sity; George Gaylord Simpson, associate curator of vertebrate paleontology, American Museum of Natural History, New York City; Joseph Slepian, research engineer, Westinghouse Electric and Manufacturing Company, Pittsburgh, Pa.; Lyndon Frederick Small, head chemist of the Division of Infectious Diseases, National Institute of Health, U. S. Public Health Service; Wendell Meredith Stanley, member of the Rockefeller Institute of Medical Research, Princeton, N. J.; Tracy Yerkes Thomas, professor of mathematics, University of California at Los Angeles; George Bernays Wislocki, Parkman professor of anatomy at Harvard University.

SCIENTIFIC NOTES AND NEWS

FORMER students of Dr. Marston Taylor Bogert, professor emeritus of organic chemistry in residence at Columbia University, who had obtained the doctorate under his direction presented his portrait to the university at a dinner at which he was the guest of honor at the Chemists' Club on May 2. Frederic E. Coudert, university trustee, accepted the painting on behalf of Columbia, where Dr. Bogert has been a member of the teaching staff for forty-seven years. Dr. Michael Heidelberger, of the Columbia School of Medicine, made the presentation. Dr. George D. Beal, of the Mellon Institute of Industrial Research, Pittsburgh, was toastmaster. The speakers included Dr. Edward Bartow, of the Johns-Manville Corporation, vice-president of the International Union of Chemistry, of which Dr. Bogert is president; Dr. Robert M. MacIver, head of the Columbia University Section of the Association of University Professors; Dr. Henri Mouquin, of New York University, president of the Société de Chimie Industrielle; Dr. Charles L. Parsons, Washington, D. C., secretary of the American Chemical Society, of which Dr. Bogert is past president; Dr. Foster D. Snell, of Brooklyn, president of the Graduate Alumni Association of Columbia University; Dr. Maximilian Toch, past president of the Chemists' Club; Dr. Horatio B. Williams, of Columbia University, president of Sigma Xi; Dr. Lincoln T. Work, of the Metal and Thermit Corporation, Carteret, N. J., chairman of the American Section of the Society of Chemical Industry.

THE John Phillips Memorial Medal for 1940–41 of the American College of Physicians was awarded at the recent Boston meeting to Dr. William C. Stadie, associate professor of research medicine at the University of Pennsylvania, in recognition of his work on diabetes.

THE Thomas McCrae award of one hundred dollars for the best publication in 1940 by younger members of the Medical Staff of the Pennsylvania Hospital, Philadelphia, was granted to Dr. Robert F. Norris and Dr. Alexander Rush. At a special meeting on April 22, at which the awards were presented, Dr. Henry A. Christian, Hersey professor of the theory and practice of physics, emeritus, of Harvard University, made an address on "Scholarship in Medicine."

THE two awards of $100 each offered by the Laymen's League against Epilepsy in 1940 for the best original unpublished investigations bearing on the subject of epilepsy have been granted for work done in a state epileptic colony or mental hospital to Dr. Walter L. Bruetsch, Central State Hospital, Indianapolis, "Rheumatic Epilepsy," and for work done elsewhere to Dr. Frederick A. Fender, Stanford University Hospital, San Francisco, "Convulsions Following Remote Electrical Stimulation of Subcortical Cerebral Levels."

THE *Journal* of the American Medical Association states that Dr. Lewis Thomas, of the Neurological Institute, New York, has received the first research fellowship in neurology awarded by the Frederick Tilney Memorial. Dr. Thomas will begin his work in the field of infectious diseases of the central nervous system at the Thorndike Memorial Laboratory and the Boston City Hospital.

L. B. ROGERS has been awarded the J. T. Baker Chemical Company (Eastern Division) research fellowship in analytical chemistry for 1941–42. He will work at Princeton University under the direction of Professor E. R. Caley. Members of the fellowship committee making the award are: N. Howell Furman, *chairman,* Princeton University; John H. Yoe, *secretary,* University of Virginia; G. P. Baxter, Harvard University; H. A. Fales, Columbia University, and C. W. Mason, Cornell University.

DR. LEON W. COHEN, professor of mathematics at the University of Kentucky, has been named president of the university branch of the American Association of University Professors.

DR. C. E. NABUCO DE ARAUJO, JR., has been elected president of the Brazilian Chemical Association for the coming year.

AT the forty-first annual meeting of the American Association of Pathologists and Bacteriologists in New York on April 10 the following officers were elected for the ensuing year: *President,* Dr. Samuel R. Haythorn; *Vice-president,* Dr. Paul R. Cannon; *Secretary,* Dr. Howard T. Karsner; *Treasurer,* Dr. Alan R. Moritz; *Assistant Secretary,* Francis Bayless, and *Assistant Treasurer,* Dr. Granville A. Bennett. The next

annual meeting of the association will be held in St. Louis, on April 2 and 3, 1942. Half a day will be devoted to a symposium on "Neoplasms of the Endocrine Glands."

AT the recent meeting of the Indian Science Congress at Benares, the Indian Society of Genetics and Plant Breeding was inaugurated. The following officers were elected for the year 1941: *President,* Rao Bahadur T. S. Venkatraman; *Vice-presidents,* Dr. W. Burns, K. Ramiah; *Secretary,* Dr. B. P. Pal; *Treasurer,* Dr. S. Ramanujam; *Councillors,* Dr. V. K. Badami, Dr. B. S. Kadam, Dr. J. S. Patel and Dr. T. S. Sabnis. The society will publish a journal in which papers on genetics, plant breeding and cytology will be published.

PROFESSOR LEON BRILLOUIN, of the Collège de France, will be in residence at the University of Wisconsin as visiting professor of physics for some months beginning about May 7.

DR. CARL G. HARTMAN, of the department of embryology of the Carnegie Institution of Washington at the Johns Hopkins University, has been appointed professor of zoology and head of the departments of zoology and physiology at the University of Illinois, beginning on September 1. It is anticipated that in the near future the two departments will be united. Professor V. E. Shelford, who has been in charge of the department of zoology for the past two years, will continue his research with a reduced teaching load.

MISS SARAH GIBSON BLANDING, dean of women and associate professor of political science at the University of Kentucky, has been appointed director of the State College of Home Economics at Cornell University. She succeeds Miss Flora Rose. Miss Mary Henry, acting director since Miss Rose's retirement last October, will resume work as assistant director.

JAMES KIP FINCH, Renwick professor of civil engineering at Columbia University and since 1932 head of the department, has been made associate dean of the Faculty of Engineering.

DR. RAYMOND W. AGER, assistant professor of electrical engineering at the University of California, has been appointed associate professor of electrical engineering at Cornell University. He will join the faculty in July, and will have charge of the research and testing program in the new High-Voltage Laboratory. He will also give some of the senior courses in the School of Electrical Engineering. Dr. Samuel L. Leonard, of Rutgers University, has been appointed associate professor of zoology. Associate professors in the College of Agriculture, who have been promoted to the rank of full professor, are Leo A. Muckle, professor of extension service and assistant county agent leader, and Dr. Donald S. Welch, professor of plant pathology and forest pathologist in the Experiment Station.

DR. WILLARD E. HOTCHKISS, Maurice Falk professor of social relations at the Carnegie Institute of Technology, has been appointed director of a newly organized Division of Humanistic and Social Studies. The new division centralizes the responsibility for related types of studies, which have been offered in the College of Engineering chiefly under the Social Relations Program, and in the Margaret Morrison Carnegie College and the College of Fine Arts under the Division of General Studies.

DR. J. L. T. APPLETON has been appointed acting dean of the Dental School of the University of Pennsylvania.

FRANK MYERS, research fellow in the department of microscopy of the Academy of Natural Sciences of Philadelphia and research associate in Rotifera in the American Museum of Natural History, New York, has been elected a member of the board of trustees of the academy.

ARCHIE CRAMER, formerly research chemist on the staff of the Carnegie Institute of Technology, has joined the Miner Laboratories, Chicago, where he will conduct chemical research on soybeans.

DR. WARREN WEAVER, director of the Natural Sciences of the Rockefeller Foundation, and Edward J. Poitras, of the California Institute of Technology, returned to New York by clipper on April 28, having spent five weeks in England as members of the scientific mission appointed by President Roosevelt from the membership of the National Defense Committee. Dr. Weaver, Mr. Poitras, Professor Louis B. Slichter, of the Massachusetts Institute of Technology, and Dean John T. Tate, of the University of Minnesota, were together in London throughout the nine-hour bombing raid of April 16 and 17—the most severe London has experienced.

DR. CLARENCE A. MILLS, Heady professor of experimental medicine at the University of Cincinnati, is now in Panama where he is continuing work begun last year on the effects of tropical climates on man. He is working at the Gorgas Memorial Institute.

DR. TENG-CHIEN YEN, research associate of the Academia Sinica (National Academy of China), is spending some time in the Division of Zoology of the New York State Museum at Albany studying the Gould types of mollusca which form a part of the collections. Immediately preceding his recent arrival in Albany he had carried on his researches on the molluscs at the Philadelphia Academy of Natural Sciences.

DR. ROBERT J. TRUMPLER, professor of astronomy in the University of California, Berkeley, delivered an Alexander F. Morrison lecture of the Astronomical Society of the Pacific at the University of California, Los Angeles, on the evening of April 23. The subject of the lecture, which was illustrated with slides, was "The Milky Way."

DR. DANIEL J. GLOMSET, Des Moines, Iowa, gave the seventeenth Ludvig Hektoen Lecture of the Frank Billings Foundation before the Institute of Medicine of Chicago on April 25. His subject was "Observations on the Structure of the Cardiac Conduction System in Man and Other Mammals."

DR. REBECCA C. LANCEFIELD, associate of the Rockefeller Institute for Medical Research, will deliver the eighth and last Harvey Society lecture of the current series at the New York Academy of Medicine on May 15. She will speak on: "Specific Relationship of Cell Composition to Biological Activity of Hemolytic Streptococci."

BY invitation of the three leading educational institutions of Flagstaff, Ariz., the Museum of Northern Arizona, the Arizona State Teachers College and the Lowell Observatory, the Society for Research on Meteorites will hold its eighth meeting in that city on June 23, 24 and 25. A feature of this meeting will be an excursion to the great Canyon Diablo Meteorite Crater, some forty miles east of Flagstaff.

THE Philadelphia Chapter of the American Society for Metals will hold on May 16 and 17 a Conference on the Hardening of Metals in the John Harrison Laboratory of Chemistry of the University of Pennsylvania.

THE nineteenth annual conference of the Milbank Memorial Fund was held on April 29 and 30 at the New York Academy of Medicine. The discussions were devoted to health problems in national defense, nutrition in the defense program and reports on factors influencing fertility. The conference was divided into three panels of which Dr. G. Canby Robinson, of the Johns Hopkins University; Dr. Frank G. Boudreau, executive director of the Milbank Memorial Fund, and Dr. Lowell J. Reed, dean of the School of Hygiene and Public Health at the Johns Hopkins University, were chairmen. Dr. C.-E. A. Winslow, professor of public health at the School of Medicine of Yale University, presided at the annual dinner on April 30. The guest speaker at the dinner was Dr. Thomas Parran, Jr., Surgeon General of the U. S. Public Health Service. Albert G. Milbank, president of the fund, and Dr. Boudreau also spoke.

THE summer meetings of the Genetics Society of America will be held at Cold Spring Harbor, New York, from August 27 to 29. Facilities of the Biological Laboratory of the Long Island Biological Association and of the Department of Genetics of the Carnegie Institution of Washington will be available for the meetings. The proposed program includes an evening lecture by Professor A. H. Sturtevant on "Comparative Genetics of the Species of Drosophila," and one or two sessions devoted to the informal type of demonstration presentation that has characterized the program of the society in recent years. Opportunity will be offered for inspection of the work of the Carnegie staff and of the investigators who will be in residence at the Biological Laboratory during the summer. Among these exhibits will be the garden plots showing a series of representative types of Daturas and other plants which have been developed in the Carnegie Laboratories during recent years. Visitors desirous of attending the meetings are urged to notify the secretary, B. P. Kaufmann, or the local representative, J. S. Potter, Department of Genetics, Carnegie Institution of Washington, at least one week in advance so that housing facilities may be arranged.

THE Animal Nutrition Laboratory of Cornell University has been granted $60,000 by the Rockefeller Foundation to continue its research concerning degenerative diseases and age changes. According to the provisions of the gift, it is to be an "outright grant for researches under the direction of Professor Clive M. McCay for the Laboratory of Animal Nutrition, primarily those on aging and longevity." A long-range research program will be set up with the new funds, which will provide experimental material for specialists at Cornell University and other institutions concerned with degenerative diseases and age changes.

BY the will of Henry Osborn Taylor, distinguished for his work on the history of civilization, who died on April 13 at the age of eighty-four years, his residuary estate of undetermined value is bequeathed to Harvard College to increase the salaries of the professors and instructors there. The income from this gift is to be made part of the "Julia Isham Taylor Fund" established as a memorial to Mrs. Taylor. In addition to works of art, Harvard College also will receive eventually a trust fund of $50,000.

THE National Advisory Cancer Council of the U. S. Public Health Service, has recommended the following grants: Meharry Medical College, Nashville, Tenn., $1,100 for the maintenance of clinical cancer records for research; Jackson Memorial Laboratory, Bar Harbor, Me., $15,000 for research in the genetics of cancer; Barnard Free Skin and Cancer Hospital, St. Louis, Mo., $5,000 for research in the integration of changes in experimental carcino-genesis; the University of California, $600 for research on the urinary gonadotropic hormone coincident with testicular neoplasms.

IT is reported in *Nature* that the Government of Eire has set up a small advisory body, to be known as the Emergency Scientific Research Bureau, to deal primarily with the technical problems involved in the provision of substitute processes and materials during the period of the emergency. This body, which will be attached to the Department of the Taoiseach, has the following terms of reference: (1) To give technical advice to the Government on such special problems relating to industrial processes and the use of substitute materials as may be referred to them. (2) To advise the Government generally on the use of native or other materials to meet deficiencies caused by the restriction of imported raw materials and commodities. (3) To direct or conduct special researches and inquiries connected with the above. The following have been appointed members of the bureau: Dr. J. J. Dowling (*chairman*), professor of technical physics, University College, Dublin; Dr. J. J. Drumm; Dr. M. A. Hogan, professor of mechanical engineering, University College, Dublin; Dr. J. H. J. Poole, professor of geophysics and experimental physics, Trinity College, Dublin; Dr. T. S. Wheeler, state chemist. The secretary to the Industrial Research Council, Dr. J. J. Lennon, will act as secretary to the bureau.

DISCUSSION

BOULDER DAM INVESTIGATIONS: SIGNIFICANCE OF EXPERIMENTAL DATA

ENGINEERS and scientists throughout the world have looked forward for many years to the publication of the technical reports on the researches and investigations which were carried out prior to the construction of Boulder Dam, completed in 1935. The U. S. Bureau of Reclamation has recently published their report on "Thermal Properties of Concrete." This is one of a series of 37 *Bulletins* which will cover all phases of the Boulder project; it is the first to give the results of laboratory work on concrete. The *Bulletin* gives the details of experimental studies of the conductivity and specific heat of concrete at temperatures ranging from 50 to 150° F. The purpose of these studies was to furnish information for use in designing and operating a refrigeration system for removing the heat developed by hydration of the 663,000 tons of Portland cement used in the dam.

Concrete sets and hardens as a result of chemical reactions between the compounds in the cement and the mixing water. Each gram of cement evolves 50 to 90 calories of heat during the first week. In small sections this heat is gradually dissipated to the atmosphere, hence there is no abnormal rise in temperature; however, in large masses, especially if the concrete is placed rapidly, as in concrete dams, the internal temperature will rise 50 to 75° F., unless measures are taken to remove part of the heat generated by the hydration of the cement. Abnormal rise of temperature causes a volumetric expansion of the concrete, which sometimes disrupts the mass; at best it is objectionable due to the shrinkage which occurs when the concrete finally cools.

The situation at Boulder Dam was aggravated by the high summer temperatures—mean for July 108° F. The methods adopted consisted of (a) using a low-heat-of-hydration cement and (b) embedding hundreds of miles of steel pipe in the dam through which artificially cooled water was circulated. The *Bulletin* does not give information on the larger question of how successful these measures were in solving the problem of temperature control in Boulder Dam.

An elaborate apparatus was devised for the laboratory studies of the thermal properties of concrete; many observations were made of temperature, weights and lengths, as well as in electrical units. The theoretical phases of the subject are developed by the use of differential equations and Bessel functions. The *Bulletin* is marred by numerous errors of statement and proofreading. A notable feature is the failure to recognize the limitations of experimental data. The Bureau scientists apparently missed two important principles: (1) That the results of arithmetical operations are never more precise than the least precise value which enters into the computation; (2) that an experimental value can not be more precise than the least precise data on which it is based. Item (2) is, of course, only an application of (1).

Under "Computations of Conductivity" (p. 110) 15 2-place and 19 3-place factors are introduced in dealing with the fundamental data. Needless to say, it is absurd to compute values from these data to 4, 5 or 6 significant figures, as was done by the authors.

Conversion factors, to be used with the 2- or 3-place data, are given to 8 significant figures; for example, the factor 0.256,065,03 is given (p. 41) for converting diffusivity values from English to metric units.

In spite of the appearance of great refinement, these 4-, 5- and 6-place computed quantities are only *2-place values*. These computed values wear the cloth but not the clothes of accuracy. The methods of this *Bulletin* are analogous to measuring with one's thumb, then computing the length to the nearest ten-thousandth of an inch.

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