NEWS *and Notes*

The Franklin Institute celebrated its 1947 Medal Day at a presentation dinner in Franklin Hall, Philadelphia, on April 16 honoring 19 medalists. The highest award of the Institute, the Franklin Medal, was presented to Enrico Fermi, Institute for Nuclear Studies, University of Chicago, and Sir Robert Robinson, Oxford University, England. Dr. Fermi, who received the 1938 Nobel Prize in physics for his early work in production of transmutations by neutron bombardment, spoke briefly on the opportunities offered by recent developments in the field of nuclear physics to add to and integrate what is now known about the nature of forces within the atom. Sir Robert, who received the award for his contributions in the field of chemistry of natural substances, spoke on the value of concerted research as exemplified by the history of the development of penicillin.

The Ballantine Medal was awarded to George C. Southworth, Bell Telephone Laboratories, the Newcomen Medal, to Everett G. Ackart, recently of the Du Pont Company, the Clamer Medal, to Edgar H. Dix, Jr., Aluminum Company of America; the Brown Medal, to Karl P. Billner, Vacuum Concrete, Inc.; the Clark Medal, to Edward G. Boyer, Philadelphia Electric Company; the Wetherill Medal, to Kenneth S. M. Davidson, Stevens Institute of Technology; Henderson Medals, to Lars O. Grondahl, Union Switch & Signal Company, and Sedgwick N. Wight, General Railway Signal Company; Levy Medals, to Everett M. Barber and Jay B. Malin, both of the Texas Company, and Joseph J. Mikita, the Du Pont Company; Potts Medals, to Robert H. Kent, Aberdeen Proving Ground, and Vladimir K. Zworykin, Radio Corporation of America; Longstreth Medals, to Samuel Berman, Waugh Equipment Company, and Harold J. W. Fay, Submarine Signal Company; and Certificates of Merit, to Joseph Razek, Llanerch, Pennsylvania, and Peter J. Mulder, Shippensburg State Teachers College.

About People

Enrico Fermi, Nuclear Research Institute, Chicago, has been named honorary chancellor of Union University, Schenectady, New York, for 1947–48, an office conferred annually since 1878 on such outstanding leaders as Wendell Willkie, Bernard Baruch, Irving Langmuir, President Taft, Chief Justice Hughes, Elihu Root, Whitelaw Reid, and Senator Vandenburg.

George W. Carter, head of the Physics Department, Wayne University, since 1917, has been retired at his own request by the Detroit Board of Education.

R. W. Trullinger, chief of the Office of Experiment Stations, Department of Agriculture, has been appointed assistant administrator of the Agricultural Research Administration. Dr. Trullinger will continue as chief of the Office of Experiment Stations, so that the office will be brought into closer contact with the over-all planning of research in the Department.

James A. Noble, chief geologist of the Homestake Mining Corporation, has been granted a leave of absence by the Corporation in order to serve as professor of metalliferous geology at the California Institute of Technology, starting September 1, 1947. Dr. Noble succeeds H. J. Fraser, now general manager of the Falconbridge Nickel Mining Company.

Richard H. Daggy, formerly assistant professor of entomology at the University of Minnesota, has been appointed medical entomologist for the Arabian American Oil Company. Dr. Daggy's headquarters will be at Dhahran, Saudi Arabia.

B. S. Pickett, head of the Department of Horticulture and of the horticultural section of the Agricultural Experiment Station, Iowa State College, for 24 years, will retire June 30 but will continue as professor in the department. He will be succeeded by E. S. Haber, head of the vegetable crops subsection.

Clinton M. Osborn, Department of Anatomy, College of Medicine, Ohio State University, has been appointed associate professor of zoology, Syracuse University, effective September 1, 1947. Dr. Osborn was formerly associated with the Biological Laboratories of Harvard University, where he received his Ph.D. degree, and during the war was a Major in the Aviation Physiology service of the U. S. Army.

Robert A. Moore, professor of pathology at Washington University School of Medicine since 1939 and acting dean of the School for the past year, has been appointed dean. Dr. Moore is secretary of the American Board of Pathology and editor of the *Journal of Gerontology*. During the war he served as civilian resident consultant to the Army Medical Museum and to the Secretary of War on epidemic diseases.

Cornelia T. Snell, Snell Laboratories, New York City, will speak on "Synthetic Detergents" May 5 at The Pennsylvania State College in the annual Marie Curie Lecture Series sponsored by the Palladium Chapter of Iota Sigma Pi, national honor society for women in chemistry.

Harold C. Wiggers, associate professor of physiology, University of Illinois College of Medicine, has been appointed head of the Department of Physiology and Pharmacology, Albany Medical College, and will assume his duties on July 1.

P. J. Selgin, 35-year-old expert in high-frequency radiation and electronics, has been appointed to the staff of the National Bureau of Standards, where he will work on the development of electronic ordnance for the military services in the Ordnance Development Division.

Grants and Awards

Hubert Lyman Clark, associate professor emeritus of zoology at Harvard University, is the recipient of the 1946 Clarke Memorial Medal, one of Australia's leading scientific honors, awarded by the Royal Society of New South Wales. The medal is presented for distinguished work in the natural sciences performed in the Australian Commonwealth or its territories. Dr. Clark was "unanimously agreed upon because of the great interest in Australian zoological

problems, particularly in regard to the elucidation of the Echinodermata of the country."

Linus Pauling, director of the Gates and Crellin Laboratories of Chemistry, California Institute of Technology, has been awarded the Theodore William Richards Medal of the Northeastern Section of the American Chemical Society. Dr. Pauling was especially cited for his work in quantum mechanics, valence theory, crystal structure, electron diffraction, and biochemistry. The award will be presented at a meeting of the Northeastern Section on May 8.

Barbara McClintock, Department of Genetics, Carnegie Institution, Cold Spring Harbor, New York, received the $2,500 achievement award of the American Association of University Women at the Association's convention in Dallas, Texas, April 18. Dr. McClintock received the award in recognition of her work in the field of cytogenetics.

Wolfgang Koehler, Swarthmore College, received the Howard Crosby Warren Medal and Award at a meeting of the Society of Experimental Psychologists on April 9. Dr. Koehler was cited "for his studies on figural after effects as an approach to a more general theory of perceptual processes."

Brig. Gen. George R. Callender, U. S. Army (retired), has been awarded the United States of America Typhus Commission Medal for exceptionally meritorious services in organizing, directing, and supporting investigations of the rickettsial diseases, in training personnel in organizing a laboratory for the study of these diseases, and in aiding and supporting the Commission.

Julian I. Gilliam has received the first in a series of fellowships to be awarded by the Virginia Cancer Foundation for a year of training in cancer work at Bellevue Hospital under supervision of New York University College of Medicine doctors.

The American Veterinary Medical Association has announced the renewal of the following fellowships for 1947–48: Howard W. Dunne, working at Michigan State College on swine enteritis; Dean S. Folse, working at the University of Minnesota on coccidiosis in turkeys; and Melvin J. Swenson, working at Iowa State College on nutrition and its effects on diseases of swine. The renewals, together with new fellowships for 1947–48 which will be announced upon acceptance by the winning candidates, were awarded by the Fellowships Committee of the Association's Research Council at a meeting in Chicago on April 12. All funds for this program are derived from contributions from veterinarians.

The American Philosophical Society has awarded fellowships from the Penrose Fund to the following candidates for their respective studies: Victor F. Hess, Fordham University, actual ionization produced by the gamma rays from well-analyzed types of rocks; L. Reed Brantley, Occidental College, acidic and oxidizing properties of oxygen fluoride in aqueous solution and in the gaseous state; Lewis H. Kleinholz, Reed College, endocrine and nervous factors in the regulation of hyperglycemia in crustaceans; Thos. A. Stephenson, University of Miami, general biology of animals and seaweeds between tide marks; George L. Kreezer, Institute for Advanced Study, determination of the components of biological systems on the basis of the mathematical analysis of transient response curves; Ching-tsao Wei, University of Nanking, (1) a survey of the seed-borne pathogens of soybean in North and Central China and (2) a study on the relative effectiveness of treatments with organic mercury dusts and hot water; David H. Raab, Brooklyn College, neurology of hearing and auditory learning in animals; and T. C. Schneirla, American Museum of Natural History, behavior pattern of army ants in relation to underlying ecological and physiological conditions.

Colleges and Universities

The University of Tennessee has announced the following appointments to its chemistry staff: Evan C. Noonan, Westvaco Chlorine Products, Inc., as associate professor, and George P. Mueller, Wyeth Institute of Applied Biochemistry, as assistant professor.

The University of Michigan has announced the following appointments for the academic year 1947–48: Donald D. Brand, professor of geography; George M. Sutton, half-time curator of birds in the Museum of Zoology and associate professor of zoology; and Richard K. Beardsley, instructor in anthropology. The following leaves of absence were also announced: Leslie A. White, professor of anthropology, for the first semester, to do research on the evolution of culture; Mischa Titiev, associate professor of anthropology, for the second semester, to make use of a grant from the Rackham Research Foundation for the study, in Chile, of the changing pattern of Araucanian culture; and Shirley W. Allen, professor of forestry, for the first semester, to do research in forest administration and in the general field of conservation of natural resources.

The University of Pennsylvania School of Medicine has announced that as of July 1, 1947, T. Grier Miller, Truman G. Schnabel, and Charles C. Wolferth, who now hold full professorships in clinical medicine, will become full professors in medicine. Francis C. Wood, assistant professor in medicine, will become full professor and chairman of the Department of Medicine, succeeding O. H. Perry Pepper, who has asked to be relieved of his administrative duties.

Summer Programs

The Franz Theodore Stone Laboratory, of Ohio State University, will offer 18 courses of advanced study in botany, entomology, and zoology during its summer quarter, beginning June 16. The station, operating as a regular department of the University, maintains a departmental library and a full-time staff. Living accommodations include a men's dormitory, a women's dormitory, and a residence hall for married students. Registration for the summer quarter will be held at the Laboratory on June 16, but those interested in attending are advised to submit applications as soon as possible to Dr. Thomas H. Langlois, Director, Franz Theodore Stone Laboratory, Put-in-Bay, Ohio.

The University of California Medical School, in association with University Extension, University of California, announces a course in the Application of Nuclear Physics to the Biological and Medical Sciences, to be given at the Medical Center, San Francisco, June 30–July 18. The course will consist of didactic lectures, laboratory demonstrations, and seminars for round-table

discussions and will be open to individuals in the fields of medical and biological research. Detailed information may be obtained from: Dr. Stacy R. Mettier, Head, Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22, California.

Duke University Marine Laboratory, Beaufort, North Carolina, is offering two courses for graduate students and qualified seniors this summer. Marine Zoology will be given during the first term, June 12–July 24, by C. G. Bookhout; Plant Ecology, during the second term, July 25–August 29, by H. J. Oosting. Opportunities for research in marine botany or zoology and local flora or fauna will be offered graduate students throughout the summer.

Industrial Laboratories

The General Electric Research Laboratory announces the appointment of Glenn T. Seaborg, professor of chemistry, University of California, and co-discoverer of the artificial element, plutonium, as a consultant in nucleonics.

Pyridium Corporation, Yonkers, New York, has announced the following appointments: John F. Reinhard, formerly with the Burroughs Wellcome Company, Tuckahoe, New York, as a pharmacologist; and Charles F. Duca, formerly instructor of bacteriology, College of Physicians and Surgeons, Columbia University, as a bacteriologist.

Elections

The New York State Archaeological Association, at a meeting at the Rochester Museum of Arts and Sciences on April 12, elected Carl E. Guthe director, New York State Museum, as president and Charles F. Goddard as first vice-president.

The Southern New England Chapter of the Soil Conservation Society of America, at its organizational meeting on March 8, elected the following officers: Ayers Brinser, chairman; Irene H. Stuckey, vice-chairman; Laurence T. Small, treasurer; and L. Russell Albright, secretary.

George R. Harrison, dean of the School of Science, Massachusetts Institute of Technology, has been elected chairman of the American Institute of Physics, succeeding Paul E. Klopsteg, director of research, Northwestern University Technological Institute, who has served as chairman since 1940.

Meetings

The American Society for the Study of Arteriosclerosis, now being organized, will hold its constituting meeting June 9 at the Hotel Strand, Atlantic City, New Jersey. Clinicians and experimentalists interest in a concerted investigation of all phases of the disease are invited to join and are urged to communicate as soon as possible with Dr. O. J. Pollak, Wilmington General Hospital, Chestnut and Broom Streets, Wilmington 14, Delaware.

The American Association of Physics Teachers and **The American Society for Engineering Education** will meet jointly at the University of Minnesota, Minneapolis, June 18–21. The program chairmen for the meeting, C. E. Bennett and J. W. Buchta, are planning a symposium on the teaching of physics, particularly as it relates to students in electrical engineering. Complete programs for the meeting may be obtained after May 10 from C. J. Overbeck, Secretary, American Association of Physics Teachers, Physics Department, Northwestern University, Evanston, Illinois. Members planning to attend the meeting are urged to make hotel reservations as soon as possible through the Hotel Association of Minneapolis.

The Acoustical Society of America will meet at the Pennsylvania Hotel, New York, May 8–10. This meeting, which will be concerned chiefly with the means of attaining closer correlation of the art of music and the science of acoustics, will feature the following speakers: Howard Hanson, Eastman School of Music, Rochester, New York; Harvey Fletcher, Bell Telephone Laboratories; Harold Burris-Meyer, Stevens Institute of Technology; Leopold Stokowski; Gustave Reese, American Musicological Society; and V. O. Knudsen, University of California, Los Angeles.

The Association of Geology Teachers will hold its annual meeting May 9–10 at Milwaukee-Downer College, Milwaukee, Wisconsin. In addition to presentation of papers, the program will include the presidential address of Neil A. Miner, Cornell College; a discussion on "What the Graduate School Expects of the Undergraduate," led by Arthur L. Howland, Northwestern University; the annual banquet and lecture; and either a field trip to Silurian and Devonian localities or a visit to the Milwaukee Public Museum. Those interested in attending should communicate with Miss Katherine F. Greacen, Secretary, Milwaukee-Downer College, Milwaukee 11, Wisconsin.

The Society of American Bacteriologists, meeting May 13–16 at the Bellevue Stratford Hotel in Philadelphia, will honor Ludvig Hektoen at its 1947 annual lecture. The lecture, which has been scheduled for the morning of May 14, will be delivered by William H. Taliaferro, University of Chicago, on "The Inhibition of Reproduction in Parasites by Immune Factors."

The Division of Solid State Physics of the American Physical Society, now in the process of formation, will meet in Montreal on June 21, according to an announcement by the Organizing Committee. This date was selected for the convenience of those who will attend meetings of the American Physical Society in Montreal, June 19–21, and of the American Society for X-Ray and Electron Diffraction near Montreal, beginning June 23. In addition to contributed papers in the field of solids, the program will include four invited papers: "Diffraction of Neutrons in Crystals," F. Seitz; "Theory of Crystal Rectifiers With Application to Copper Oxide," J. Bardeen; "The Relaxation Spectrum of Metals," C. Zener; and "Nuclear Magnetic Resonance Absorption in Solids and Liquids," E. M. Purcell.

Members of the Organizing Committee of the Division are: T. A. Read, F. Seitz, W. Shockley, S. Siegel, R. Smoluchowski, and C. Zener.

The American Iron and Steel Institute will hold its 55th general meeting in New York at the Hotel Pierre on May 21 and at the Waldorf-Astoria on May 22. One of the features of the program will be the first Charles M. Schwab Memorial Lecture, to be delivered by Eugene G. Grace, Bethlehem Steel Company. Four technical sessions are planned as follows: "Raw Materials," "Coke Ovens, Blast Furnaces

and Steelmaking Furnaces," "Shaping and Forming," and "General Metallurgy." Members are urged to address all communications with reference to luncheon and dinner reservations to: S. A. Maxon, Assistant Secretary, American Iron and Steel Institute, 350 Fifth Avenue, New York 1, New York.

Recent Deaths

Herbert S. Jennings, 79, research associate at the University of California since 1938 and professor emeritus of zoology at Johns Hopkins University, died April 14 in Santa Monica, California, after a year's illness.

Halsey J. Bagg, 57, research biologist who had devoted much of his life to the study of cancer, died April 13 in Yorktown Heights, New York.

William Stanley Marshall, 80, professor emeritus of zoology at the University of Wisconsin, died March 17 in Madison. He published many papers on the anatomy and embryology of insects. A collection of Wisconsin beetles, which he assembled, was left to the University of Wisconsin.

I. Seymour A. Hadwen, 70, former director of the Department of Pathology and Bacteriology, Ontario Research Foundation, and past-president of the American Veterinary Medical Association, died April 18 in Toronto.

Make Plans for—

New York State Geological Association, 19th field meeting, May 9–10, New York City.

Federation of American Societies for Experimental Biology, May 18–22, Chicago, Illinois.

American Association of Cereal Chemists, 32nd annual meeting, May 19–23, Hotel President, Kansas City, Missouri.

American Oil Chemists' Society, 38th annual meeting, May 20–22, New Orleans, Louisiana.

American Society of Mechanical Engineers, oil and gas power 19th national conference, May 21–24, Cleveland, Ohio.

COMMENTS *by Readers*

A number of biological papers involving work in which a centrifuge is used are published each year. In an appreciable percentage of these, reference to the amount of centrifuging to which a given material is subjected is presented in terms of duration of centrifuging and the speed of the centrifuge. Such figures, alone, are quite meaningless. Centrifuging data should include duration of centrifuging and the magnitude of the applied centrifugal force. It is possible to centrifuge material at 3,000 r.p.m. (or even at 3,000 r.p.s.) and subject it to little or no centrifugal force, if the material is near or at the center of rotation.

The centrifugal force, in terms of gravity, can be easily calculated if one knows the speed of the centrifuge and the distance of the material from the center of rotation. Heilbrunn (1921) gives the formula

$$c' = \frac{4\pi^2 n^2 r}{g},$$

where n = the number of revolutions per second, r = the distance of the material from the center of rotation in centimeters, g = the gravitational constant, and c' = the centrifugal force in terms of gravity. The figure 39.478 may be substituted for the constant $4\pi r$. Shapiro (1935) has published a useful monogram for obtaining c' if n and r are known.

It is important to stress the fact that r represents the distance of the material from the center of rotation and not the length of the centrifuge arm or the external radius of the centrifuge. The centrifugal force at the outer periphery may be far greater than the effective force, since the material being centrifuged is nearer the center of rotation by the thickness of the outer wall of the centrifuge plus the thickness of the bottom of the centrifuge tube plus the thickness of the layer of supporting medium (if present).

Furthermore, it is not sufficient to state the speed of the centrifuge and the type of centrifuge employed, since most centrifuges have interchangeable heads of different diameters. It is true that, for any given centrifuge with a given head, the speed of rotation and the duration of centrifuging are the variables and the distance of the material from the center of rotation is usually constant. Nevertheless, the latter can be varied by changing the centrifuge head or by altering the method of suspending the material in the centrifuging medium.

Editors could do much to remedy the present situation by insisting that authors either state the centrifugal force employed or give both the speed of the centrifuge and the effective distance from the center of rotation. The former procedure is definitely preferable, however, since it is more concise, saves the reader a task of calculation, and avoids the possibility of subsequent misquotation in terms of centrifugal speed alone.

If the centrifugal force employed in a given set of experiments, particularly on such material as living marine egg cells, is unknown, it is frequently impossible to repeat these experiments and obtain the same result. Rate of sedimentation of the granules and vacuoles of living cells under low centrifugal forces is markedly retarded by redistribution of these inclusions by Brownian movement, as Howard (1931) carefully pointed out.

Among the numerous pieces of work on biological material marred by the oversight of stating centrifugal speed rather than centrifugal force, or entirely omitting mention of magnitude of centrifugal force employed, are those of Boveri (1910), Hertwig (1904), Morgan (1935, 1937), Parseval (1922), Raven (1938), Ries (1939), Wilber (1945), Wilson (1929, 1930), and many others. (DONALD P. COSTELLO, *Department of Zoology, University of North Carolina, Chapel Hill.*)