

classified," \$25,300; *industrial machinery*—process, construction, petroleum, steel-making, farming, household, food-making, textile and clothing, printing and "not otherwise classified," \$25,300.

Each entrant in a sub-classification will compete for five initial prizes of \$700, \$500, \$300, \$200 and \$150 to be awarded within the sub-classification. From the winners of these prizes will be chosen four papers in each major industry to receive additional prizes of \$3,000, \$2,000, \$1,000 and \$800.

RECENT DEATHS AND MEMORIALS

DR. EDWARD CURTIS FRANKLIN, emeritus professor of organic chemistry at Stanford University, died on February 4 at the age of seventy-four years.

DR. DUNCAN STAR JOHNSON, since 1906 professor of botany at the Johns Hopkins University, died on February 16 at the age of sixty-nine years.

DR. FRANK SMITHIES, professor of medicine at the Medical School of the University of Illinois, Chicago, died on February 9 at the age of fifty-six years.

Nature records the following deaths: Sir John A. F. Aspinall, past-president of the Institutions of Mechanical and Civil Engineers and also of the Institution of Civil Engineers of Ireland, on January 19, aged eighty-five years; and of David Ellis, professor of bacteriology and superintendent of the Schools of Pharmacy and Bakery in the Royal Technical College, Glasgow, on January 16, aged sixty-two years.

A CORRESPONDENT of the *Journal* of the American Medical Association reports that a bust of the late Professor Babes, founder of the first Pasteur Institute in Bucharest, was unveiled in Bucharest on October 27. The bust is placed in the square, opposite the Bucharest Bacteriologic Institute. Memorial addresses were made by Professors Bacaloglu, Ciuca, Manicattide, Marinescu and Proca. At the same time the remains of Professor Babes were interred in the crypt situated in the garden of the institute. He died ten years ago and was buried in the Bucharest Greek Catholic cemetery.

SCIENTIFIC NOTES AND NEWS

THE Cardinal Newman Award for 1936 will be presented at the University of Illinois on February 21 to Dr. Alexis Carrel, of the Rockefeller Institute for Medical Research, New York City, for his contributions to medical science. The award is conferred annually upon the individual "who has made an outstanding contribution to the enrichment of human life in the fields of statesmanship, education, art, science or humanitarianism."

DR. RICHARD EDWIN SHOPE, of the department of animal and plant pathology of the Rockefeller Institute for Medical Research, Princeton, has been awarded the John Phillips Memorial Medal of the American College of Physicians for 1937, in recognition of his work on filterable viruses. The medal will be presented at the annual meeting of the college in April.

IN honor of the election of Dr. Frank C. Whitmore, dean of the School of Chemistry and Physics at Pennsylvania State College, as president of the American Chemical Society and as the recipient of the William H. Nichols Medal, a dinner was given by his colleagues on January 14. Dr. Grover C. Chandlee, head of the department of chemistry, presented to Dean Whitmore a congratulatory scroll signed by all staff members and graduate students in the School of Chemistry and Physics. Dr. Charles L. Parsons, secretary of the American Chemical Society, was present at the dinner and spoke briefly. Illness prevented Dr. Edward R. Weidlein, president of the society, from attending.

W. R. Ham, head of the department of physics, served as toastmaster.

DR. CHARLES WALLIS EDMUNDS, professor of materia medica and therapeutics in the School of Medicine of the University of Michigan, has been appointed Henry Russell lecturer for 1937. The award was made possible by an endowment established in 1925 by the will of the late Henry Russell and is planned "to honor and reward that member of the faculty who is declared to have accomplished the work of greatest scholarly distinction during the year past." Another portion of the endowment is used to make an award to one of the younger members of the faculty who is believed to show the greatest promise in scholarly achievement. The name of the latter customarily is announced at the time of the lecture, which probably will be given in the first week of May.

DR. DAVID HILBERT, professor of mathematics at the University of Göttingen, celebrated his seventy-fifth birthday on January 23.

DR. W. G. CROCKETT, professor of pharmacy at the Medical College of Virginia, Richmond, has been elected president of the American Association of Colleges of Pharmacy.

OFFICERS of the Society of American Bacteriologists elected at the annual meeting in Indianapolis are: *President*, Dr. James M. Sherman, Cornell University, Ithaca, N. Y.; *Vice-president*, Dr. Paul F. Clark, University of Wisconsin; *Secretary-treasurer*, Dr. I.

L. Baldwin, University of Wisconsin; *Councilors-at-large*, Dr. Paul J. Beard, Stanford University, and Dr. Malcolm H. Soule, University of Michigan. Dr. F. G. Novy, of the University of Michigan, was elected an honorary member, and Dr. A. J. Kluyver, of the Technische Hoogeschool, Delft, and Dr. Th. Thjötta, of Oslo, were elected corresponding members.

DR. CHARLES SEYMOUR, professor of history and for the last ten years provost of Yale University, has been elected president to succeed Dr. James Rowland Angell, who retires in June, having reached the age of sixty-eight years. Dr. Angell has served as president of Yale University since 1921. He was previously president of the Carnegie Corporation, chairman of the National Research Council and earlier from 1894 to 1920 professor of psychology at the University of Chicago.

CHARLES E. MCQUIGG, since 1934 director of research of the Union Carbide and Carbon Corporation, New York City, has been appointed dean of the College of Engineering of the Ohio State University. He succeeds Emeritus Dean Embury A. Hitchcock, who retired last July.

PROFESSOR A. A. ATKINSON, for a number of years head of the department of electrical engineering at Ohio University, Athens, has been appointed dean of the College of Applied Science, which includes the departments of electrical, civil and industrial engineering, industrial arts, agriculture and the School of Home Economics. Dr. W. S. Gamertsfelder, professor of philosophy, has been made dean of the College of Arts and Sciences and of the Graduate College, succeeding Dean E. W. Chubb, who retired recently.

DR. WILLIAM HENRY WESTON, JR., professor of botany and chairman of the department at Harvard University, has been appointed visiting professor of mycology at the Johns Hopkins University.

At the University of Oxford, Cyril Norman Henselwood, fellow of Trinity College, has been appointed to Dr. Lee's professorship of chemistry; Dr. Hugh William Bell Cairns, of Balliol College, has been appointed Nuffield professor of surgery, and Robert Reynolds Macintosh, Nuffield professor of anesthetics.

DR. WILLIAM R. MAXON, since 1914 associate curator in immediate charge of the National Herbarium in the U. S. National Museum under the Smithsonian Institution, has been made curator.

At the recent annual meeting of the American Society of Zoologists, three new editors of *The Journal of Morphology*, to serve three years, were elected as follows: Dr. Leigh Hoadley, Harvard University; Dr. Wm. A. Kepner, University of Virginia, and Dr. J. Percy Moore, University of Pennsylvania.

PROFESSOR ARTHUR H. COMPTON, accompanied by Professor M. S. Vallarta, of the Massachusetts Institute of Technology, returned on February 11 from Mexico, where a permanent Cosmic Ray Recording Station was established on the grounds of the Mexican National Magnetic Observatory at Teolyucan, thirty miles north of Mexico City.

DR. R. K. NABOURS, head of the department of zoology at the Kansas State College and zoologist of the Agricultural Experiment Station, has been authorized to make a trip of approximately one month beginning on February 1, to southern Mexico for the purpose of collecting specimens of grouse locusts to be used as material for his experimental work. The trip is financed by a grant-in-aid from the American Academy of Arts and Sciences of Boston.

PROFESSOR OLIVER LEE, chairman of the department of astronomy at Northwestern University, has returned to the university after six months leave of absence, which he spent at the National Observatory at Tecubaya.

DR. NIELS BOHR, director of the University Institute for Theoretical Physics at Copenhagen, has been appointed to the Hitchcock professorship at the University of California, where he will lecture during the spring semester. He plans to give a series of public lectures and will hold daily conferences and colloquia with members of the departments of physics and chemistry. The Hitchcock chair was founded in 1872 by Charles M. Hitchcock, and his gift of \$10,000 to endow a single lecture each year was augmented in 1932 from the will of his daughter, Lillie Hitchcock Coit, who provided \$115,000 to endow the Charles M. and Martha Hitchcock chair, in memory of her father and mother.

DR. CLAUDE S. HUDSON, professor of chemistry at the National Institute of Health at Washington, gave the second series of Forris Jewett Moore lectures at the Massachusetts Institute of Technology on February 17, 18 and 19. This series is given under the auspices of the department of chemistry for the purpose of emphasizing the cultural and humanistic relations of chemistry. The general subject of the lectures was "Isomerism in the Carbohydrate Group."

DR. CARL D. LA RUE, professor of botany at the University of Michigan, addressed the Torrey Botanical Club at a meeting held at Columbia University on February 2 on "Studies in Morphogenesis and Plant Tissue Cultures." Professor La Rue has spent the past semester in research on plant tissue culture at Harvard University.

DR. DETLEV W. BRONK, professor of biophysics at the University of Pennsylvania and director of the

Eldridge R. Johnson Foundation for Research in Medical Physics, delivered the address to the graduating class on February 13.

DR. EARLE R. HEDRICK, professor of mathematics at the University of California at Los Angeles, delivered the address on January 25 at the annual dinner of the Santa Monica Chamber of Commerce. Dr. Hedrick spoke on "Royal Roads to Learning."

HOWARD BLAKESLEE, science editor for the Associated Press and president of the National Association of Science Writers, will be the commencement speaker at the Medical College of Virginia, Richmond, next June. Austin H. Clark, of the U. S. National Museum, has been invited to be Founders' Day speaker on December 1.

ERNEST H. ANTHERS, of the Scientific Instrument Division of the Bausch and Lomb Optical Company, gave the Society of Hygiene Lecture of the School of Hygiene and Public Health of the Johns Hopkins University on January 27. The lecture, entitled "Microscopy through the Centuries," was illustrated by forty-nine lantern slides of early microscopes and a working model of Leeuwenhoek's microscope.

THE National Research Council announces a limited number of post-doctorate fellowships in physics (including astronomy), chemistry and mathematics for the academic year 1937-1938. Applications, including all supplementary documents, must be submitted in triplicate to the Secretary of the Fellowship Board in Physics, Chemistry and Mathematics, National Research Council, 2101 Constitution Avenue, Washington, D. C., not later than March 1. Application forms will be furnished upon request, together with a statement of general rules and regulations. Due to prospective modification in the administration of the National Research Fellowships, republication for 1937 of the usual pamphlet concerning these fellowships has been deferred.

THE University of Oxford is inviting applications for the Nuffield professorships of clinical medicine and obstetrics and gynecology. Applications must reach the registrar of the university by April 17. The salary in each case is £2,000 per annum. The senate of the University of London invites applications for the chair of pathology tenable at the British Post-Graduate Medical School, Ducane Road, W. The salary is £2,000 per annum, and the latest date for applications is April 16.

THE rector of the University of Panama, Dr. Octavio Méndez Pereira, reports that there is an opening there for an American physicist. Further information may be secured from the Institute of International Education, New York City.

Two Loubat prizes of \$1,000 and \$400, for "the best work printed and published in the English language on the history, geography, archeology, ethnology, philology or numismatics of North America" will be awarded at the Columbia University Commencement of 1938. The competition is open to "all persons, whether connected with Columbia University or not, and whether citizens of the United States of America or any other country." To be considered for the 1938 awards, books must be published before January 1, 1938. Dr. Waldo G. Leland, executive director of the American Council of Learned Societies, has been appointed chairman of the jury of award. Other members are Carl L. Becker, professor of modern European history at Cornell University, and Robert H. Lowie, professor of anthropology at the University of California.

A SEISMOGRAPH designed by Dr. Hugo Benioff, of the laboratories of the Carnegie Institute of Technology and the California Institute of Technology, has been given to Williams College by Mr. and Mrs. John S. Palmer, 2d, of Providence, in memory of their son Julius, who perished about two years ago on the Ward liner *Mohawk* with two senior classmates and Professor H. F. Cleland of Williams College. The instrument will be placed in two specially constructed tiled rooms.

Industrial and Engineering Chemistry reports that a contract was signed recently for the completion of the Museum of Science and Industry founded by Julius Rosenwald in Jackson Park, Chicago. The structure and the completion of the museum involves an expenditure exceeding \$3,000,000 and will require some eighteen months to build. In order to avoid the necessity of closing the museum at any time, it has been arranged to hurry the completion of the west wing, so that space may be occupied there as required.

A DENSER network of weather observation stations, better synchronized and designed primarily to provide information for more detailed and more frequent forecasts for fliers, has been established by the U. S. Weather Bureau. About one hundred new off-the-airway stations began to make six-hourly observations on January 15. Temperature, precipitation, barometric pressure, visibility, ceiling, dewpoint, etc., are to be recorded at 1:30 and 7:30, both A.M. and P.M., Eastern Standard Time. The new observations will be coded immediately and wired either to Oakland, Calif., or to Chicago, where they will be relayed, by radio or teletype, over the entire airway weather system and also to regular Weather Bureau stations. The fifty or so off-the-airway stations already in operation and about one hundred selected stations on the airways will be equipped with the same kind of

instruments. The extra observations from the new, and newly equipped, stations will amplify greatly the information on which the forecasters at the six district centers of the Weather Bureau may draw in making daily weather forecasts for the United States.

THE first number of *Population Index*, a guide to current demographic materials for students, research workers and teachers, appeared in January. The *Index* is published quarterly by the School of Public Affairs, Princeton University, and the Population Association of America. It continues the association bibliography, "Population Literature." The current number contains two new sections, Current Items and Statistics, in addition to a bibliography covering more than 400 recent books and articles.

A QUARTERLY journal devoted to the integration of the scientific disciplines and to the study of the interdependence of science and society has recently begun publication under the title *Science and Society: A Marxian Quarterly*. The editors are A. E. Blumberg, E. B. Burgum, V. J. McGill, Margaret Schlauch and

B. J. Stern. The foreign editors are J. D. Bernol, University of Cambridge; Lancelot Hogben, London School of Economics and Political Science; Paul Langevin, Collège de France; H. Levy, Imperial College of Science, London; H. J. Muller, Institute of Genetics, Leningrad; Maurice Dobb, The Marshall Library, Cambridge, and Joseph Needham, of Cambridge. Editorial communications may be addressed to the managing editor, W. T. Parry, 6½ Holyoke St., Cambridge, Mass.

FIFTEEN acres of woodland have been added to the Connecticut Arboretum at Connecticut College, New London, by a gift from forty donors interested in the development of the arboretum. The deed of gift specifies that the property shall be set aside forever as a wild-life preserve. The arboretum covers seventy acres within the college property and has been set aside for the preservation and propagation of the native plant life of Connecticut. Garden clubs, horticultural societies and other organizations and individuals throughout the state are cooperating with the college in its development.

DISCUSSION

ETYMOLOGY AND PRONUNCIATION OF THE WORD "OESTRUS" AND ITS DERIVATIVES

THIS word seems to offer more difficulties as to pronunciation and spelling than any other technical word in biology. Derived originally from the Greek *οἶστρος*, signifying the gadfly, and taken over into Latin as *oestrus*, the word came secondarily to mean frenzy or strong desire. The Latin derivative is properly of masculine gender, following the Greek, but we are told by Tyson¹ that some grammarians gave it the neuter form *oestrum* as early as 400 A.D. In its more general senses the word became naturalized in English with the spelling *oestrum* and has been so used in prose and poetic literature by many writers (see Tyson's article and the Oxford English Dictionary).

In the original Greek and Latin the meaning of the word already included, among other forms of excitement, the recurrent sexual impulse of animals. We owe its present definite technical use, however, to the late Walter Heape,² whose analysis and terminology of the phenomena of the reproductive cycle form the basis of research on that subject in the present century. As pointed out by Asdell,³ Heape was not using the well-naturalized English word *oestrum*, which in English signifies any form of recurrent excitement (*e.g.*, the poetic frenzy), but was deliberately adopting

the Latin word *oestrus* for use as a specific technical term meaning in English "periodic sexual excitement of the female." Writers having the latter significance in mind should, for the sake of precision, respect the difference and use the word *oestrus*.

It is scarcely necessary to point out that the nominative form is *oestrus*, and the adjectival form *oestrous* (*cf.* fungus, fungous; mucus, mucous).

As to pronunciation, the Greek and Latin diphthong of the first syllable has become in English merely a digraph, and in England is pronounced like long *e*, as in *thief*. Wyld's Dictionary of "Received Standard English" gives this pronunciation only. The Oxford English Dictionary gives also the short *e*, as in *yet*, as an alternative pronunciation, but by the time the Shorter Oxford Dictionary reached the letter O, the compilers had discovered that the short *e* is an American usage. The word *oestrum* seems to have first appeared in the American dictionaries in the 1860 edition of Worcester and the 1864 Webster. In both cases the short pronunciation of *e* was alone given. Webster continued to give preference to this pronunciation, but since the 1909 revision cites also the long *e* as a non-preferred pronunciation. The Century Dictionary of 1911 gives the long *e* only, but on the other hand the 1913 Funk and Wagnalls gives the short *e* only.

It is evident, therefore, that the pronunciation of the non-technical word *oestrum*, and consequently of the technical term *oestrus*, *oestrin*, *oestrogenic*, etc., is

¹ Stuart L. Tyson, *SCIENCE*, 512: 74, 1931.

² Walter Heape, *Quart. Jour. Micros. Sci.*, n.s., 44: 1, 1901.

³ Sidney A. Asdell, *SCIENCE*, 75: 131, 1932.