# SCIENTIFIC NOTES AND NEWS

THE Perkin Medal of the American Section of the Society of Chemical Industry has been awarded to Dr. Francis C. Frary, director of research of the Aluminum Company of America, in recognition of "outstanding accomplishments in the field of industrial research."

THE Royal College of Physicians has awarded the Moxon Medal to Sir Alexander Fleming, for his discovery and work on penicillin. The Weber-Parkes Prize and Medal were awarded *in absentia* to Dr. Eugene L. Opie, emeritus professor of pathology of the Cornell University Medical College, for his work on the pathogenesis of pulmonary tuberculosis.

AT the sixty-seventh Founders' Day program of Lehigh University, the honorary degrees conferred included the doctorate of science on Dr. Harvey Bassler, research associate of the American Museum of Natural History.

DR. DETLEV W. BRONK, director of the Johnson Foundation for Medical Physics of the University of Pennsylvania, has been appointed foreign secretary of the National Academy of Sciences and chairman of the Division of Foreign Relations of the National Research Council, *ad interim,* for the period ending June 30, 1946, to take the place of the late Dr. Walter B. Cannon. Election of a foreign secretary will take place at the spring meeting of the academy.

DR. OSCAR F. HEDENBURG, of the Mellon Institute, Pittsburgh, has been elected chairman of the Western Pennsylvania Chapter of the American Institute of Chemists. Other officers are Wm. B. Brown, Pittsburgh Coke and Chemical Co., *Vice-chairman;* Anna M. Coleman, Mellon Institute, *Secretary-Treasurer;* and Wm. H. Hill, Mellon Institute, *National Council Representative.*

THE Virginia Chapter of Sigma Xi, on October 9, held its autumn meeting for the initiation of two associates and fifteen members. On this occasion Dr. Frank W. Finger spoke on "Psychology—the War and After." At a meeting on October 15 officers of the chapter elected were Robert E. Lutz, *President;* Frederick L. Brown, *Retiring President;* Gustav A. Hedlund, *Vice-president;* Joseph K. Roberts, *Secretary;* Lawrence R. Quarles, *Treasurer;* and Cecile B. Finley, *member of the executive committee.*

DR. WENDELL F. HESS, professor of metallurgical engineering and head of the welding laboratory of the Rensselaer Polytechnic Institute, Troy, N. Y., has been elected president of the American Welding Society for 1945–46.

DR. CHARLES DONALD SHANE, professor of astronomy at the University of California at Berkeley, has been appointed head of Lick Observatory on Mount Hamilton. He succeeds Dr. Joseph H. Moore, who has retired, but who remains as astronomer. Dr. Shane became a member of the department of astronomy and in 1935 became a full professor. In 1941–42 he served as chairman of the department. His research has been mainly on spectroscopy. Recently he has been on leave, first as assistant director in charge of administrative matters in the Radiation Laboratory, and later as assistant director in charge of personnel of the Los Alamos project of the university.

PROFESSOR PAUL H. BUCK, anthropologist, since 1942 dean of the faculty of arts and sciences of Harvard University, has been appointed to the newly established post of provost of the university. He also will serve as *ex-officio* dean of the faculty of arts and sciences.

DR. ERNEST LYMAN STEBBINS, New York City Commissioner of Health, has been appointed professor of public health administration in the School of Hygiene and Public Health of the Johns Hopkins University, and assistant director of the school.

DR. J. C. WARNER, head of the department of chemistry of the Carnegie Institute of Technology, has been appointed dean of graduate studies in the College of Engineering and Science.

DR. KENNETH V. THIMANN, associate professor of plant physiology at Harvard University, has returned to the university after three years' leave of absence for research with the Navy.

LIEUTENANT COMMANDER OMAR C. HELD, formerly associate professor of psychology at the University of Pittsburgh, has been appointed dean of the College of Letters and Science at St. Lawrence University, Canton, N. Y.

DR. E. M. SCHOENBORN, JR., has resigned as associate professor of chemical engineering at the University of Delaware, to become head of the department of chemical engineering at North Carolina State College at Raleigh, N. C.

DR. MINNIE A. GRAHAM recently retired from the faculty of Queens College, Charlotte, N. C., where she has been professor of the physical sciences for the past fifteen years. Her successor is Dr. Mildred Morse McEwen, who has had leave of absence for three years to complete her work for the doctorate at

the University of North Carolina. John H. Norman, who has been substituting for Mrs. McEwen, will continue as assistant professor in the department.

PROFESSOR FREDERICK M. GAIGE, director of the Museum of Zoology and curator of insects of the University of Michigan, and Helen T. Gaige, curator of amphibians, have retired, both having been members of the staff for more than thirty years.

THE retirement is announced of Professor Llewellyn Rodwell Jones, for twenty years professor of geography at the London School of Economics and Political Science of the University of London.

CHARLOTTE E. MOORE (Mrs. B. W. Sitterly), research associate at the Observatory of Princeton University, has been appointed physicist in the Section of Spectroscopy of the National Bureau of Standards. She will take up her work in Washington on November 1.

DR. DEAN A. CLARK, assistant director of the public health methods division and senior surgeon of the U. S. Public Health Service, has been granted a leave of absence to become medical director of the Health Insurance Plan of Greater New York.

DR. WILLIAM A. GOSLINE, for two years engaged in the food supply program of the Brazilian Government, Museu Nacional, Rio de Janeiro, has been appointed assistant curator of fishes in the Museum of Zoology of the University of Michigan.

COLONEL HOWARD A. RUSK, Medical Corps, Army of the United States, has been appointed consultant on physical rehabilitation for the Baruch Committee on Physical Medicine. He will make his headquarters at the New York office of the committee.

DR. JOHN L. RICH, professor of economic geology and head of the department of geology and geography of the University of Cincinnati, has returned from a recent government mission to China, where he spent more than eleven weeks as technical consultant in an advisory capacity for both the United States and Chinese Governments.

DR. J. ALBERT RAYNOLDS, formerly technical director of vitamin oil operations for the Atlantic Coast Fisheries Company, has assumed full-time work as technical consultant for the National Oil Products Company, Harrison, N. J.

DR. A. L. HOWLAND, chairman of the department of geology of Northwestern University, and Dr. R. M. Garrels have resumed teaching after a year's leave of absence. They were members of the Section of Military Geology of the United States Geological Survey and were engaged in the preparation of terrain studies for the army engineers. These studies were concerned with such problems as airfield and road construction, water supply, effect of terrain on the use of tanks, prediction of the ease of fortification and tunnel construction, estimates of beaches for landings and problems of stream and river crossings. Dr. J. T. Stark, formerly chairman of the department, is still absent on detached service in southeast Asia, but his return during the academic year is expected. Dr. J. R. Ball was recently promoted to a full professorship.

DR. LAWRENCE ROSNER, formerly chief chemist for the Laboratory of Vitamin Technology in Chicago, has been placed in charge of the chemical, physical and microbiological assay sections of the Nopco Vitamin Laboratories, Harrison, N. J.

DR. LUDWIK ANIGSTEIN, associate professor of preventive medicine of the Medical Branch at Galveston of the University of Texas, attended the first Inter-American Conference on Typhus Fever, held in Mexico City on October 8 and 9. He was invited to discuss the classification of rickettsia.

DR. R. P. LINSTEAD, F.R.S., has been appointed director of the Chemical Research Laboratory in the British Department of Scientific and Industrial Research. He took up this work on October 1.

SIR ALFRED EGERTON, secretary of the Royal Society of London, left on October 2 for a visit to Prague to convey the greetings of the Royal Society on behalf of the men of science of Great Britain to their colleagues in Czechoslovakia. He is the guest of the rector of the Charles University in Prague and will discuss with him and his colleagues what aid British science can give to the rehabilitation of science and scientific education in their country. It is hoped that this visit may do much to enable the people of Czechoslovakia to re-establish firm scientific contacts with men of science throughout the world. Sir Alfred took with him, for the Masaryk University at Brno and the Royal Bohemian Society of Sciences at Prague, scientific publications of the Royal Society issued during the war years.

THE National Research Council announces that it has renewed its subscription to a research table at the Zoological Station at Naples for the year 1946. Inquiries should be addressed to the National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

DR. K. LINDERSTROM LANG, director of the Carlsberg Laboratorium in Copenhagen, Denmark, delivered on October 9 the opening lecture before the Sigma Xi Chapter of Duke University. He reported the results of his recent studies on volume contraction in protein solutions during enzymatic hydrolysis.

A SYMPOSIUM on atomic energy was conducted

on October 4 by the Chapter of Sigma Xi of the University of Cincinnati at which the following papers were given: "Radioactive Materials, the Geologic Source of Supply," Professor O. C. Von Schlichten, associate professor of geology; "Basic Principles of Atomic Energy," Dr. D. A. Wells, professor of physics; and "Radioactive Isotopes in Medical Research," Dr. G. M. Guest, associate professor of pediatrics.

THE annual meeting of the Society of Rheology will be held on October 26 and 27 at the Hotel Pennsylvania, New York City.

THE president and fellows of Harvard College have voted to establish a committee to develop a program in nuclear physics at the university. The corporation has further voted to allocate the sum of $400,000 to the committee to spend within a period of five years in developing the program.

THE School of Mathematics of the Institute for Advanced Study will allocate a small number of stipends to gifted young mathematicians and mathematical physicists to enable them to study and to do research work at Princeton during the academic year 1946–1947. Candidates must have given evidence of ability in research comparable at least with that expected for the degree of doctor of philosophy. Blanks for application may be obtained from the School of Mathematics, Institute for Advanced Study, Princeton, N. J., and are returnable by February 1, 1946.

THE *Journal* of the American Medical Association reports that the Governor of Wisconsin has signed a bill appropriating $25,000 annually "for study of and research into the causes, prevention and cure of cancer and for the purchase of necessary apparatus and supplies for the purpose of carrying on such study and research."

# SPECIAL ARTICLES

## THE ACTION OF HORSERADISH-PEROXIDASE ON ANGIOTONIN, PEPSITENSIN AND EPINEPHRINE[1]

FROM results obtained with a representative series of phenols, Elliott[2] concluded that all phenolic substances are oxidized with horseradish-peroxidase in the presence of hydrogen peroxide. Szent-Györgyi[3] showed that epinephrine was affected in a similar manner by this enzyme system. Bach and Chodat[4] found that peroxidase in a weak acetic acid medium catalyzed the oxidation of potassium iodide by hydrogen peroxide, releasing iodine. We wish to present data showing that the pressor peptides, angiotonin (hypertensin) and pepsitensin, as well as epinephrine, are oxidized by the action of hydrogen peroxide with horseradish-peroxidase and that this reaction is enhanced by the addition of a very small amount of potassium iodide.

The loss of the pressor response in a pithed cat was utilized as an index of the oxidative degradation of angiotonin, pepsitensin and epinephrine. In addition to this biological assay, the red color produced by the oxidation of epinephrine was measured photometrically.

The horseradish-peroxidase was prepared by the method of Elliott.[2] Angiotonin and pepsitensin solutions were standardized so that 0.5 cc produced a rise in arterial pressure of 50 to 70 mm Hg in a pithed cat. For the bio-assay 1: 250,000 epinephrine acidified with acetic acid was employed, and for the colorimetric test, 1: 10,000.

Each reaction mixture for bio-assay contained 5 cc of each pressor substance and, in different combinations, 1 cc of hydrogen peroxide solution (0.25 mg per cc), 1 cc of 0.001 N iodine in potassium iodide ($KI_3$), and 1 cc of peroxidase solution containing varying amounts of the dry horseradish preparation (0.5 to 2.0 mg). The final volume was adjusted to 10 cc with distilled water. The mixtures were incubated at room temperature (25° C) and the reaction was stopped at the desired time by immersion of an aliquot in boiling water for 10 minutes. Then a 1 cc sample was injected into the femoral vein of a pithed cat and the pressor response compared to that of the unmodified angiotonin, pepsitensin or epinephrine solution.

As a substrate for the colorimetric determination, 5 cc of the epinephrine solution was used; to this were added, in various combinations, 1 cc volumes of enzyme preparation (0.1 mg), hydrogen peroxide solution (0.25 mg per cc), and 0.0001 N iodine or potassium iodide. The change in color was measured in a Coleman spectrophotometer at a wave-length of 540 millimicrons.

### RESULTS

Fig. 1 indicates the amount of angiotonin destroyed by hydrogen peroxide with peroxidase. In the presence of the same amount of hydrogen peroxide, increasing the quantity of peroxidase caused a greater destruction of angiotonin (compare Curve 2 and Curve 3). The marked, enhancing action of $KI_3$ is clearly evident (*cf.* Curve 1). The combination of

[1] We wish to express our appreciation to Mr. Robert Sanders for his technical assistance.

[2] K. A. C. Elliott, *Biochem. Jour.*, 26: 1281, 1932.

[3] A. Szent-Györgyi, *Biochem. Jour.*, 22: 1387, 1928.

[4] A. Bach and R. Chodat, *Ber.*, 37: 1342, 1904.