Texas Agricultural and Mechanical College, College Station. *Directors,* elected for the period 1942–44, are: William H. Burt, University of Michigan; J. Kenneth Doutt, Carnegie Museum, Pittsburgh; Claude W. Hibbard, University of Kansas; Olaus J. Murie, U. S. Fish and Wildlife Service, Jackson, Wyo.; and W. E. Saunders, London, Ontario. *Additional directors* are Victor H. Cahalane, National Park Service; William J. Hamilton, Jr., Cornell University; J. Eric Hill, American Museum of Natural History; Remington Kellogg, U. S. National Museum, and Otis Wade, State University of Nebraska.

Since in times of stress, such as the present, there is danger that public resources of permanent value may be exploited unduly to furnish food and other materials, the society passed a resolution opposing the use of any such materials from National Parks, National Monuments or National and State Wildlife Refuges, unless it be demonstrated that such materials can not be obtained elsewhere. It was also resolved that as investigations are now in progress to determine whether or not it will be necessary to exterminate the deer of the Seminole Indians Reservation in order to eradicate tick fever in cattle, to oppose destruction of the deer until the investigations are completed and the results are made public for consideration by the authorities concerned and with due regard to the rights of the Indians.

THE AMERICAN ASSOCIATION OF PATHOLOGISTS AND BACTERIOLOGISTS

AT the annual meeting of the American Association of Pathologists and Bacteriologists, which opened at St. Louis on April 2, the following officers were elected for the coming year: Dr. Paul R. Cannon, *President;* Dr. Wiley D. Forbus, *Vice-president;* Dr. Howard T. Karsner, *Secretary;* Dr. Alan R. Moritz, *Treasurer;* Dr. Shields Warren, *Incoming Member of Council;* Dr. Francis Bayless, *Assistant Secretary;* and Dr. Granville A. Bennett, *Assistant Treasurer.*

Dr. Esmond R. Long, director of the Henry Phipps Institute of the University of Pennsylvania, was elected the representative of the association in the Division of Medical Sciences of the National Research Council, and Dr. Jacob Furth, of the department of pathology of the Cornell University Medical College, was appointed a member of the Advisory Committee of the Lymphatic Tumor Registry of the association.

The Gold Headed Cane of the association was awarded to Dr. James Ewing, professor of oncology at the Cornell University Medical School, formerly director of Memorial Hospital.

The next annual meeting of the association will be held in Chicago on April 1 and 2, 1943. At this meeting a symposium is planned on Infectious Granulomas, exclusive of tuberculosis and syphilis. Dr. Wiley D. Forbus has been elected referee.

SCIENTIFIC NOTES AND NEWS

THE National Academy of Sciences will begin its annual meeting at Washington, D. C., under the presidency of Dr. Frank B. Jewett, at the usual time on the 27th of the month, the fourth Monday in April. The meeting this year, however, will be limited to two days, and there will be no presentation of scientific papers or social functions, except a smoker for members on Monday evening. Apart from the annual election of members the time will be devoted to a discussion of the present work of the academy, with special reference to the provisions of its charter which makes it the scientific adviser of the government. The National Research Council, a committee of the academy, which was organized in the emergency of the last war by President Wilson, is now active in the study of scientific problems connected with war work.

THE American Philosophical Society, under the presidency of Roland S. Morris, is meeting on Thursday, Friday and Saturday of the present week in the hall of the society, on Independence Square, Philadelphia. The sessions on Thursday were devoted to an archeological program, the Franklin Medal Lecture being given in the evening by Dr. Sylvanus G. Morley, of the Carnegie Institution of Washington. The Penrose Memorial Lecture is given on Friday evening by Dr. James R. Angell.

DR. MARSTON T. BOGERT, emeritus professor of organic chemistry at Columbia University, has been elected to honorary membership in the Society of Chemical Industry of England, an organization of which he is the senior past-president. Upon the completion of his presidential term in 1913, he was succeeded by Sir William Crookes.

Nature reports that S. Bairstow, of the Chemical Research Station, Research Department of the London Midland and Scottish Railway, has been awarded the Herbert Jackson Prize for 1941, for a paper entitled "The Relation between Calorific Value and the Road Performance of Producer-Gas Vehicles."

THE William Julius Mickle Fellowship of the University of London has been awarded to Professor Alexander Fleming, professor of bacteriology in St. Mary's Hospital Medical School.

THE Academy of Medicine of Washington, D. C., held a dinner meeting on April 22 to hear an address entitled "War's Contribution to Medicine, and Medi-

cine's to War" by Professor Henry E. Sigerist, director of the Institute of the History of Medicine at the Johns Hopkins University. Officers of the academy recently elected are: *President,* Joseph F. Siler; *Vice-president,* Ralph E. Gibson; *Treasurer,* Roger M. Choisser; *Secretary,* (re-elected), Errett C. Albritton; *Board of Directors,* Matthew Perry, Roscoe R. Spencer, Lyman J. Briggs, Prentiss Willson and Charles Thom.

AT the Nashville meeting of the Southern Society for Philosophy and Psychology the following officers were elected: *President,* Dr. Christian Paul Heinlein, Florida State College for Women; *Secretary-Treasurer,* Dr. Wayne Dennis, Louisiana State University; *Members of the Council,* Dr. Elizabeth Duffy, Woman's College of the University of North Carolina, Dr. S. Rains Wallace, Tulane University, and Dr. Peter A. Carmichael, Louisiana State University. The meeting next year will be held in Chattanooga.

DR. LAURENCE H. SNYDER, professor of zoology at the Ohio State University, will become chairman of the department of zoology and entomology on July 1, succeeding Dr. Raymond C. Osburn, who is retiring with the title emeritus. He has been chairman since 1917. During eighteen years of this period, 1918 to 1936, Dr. Osburn was director of the Franz Theodore Stone Laboratory on Gibraltar Island in Lake Erie.

Chemical and Engineering News states that William B. Fulton, senior surgeon in the U. S. Public Health Service Reserve, a former director of the Bureau of Industrial Hygiene of the Pennsylvania Department of Health, has been appointed chief of the Health Division, U. S. Bureau of Mines. He will direct the safeguarding of the physical welfare of workers in the mineral industries.

DR. THOMAS B. MCKNEELY, passed assistant surgeon in the U. S. Public Health Service, has been assigned to the Medical Division, Office of Civilian Defense, to assist in the organization of emergency medical services throughout the United States.

ACCORDING to the *Journal* of the American Medical Association, Dr. Julius Hass, who formerly occupied the chair of orthopedic surgery at the University of Vienna, has been appointed attending orthopedic surgeon, in charge of the Orthopedic Service, at Montefiore Hospital, New York City.

DR. RUTH HARTLEY WEAVER, registrar of vital statistics of Philadelphia, has been appointed director of health to succeed the late Dr. Martha Tracy. Dr. Weaver has served as epidemiologist of the city department of health and is at present assistant professor of epidemiology and vital statistics in the Temple University School of Medicine.

DR. ELSA ORENT-KEILES, formerly of the department of biochemistry of the School of Hygiene and Public Health of the Johns Hopkins University, is now in charge of the Nutrition Research Laboratories and assistant chief of the Foods and Nutrition Division of the Bureau of Home Economics, U. S. Department of Agriculture, Beltsville Research Center, Maryland.

DR. RALPH G. MEADER, assistant professor of anatomy at the Yale University School of Medicine, has been appointed assistant to the director of the Jane Coffin Childs Memorial Fund for Medical Research. He will act as supervisor during the absence of Lieutenant Colonel Stanhope Bayne-Jones, director, who has reported for duty in the Office of the Surgeon General, Washington, D. C.

DR. CARL J. KLEMME, professor of pharmaceutical chemistry at the University of Minnesota, has become administrator of the experimental research laboratories of Burroughs, Wellcome and Co., Inc., Tuckahoe, N. Y.

THE Hercules Powder Company has established a fellowship for the year 1942, to be known as the Pine Chemicals Fellowship, at Mellon Institute of Industrial Research, University of Pittsburgh. Dr. George B. Feild of the institute will be the fellow.

DR. OLIN SEWALL PETTINGILL, JR., of the department of zoology of Carleton College, has been appointed editor of the Aves section of *Biological Abstracts.* He will handle the non-economic papers. Dr. W. L. McAtee will remain as associate editor to continue his work on the economic aspects of birds. Dr. Peter Gray, of the University of Pittsburgh, has been appointed editor of a new section, Apparatus and Technique, which will appear in an early issue. Dr. C. E. Blye, Division of Veterinary Medicine, University Farm, University of Minnesota, has become editor of the section of veterinary bacteriology and pathology; he takes the place of Dr. A. F. Sellers, who has been called to military service.

ON the evening of April 10, Professor Marston T. Bogert, of Columbia University, addressed the New York Section of the American Chemical Society and their friends at the Hotel Pennsylvania on the subject, "The Ramparts the Chemist is Guarding," in the course of which he discussed malaria and the serious quinine situation now confronting the world as the result of the occupation of Java by the Japanese.

AT a joint meeting on April 16 of the Washington Academy of Sciences and the Philosophical Society of Washington, Dr. Paul R. Heyl, chief of the Section on Sound of the National Bureau of Standards, delivered an address entitled "Cosmic Emotion."

THE American Astronomical Society will meet at the Yale University Observatory on June 12, 13 and 14.

UNDER the joint sponsorship of the department of physics of the University of Pennsylvania and of the Philadelphia District Committee of the American Society for Testing Materials, there will be held on Friday and Saturday, May 15 and 16, at the University of Pennsylvania, a symposium on the physics of pigments and glasses. Leading technical authorities will prepare papers, and invitations are being extended to physicists, engineers and scientific men concerned with the problems to be covered. Dr. Frederick Seitz, of the university, is chairman of the joint committee in charge of the meeting.

A JOINT meeting of the American Association for the Advancement of Science, Section C, and the American Society for X-Ray and Electron Diffraction will be held at Gibson Island, Md., from July 27 to 31. Registration and reservations are made through the director of the Gibson Island Conferences, Professor Neil E. Gordon, Central College, Fayette, Mo. A business meeting of the American Society for X-Ray and Electron Diffraction will be held at the Conference Room, on the afternoon of July 29.

Nature writes: "In 1939 the Australian Anthropological Association was formed after discussion between the Anthropological Associations of New South Wales, Victoria and South Australia at the meeting of the Australian and New Zealand Association for the Advancement of Science held in Canberra that year. The headquarters of the new association are to be situated in rotation for a period of two years in each State of the Commonwealth in which there is an anthropological society affiliated with the association. During the first two years of its existence the headquarters of the association were in Adelaide. Now they are at Sydney and will remain there until October 1, 1943, when they will be transferred to Melbourne. The official organ of the association is *Mankind,* which is the official journal of the Anthropological Society of South Australia. Officers of the association are as follows: *President,* Professor A. P. Elkin; *Vice-president,* F. L. S. Bell; *Hon. Secretary-Treasurer,* G. W. Watkins ("Hansard" Staff, Parliamentary House, Sydney)."

THE name of the Laboratory of Vertebrate Genetics of the University of Michigan has been changed by act of the Board of Regents to the Laboratory of Vertebrate Biology. The change in name was made in order to indicate more adequately the scope of the laboratory, which for a number of years has included studies in ecology and in speciation as well as in genetics.

A HANDBOOK of physical constants, edited by Francis Birch, containing 325 pages, has been published by the Geological Society of America. It contains twenty-one sections prepared by nineteen specialists cooperating through the divisions of chemistry, physics and geology of the National Research Council. Copies may be consulted in geological libraries and can be purchased from the Geological Society of America, 419 West 117th Street, New York. N. Y.

THE department of public health at the Massachusetts Institute of Technology is offering an accelerated program of public health training beginning on June 8 and allowing for the completion of a master's degree by February 6. These training programs are organized for public health engineers, health educators and workers in public health laboratories, as well as for administrators. Special summer courses are also being offered.

AT Yale University faculty members are cooperating in the field of physical chemistry on a project of significance to the war effort. The investigation is being made at the university under the auspices of the U. S. Office of Scientific Research and Development. It is under the direction of Dr. Herbert S. Harned, professor of chemistry, assisted by: Ralph G. VanName, research associate; Benton B. Owen, associate professor; John E. Vance, associate professor; George M. Murphy, assistant professor; Henry C. Thomas, assistant professor; Julian M. Sturtevant, assistant professor; Scott E. Wood, instructor; Harold G. Cassidy, instructor; and James English, Jr., instructor.

THE engineering education of women for service in Connecticut war industries will be undertaken this spring by the Engineering, Science and Management Defense Training Program of Yale University. The courses will be given in cooperation with the New Haven Y. M. C. A. Junior College and the Bridgeport Engineering Institute. During the next eight months Connecticut must train and employ 60,000 women in war industries, according to Professor Hughes, the representative of Yale University. The immediate need is said to be for 11,000 women. Of this number, a portion will receive training on the engineering level.

APPROPRIATIONS amounting to nearly two million dollars for research to further the war effort have been made by the Government of the United States to the University of California. According to a statement made by Dr. Robert G. Sproul, president of the university, the larger part of the money will be expended on two projects—the cyclotron, under the direction of Professor E. O. Lawrence, at Berkeley, and the sound laboratory at San Diego, under the

direction of Professor Vern O. Knudsen, dean of the graduate division at Los Angeles. It is stated that research projects from other places are being carried out at the University of California. The work, however, is of a confidential nature and information regarding it is forbidden.

DISCUSSION

CARBONATE-APATITE AND HYDROXYL-APATITE IN URINARY CALCULI

CALCIUM phosphate often has been reported as a constituent of urinary calculi, but the specific phase or phases present have long remained unidentified. Recently, however, Jensen[1] has found that a substance designated by him as colloidal apatite occurs in many phosphatic calculi. We have examined a small collection of kidney and bladder calculi by x-ray diffraction and optical methods and have found 31 individual stones to be composed in part or entirety of carbonate-apatite (dahllite). Hydroxyl-apatite was identified in one stone, and its presence in small amounts was suspected in two other stones. No other calcium phosphates were found, but Jensen has reported brushite ($CaHPO_4 \cdot 2H_2O$) and whitlockite ($Ca_3(PO_4)_2$) in single instances. Carbonate-apatite, together with calcite, aragonite and vaterite B (μ–$CaCO_3$), has also been recognized by Phemister, Aronsohn and Pepensky[2] among the inorganic constituents of cholesterol gallstones.

Stones composed wholly of carbonate-apatite are relatively rare. Whewellite ($Ca_2O_4 \cdot H_2O$), weddellite ($CaC_2O_4 \cdot 2H_2O$) and especially struvite ($NH_4MgPO_4 \cdot 6H_2O$) are ordinarily present in greater or less proportion. Carbonate-apatite was not found in the five uric acid stones available for examination. Sufficient data are not yet at hand to warrant any conclusions as to the clinical significance of carbonate- and hydroxyl-apatite in urinary deposits.

The substances appear under the petrographic microscope as irregular grains with a banded or spherulitic structure. The material usually is colorless, pale yellow or brown. In some instances the color is deep reddish brown or an intense greenish yellow. The substances are sensibly isotropic, and the index of refraction varies widely both in different stones and in the same stone. The observed extremes in index are 1.520 and 1.605, but the usual range is 1.555–1.590 and the average value of all our measurements is about 1.575. The range in index between different layers in a single calculus is, on the whole, about 0.025, but may extend to as much as 0.04. The isotropic character is due to aggregate polarization in a mass composed of submicroscopic crystallites. The variation in index doubtless is due to variation in the content of adsorbed and capillary water. The material is not amorphous, as has been stated, and affords a distinct, although rather diffuse, x-ray powder pattern of the apatite type. It is interesting to note that the isotropic carbonate-fluor-apatite which forms the major constituent of fossil bone and teeth has in general a much higher range of indices. Rogers[3] found half of 250 measurements to lie between 1.600 and 1.610, with an overall range of 1.573 to 1.621. This difference must be due to the relatively large water content of the urinary deposits, since the macrocrystalline fluorine-containing apatites have in general lower indices than apatite members containing only hydroxyl.

A bladder stone composed of carbonate-apatite admixed with about 0.2 per cent. struvite was examined in some detail. The stone weighed 65 grams. A quantitative chemical analysis gave CO_2 5.50, Cl none, F none, H_2O lost at 110° 4.86, H_2O lost at 1000° 4.97 (total H_2O 9.83). The index of refraction largely ranged between 1.575 and 1.590. About three fourths of the total water content was lost by heating at 305° and the index increased to values in the range 1.595–1.605. The rest of the water was expelled by heating at 1000° C and the index increased to values between 1.635 and 1.655 with most grains about 1.643; this material was quite isotropic but gave a very sharply defined apatite-like x-ray pattern.

Hydroxyl-apatite can be distinguished from carbonate-apatite by the lack of effervescence in weak HCl. The test is conveniently made on crushed grains on a glass slide under moderate magnification. The indices of refraction are not diagnostic, as the slight differences in indices existing in macrocrystalline, birefringent samples are obscured by the large and variable content of non-essential water in the substances as they appear in isotropic urinary deposits. It should be emphasized that an isomorphous series in point of carbon content exists between the two compounds. The general formula may be written $Ca_6(OH)_2(P,C)_6O_{24}(Ca,C)_4$.

CLIFFORD FRONDEL
HARVARD UNIVERSITY

EDWIN L. PRIEN
BOSTON, MASS.

THE SACRAL SPOT IN BENGAL

IN the summer of 1941, while engaged upon a serological study of a pair of fraternal Sindi twins in Calcutta, a faint discoloration was noticed on the

[1] A. T. Jensen, *Acta Chirurgica Scandinavica*, 84: 207, 1940.

[2] D. B. Phemister, H. G. Aronsohn and R. Pepensky, *Annals of Surgery*, 109: 161, 1939.

[3] A. F. Rogers, *Bull. Geol. Soc. Amer.*, 35: 535, 1924.