

mental conditions occurring during relatively recent geologic time. The coarser separates will be preserved for petrographic and micropaleontologic studies.

A. K. Miller, Iowa City, Iowa, \$600. Arrangements have been made for Dr. Miller to complete the studies long in progress by Dr. E. O. Ulrich and the late Dr. Aug. F. Foerste of Ozarkian and Canadian cephalopods, and to complete the manuscript for publication. Dr. Miller will be assisted in the work by Dr. W. M. Furnish.

#### THE PACIFIC DIVISION OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

THE twenty-third annual meeting of the Pacific Division of the American Association for the Advancement of Science will be held this year at Stanford University from June 26 to July 1. The general sessions will be held on Tuesday, June 27, and will begin with a symposium on "Radiation and Life." The speakers will be Dr. W. V. Houston, of the California Institute of Technology; Dr. John H. Lawrence, of the University of California; Dr. M. Delbruck, also of the California Institute of Technology, and Professor Robert R. Newell, of Stanford University Medical School. A session on reviews of current research will be held in the afternoon. Professor J. W. McBain, of Stanford University, will speak on "Recent Advances in Colloid Chemistry," and an address by Dr. A. R. Davis, of the University of California, will follow. Professor Henry Borsook, of the California Institute of Tech-

nology, will contribute a discussion of "Biological Oxidations and Reductions," and Dr. J. W. Macfarlane, of the University of California, will discuss "Research on Personality Development." A general reception for members and guests of the division and its associated societies will follow the meeting. Among the evening addresses will be that of the president of the Pacific Division, Professor S. J. Holmes, of the University of California, on "Darwinian Ethics and Its Practical Applications." Professor John Desmond Bernal, professor of physics at Birkbeck College, the University of London, will also deliver one of the evening addresses.

Seventeen scientific organizations on the Pacific Coast are participating actively in the meeting by holding scheduled sessions throughout the week, while members of associated societies not formally participating are invited to take part by attending or presenting papers at the scheduled sessions. Titles of papers may be sent to the office of the Secretary, Pacific Division, American Association for the Advancement of Science, Stanford University, up to May 3, or, if sent to the secretaries of affiliated societies, the closing date for their inclusion in the program is April 29.

The meeting of the Pacific Division will be followed by a symposium commemorating the enunciation of the cell theory (July 1 to 5), and by the sixteenth National Colloid Symposium (July 6 to 8). Both will be held at Stanford University.

## SCIENTIFIC NOTES AND NEWS

At the annual meeting in Philadelphia of the American Association of Physical Anthropologists a dinner will be given on April 4 at the Hotel Pennsylvania in honor of the seventieth birthday of Dr. Aleš Hrdlička, curator of the Bureau of Anthropology of the U. S. National Museum. Dr. Hrdlička was born in Bohemia on March 29, 1869.

ACCORDING to a cablegram from England, Dr. C. E. Kenneth Mees, director of the research laboratories and vice-president of the Eastman Kodak Company, was nominated on March 16 for fellowship in the Royal Society, London.

THE International Acetylene Association recently awarded the James Turner Morehead Medal to John J. Crowe, research engineer of the Air Reduction Sales Company, New York. The medal was presented at the convention of the association, which met at Houston, Texas, from March 8 to 10. It was awarded to Mr. Crowe "in honor of his unceasing and successful technical activities," particularly in the development of apparatus for oxyacetylene welding and cutting.

DR. ADOLF WINDAUS, professor of chemistry at Göttingen, has been awarded the Pasteur Medal of the Society of Biological Chemistry at Paris.

THE Mary Kingsley Medal of the Liverpool School of Tropical Medicine has been awarded to Dr. Werner Schulemann, professor of pharmacology at the University of Bonn.

IT is announced in *Nature* that G. Ingle Finch, professor of applied physical chemistry at the Imperial College of Science and Technology, London, was presented at the Belgian Embassy on January 23 with the order of Commander of the Order of King Leopold II, which was conferred on him by King Leopold III for services rendered to science in Belgium during his term of office as Fondation Francqui professor in the University of Brussels during 1937-1938. Dr. Otto Loewi, professor of pharmacology at the University of Graz, was recently appointed his successor.

DR. ALFRED VOGT, professor of ophthalmology at the University of Zurich, has received the Cothenius Medal of the Academy of Natural Sciences at Halle.

THE hundredth anniversary of the birth of Ludwig Mond, the distinguished English industrial chemist, occurred on March 7.

DR. S. W. RANSON, director of the Institute of Neurology of the Medical School of Northwestern University, has been elected a corresponding member of the Society of Neurology of Paris.

THE retirement is announced of Dr. Albert H. Wilson, professor of mathematics at Haverford College, who has been a member of the faculty for twenty-nine years.

PROFESSOR F. J. COLE retired in September from the chair of zoology at the University of Reading, which he had held for thirty-two years.

DR. ERWIN FINLAY FREUNDLICH, formerly professor in the German University at Prague, has been appointed Napier lecturer in astronomy and director of the new Astronomical Observatory in the United College of St. Andrews.

DR. CARL WILHELM CORRENS, of Rostock, has been appointed professor of mineralogy and geology at Göttingen.

DR. FREDERICK C. LEONARD, chairman of the department of astronomy of the University of California at Los Angeles, will be visiting professor of astronomy in the summer session of the University of British Columbia, Vancouver, which will be in session from July 3 to August 18, and Dr. Daniel Buchanan, dean of the Faculty of Arts and Science and head of the department of mathematics of the University of British Columbia, will be visiting professor of astronomy and mathematics in the summer session at Los Angeles, from June 26 to August 4. A similar exchange was made in the summer of 1937.

DEPUTY COMMISSIONER CHARLES E. JACKSON has been appointed Acting Commissioner of Fisheries to discharge the duties of the Commissioner of Fisheries until such time as an appointment is made to fill that position. The resignation of Commissioner Frank T. Bell was accepted by the President on January 7.

DR. G. E. HILBERT, senior chemist in the Bureau of Chemistry and Soils of the U. S. Department of Agriculture, has been appointed scientific adviser, with headquarters at Washington, D. C., in the general organization of the Regional Research Laboratories, which are being established by the department.

DR. C. K. LEITH, professor of geology at the University of Wisconsin, has been reappointed by Secretary Hopkins a member of the Business Advisory Council to the U. S. Department of Commerce. Professor Leith is also chairman of the Minerals Advisory Committee to the U. S. War and Navy Depart-

ments, acting through the Army and Navy Munitions Board.

DR. WENDELL S. NIEDERHAUSER, assistant professor of chemistry at Williams College, has resigned to take a position as research chemist with the Rohm and Haas Company, of Philadelphia.

THE Jacob Wertheim Fellowship for the Betterment of Industrial Relations has been awarded by Harvard University to Anthony Luchek, of the University of Michigan, to enable him to complete a study of labor conditions in the automobile industry. The fellowship, with an endowment of \$100,000, was established in 1923.

THE Commonwealth Fund has granted the sum of \$8,360 to the Institute of Pathology at Western Reserve University to be expended over the course of a year in support of the studies on the chemistry of immunity of Dr. E. E. Ecker, associate professor of immunology and immunologist to the University Hospital. Provided progress is made, a similar appropriation will be made for an additional two years.

THE Rockefeller Foundation has made a grant of \$2,000 to continue for the year 1939 the studies in malaria conducted by William H. Taliaferro, chairman of the department of bacteriology and parasitology and dean of the Division of the Biological Sciences of the University of Chicago.

THE National Committee for Mental Hygiene will give an additional grant of \$1,000 to aid in the research in dementia praecox being carried on by Drs. Esther Bogen Tietz and Douglas Goldman, at Longview Hospital, Cincinnati.

DR. JOHN A. LANFORD, assistant professor of surgical pathology at Tulane University, has been elected a member of the board of directors of the American Society for the Control of Cancer.

DR. DUGALD C. JACKSON, professor emeritus of electrical engineering at the Massachusetts Institute of Technology, lectured on March 15 at the Franklin Institute, Philadelphia. The title of the lecture was "Man in an Engineering World." At this meeting presentation of the Boyden Premium was made by the institute to Dr. John S. Hall, of the Amherst College Observatory.

DR. HENRY B. WARD, of the University of Illinois, gave an illustrated lecture on March 8 at the Illinois State Museum on "Salmon Psychology and its Relation to Conservation." The lecture was one of the winter series sponsored by the museum.

DR. ENRICO FERMI, professor of physics at Columbia University, gave an illustrated lecture on "The Mesotron" at a joint meeting on March 16 of the Washing-

ton Academy of Sciences and the Philosophical Society of Washington.

THE Edward K. Dunham Lectures for the promotion of the medical sciences were given on March 8 and 10 at Harvard Medical School by Dr. K. Linderstrøm-Lang, of the Carlsberg Laboratory, Copenhagen. The titles of the separate lectures were: "Micromethods for the Determination of Enzymes," "Distribution of Enzymes in Cells and Tissues" and "Proteins and Proteolytic Enzymes." He lectured on March 21 at the Franklin Institute under the auspices of the Biochemical Research Foundation on "The Histo-chemistry of Cells."

DR. THOMAS M. RIVERS, director of the Hospital of the Rockefeller Institute for Medical Research, will deliver five Lane lectures at the School of Medicine of Stanford University during the week beginning on May 22. The subjects of the lectures will be: "Lymphocytic Choriomeningitis," "Pathology of Virus Diseases," "Immunological and Serological Phenomena of Virus Diseases," "The Nature of Viruses" and "The Treatment and Prevention of Virus Diseases."

THE fourth annual science forum lecture at Mundelein College, Chicago, will be given on April 18 by the Reverend Alphonse M. Schwitalla, S.J., dean of the Medical School of St. Louis University. His subject will be "Schwann and a Century of Scientific Progress." The lecture will commemorate the one hundredth anniversary of the publication of the cell theory.

DR. HOWARD C. NAFFZIGER, head of the division of surgery of the Medical School of the University of California and president of the American College of Surgeons, has been invited to make an address on the occasion of the celebration on May 4 of the anniversary of the founding of the Medical School of the Johns Hopkins University.

DR. FRANCIS G. BENEDICT, formerly director of the Nutrition Laboratory of the Carnegie Institution of Washington at Boston, lectured at Notre Dame University, Indiana, on March 13 and 14. The first was an illustrated lecture on animal metabolism, "From the Mouse to the Elephant." The second was entitled "Science and the Art of Deception."

THE regular spring meeting of the Pennsylvania Academy of Science will be held on April 7 and 8 at the Pennsylvania State College, Pa. Information concerning the meeting can be obtained from the secretary, Dr. V. Earl Light, Lebanon Valley College, Annville, Pa.

THE fourteenth scientific sessions of the American Heart Association will be held on May 12 and 13 at the

Hotel Jefferson, St. Louis, Mo. The general cardiac program will be given on Friday, May 12, and the program of the Section for the Study of the Peripheral Circulation on Saturday, May 13.

THE tenth spring meeting of the Eastern Psychological Association will be held at Bryn Mawr College on March 31 and April 1, under the presidency of Dr. Karl M. Dallenbach, of Cornell University.

THE American Institute of Nutrition will meet in Toronto on April 26. The morning and afternoon sessions will be devoted to the presentation of papers on current nutrition research. The evening will be given over to a symposium entitled "The Fortification of Foods with Vitamins and Minerals," Dr. E. V. McCollum, professor of biochemistry and head of the department of school hygiene and public health of the Johns Hopkins University, presiding. The program follows: "Basic Nutrition Principles Involved in the Fortification of Foods," Agnes Fay Morgan; "Fortification of Foods in a General Program for Better Nutrition," Lydia Roberts; "Public Health Aspects of Fortification of Foods," W. H. Sebrell; "Governmental Control Problems in the Fortification of Foods," E. M. Nelson, and "Viewpoints of the Food Industries Regarding Fortification," Alonzo Taylor.

DURING the current academic year the department of geology of Bryn Mawr College has conducted a symposium on the problems of the crystalline rocks of the Piedmont Province of the eastern United States. Lectures and field excursions for a selected group of graduate students have been conducted by Professors E. H. Watson and Dorothy Wyckoff. During January and February a series of lectures by workers in this field has been given. The lecturers and their subjects were: G. W. Stose, U. S. Geological Survey, "The Geology and Structure of the Reading Hills, Pa."; Dr. Anna Jonas Stose, U. S. Geological Survey, "The Geology and Structure of the Western Piedmont of Maryland"; Dr. Anna Hietanen, University of Helsinki, Finland, "Orientation of Quartz and Mica in the Wissahickon Schist of the Philadelphia Region"; Dr. Ernst Cloos, the Johns Hopkins University, "Recent Work on the Geology and Structure of the McCalls Ferry-Quarryville Quadrangles"; Dr. Marland P. Billings, of Harvard University, "Metamorphism in Western New Hampshire and Eastern Vermont"; Dr. Robert Balk, Mount Holyoke College, "Problems of Metamorphism in Southeastern New York"; Dr. Eleanor Bliss Knopf, Yale University, "The Role of Mineralogic and Tectonic Facies in Metamorphism."

THE Eastern Regional meeting of the Pennsylvania Junior Academy of Science was held on February 24 under the auspices of the Steinmetz Scientific Society of the Upper Darby Senior High School. Over a

hundred and fifty high-school students of science were in attendance, with fifteen science clubs represented. Eleven student papers were presented. There was an attendance of a hundred and ten at the dinner in the evening, at which Dr. Richard M. Sutton, of Haverford College, was the speaker. The Western Regional meeting was held on March 4, under the auspices of the Biology Club of Peabody High School, Pittsburgh, Pa. Thirteen clubs were represented by two hundred and twenty-five boys and girls. The attendance at the dinner was a hundred and forty. Dr. L. K. Darbaker, of the University of Pittsburgh, president of the Pennsylvania Academy of Science, and Dr. Karl F. Oerlein, Teachers College, California, Pa., general chairman of the Pennsylvania Junior Academy of Science, spoke at the morning session. Fourteen student papers were presented.

YALE UNIVERSITY has received from the Rockefeller Foundation a grant-in-aid of \$189,000 toward the continued support of the Yale Laboratories of Primate Biology for the five-year period July 1, 1939, to June 30, 1944, and also the sum of \$35,000 for the construction of an additional laboratory building at the Anthropoid Station at Orange Park, Florida. Under the reorganization of the laboratories, following the ten-year period for which the project was originally financed, the director, Dr. Robert M. Yerkes, will be responsible to an administrative committee, serving as a board of control. The following have been appointed members of this committee: Drs. Carl G. Hartman, research associate in embryology, Carnegie Institution, the Johns Hopkins School of Medicine, *chairman*; Edgar Allen, professor of anatomy, Yale School of Medicine; Leonard Carmichael, president of Tufts College; William H. Taliaferro, dean of the

Division of Biological Sciences, University of Chicago; Robert M. Yerkes, professor of psychobiology, Yale School of Medicine, *secretary*, and, as member *ex-officio*, Stanhope Bayne-Jones, dean of the Yale School of Medicine.

CANDIDATES for the Jacksonian professorship of natural philosophy at the University of Cambridge, which is vacant owing to the resignation of Professor E. V. Appleton, of St. John's College, to accept the secretaryship of the Scientific and Industrial Research Council, should communicate with the vice-chancellor of the university before April 11. The professorship is assigned to experimental atomic physics and will be associated with the Cavendish Laboratory.

It is stated in *Nature* that a large plaster-of-Paris model of the main new buildings of the Academy of Sciences of the U.S.S.R. is now on view at the Academy's premises in Bolshaya Kuluzhskaya Ulitsa in Moscow. The buildings were designed by A. V. Shchusev. The site for the buildings most favored is on the Frunze Embankment of the Moscow River. The new buildings of the academy, according to the plans, consist of five blocks with a volume of 880,000 cubic meters. In the center of the architectural ensemble is the main block for the presidium of the academy. The hall is large enough to seat 2,000 persons. There are also four smaller auditoriums. Near the main hall are rooms for the demonstration of films and for broadcasting; also a post and telegraphic office and an information bureau. A block has been set aside for the library and storage premises for fifteen million volumes. On either side of the block for the presidium are buildings to accommodate two museums, one of which will be the Natural History Museum.

## DISCUSSION

### NUCLEAR AND CYTOPLASMIC EFFECTS OF ULTRA-VIOLET LIGHT

THE bactericidal and photolethal effects of ultra-violet light have been known for a long time,<sup>1</sup> but the mode of action of the radiations is still obscure, although many interesting clues have been uncovered. Among the most interesting is the fact that the reciprocal of the curve of bactericidal action at different wave-lengths is suggestive of the absorption curve of the nucleoproteins, a fact which led Gates<sup>2</sup> to propose that the seat of action of ultra-violet light may be in the nucleoproteins of the cell.

If the lethal effect of ultra-violet light is indeed correlated chiefly with the effects upon nuclear constituents, then one might suppose that the isolated nucleus should be far more sensitive to the radiations

than a nucleus surrounded by cytoplasm. Sperm are almost naked nuclei; they should serve as convenient material for just such a test. Therefore in one series of experiments the sperm of the sea urchin *Strongylocentrotus purpuratus* were irradiated, then used to inseminate unirradiated eggs; in another series of experiments the eggs were irradiated 30 minutes after insemination. In both cases, following the smaller dosages, division was retarded; following larger dosages, it was irregular; and if the dosage was large enough, abnormal. The results will be reported in detail later. In these studies known intensities of 2654Å, a wave-length near the region of maximal absorption by the nucleoproteins<sup>3</sup> was used; the apparatus was essentially like that previously described.<sup>4</sup>

The point of greatest interest in these data, how-

<sup>1</sup> Duggar, "Biological Effects of Radiation," Vol. II, Ch. 36, 1936.

<sup>2</sup> Gates, *SCIENCE*, 68: 479, 1928.

<sup>3</sup> Heyroth and Loofbourov, *Bull. Basic Science Res.*, 5: 13, 1933.

<sup>4</sup> Giese and Leighton, *Jour. Gen. Physiol.*, 5: 535, 1935.