showed a market value of $932,760 on a book value of $898,433. There are now twenty-three former members of the staff who are receiving pensions under the various plans offered.

## REPORT OF THE RETIRING DIRECTOR OF THE U. S. BIOLOGICAL SURVEY

THE report of J. N. Darling, retiring chief of the U. S. Biological Survey, recently made public, gives a full account of the work of the survey.

Research work during the year included an intensified investigation of waterfowl conditions, studies of elk, mountain sheep and of caribou in Minnesota; and research in forest wildlife relationships. Statistics showed that 249,829 birds were banded by cooperators during the year; 113 mammal specimens were added to the survey collection, and 662 bird specimens were acquired, chiefly from North Carolina, Georgia and Virginia.

Mr. Darling points out that the survey has developed and published the facts regarding the economic, recreational and esthetic values and the requirements of wildlife and has built up a public sentiment that has made possible the necessary but heretofore unheard-of restrictions on hunting.

The report cites the acquisition and administration of a rapidly increasing number of bird refuges and big-game preserves. The survey has also furnished to agriculture, horticulture, stock raising and forestry a service worth millions of dollars annually, by demonstrating and cooperating in the control of predatory animals and destructive rodents. The numbers of injurious rodents were reduced on 11,166,935 acres for the protection of crops.

Plans for a program of wildlife research, demonstration and education, through cooperation with selected land-grant colleges and state game commissions, were completed and cooperative studies on national forests were extended; the Wichita National Forest and Game Preserve (Okla.) was transferred to the Biological Survey for administration as a wildlife refuge and research station; the importance of the country's fur resource was emphasized in land-management policies and research on suitable species was broadened; all outstanding scientific collecting permits for migratory birds were revoked and new ones issued only on an annual basis to insure against misuse.

Allotments from emergency funds during the year provided "the most noteworthy contribution the federal government has ever made to wild-life." The larger part of a million-dollar fund for acquiring refuge lands was obligated; about $2,100,000 of a two and one half million dollar fund for rehabilitation of new and old refuge areas was either expended or obligated, and in addition nearly all of a fund of $5,000,000 earmarked by the Federal Emergency Relief Administration for the purchase of migratory-waterfowl refuge areas. The Biological Survey thus obtained a group of the most outstanding waterfowl-refuge areas in the country.

## BROADCASTS FROM THE CALIFORNIA INSTITUTE OF TECHNOLOGY

BROADCASTS by the Columbia Broadcasting Company on "Recent Scientific Progress" have been arranged at the Athenaeum in Pasadena under the auspices of the California Institute Associates. The series opened on December 14, and will be continued during the months of January, February, March and April, 1936. The second lecture will be given on January 4, and the remaining lectures will follow at intervals. The program follows:

*Physics*—Dr. Robert A. Millikan, Nobel Laureate, director of the Norman Bridge Laboratory of Physics.
*Geology*—Dr. John P. Buwalda, professor of geology.
*Astronomy*—Dr. Walter S. Adams, director, Mount Wilson Observatory of the Carnegie Institution of Washington.
*Mathematics*—Dr. Eric T. Bell, professor of mathematics.
*Biology*—Dr. Thomas Hunt Morgan, Nobel Laureate, chairman of the Division of Biology, William G. Kerckhoff Laboratories of the Biological Sciences.
*Engineering and Aeronautics*—Dr. Theodor von Kármán, director of the Daniel Guggenheim Aeronautical Laboratory, and Dr. Clark B. Millikan, associate professor of aeronautics.
*Cosmology*—Dr. Richard Chace Tolman, professor of physical chemistry and mathematical physics and dean of the Graduate School.

# SCIENTIFIC NOTES AND NEWS

DR. W. C. MENDENHALL, director of the United States Geological Survey, was elected president of the Geological Society of America at the annual meeting held in New York City on November 26, 27 and 28. He succeeds Dr. Nevin M. Fenneman, professor of geology and geography at the University of Cincinnati.

DR. THOMAS M. RIVERS, member of the Rockefeller Institute for Medical Research, was elected president of the American Society of Bacteriologists, at the recent New York City meeting. He succeeds Dr. Karl F. Meyer, director of the Hooper Foundation, who is now ill as the result of an infection incurred during his work on psittacosis.

THE Warren Triennial Prize of $500 has been awarded by the general executive committee of the

Massachusetts General Hospital, Boston, to Dr. Norman E. Freeman, a member of the staff, for an essay on "The Physiology of Gangrene." The prize was founded by the late J. Mason Warren in memory of his father and is awarded every three years.

THE *Journal* of the American Medical Association states that members of the staffs of the University of Pennsylvania, Graduate, Presbyterian and Abington Memorial hospitals gave a testimonial dinner on November 16, in honor of Dr. George M. Coates, professor of otolaryngology, University of Pennsylvania School of Medicine. A feature of the dinner was the presentation to Dr. Coates of a portrait to be hung in the School of Medicine. Dr. Benjamin H. Shuster made the presentation.

AT the recent annual meeting of the American Society for Metals, Zay Jeffries, consulting metallurgist of the Aluminum Company of America, received the Albert Sauveur Medal, awarded for outstanding contributions to metallurgical progress.

THE A. Cressy Morrison Prize of $250 for the best scientific paper presented by a member of the New York Academy of Sciences, or of one of the affiliated societies, on a subject comprised within the field of these various organizations, was awarded at the annual meeting of the academy on December 16 to Arthur David Howard, of New York University, for his paper entitled "Pleistocene History of the Grand Canyon of the Yellowstone."

THE University of Oxford has conferred the title of "professor" on Dr. Henry Balfour, since 1891 curator of the Pitt-Rivers Museum.

DR. F. O. BOWER, emeritus professor of botany in the University of Glasgow, has been elected a corresponding member of the Prussian Academy of Sciences.

THE Lorentz Medal of the Royal Academy of Sciences at Amsterdam has been awarded to Dr. Peter Debye, professor of physics at the University of Leipzig.

PROFESSOR GUSTAVE ROUSSY, dean of the Faculty of Medicine of the University of Paris and director of the anti-cancer center of the Paris region, has been made a commander in the Legion of Honor.

*Nature* writes: "At the meeting of the Geological Society of London on November 20, Professor C. P. Berkey and Professor P. D. Quensel were elected foreign members, and Professor F. Broili and Dr. E. P. de Oliveira foreign correspondents. Professor Charles P. Berkey, of Columbia University, is the secretary of the Geological Society of America. His publications cover a wide field, but in recent years have been principally devoted to the geology of Mongolia. Professor Percy Quensel, of the University of Stockholm, is known for the elucidation of the problems of the petrology and structural features of the older rocks. Professor Ferdinand Broili, of the University at Munich, is known for his studies of fossil reptiles, brachiopods and trilobites. Dr. Euzebio Paulo de Oliveira is the director of the Geological Survey of Brazil.

R. S. ARCHER, chief metallurgist of the Chicago District, Republic Steel Corporation, was elected president of the American Society for Metals at the recent annual meeting. E. C. Bain, assistant to the vice-president of the United States Steel Corporation, was elected vice-president.

*Nature* reports that Professor W. H. Hoffmann, of the Finlay Institute of Havana, has been elected president of the recently founded Cuban Society of Biology.

PROFESSOR ACHARD has been reelected permanent secretary of the Academy of Medicine of Paris.

THE following officers of the New York City Branch of the Society of American Bacteriologists have been elected for the year 1936: Dr. Theodore Curphey, St. John's Hospital, *chairman;* Dr. Morton C. Kahn, Cornell Medical College, *vice-chairman,* and Dr. William W. Browne, College of the City of New York, *secretary-treasurer.*

DR. RALPH H. HEEREN has been appointed associate professor of hygiene, preventive medicine and bacteriology at the State University of Iowa College of Medicine, Iowa City.

DR. ERNEST RENAUX has been appointed the successor to Professor Jules Bordet in the chair of bacteriology in the University of Brussels.

DR. WILLIAM HALLOCK PARK retired on his seventy-second birthday anniversary on December 30 from active work as director of the Bureau of Laboratories of the New York Department of Health. He will take a six months' vacation, after which he will retire permanently as director and become director emeritus. He has held the post for forty-one years. The new William H. Park Research Laboratories, named in his honor, will have been completed, so that they can be dedicated while Dr. Park is still nominally in the city's service. He expects to continue to work at the laboratories in an advisory capacity. Dr. Ralph Muckenfuss, acting associate director, will be in charge during his absence. Next summer Dr. Park will retire from the Hermann M. Biggs professorship of preventive medicine at the New York University College of Medicine.

DR. ISAAC MONROE CLINE, principal meteorologist of the U. S. Weather Bureau in New Orleans, retired at

the end of the year, after serving for over fifty-three years. It is reported that Willard F. McDonald, formerly administrative assistant to Dr. Cline, who went to Washington as head of the marine division of the Weather Bureau in 1931, is expected to succeed Dr. Cline, with the title of administrator, and R. A. Dyke, senior meteorologist in the bureau in New Orleans, is expected to become chief forecaster.

DR. JOHN S. UNGER, long associated with the Carnegie Steel Company and since 1908 manager of the Central Research Bureau, recently resigned his position just prior to his eightieth birthday. According to the *Bulletin* of the society he has been a member for over twenty-five years of the American Society for Testing Materials and has served on a number of standing committees.

*Museum News* reports that new appointments for 1935–36 in the American Association of Zoological Parks and Aquariums include the following chairmen of standing committees: membership, Roger Conant, curator of reptiles, Philadelphia Zoological Garden; statistics and publications, W. Reid Blair, director, New York Zoological Park; legislation, Mrs. Belle J. Benchley, executive secretary, Zoological Society of San Diego; express and transportation, Robert A. Bean, assistant director, Chicago Zoological Park, and design and construction, John E. Wallace, architect, St. Louis Zoological Park.

BEGINNING with the issue of January 1, Dr. Herbert S. Gasser will become co-editor of *The Journal of Experimental Medicine* with Dr. Simon Flexner and Dr. Peyton Rous.

DR. LOUIS C. KRESS, director of the New York State Division of Cancer Control, has been appointed chairman of the state cancer committee of the American Society for the Control of Cancer, succeeding Dr. Burton T. Simpson.

DR. T. E. ODLAND, of Rhode Island, and Dr. H. P. Cooper, of South Carolina, have been appointed representatives of the American Society of Agronomy on the Council of the American Association for the Advancement of Science for the year 1936.

THE Committee on Scientific Research of the American Medical Association has made a grant to Dr. Jessie L. King, of the department of physiology and hygiene at Goucher College, Baltimore, in aid of research on the effect of cortical extract on normal rats.

F. TRUBEE DAVISON, president of the American Museum of Natural History, sailed with Mrs. Davison on December 28 on the first lap of a journey to India. They intend to do some hunting and will probably collect flora and fauna for the museum, though that will be incidental to the trip. They expect to return in April.

DR. S. C. BROOKS, professor of zoology at the University of California and Dr. Matilda M. Brooks, research associate in biology, will be on leave from January to June, 1936. They will spend the first part of the winter in Tahiti, experimenting on Valonia.

THE sum of a million and a half dollars has been added to the gift recently made by the Horace H. Rackham and Mary A. Rackham Fund to the University of Michigan. This additional benefaction brings the total amount of the grants for the furtherance of advanced study and research by this fund to the university to $6,500,000. With the possible exception of the gifts of the late William W. Cook, this is the largest gift ever received by the university.

A GIFT of $2,000,000 from Lucius N. Littauer, of New York City, manufacturer and ex-congressman, has been made to Harvard University for the establishment of a Graduate School of Public Administration. Half a million dollars has already been received and the balance will be received within the next two years. A "commission," of which President Harold W. Dodds, of Princeton University, will be chairman, has been appointed to make a comprehensive report on university education for public service and to recommend plans for the organization of the new school.

A GIFT of $500,000 to Harvard University from Thomas W. Lamont, of New York, for the founding of one of the new university professorships under Harvard's three hundredth anniversary fund plan, has been announced. The purpose of the anniversary fund, as described by President Conant, is "to strengthen the university as a national institution" by establishing pioneering interdepartmental professorships of an entirely new type and by creating large annual national prize scholarships to be competed for by boys in each state of the union. The gift is without restriction, under the general purposes of the three hundredth anniversary fund, but it is suggested that the professorship might be used for the first time in the field of political economy. This is the first gift of a professorship under the new plan.

BY the will of Charles Howard Warren, formerly treasurer of the Mutual Life Insurance Company, his residuary estate, estimated at $1,000,000, is bequeathed to Yale University. The bequest is to aid young men in securing educational advantages and as a "memorial to my son, Lewis Baker Warren," and "to the Anglo-Saxon race, to which the United States owes its culture, and as a means of maintaining the best ideals and traditions of that culture." The will provides that Yale University must accept the gift within six months

of the date of probate. Mrs. Lillian Baker Warren receives the income from the residue for life.

THE Elizabeth Clay Howald Scholarship has been endowed by the late Ferdinand Howald, an alumnus of the Ohio State University, in memory of his mother, Elizabeth Clay Howald. Appointments will be made annually and the scholar will receive an honorarium of $3,000 paid in twelve equal monthly installments. Any person who has shown marked ability in some field of study and has in progress work, the results of which promise to be an important contribution to our knowledge, shall be deemed eligible to appointment. If the scholar has ever been a student of the Ohio State University or a member of the university staff, he may carry on his investigation either at the Ohio State University or, subject to the approval of the Graduate Council, elsewhere. If the scholar has never had any connections with the Ohio State University, he must carry on his investigation there. Prospective candidates may secure application blanks, which must be filed not later than March 1, by addressing the Dean of the Graduate School, the Ohio State University. The appointment will be made on April 1 and the term of appointment will begin on July 1.

PROFESSOR MARSTON T. BOGERT writes: "Thanks to the generosity of interested friends, the Organic Laboratories of Columbia University have received recently research funds as follows: (1) From E. R. Squibb & Sons, 745 Fifth Avenue, New York, for investigations in the quinazoline series. (2) From the Ella Sachs Plotz Foundation, Collis P. Huntington Memorial Hospital, Boston, Mass., for researches on the synthesis of certain polycyclic hydrocarbons. (3) From the Committee on Therapeutic Research, of the Council on Pharmacy and Chemistry, American Medical Association, to assist in studies on the chemistry and pharmacology of the quinazoline group. With this support, work is actively under way in these fields, as well as in many others, and the results will be reported from time to time in our chemical periodicals."

# DISCUSSION

## THIRD SCARRITT EXPEDITION OF THE AMERICAN MUSEUM OF NATURAL HISTORY

THE activities of the first two Scarritt Expeditions, both to Patagonia, have previously been reported in this journal.[1] Twenty-seven papers (reference to which will be supplied on request to the writer) have been published on the Patagonian work. Most of the fossils collected on the second expedition have now been prepared, and their study is in progress, as is also the final report on the early mammalian faunas of South America.

The field work of the Third Scarritt Expedition, just completed, has continued the general program of these expeditions and of the American Museum of Natural History for research on early Tertiary, particularly Paleocene and Eocene, mammals of the world, this time in the Paleocene Fort Union Formation of the Crazy Mountain Field, Wheatland and Sweetgrass Counties, Montana. This work is due to the continued support and interest of Mr. H. S. Scarritt, of New York, with the cooperation of Mr. and Mrs. Fenley Hunter, of Flushing.

The party was in the field from June 4 to September 29, 1935, and consisted of the writer, Mr. A. C. Silberling, and a cook and helper for the full period. Mr. and Mrs. Hunter worked with the party during June, Dr. Walter Granger from August 8 to September 10, Mr. Albert Thomson from August 20 to the end and Mr. H. S. Scarritt from August 28 to August 31. Mr. F. Trubee Davison and party also visited the camp and made possible an aerial reconnaissance. Mr. Ray Wyn and numerous other local people cooperated in the most helpful way.

The success of this work is very largely due to Mr. Silberling, of Harlowton, Montana, well known for his work in this and other fields during the past thirty-five years. The localities worked were all discovered by him, and his knowledge and experience prevented lost motion and greatly facilitated all the work.

Forty-eight localities were thoroughly prospected, but the great bulk of the collections obtained is from two quarries. One, the Gidley Quarry, was discovered by Mr. Silberling, in 1908, and previously worked by him and by the late Dr. J. W. Gidley for the United States National Museum. Equally important is a new quarry, the Scarritt Quarry, recognized as a promising prospect by Mr. Silberling some years ago, but worked as a quarry this year for the first time.

The collection includes 635 jaws and partial skulls of mammals and about 900 isolated teeth, limb-bones and other less important specimens of fossil vertebrates. It is thus one of the largest extant collections of Paleocene mammals, and probably much the largest ever made in a single field season. The material has not yet been prepared or identified, but it apparently includes about 75 species of fossil mammals, a number of which appear to be new, and thus gives a remarkably complete picture of mammalian life in the Middle Paleocene.

Several different orders and many families of mammals are included, but greatest interest attaches to the Primates, which are the oldest known from anywhere

[1] SCIENCE, 80: 2070, 207–208, August 31, 1934.