Groves, supervisor of home economics; Miss Rose K. Brandt, supervisor of elementary education; Miss Mary Stewart, assistant director of education; Mrs. Elna Smith, of the division of subsistence homesteads; Miss Evelyn Pierce, of the education division; Mrs. Margaret Welpley, of the Indian organization unit, and Albert Sandoval, of Lukachukai, Arizona, assistant on the Navajo language project.

SCIENTIFIC NOTES AND NEWS

DR. CHARLES A. KRAUS, professor of chemistry and director of chemical research at Brown University, has been awarded the Willard Gibbs Medal of the Chicago section of the American Chemical Society for 1935, for his research on the theory of solutions.

PROFESSOR CARL G. ROSSBY, professor of meteorology, and Dr. Hurd C. Willett, assistant professor of meteorology at the Massachusetts Institute of Technology, on January 30 received the Sylvanus Albert Reed award of the Institute of the Aeronautical Sciences in New York for their contributions to weather forecasting. It was largely as a result of their work that the polar front or air mass analysis method recently was adopted by the U. S. Weather Bureau. Dr. Joseph S. Ames, president of The Johns Hopkins University and chairman of the National Advisory Committee for Aeronautics, was made an honorary fellow of the institute.

THE Stevens Triennial Prize was awarded in 1934 by the College of Physicians and Surgeons of Columbia University to Dr. Robert F. Loeb and Dr. Harold A. Abramson, jointly. The award to Dr. Abramson was made on the basis of his research on the electrochemical reactions of blood cells and is of interest because of his recent summary of the electrochemical properties of surfaces in liquids.

AT a recent meeting of the American Society of Civil Engineers the Norman Medal was presented to Leon S. Moisseiff, consulting engineer of New York City, for his paper on "The George Washington Bridge—Design of the Towers." The J. James R. Croes Medal was awarded to Dr. H. M. Westergaard, professor of theoretical and applied mechanics at the University of Illinois, for his work on "Water Pressure on Dams during Earthquakes." The Thomas Fitch Rowland Prize was awarded to Miles I. Killmer for a paper on "Fulton Street, East River, Tunnels." A paper by E. Warden Bowman on the steel superstructure of the George Washington Bridge won the James Laurie Prize. J. C. Evans, terminal engineer of the Port of New York, received the Arthur M. Wellington Prize. Mr. Evans's paper dealt with the approaches and highway connections to the George Washington Bridge. The Collingwood Prize for juniors was given to G. H. Hickox and G. O. Wessenauer, for a paper on the "Application of Duration Curves to Hydro-Electric Studies."

AT the dinner of the American Society of Plant Physiologists in Pittsburgh, Dr. Burton E. Livingston, president of the society, was presented with a check by his former students at the Johns Hopkins University, on the occasion of his completing twenty-five years of service at this institution and in recognition of his services to plant physiology. The presentation was made by Dr. John W. Shive, professor of plant physiology at Rutgers University, who received his doctor's degree from the Johns Hopkins University in 1915.

DR. LEONA BAUMGARTNER, of Yale University, now of the Children's Clinic of the New York Hospital, was awarded the John Lovett Morse Prize for her research work upon "Age and Antibody Production." The prize is given annually by the New England Pediatric Society for the outstanding investigation of the year.

DR. EDNA HARDE YOUNG, American bacteriologist connected with the Pasteur Institute, has been awarded the Guy Amerongen Prize for cancer research, for a paper submitted to the French League against Cancer on the thesis that chemically preserved foods aid the growth of cancer cells.

IGNATZ MOSCICKI, president of Poland and well known for his work in chemistry, was awarded the degree of "doktora honoris causa" at the University of Fribourg in recognition of his thirty years of research in electrochemical research.

HARVARD UNIVERSITY has announced the following retirements and appointments: Dr. George H. Parker, professor of zoology; Dr. Milton J. Rosenau, professor of medicine and hygiene, and Albert Sauveur, professor of metallurgy and metallography, have retired. Dr. Weld Arnold, instructor in geological survey and field astronomy, has been appointed assistant director of the Institute of Geographical Exploration for one year; Edwin Raisz has been made curator of maps in the Institute of Geography, and Edmund B. Delabarre, Jr., has been made assistant in psychology.

DR. KNIGHT DUNLAP, professor of psychology in the Johns Hopkins University, has accepted appointment as visiting professor at the University of California at Los Angeles for the spring semester.

IT is reported in *Industrial and Engineering Chemistry* that Dr. Irvin Lavine, professor of chemical

engineering at the University of North Dakota, has been appointed by the National Resources Board of Washington, D. C., to the position of consultant to the North Dakota State Planning Board. He will work with the state board in developing a long-range program for the rehabilitation of the state according to objectives laid down by the National Resources Board. The university is extending a leave of absence to him for the period of his appointment. His headquarters will be at the university.

DR. THOMAS A. WILSON, associate professor of chemistry at Union College, has been appointed senior fellow at the Mellon Institute. Dr. J. George Lutz has been made instructor to replace Dr. Wilson.

DR. ALBERT C. FURSTENBERG, professor and head of the department of otolaryngology, has been appointed dean of the Medical School of the University of Michigan.

HUMPHREY GRAY OWEN, associate professor of zoology at the University of Denver, has been made chairman of the division of biological sciences and professor of zoology. He succeeds Dr. Ira Eugene Cutler, who becomes professor emeritus.

THE resignation of Claude R. Kellogg, assistant professor of entomology at the Massachusetts State College, has been announced. Professor Kellogg left on February 1 for China, where he will resume the post of professor of entomology and beekeeping at the Fukien Christian University which he held from 1916 to 1931.

E. F. ARMSTRONG, British industrial chemist, has been elected chairman of the British Standards Institution.

DR. WALTER B. CANNON, George Higginson professor of physiology at the Harvard Medical School, will leave early in March for China, where he will serve as visiting professor of physiology at the Peiping Union Medical College from April 15 to June 1. After a sojourn in Japan, he will cross Siberia and attend the International Physiological Congress in Leningrad and Moscow in August.

J. FRANCIS MACBRIDE, assistant curator of taxonomy in the department of botany of the Field Museum, who has been in charge of the joint botanical project of the Rockefeller Foundation and the Field Museum of Natural History since it was inaugurated about five years ago, sailed for Europe on January 30 to continue the project. Mr. Macbride has been in this country for a visit during the past several months, his first interruption of the work since its inception. The project has for its purpose the making of photographic negatives of type specimens of plants preserved in European herbaria, prints of which, through the Field Museum, are made available to all botanists.

DR. HELLMUT DE TERRA, research associate at the Peabody Museum, Yale University, and chief of the Yale University North India Expedition, sailed on February 2 for India to take charge of excavations in the Himalayan foothills. The expedition will seek further traces of prehistoric man to match with the fossil ape unearthed in Northern India last year. The expedition, sponsored by Yale University, the Carnegie Institution of Washington, the American Philosophical Society, the Geological Survey of India and the Cenozoic Research Laboratory of Peking, China, will have an international personnel. Père Teilhard de Chardin, acting director of the Cenozoic Laboratory; T. T. Patterson, a geologist and archeologist of Cambridge University, and V. N. Ayengar, paleontologist of the Survey of India, are members of the party.

A SERIES of lectures has been inaugurated at the School of Medicine and Dentistry of the University of Rochester, to be known as the Eastman memorial lectures, in memory of George Eastman. The last lecture was given on November 14 by Dr. Eugene F. DuBois on "The Surface Area of the Body and the Radiation of Heat." On February 5 Dr. Peyton Rous lectured on "Viruses and Tumors."

DR. W. F. G. SWANN, director of the Bartol Research Foundation, lectured at the first meeting of the Lancaster, Pennsylvania, Branch of the American Association for the Advancement of Science on February 13. His subject was "Cosmic Rays."

PROFESSOR ALBERT EINSTEIN was the principal speaker at a dinner given at the Young Men's and Young Women's Hebrew Association in Philadelphia on February 6, as the opening of a campaign to raise $25,000 for the support of the Bicur Cholim Hospital in Jerusalem.

DR. ARTHUR L. DAY, director of the geophysical laboratory of the Carnegie Institution, delivered an address before the Washington Academy of Sciences on January 17. The title of his address was "Public Safety in Earthquake Regions."

THE annual Alpha Omega Alpha lecture of the Jefferson Medical College was given on January 18 by Professor William K. Gregory, of the American Museum of Natural History, on "The Origin, Rise and Decline of *Homo sapiens*."

A SERIES of lectures on our astronomical relations was given in January at Harvard University by Dr. Harlan T. Stetson.

DR. RALPH H. MAJOR, professor of medicine at the University of Kansas School of Medicine, gave the annual Scripps lectures at the Scripps Metabolic Clinic at La Jolla on November 11, 12 and 13.

DR. GEORGE GAMOW, visiting professor at George Washington University and research worker in atomic nuclei at the Academy of Science of Leningrad and at the University of Copenhagen, delivered two lectures at the University of Pennsylvania on January 31. A talk on "Modern Alchemy" was given by Dr. Gamow in the afternoon and in the evening he lectured on "Elementary Particles in Physics."

DR. H. D. CROCKFORD, associate professor of physical chemistry at the University of North Carolina, has received a grant of money from the U. S. Naval Research Laboratory of the Navy Department in Washington, to direct research on the thermodynamics of the lead-sulfuric acid storage cell.

DR. G. LOMBARD KELLY, vice dean of the University of Georgia School of Medicine, announces a gift of $18,000 from Mrs. John W. Herbert, of New York and Augusta, for the furnishing and equipment of the new wing of the University Hospital, as a memorial to her husband, the late John W. Herbert, and to two of their children, Mrs. Gertrude Herbert Dunn and John Oliver Herbert.

THE board of regents of the University of Wisconsin has accepted a grant of $57,500 from the Rockefeller Foundation to continue research on hormones. Funds for the research formerly came from the National Research Council out of funds provided by the Rockefeller Foundation. The funds permit Dr. F. L. Hisaw, professor of zoology, Dr. L. J. Cole, professor of genetics, and Dr. E. L. Sevringhaus, associate professor of medicine, to continue research on hormones or internal secretion glands which, it is thought, control the growth and actions of the human body.

A GRANT has been awarded by the committee of scientific research of the American Medical Association to Dr. W. Antopol, Dr. A. Schifrin and Dr. L. Tuchman, to aid in the continuation of experimental work on acetyl choline, especially in its relation to carbohydrate metabolism, which is being carried out in the chemical laboratories of the Mt. Sinai Hospital.

A COLLECTION of fifteen thousand specimens of wood was bequeathed to the Franklin Institute Museum by the late Henry Howson, of Philadelphia. Each piece is numbered with a steel die and bears the common as well as the botanical name.

THE National Committee for Great Britain and Ireland of the International Society for Microbiology has arranged to organize a congress in London in 1936, and an executive committee, with Professor J. C. G. Ledingham as president, Dr. R. St. John-Brooks as secretary and Dr. J. T. Duncan as treasurer, has been appointed to undertake the work of organization. The scientific business of the congress will be conducted in seven sections, which will meet daily during the meeting. The preliminary selection of programs for these sections will be entrusted to sectional sub-committees, which will report to the executive committee. Each sectional sub-committee will consist of local or London members, together with a recorder and secretary, and of corresponding members at home and abroad. Sections will be as follows: Section 1, bacteria in their morphological, cultural and physiological aspects; section 2, viruses, virus diseases, experimental tumor research and tissue culture; section 3, bacteria and fungi in relation to disease in man, animals and plants; section 4, economic bacteriology; soil, dairy research and industrial microbiology; section 5, medical, veterinary and agricultural zoology and parasitology; section 6, serology and immunochemistry, and section 7, microbiological chemistry.

THE annual meeting of the Association of British Zoologists was held by invitation of the Zoological Society in the society's rooms in Regent's Park on January 5. Professor W. A. F. Balfour-Browne presided. On this occasion the greater part of the time of the meeting was given to a discussion of the present outlook and aims of zoologists. In this discussion Professor D. M. S. Watson, Jodrell professor of zoology and comparative anatomy at the University College, London; Dr. J. Gray, fellow of King's College, Cambridge; Dr. E. S. Russell, director of the fisheries laboratory of the Ministry of Agriculture and Fisheries; Professor E. W. Macbride, professor of zoology, Imperial College of Science, and several other speakers took part.

UNDER the terms of the will of the late Virginia Purdy Bacon, of New York, the Smithsonian Institution some years since was bequeathed the sum of $50,000 to establish a traveling scholarship as a memorial to her husband, Walter Rathbone Bacon, for the study of the fauna of countries other than the United States. The amount available is the interest on the capital invested, which is about $3,000 a year, the incumbent to hold the scholarship not less than two years. Application for this scholarship, addressed to the secretary of the Smithsonian Institution, should be submitted not later than March 15. The application should contain a detailed plan for the proposed study, including a statement as to the faunal problems involved; the reasons why it should be undertaken; the benefits that are expected to accrue; the length of the time considered necessary for

the carrying out of the project; the estimated cost; and the scientific and physical qualifications of the applicant to undertake the project. The scholarship will be awarded for a term of two years. If at the expiration of the term it is desired to extend the time, the incumbent shall make application a sufficient time in advance, accompanied by a statement as to the necessity for such extension. All collections, photographs, records and equipment become the property of the institution. The incumbent shall not engage in work for remuneration or receive salary from other sources than the institution or its branches during the period of occupancy of the scholarship.

DR. L. O. HOWARD, formerly chief entomologist in charge of the Bureau of Entomology, U. S. Department of Agriculture, writes: "Government officials of Denmark paid last autumn a very good and well-deserved compliment to the work done in the United States in a certain branch of science. They invited Dr. Adam G. Böving, who for twenty-two years has been working in the U. S. National Museum and in the Bureau of Entomology of the Department of Agriculture, to cross the Atlantic and to give two short courses of lectures in Denmark. One of these courses, given at the Royal Museum of Zoology, of the University of Copenhagen, related to the classification of the larvae of the Coleoptera. This is a subject that in the last century was studied by the famous Danish workers, Schiödte and Meinert. Böving worked with Meinert and, fortunately for us, fate brought him to the United States and to Washington, a generation ago. These lectures were well attended by Danish students and workers and by some men from adjoining countries. The book by Böving and Craighead published in 1931, entitled 'Illustrated Synopsis of Larval Forms of Coleoptera' and which has been termed 'epoch-making' by certain Europeans, incited this course. The second course was delivered before the Royal Veterinary and Agricultural College and aroused much interest. The agricultural journals and the daily press paid much attention to these lectures. They related to applied entomology in the United States and especially described our organization and methods of work. Both courses were given in September."

IN SCIENCE for January 4 on page 24 the address for Dr. Gustav Zechel should have been University of Illinois instead of University of Chicago.

DISCUSSION

FILM-STRIP COPIES OF SCIENTIFIC PUBLICATIONS

ATTENTION was called some months ago[1] to the efforts being made to reorganize the production and distribution of scientific publications. Special emphasis was laid on the need of making published results of research more easily accessible to those who use them. It was pointed out that the apparatus and materials required for making film-strip copies of printed pages exist at present and all that is needed is to assemble them and systematically organize the service. A plan of such an organization was suggested, and a preliminary estimate given of the cost of the equipment required.

At the time the articles referred to above were written, the most highly developed machine for photographing pages of books upon moving picture film, of which I had learned, was one of German manufacture, for which the quoted price, in marks, corresponded to about $1,000.

Since then, through the courtesy of Dr. Robert C. Binkley, chairman of the Joint Committee on Materials for Research, I have had the privilege of reading the advance sheets of chapters IX and X of his revised "Manual of Methods of Reproducing Research Materials." These chapters give a comprehensive critical survey of the factors involved in applying film-copying processes to the reproduction of printed or other documents. The contributions of a large number of workers are reviewed and it is apparent that greater progress has been made than is generally realized. Some 12 film-copying cameras are described and their relative merits discussed. Of these, the camera invented and built by Mr. Lloyd B. Kennedy, of Warren, Ohio, is considered to be the most ingenious so far developed.

Of the several cameras at present on the market, the most widely used is the Leica. This camera, however, is designed particularly for the use of individuals who wish to make their own copies of documents. Its limited film capacity restricts the usefulness of this camera for the large scale production under which a highly organized library copying service would be called upon to operate.

On November 5 last Mr. Watson Davis, of Science Service, invited to a luncheon at the Cosmos Club of Washington about 15 persons known by him to be interested in the subject of film copying of documents. Among those present was Dr. R. H. Draeger, of the Medical Department of the U. S. Navy. Dr. Draeger

[1] SCIENCE, 80: 70–72, July 20, 1934; pages 184–5, August 24, 1934. See also address on the Berthelot Centenary, SCIENCE, 67: 497–99, May 18, 1928.