He was born in 1847 in Illinois and he received the M.A. degree from the University of Chicago. For five years he was at the U. S. Naval Observatory in Washington and left there in 1875 to go to the Cincinnati Observatory as director. When Leander McCormick, the son of the inventor of the famous reaping machine, gave to the University of Virginia the 26-inch refractor, the telescope was the largest and the finest in the world. In looking for a director, the distinguished astronomer Simon Newcomb recommended for the position the director of the Cincinnati Observatory. For thirty years, from 1882 to 1912, when he was retired on the Carnegie Foundation, Professor Stone directed the work of the McCormick Observatory. No photographic work was attempted, but valuable visual observations were made on double stars, variable stars, nebulae, the satellites of Saturn, etc. In addition, he observed three total solar eclipses, that of 1869 in Iowa, he was in charge of the Naval Observatory expedition to Colorado in 1878 and of the McCormick expedition to South Carolina in 1900.

Professor Stone was as much at home in the field of mathematics as he was in astronomy. He was the founder and the first editor of the *Annals of Mathematics,* later taken over by the American Mathematical Society.

The Vanderbilt fellowships at the University of Virginia attracted to the McCormick Observatory many capable young men. Among those now living who hold the degrees of doctor of philosophy from Virginia and who have attained prominent scientific positions are the following: Edgar Odell Lovett, president of Rice Institute; Heber D. Curtis, director of the University of Michigan Observatory; Charles P. Olivier, director of the Flower Observatory; Herbert R. Morgan, U. S. Naval Observatory; Ralph E. Wilson, Dudley Observatory; G. F. Paddock, Lick Observatory, and T. McN. Simpson, Randolph-Macon College.

The combination of a great telescope and skill as a mathematician brought distinction to the University of Virginia. Naturally the McCormick telescope did not long remain the largest in the world. Four years after its opening, the Lick telescope of 36-inch aperture was dedicated.

Professor Stone came of a prominent family. He was a brother of Melville Stone, for many years general manager of the Associated Press.

S. A. MITCHELL

ARTHUR GRAY LEONARD

DR. ARTHUR GRAY LEONARD, professor of geology at the University of North Dakota and state geologist for thirty years, died at his home in Grand Forks on December 17, 1932. He was born at Clinton, New York, March 15, 1865. He graduated from Oberlin College in 1889, received the degree A.M. from his alma mater in 1895 and the Ph.D. degree from the Johns Hopkins University in 1898. He served as assistant state geologist of Iowa, assistant professor of geology at the University of Missouri and professor of geology at Western College before going to the University of North Dakota in 1903.

The wide range of Dr. Leonard's contribution to the knowledge of the geology of North Dakota is indicated by the titles of his numerous geological papers in scientific journals and the reports of the United States Geological Survey and the North Dakota Geological Survey on such subjects as lignite coal, clay, gravel and the possibilities of oil and gas. A complete list of his publications numbers over fifty.

Dr. Leonard's greatest contribution to the science aside from that as a teacher was his addition to the basic knowledge of the geology of lignite coal, its origin and the relation of the lignite-bearing beds to the geologic time scale.

HOWARD E. SIMPSON

JOHN F. G. HICKS

THE many friends and former students of Dr. J. F. G. Hicks will regret to learn of his death on December 13, at his home in Portland, Oregon. At the time of his death he was teaching in the Institute of Technology Junior College in Portland. His health failed while he was doing research at the Bureau of Standards on paper deterioration (1929–1931).

Dr. Hicks was born in Philadelphia in 1884. He received his B.S. degree from the University of Pennsylvania in 1906, and his M.S. and Ph.D. degrees from the University of Illinois in 1916 and 1918, respectively.

Besides holding several industrial positions, Dr. Hicks held professorships in the departments of chemistry of Oregon State College, University of Nevada and North Pacific College. At the time of his death he was actively engaged in writing a textbook of chemistry.

RALPH W. HUFFERD

RECENT DEATHS

CHARLES G. FAIRCHILD, formerly professor of physics at Oberlin College and later president of Rollins College, died on January 20, at the age of eighty-nine years.

DR. WINFIELD S. DUDGEON, professor of botany at Ewing Christian College, Allahabad, India, died at Ames, Iowa, on December 26, at the age of forty-six years. Professor Dudgeon had been spending a sabbatical year in the United States.

DR. JOHN H. STUMBERG, a member of the research staff of the Rockefeller Institute at Princeton, died suddenly on January 20, at the age of twenty-six years.

Nature announces the deaths of Professor Paolo

Enriques, professor of zoology in the University of Padua and president of the last International Congress of Zoology, and of Professor James Johnstone, professor of oceanography in the University of Liverpool, formerly director of the Marine Biological Station, Port Erin.

SCIENTIFIC EVENTS

INVESTIGATION OF THE CARIBBEAN REGION

ARRANGEMENTS have been made between Yale University and the Woods Hole Oceanographic Institution for a continuation of the cooperative program of marine investigations in the Central American seas, which was inaugurated by the Yale Oceanographic Expedition to the Gulf of Mexico on the schooner *Mabel Taylor* last year. The research ship *Atlantis,* belonging to the institution, is now being equipped for a three-months oceanographic cruise in the Caribbean, and is expected to leave Woods Hole at the beginning of February.

A series of observations will be made from Woods Hole to Bermuda and from Bermuda to Nassau, Bahamas, from which point the joint investigations take their start, with Professor A. E. Parr, curator of the Bingham Oceanographic Collection at Yale University, and a research associate of the Woods Hole Oceanographic Institution, in charge of the subsequent scientific work in the Caribbean waters.

The contemplated investigations will be chiefly concerned with the general oceanic circulation in the Central American seas, particularly as it affects the transportation of water from the inflow of the North Equatorial current through the passages between the Windward Islands at the southeastern end to the outflow of the Gulf Stream through the Straits of Florida in the North. Special attention will also be given to the problem of the origin of the cold bottom water in the isolated chains of deepsea basins extending through the Gulf and Caribbean region. It is hoped that the results of the coming cruise, combined with the observations from last year's expedition to the Gulf of Mexico, may prove sufficient to give a general outline of the oceanographic conditions throughout the Central American Seas on which further investigations can be based.

Along with the hydrographic observations, biological material will also be collected, and an attempt will be made to obtain an idea of the frequency of the larger deepsea animals by the use of a triangular otter trawl of much greater opening width than that of any gear previously employed for deepsea collecting.

NATIONAL FELLOWSHIPS AT THE JOHNS HOPKINS UNIVERSITY

UNDER the National Fellowship Plan of the Johns Hopkins University, Baltimore, Maryland, three $1,000 fellowships for graduate study of chemistry at the university will be open to qualified students in colleges and universities this year. The three are the Francis P. Garvan Fellowship for New York, the H. A. B. Dunning Fellowship for Maryland and the Eli Lilly Company Fellowship for Indiana. The New York and Maryland fellowships have been endowed by their donors, while the Indiana fellowship has been renewed for a period of four years. The fellowships provide the student $1,000 annually for a period of four years.

The purpose of the National Fellowship Plan is described as "the selection and training of chemists who are especially fitted to contribute to fundamental chemical progress"; and, under the plan, thirty-two men, representing thirty-two states, are now pursuing research on the grounds at the Johns Hopkins University. Their work covers a wide variety of fields.

The fellowships, providing $1,000 annually for a period of four years, give the recipients an opportunity for fundamental training and original research in chemistry and related subjects. The four major branches of chemistry, inorganic, organic, physical and analytical, are studied, and an elective system of study is followed by the student. In addition to the fundamental curriculum, the students are given an opportunity for personal contact with leading European and American chemists, through a visiting lectureship which has been provided by Dr. A. R. L. Dohme, of Sharpe and Dohme, Baltimore.

The selection of the successful candidate is accomplished through state committees which evaluate the student's complete previous scholastic record, and his personal qualities as rated by his instructors. Students in the sophomore, junior and senior year of the colleges and universities of the designated state are eligible for the fellowships. The successful candidates will be notified on or before April 1, 1933, and will begin their work at the Johns Hopkins University in October, 1933.

FORMAT OF THE PHYSICAL REVIEW

The Physical Review, together with the other journals published by the American Institute of Physics, has adopted a new style and format, with two three-inch columns on the page as in SCIENCE. It was chosen in a conference of all the editors. The advantages of the new format are said to be the following:

Economy. For a given amount of reading material,