

tal cavities in the trap rock region of the Watchung Mountains of New Jersey. Dr. Schaller has also made a particular study of the interesting and beautiful minerals of pegmatites and their mode of origin.

PAUL F. KERR,
Secretary

MEDALS OF THE AMERICAN GEOGRAPHICAL SOCIETY FOR 1938

THE Charles P. Daly Gold Medal for 1938 of the American Geographical Society of New York has been awarded to Dr. Alexander Forbes, professor of physiology in the Harvard Medical School.

Early in 1931, largely at the suggestion of Sir Wilfred Grenfell, Dr. Forbes undertook a geographical survey in northern Labrador, and expeditions to that region were made under his leadership in 1931 and 1935 and under his direction in 1932. Dr. Forbes saw the possibilities in a new method of surveying from the air that was being developed by the American Geographical Society. Through his expeditions the opportunity was offered the society of thoroughly testing the method in the field and of demonstrating its practicability, and as a consequence, the northernmost end of the Labrador peninsula, previously almost wholly unknown, has been accurately mapped.

Louise A. Boyd, explorer and geographer, who returned on November 30 from her sixth expedition to the Arctic, has been awarded the Cullum Gold Medal for 1938 in recognition of her achievement in Arctic geographical research. She is the second woman to receive one of the awards of the society.

According to the official announcement made public by the society, Miss Boyd is the only woman to achieve an outstanding position in Arctic exploration. This past summer she penetrated the berg-infested waters off the coast of Greenland to a point further north than had been reached by ship by any other American, and to within thirty miles of the northernmost latitude (78 degrees 16 minutes N., 16 degrees 21 minutes W.) reached by the Duc d'Orléans in 1905. With her were a scientific staff consisting of a surveyor, a geologist, a hydrographer and a radio operator to carry on research on short wave transmission. This was her fourth expedition conducted under the auspices of the American Geographical Society.

Among other explorers who have received the Cullum

medal in the past are: Peary, Nansen, Scott, the Duke of the Abruzzi, Shackleton, Prince Albert of Monaco and Bertram Thomas.

RECENT DEATHS AND MEMORIALS

DR. WILLIAM McDUGALL, since 1927 professor of psychology at Duke University and from 1920 to 1927 professor of psychology at Harvard University, previously reader in mental philosophy at the University of Oxford and a fellow of Corpus Christi College, died on November 28 at the age of sixty-seven years.

DR. ALCAN HIRSCH, president of the Hirsch Laboratories, New York, and consulting chemical engineer, died on November 24 at the age of fifty-three years.

DR. DAVID ROBERT COKER, a plant breeder and cotton expert, died on November 28 at the age of sixty-eight years. Dr. Coker was the originator of staple cotton varieties. He was a trustee of the University of South Carolina.

M. GEORGES URBAIN, French chemist, died on November 5 at the age of sixty-six years. He was a professor at the Institute of Biology in Paris and for several years professor of theoretical chemistry and chairman of the section of chemistry of the School of Advanced Study at the University of Paris.

Nature reports the death of Dr. P. A. Murphy, professor of plant pathology in the Albert Agricultural College, University College, Dublin, on September 27, aged fifty-one years, and of Paul Helbronner, the geodesist, "free member" of the Paris Academy of Sciences, on October 18, aged sixty-seven years.

THE fortieth anniversary of the discovery of radium and the seventy-first anniversary of the birth of Madame Curie were commemorated on November 6 in New York by Polish-Americans and representatives of Poland and France, under the auspices of the New York State Conference of Polish Clubs and the United St. Stanislaus Societies. Dr. Francis Carter Wood, director of the Crocker Cancer Research Institute of Columbia University, made the principal address.

THE British Society of Chemical Industry celebrated on November 24 the centenary of Sir William Perkin, the discoverer in 1856 of the first aniline dye-stuff, mauve.

SCIENTIFIC NOTES AND NEWS

A DINNER in celebration of the fiftieth anniversary of the founding of the department of biology at Western Reserve University and the fifty years of service there of Dr. Francis H. Herriek, now professor emeritus of biology, was held on December 3.

President Winfred G. Leutner served as toastmaster. Dr. E. G. Conklin, executive vice-president of the American Philosophical Society and professor emeritus of biology at Princeton University, gave the principal address.

THE seventieth birthday of Dr. Thomas S. Cullen, retiring professor of gynecology of the Medical School of the Johns Hopkins University, was celebrated at a dinner given in Baltimore on November 19. Harry Nice, formerly governor of Maryland; Phillips Lee Goldsborough and Mayor Jackson were among the speakers. Other speakers were: Dr. Howard A. Kelly; Dr. J. M. T. Finney; Dr. Abraham Flexner, director of the Institute for Advanced Study at Princeton; and Dr. Isaiah Bowman, president of the Johns Hopkins University. A portrait of Dr. Cullen, by the late Thomas Corner, was presented by Mrs. Cullen. It was accepted by Dr. Bowman and will be hung in the women's clinic.

DR. E. V. MCCOLLUM, professor of biochemistry and head of the department of biochemistry of the school of hygiene and public health of the Johns Hopkins University, was the guest of honor at an anniversary dinner of the National Dairy Council held in Chicago on November 30. Dr. McCollum, who was introduced by Dr. Morris Fishbein, editor of the *Journal* of the American Medical Association, gave an address on his work on nutrition.

THE Chemists' Club, New York, gave on December 2 a testimonial dinner in honor of Dr. Leo Hendrik Baekeland, honorary professor of chemical engineering at Columbia University and president of the Bakelite Corporation. At this dinner honorary membership in The Chemists' Club was conferred upon him. Dr. Baekeland is known for his invention of Velox photography and the discovery of Bakelite resinoid.

DR. F. R. MOULTON, permanent secretary of the American Association for the Advancement of Science, was the guest of honor at a dinner given at Richmond on November 25 by the Virginia Section of the American Chemical Society. After the dinner Dr. Moulton delivered an address entitled "Celestial Chemistry and Engineering."

SIR RICHARD GREGORY arrived in New York on December 1. He will deliver on December 9 the Elihu Root lecture of the Carnegie Institution on "Cultural Contacts of Science." He will give an address before a general session of the American Association for the Advancement of Science at Richmond on December 29, and will be the principal speaker at a dinner of the National Association of Science Writers on December 26. Before sailing for the United States a dinner was given in honor of Sir Richard at the Athenaeum Club, London, to mark his retirement as the editor of *Nature*.

DR. HENRY C. CHRISTENSEN, of Chicago, secretary of the National Association of Boards of Pharmacy, received the Remington Medal of the New York Branch

of the American Pharmaceutical Association at a dinner given in his honor on November 30 at the Hotel Pennsylvania. The award was presented by Dr. Henry V. Army, dean emeritus of the School of Pharmacy of Columbia University. The speakers were: Robert Swain, deputy commissioner of health for Maryland; E. F. Kelly, secretary of the American Pharmaceutical Association, and J. Leon Laseoff, president of the association.

MISS ALICE EASTWOOD, for the past forty-six years curator of botany in the California Academy of Sciences, turned the first shovelful of earth in the groundbreaking exercises for the Floricultural Building at the Golden Gate International Exposition on November 26. John McLaren, superintendent of Golden Gate Park since 1887, and Miss Kate O. Sessions, horticulturalist of San Diego, were also honored in the groundbreaking exercises, over which Professor Sydney B. Mitchell, of the University of California, presided.

THE Albers-Schönberg Medal of the German Röntgen Society has been conferred on Dr. Hans Holfelder, professor of general clinical roentgenology at Frankfurt-on-Main.

DR. MALCOLM GOODRIDGE, formerly professor of clinical medicine at Cornell University Medical College, was elected president of the New York Academy of Medicine for a two-year term at the annual meeting held on December 1. He succeeds Dr. James Alexander Miller. Dr. Rufus Cole, who retired last year as director of the Hospital of the Rockefeller Institute for Medical Research, was elected vice-president for a three-year term. Dr. Bernard Sachs, neurologist and a former president of the academy, was chosen treasurer for three years; Dr. Miller and Dr. Charles F. Tenney were elected trustees for five years; Dr. Carl G. Burdick was elected a trustee to fill the unexpired term of the late Dr. Frederick Tilney.

ASSISTANT PROFESSOR AUGUSTUS SISK, of the University of Tennessee, has been elected head of the department of mathematics and physics at Maryville College, Tennessee.

DR. BENJAMIN KROPP has resigned as instructor in anatomy and research fellow in obstetrics at the Harvard Medical School, to become lecturer in embryology at Queen's University Medical School, Kingston, Ontario.

DR. HERBERT SHAPIRO, formerly of Princeton University, has been appointed research associate in general physiology at Clark University.

OFFICERS of the Engineers' Council for Professional Development, of which the constituent societies are the American Society of Civil Engineers; the American

Institute of Mining and Metallurgical Engineers; the American Society of Mechanical Engineers; the American Institute of Electrical Engineers; the American Institute of Chemical Engineers; the Society for the Promotion of Engineering Education and the National Council of State Boards of Engineering Examiners, have been elected for the year 1938-1939 as follows: *Chairman*, J. P. H. Perry, vice-president of the Turner Construction Company, New York City; *Vice-chairman*, R. E. Doherty, president of the Carnegie Institute of Technology, Pittsburgh; *Secretary*, S. L. Tyler, secretary of the American Institute of Chemical Engineers, New York City; *Assistant secretary*, C. E. Davies, secretary of the American Society of Mechanical Engineers, New York City. The United Engineering Trustees, Incorporated, will continue to act as treasurer.

JAMES G. OSBORNE has been appointed chief of the Section of Forest Measurements, U. S. Forest Service. He succeeds F. X. Schumacher, who resigned some time ago to accept a professorship in the Graduate School of Forestry at Duke University.

STANFORD UNIVERSITY SCHOOL of Medicine announces the award of a grant by the Committee on Scientific Research of the American Medical Association to the department of surgery, to be used by Dr. Frederick A. Fender in the development of a device for direct electrical stimulation. The committee has extended to Dr. Irving J. Wolman, of the department of pediatrics of the University of Pennsylvania, a renewal of the grant for experimental studies on Lipoid Pneumonia.

DR. RUTH M. ADDOMS, assistant professor of botany at Duke University, who has been granted sabbatical leave for the second semester of the current year, will spend several months at the University of Leeds, in the laboratory of Professor J. H. Priestley.

DR. EUGENE F. DU BOIS, professor of medicine at Cornell University Medical College, will deliver the third Harvey Society Lecture of the current series at the New York Academy of Medicine on December 15. Dr. Du Bois will speak on "Heat Loss from the Human Body."

DR. HENRY G. KNIGHT, chief of the Bureau of Chemistry and Soils of the U. S. Department of Agriculture, gave a lecture before the New York University Chapter of Sigma Xi on November 17. He spoke on "The Role of Minor Elements in Agriculture."

DR. J. SHOHAT, professor of mathematics at the University of Pennsylvania, will give at the Graduate School in the U. S. Department of Agriculture, beginning late in January, a series of six lectures on interpolation and mechanical quadrature.

DR. RAYMOND L. DITMARS, curator of reptiles of the New York Zoological Park, gave a lecture illustrated with moving pictures on November 28, the opening night of the annual arts and sciences week at the University of Missouri. The lecture was entitled "Our Animal Friends and Foes."

SIR WILLIAM BRAGG, president of the Royal Society, delivered an address on "The Advance of Science" at the Ely Diocesan Conference, which was held at Cambridge on November 21.

THE fourteenth annual Norman Lockyer Lecture was given in London under the auspices of the British Association on December 6 by Dr. H. Spencer Jones, astronomer royal. The subject of the lecture was "The Atmospheres of the Planets."

THE New York Academy of Sciences and affiliated societies will hold their annual dinner and meeting at the Hotel Astor, New York City, on the evening of December 14. There will be lectures by Dr. Victor K. LaMer, professor of chemistry at Columbia University, and by Dr. Roy Waldo Miner, curator of living invertebrates at the American Museum of Natural History.

A JOINT meeting of the Pasteur Society of Central California and the California Academy of Sciences commemorating the centenary of the cell theory was held on November 10 in San Francisco. Following a dinner at the Western Women's Club, addresses were given as follows: "The Development of the Cell Theory," by Dr. F. M. MacFarland, president of the academy; "The Influence of the Cell Theory," by Dr. Robert C. Miller, director of the academy's museum and Steinhart Aquarium; "The Chemical Architecture of the Cell," by Dr. Chauncey D. Leake, professor of pharmacology in the University of California Medical School. Dr. Charles Edward Smith, president of the Pasteur Society, presided.

THE subsection on pharmacy of the Section on the Medical Sciences of the American Association for the Advancement of Science has organized a symposium on glycols for the meeting in Richmond. The program, which will be presented on Tuesday, December 27, is as follows: (1) The Chemistry of Glycols, Dr. Frank C. Whitmore, president of the American Chemical Society; (2) The Pharmacology of the Glycols, Dr. H. O. Calvery, chief of the Division of Pharmacology, Food and Drug Administration, U. S. Department of Agriculture; (3) The Industrial Applications of the Glycols, H. B. McClure, Carbide and Carbon Chemicals Corporation; (4) The Pharmaceutical Uses of the Glycols, Dr. A. G. Du Mez, dean of the School of Pharmacy, University of Maryland, editor of *Pharmaceutical Abstracts*. Discussion will be opened

by Dr. H. B. Haag, professor of pharmacology of the Medical College of Virginia, and Dr. M. G. Mulinos, of the College of Physicians and Surgeons, Columbia University.

THE National Council of Teachers of Mathematics will hold on December 29 and 30 its fifth annual meeting at Williamsburg, Va. The general subject of the meeting will be "Mathematics that Functions." There will be a joint dinner with the Mathematical Association of America and the American Mathematical Society on December 29. The council will meet in three sections as follows: Arithmetic Section, Secondary Mathematics Section and Teacher Training Section.

THE Medical College of Virginia, Richmond, celebrated Founders' Day marking the one hundred first anniversary of its founding on Thursday, December 1. Virginius Dabney, editor of the *Richmond Times-Dispatch*, spoke on "Medicine in a Changing World." The exercises were preceded by an academic procession of visitors, faculty and members of the student body.

AN aerial survey of an hour's duration of the geology of the New York region, sponsored by the Geological Society of America, is planned for Saturday morning, December 31, at the semi-centennial meeting of the society, which will be held in New York City from December 28 to 30. The trip will be led by Dr. Girard Wheeler. The group will start from the Newark airport and fly up the Hudson River past the Palisades, then northward to see the escarpment at the edge of the highlands. The plane will then swing southeast over Long Island Sound, where there have been changes resulting from the recent hurricane. After viewing the Long Island shoreline the return will be made to the Newark airport by way of Staten Island.

WESTERN RESERVE UNIVERSITY has received as a legacy from the late Mary Frances Morris, who died on August 2, a business building at 500 Prospect Avenue, in Cleveland. The yearly income, amounting to \$2,000, is to be used for scholarships for young women in Flora Stone Mather College.

THE MEYERSTEIN INSTITUTE OF RADIOTHERAPY at the Middlesex Hospital, for the treatment of cancer by radium and x-rays, was recently opened by Sir William Bragg, president of the Royal Society. Its erection was made possible by a gift of \$230,000 from Sir Edward Meyerstein. All forms of radiotherapy are available both for the in-patients and out-patients of the hospital and for private patients.

As has already been reported in SCIENCE, David Cleghorn Thomson, formerly secretary to the Oxford University Appeal Committee, has been appointed general secretary, in succession to Mr. Walter Adams, of the Society for the Protection of Science and Learning (formerly known as the Academic Assistance Council) which for five years has been handling the academic side of the international refugee problem. *Nature* states that Cleghorn Thomson is a graduate of the Universities of Edinburgh and Oxford; a senior history exhibitor of Balliol, he was for seven years the B.B.C.'s chief official in Scotland. The Society for the Protection of Science and Learning, of which the Archbishop of York recently became president in succession to the late Lord Rutherford, acts as a central bureau of information regarding professors, lecturers and research workers displaced in their own country on account of "race," religious or political opinions, and aids in securing the continuation of their valuable work in other countries. So far, of the 1,350 displaced scholars registered with this society, 520 have been permanently placed in thirty-eight countries, apart from more than 300 who have temporarily found work. Within the last three months, the society has received 340 applications from scholars who have had to discontinue academic activity in Austria. The offices of the society are at 6 Gordon Square, London, W.C.1.

THE senate of the University of London invites applications for the university chair of medicine, tenable at University College Hospital Medical School, with a salary of £2,000 a year. Applications (twelve copies) must be received not later than January 16 by the Academic Registrar, University of London, Senate House, W.C.1, from whom further particulars can be obtained.

DISCUSSION

PHOTOSYNTHESIS AND THE LIVING STATE

It is hardly necessary to remark that no new definition of "The Living State" is contemplated. For the purposes of these remarks we may assume that the living state is associated with the heterogeneous but organized substance called protoplasm, and that such

criteria as growth, reproduction, respiration and photosynthesis will be sufficient identification.

Hans Molisch¹ was perhaps the first investigator to announce that the evolution of oxygen from green plant cells was possible when the organism was no longer alive. He also attributed this important reac-

¹ H. Molisch, *Zeits. Bot.*, 17: 577, 1925.