiting member at the twelfth annual physics symposium during the summer session of the University of Michigan. Professor J. Robert Oppenheimer, of the California Institute of Technology, will be the American visiting member.

DR. ALEXANDER H. PHILLIPS, chairman of the department of geology at Princeton University, will retire from active service in June, but will continue as lecturer in geology.

DR. E. H. BARBOUR will retire in June as head of the department of geology at the University of Nebraska, after serving for forty-three years. He will retain the directorship of the University Museum and will also hold the title of professor of paleontology. Dr. Barbour will be succeeded by Professor E. F. Schramm. Professor Schramm has been a member of the department of geology since 1908 and professor of geology since 1918. Dr. A. L. Lugn, who became a member of the faculty in 1927, was recently promoted from an assistant professorship to an associate professorship of geology.

AT the annual meeting of the American Association of Physical Anthropologists, held in conjunction with the American Society of Mammalogists, from May 8 to 10, at the American Museum of Natural History, the following were elected officers of the society: Professor Raymond Pearl, *president;* Dr. H. L. Shapiro, *secretary-treasurer;* Professor T. Wingate Todd, *member of the executive committee.*

OFFICERS of the Association of American Physicians were elected at the Atlantic City meeting as follows: Dr. Henry A. Christian, Hersey professor of the

theory and practise of physic at Harvard University, *president;* Dr. Rollin T. Woodyatt, professor of medicine at the Rush Medical College of the University of Chicago, *vice-president,* and Dr. James H. Means, Jackson professor of clinical medicine at the Harvard Medical School, *secretary.* Dr. Louis Hamman, associate professor of medicine at the Johns Hopkins University, was chosen *councilor.*

DR. WILLIAM FOGG OSGOOD, Perkins professor of mathematics, *emeritus,* at Harvard University, has accepted an invitation to join the department of mathematics at the National University of Peking. He expects to sail early in August.

DR. ALFRED C. REDFIELD, professor of physiology, has been appointed director of the Biological Laboratories of Harvard University, a post created to make more effective the consolidation of the departments of botany, zoology and general physiology into a department of biology.

AS the first incumbents of a series of exchange professorships between the Massachusetts Institute of Technology and other educational institutions, Professor Harold L. Hazen, of the department of electrical engineering, has been appointed to serve next year as a member of the faculty of the Ohio State University, and Professor J. F. Byrne, of the electrical engineering department of the Ohio State University, will spend the coming year at the institute.

PAUL W. CHAPMAN has been appointed dean of the Georgia College of Agriculture, relieving H. P. Stuckey, who continues as director of the station.

H. P. BARSS, professor of botany and plant pathology and plant pathologist in the Oregon College and Station, has been appointed principal botanist.

DR. FRANK H. LATHROP has been appointed entomologist at the Maine Agricultural Experiment Station to succeed the late Dr. Clarence R. Phipps.

DR. WILLIAM H. F. WARTHEN, for ten years director of the Bureau of Child Welfare, has been appointed assistant commissioner of health of the Baltimore City Health Department, succeeding the late Dr. John Frederick Hempel.

DR. JACOB G. LIPMAN, dean of the College of Agriculture and director of the New Jersey State Agricultural Experiment Station, has been given a year's leave of absence from Rutgers University, beginning on July 1. Dr. Lipman will direct an inventory of the soil fertility resources of the United States to be made by the U. S. Department of Agriculture. The inventory will aim to provide a more accurate basis for the determining of national policies "on the use of land for agriculture, forests, recreation and other purposes, and to point the way to a more effective conservation of the plant food resources of soils."

DR. HOWARD E. SIMPSON, professor and head of the department of geology and geography of the University of North Dakota and state geologist, has been appointed by Secretary Ickes to conduct a study of ground water fluctuations in North Dakota, the eastern portions of South Dakota, Nebraska and Kansas, and the western portions of Minnesota, Iowa and Missouri. The work will be done under the supervision of the Mississippi Valley Committee of the Federal Emergency Administration of Public Works. The study forms a part of the general investigation of rainfall, run-off and ground water conditions now being conducted by the U. S. Geological Survey and other agencies under a recent Public Works Administration allotment, looking toward a relief of the water problem in the northwestern states.

DR. GEORGE A. HULETT, professor of physical chemistry at Princeton University, has leave of absence next year for the second term.

DR. HARRY STEENBOCK, professor of agricultural chemistry at the University of Wisconsin, and Dr. E. M. Nelson, of the Vitamin Testing Laboratory of the Bureau of Chemistry and Soils of the U. S. Department of Agriculture, have been invited to represent the United States before the Permanent Commission on Biological Standardization of the League of Nations at a conference to be held in London, from June 12 to 14.

DR. ANTON J. CARLSON, Frank P. Hixon professor of physiology and chairman of the department of physiology at the University of Chicago, delivered the annual Frederick A. Packard memorial lecture of the Philadelphia Pediatric Society on April 10, on "The Mechanism of Appetite, Hunger and Thirst."

DR. OSKAR BAUDISCH, of Yale University, formerly of the University of Zürich and the Rockefeller Institute, addressed the Priestley Club of the department of chemistry and chemical engineering of the University of Pennsylvania on May 3. His subject was "Active Iron—its Chemical and Biological Aspects."

DR. A. O. LEUSCHNER, professor of astronomy at the University of California, was recently a guest of the Sigma Xi Club of the University of Denver. He spoke on "Effective Research" at a luncheon given in his honor.

DR. C. H. ANDREWS delivered the Oliver-Sharpey lectures of the Royal College of Physicians on May 1 and 3 on "Viruses in Relation to the Etiology of Tumors" and Professor O. L. V. S. de Wesselow will

deliver the Croonian Lectures on June 5, 7 and 12, on "Arterial Hypertension."

THE sixteenth annual meeting of the New Hampshire Academy of Science will be held on Friday and Saturday, June 1 and 2, at the Hancock Hotel, Hancock, New Hampshire, under the presidency of Samuel P. Hunt, of Manchester.

THE American Dairy Science Association will hold its annual meeting at Cornell University and the New York State Agricultural Experiment Station at Geneva from June 26 to 28. The first two days will be spent at Ithaca and the third day at Geneva. Formal programs will be presented at both places.

BY the will of the late William H. Welch, his medical, scientific and literary books with medals go to the Johns Hopkins University. These include a rare collection of medical portraits and pamphlets, to be dedicated preferably to the Institute of the History of Medicine and the School of Hygiene and Public Health. The university is to make a selection from these gifts. Should there be any the university does not desire, the rejected part of the collection will go to Alexander G. Wolcott, a grandnephew. The residue of the estate is divided into four parts, one part to be given to the Johns Hopkins Endowment.

THE $25,000 gift to the Long Island College of Medicine from the Misses Jennie A. and Cornelia Donnellon has been utilized, according to their wishes, in the purchase of their former residence adjoining the college and in equipping it as a student recreation center. The basement has been converted into a cafeteria; the first floor consists of lounge rooms and card room; the second and third floor of study and game rooms.

A TRUST fund of approximately $200,000 has been created by anonymous donors to be used over a period of ten years for the establishment and maintenance of a department for research into the causes and cure of cancer in the Hebrew University at Jerusalem. Part of the available funds will be used for the erection and adequate equipment of special laboratories.

J. D. WATSON has given to the University of Georgia a tract of 609 acres, including Watson Springs, to establish a research station in animal husbandry and forestry.

A COLLECTION of 835 ethnological specimens from the Pacific islands of the Melanesian and Polynesian groups has been presented to the Field Museum, Chicago, by Templeton Crocker of San Francisco.

THE order issued soon after the establishment of the Department of Commerce and Labor, changing the name of the National Bureau of Standards to the Bureau of Standards, has been rescinded. Measuring apparatus certified by the bureau was from that time stamped "BS" instead of "NBS." But "BS" was also stamped on measuring instruments by State Bureaus of Standards, by one manufacturer and by the British Standards Institution. From now on the stamp of the bureau will bear the former letters, "NBS." This symbol is unique and free from ambiguity.

UNDER allotments from the Public Works Administration, the United States Geological Survey is undertaking four projects in Texas. These are quicksilver and silver of the Terlingua and Shafter districts; bleaching clay and other high-grade clay of the San Antonio area; the brown iron ore of northeast Texas, and the oil, gas and coal of north-central Texas. The study of the quicksilver and silver has been initiated with C. P. Ross, of the United States Geological Survey, in charge. The clay project, under the direction of Philip King, will be initiated this month, as will the survey of the iron ore deposits, conducted by G. C. Eckel. The oil, gas and coal study of north-central Texas will be directed by N. W. Bass, of the United States Geological Survey. The four projects are to be completed not later than June, 1935.

ACCORDING to *Nature*, at the twelfth annual corporate meeting of the Institution of Chemical Engineers presentation was made of the Moulton Medal, the Junior Moulton Medal and Prize of books, and the Osborne Reynolds Medal, all of which were instituted in 1929. The Moulton Medal, which commemorates the chemical engineering work of the late Lord Moulton at the Department of Explosives Supply, is awarded for the best paper of each year presented before the institution. Papers by non-members of the institution are eligible for this medal. For 1933 the award is made for the following papers: "The Mechanical Properties of Some Austenitic Stainless Steels at Low Temperatures," by E. W. Colbeck, W. E. MacGillivray and W. R. D. Manning, and "The Mechanical Properties of Metals at Low Temperatures. (2)—Non-Ferrous Materials," by E. W. Colbeck and W. E. MacGillivray. The Junior Moulton Medal is given for the best paper of the year read before the graduates and students section of the institution. Only papers by graduates and students of the institution are considered for this medal and prize. For 1933 the award is made for the paper: "The Solvent Extraction of Sulphur from Sicilian Ores," by Dr. E. H. T. Hoblyn. The Osborne Reynolds Medal commemorates the fundamental investigations of the late Professor Osborne Reynolds, and is awarded for meritorious service for the advancement of the institution. For 1933 the award is made to H. W. Cremer. Mr. Cremer acted as honorary secretary of the institution during the illness of

the late Professor J. W. Hinchley in 1931, and was appointed to succeed Professor Hinchley in that office on the latter's death.

THE report of the council of the Zoological Society of London shows that the number of visitors to the gardens during December was 19,887, the receipts amounting to £387. The total number of visitors for the year up to the end of December was 1,557,791, and the receipts £47,536, showing a decrease of £353 as compared with the same period of the previous year and a decrease of £14,635 as compared with the average for the corresponding period of the previous five years. The number of visitors to the aquarium during December was 4,792, the receipts amounting to £116. The total number of visitors for the year was 263,438, the receipts amounting to £8,820, showing a decrease of £331 as compared with the same period of the previous year. The number of visitors to Whipsnade Park during December was 1,278, the receipts for admission amounting to £70. For the year the visitors numbered 433,429, the receipts amounting to £18,759, showing a decrease of £3,364 as compared with the corresponding period of the previous year. There were 444 fellows elected and readmitted during the year, an increase of 63 on the year before and a decrease of 120 compared with the average for the corresponding period of the previous five years.

THE British Ministry of Agriculture states that an order has been made by the minister under the Destructive Insects and Pests Acts, 1877 to 1927, and by arrangement with the Forestry Commissioners under the Forestry Act, 1919, with the object of preventing the introduction into Great Britain of diseases which might prove injurious to forest trees. This order, which is entitled the Importation of Elm Trees and Conifers (Prohibition) Order of 1933, and came into operation on December 1, 1933, prohibits the landing in England or Wales from any country other than Scotland, Northern Ireland, the Irish Free State, the Isle of Man, or the Channel Islands of any living plants of the following eight genera of the Order *Pinaceae: Abies, Larix, Picea, Pinus, Pseudotsuga, Sequoia, Thuja* and *Tsuga*. The importation of living trees from any European country has been prohibited since January 15, 1927, by the Importation of Elm Trees (Prohibition) Order of 1926. That order is now revoked, but its provisions have been embodied in the new order and extended to elm trees from any country other than those mentioned in the preceding paragraph. The order further requires that the health certificates prescribed under the Importation of Plants Order of 1933 to accompany living plants imported from abroad must include a statement to the effect that the consignment does not contain any plants of the genera now prohibited.

DISCUSSION

IONIZED ARGON IN THE SPECTRUM OF UPSILON SAGITTARII

WHILE attempting to identify the many peculiar lines in the spectrum of the supergiant Upsilon Sagittarii I have found that all of the strong lines in the laboratory spectrum of *A* II coincide with faint lines in the spectrum of the star. Of sixteen argon lines which are present nine are sensibly unblended. The two strongest laboratory lines in the spectral range λλ 4000–4900, located at λλ 4348 and 4806, are represented by unblended lines of moderate intensity in the stellar spectrum. Several of the lines are included in J. S. Plaskett's[1] list of wave lengths; the others were measured on Yerkes one prism spectrograms.

W. W. MORGAN

YERKES OBSERVATORY,
WILLIAMS BAY, WISCONSIN,
MAY 8, 1934

THE ROTATION OF THE EARTH

A CORRESPONDENT of the Smithsonian Institution, Mr. W. F. Fletcher, writes: ["Owing to] the heating and consequent expansion of the atmosphere, offering a greater depth of atmosphere on the afternoon side of the earth than on the forenoon side, the increase of leverage [for the action of light pressure] on the eastern limb would tend to cause or maintain a west to east movement [as seen] in the known rotation of the earth."

I do not recollect to have seen this suggestion in the literature. Can any of your readers inform me if it is old? Apparently the sun must thus exercise an accelerating influence. It would be interesting for some one to compute how large this is compared to the sun's retarding influence through the tides.

C. G. ABBOT

SMITHSONIAN INSTITUTION

THE ISOTOPIC FRACTIONATION OF WATER BY PHYSIOLOGICAL PROCESSES—AN ADDITION

DURING the course of an investigation, still in progress, on the separation of the isotopes of hydrogen and oxygen by the electrolysis of water, it has been found that commercial oxygen prepared by the fractionation of liquefied air is slightly heavier than

[1] Publications of the Dominion Astrophysical Observatory 4: 115, 1928.