other valuable deposits. The 5-year investigation will be carried out chiefly by the surveying ship *Gauss* of the Hydrographical Institute in Hamburg. A number of other West German research institutes will participate in the project.

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A program to improve science teaching in Burma has been aided by the Asia Foundation. The United Nations Educational, Scientific, and Cultural Organization reports that the foundation has donated radio transmitters and receivers, model telephones, model steam engines, instruments to measure humidity, astronomical charts, and other scientific equipment to three science clubs in Burma. The clubs were organized by the Burmese Government with the aid of the United Nations to stimulate out-of-school interest in scientific subjects.

August Scientific Monthly

Articles appearing in the August issue of *The Scientific Monthly* are "Origin of the amniote egg," A. S. Romer; "World affairs, languages, and children," K. Mildenberger; "Origin and use of the English peat fens," K. Thompson; "Social responsibility of the physician," H. J. Geiger; "Minimum earth satellites as 'storm patrol,'" S. F. Singer. Three articles based on papers presented at a symposium on American foreign aid are included: "Purposes of international aid programs," H. vanB. Cleveland; "Foreign aid and the theory of economic development," R. Nurske; "Future of American foreign aid," M. F. Millikan. Thirteen books are reviewed.

Scientists in the News

Two astronomers have retired from the staff of the Mount Wilson and Palomar Observatories: MILTON L. HUMASON, whose observations have provided most of the evidence supporting the theory of the expanding universe, and SETH B. NICHOLSON, specialist in solar phenomena and discoverer of four of Jupiter's satellites.

Humason joined the Mount Wilson Observatory in 1917, first as janitor and then as night assistant. In the latter capacity he displayed such skill as an observer that he was made a member of the staff of investigators in 1922. He first assisted in a survey of early-type stars with bright hydrogen lines, later in a study of stellar magnitudes and parallaxes.

In the course of this work, Humason developed an unusual proficiency in the photography of spectra of very faint objects. Following the discovery by the late Edwin Hubble in the 1920's of the major role played by the extragalactic nebulae in the structure of the universe, Humason turned to the study of these objects and soon accumulated spectra of a substantial number of galaxies spread over a wide range of distances. It was a study of the relationship between the velocities as measured on these spectrograms and the distances of these galaxies that led Hubble to the concept of the expanding universe. For the following quarter-century Humason devoted most of his attention to this problem.

The introduction of extremely fast photographic plates, the development of new and very rapid spectrographs, and the completion of the 200-inch Hale telescope enabled Humason to push his observations to fainter and fainter and, therefore, more and more distant galaxies. These techniques now permit photographing the spectra of galaxies far too faint to be seen visually with the telescope used to collect the light. Humason therefore had to develop elaborate offset procedures that insure locating invisible images accurately on the slit of the spectrograph and holding them there during long exposures. His studies culminated in the publication in 1936, in collaboration with N. Mayall of the Lick Observatory and Allan Sandage of the Mount Wilson and Palomar Observatories, of the velocities of more than 900 galaxies. Some of these velocities are as high as one-fifth of the velocity of light.

In 1948, Humason was appointed secretary of the observatories, in which capacity he handled the correspondence and public relations, as well as many other administrative problems, of the observatories. A native of Dodge Center, Minn., Humason received his Ph.D. degree honoris causa, from Lund University, Sweden.

Nicholson joined the staff of the Mount Wilson Observatory in 1915. During his first few years he investigated the orbits of several of Jupiter's satellites, the ninth of which he had discovered at Lick Observatory in 1914. In collaboration with Edison Pettit, he developed a very sensitive vacuum thermocouple. This they used to measure the total radiation and surface temperature of stars, the planets, and the moon. Studies of the rates of cooling of the moon's surface during an eclipse gave a measure of the thermal conductivity of the surface rocks and provided information on their physical characteristics. In the late 1930's and again in the early 1950's, Nicholson returned to the observation of Jupiter's satellites and discovered the tenth, eleventh, and twelfth of these objects and determined the positions necessary to fix their orbits.

Throughout Nicholson's 42 years at the observatories, a large part of his efforts have been devoted to solar observations. He has developed a detailed knowledge of the complex phenomena of the sun's visible surface. He has supervised the systematic collection of data on sunspots, including the polarity and strength of their magnetic fields. In collaboration with Oliver Wulf of the California Institute of Technology and the U.S. Weather Bureau, he has made detailed investigations of the correlation between solar and terrestrial phenomena.

Nicholson received his B.S. degree in 1912 at Drake University and his Ph.D. degree in 1915 at the University of California. He is a member of the National Academy of Sciences.

LLOYD C. MITCHELL, research chemist for the U.S. Food and Drug Administration, Washington, D.C., is to receive the annual Harvey W. Wiley award of the Association of Official Agricultural Chemists. Mitchell is the first winner of the award, which was established last year to honor the father of the original Pure Food and Drug Law. The $500 award goes to a scientist who has made an outstanding contribution to the development of methods for the analysis of foods, drugs, cosmetics, feeds, fertilizers, pesticides, and soils.

A food chemist from the beginning of his career in 1909, Mitchell has developed many methods of analysis for spices, cereals, dairy products, and eggs. Especially well known are his studies published in 1932 and 1933 on the composition of shell eggs and commercial egg products.

This year's honorary degree recipients include the following:

HERBERT M. EVANS, emeritus professor of anatomy at the University of California, from Johns Hopkins University.

BENTLEY GLASS, professor of biology at Johns Hopkins University, from Washington College.

JOSEPH R. NELLER, soil chemist at the University of Florida Agricultural Experiment School, from Macalester College.

FRANCO RASETTI, professor of physics in John Hopkins University, from the University of Glasgow, Scotland.

TRACY SONNEBORN, professor of Zoology at Indiana University, from Johns Hopkins University.

CARL P. SWANSON, professor of botany at Johns Hopkins University, from the University of Massachusetts.

JOHN H. WILSON, formerly head of the editorial branch of the Technical Information Department at the China Lake (Calif.) Naval Ordnance Test Station, has been appointed technical writer and editor for the Atlantic Research Corporation, Alexandria, Va.

FRANK PRESS, since 1955 professor of geophysics at California Institute of Technology, has been named director of the Seismological Laboratory. He succeeds BENO GUTENBERG, who is retiring to half-time status after 27 years at the institute and 10 years as director of the laboratory.

Four clinical professors in the Faculty of Medicine, Harvard University, retired on 30 June to become emeritus clinical professors: THOMAS R. GOETHALS, obstetrics; CHESTER M. JONES, medicine; THOMAS H. LANMAN, surgery; and SAMUEL A. LEVINE, medicine.

Goethals, a specialist in obstetrical problems concerned with breech births, received the A.B. degree in 1912 and the M.D. degree in 1916 from Harvard. He joined the staff of the Harvard Medical School in 1920 as alumni assistant in obstetrics and was named clinical professor of obstetrics in 1930. For 20 years (1930–50) he was the senior obstetrician to the Massachusetts General Hospital and is now a member of the Board of Consultation there. Since 1946 he has been senior obstetrician at the Boston Lying-In Hospital.

Jones is a specialist in diseases of the stomach and intestinal tract. He is responsible for the revision of the postgraduate course in internal medicine offered at the Massachusetts General Hospital. He received the A.B. degree in 1913 from Williams College, the M.D. degree in 1919 from Harvard, and the S.D. degree (honorary) in 1942 from Williams. He has been a member of the Harvard Medical School staff since he was named assistant in medicine in 1921 and has been clinical professor of medicine since 1940. Between 1928 and 1954, Jones was physician at the Massachusetts General Hospital, where for the past 3 years he has been consulting visiting physician and is now a member of the Board of Consultation. He also served as associate professor of medicine, Vanderbilt University, (1940–41); as consultant in medicine to the Surgeon General of the United States (1944–48), and as vice chairman of a medical mission to Austria in 1947 and to Greece and Italy in 1948. In 1956 he received the Rogerson cup, which is awarded annually to the outstanding alumnus of Williams College. In 1956 he was chosen as the Shattuck lecturer by the Massachusetts Medical Society.

Lanman has been actively engaged in the teaching of surgery to both undergraduate and postgraduate students at the Harvard Medical School since 1928. At the Children's Hospital he developed methods of dealing with urological disorders of infancy and childhood that have become standard procedures throughout the world. He is also a pioneer in the surgical treatment of pulmonary disorders in infants and young children. In 1954 he became the first recipient of the William E. Ladd medal of the American Pediatric Society for major contributions to pediatric surgery. Lanman received the A.B. degree in 1912 and the M.D. degree in 1916 from Harvard. He joined the staff of the Harvard Medical School as an assistant in genitourinary surgery in 1920 and became clinical professor of surgery in 1947. He is consultant in surgery at the Peter Bent Brigham Hospital and visiting surgeon at the Children's Hospital.

Levine is a specialist in diseases of the heart and was the second American physician (the first was James B. Herrick of Chicago) to diagnose and describe coronary thrombosis. He was born in Poland, and his parents emigrated to the United States when he was 3. A former Boston newsboy, Levine was the second recipient of a Harvard scholarship established by the Newsboys' Union of Boston. He received the A.B. degree from Harvard in 1911 and the M.D. degree in 1914. He joined the staff of the Harvard Medical School as an assistant in medicine in 1919 and was named clinical professor of medicine in 1948. He is a member of the staffs of the Peter Bent Brigham, Newton–Wellesley, and Beth Israel hospitals. In 1954 the late Charles E. Merrill, then senior partner in the New York investment firm of Merrill Lynch, Pierce, Fenner and Beane, established the Samuel A. Levine professorship of medicine in Harvard Medical School, honoring his friend and physician. Levine's many honors include the Scientific Award (1940) of Phi Lambda Kappa medical fraternity. In 1948 he was selected to deliver the St. Cyres lectures in London.

JAMES B. CULBERTSON, head of the department of chemistry at Cornell College, has won the 1957 Iowa medal of the American Chemical Society's Iowa Section. The medal will be presented at a banquet of the section in the Iowa Memorial Union on 25 Oct. Culbertson, who has carried out important studies on the chemistry of acetylene, will be cited for his "excellence in teaching with maintenance of interest in research."

DERRICK T. VAIL, chairman of the department of ophthalmology in the Northwestern University Medical School, was honored recently by members of the Oxford Ophthalmological Congress at Oxford, England, for his outstanding contributions to ophthalmology. A worldwide organization, the Oxford Ophthalmological Congress was founded in 1909 by Robert Doyne, a British ophthalmologist. Each year an international council invites an outstanding eye surgeon to deliver the Doyne memorial lecture and to receive the Doyne medal. Vail is the second American in the history of the congress to be so honored.

WILLIAM C. PADDOCK, professor of plant pathology at Iowa State College, has been named director of the Pan American School of Agriculture at Zamorano, Honduras. He succeeds the original director of the school, WILSON POPENOE, who has been named director emeritus.

Recent Deaths

HARRY C. W. DE BRUN, Saranac Lake, N.Y.; 67; professor of surgery at the New York Polyclinic Hospital and Medical School; retired surgeon for the New York City Police Department; 16 July.

HENRY JAMES, New York, N.Y.; 76; cardiologist, senior attending physician and assistant professor of clinical medicine at Bellevue Hospital, New York, N.Y.; 14 July.

SOPHIA V. KEIL, Long Island, N.Y.; 77; retired nurse in the physical therapy department of St. Luke's Hospital, New York; accompanied Sir Wilfred Grenfell, British medical missionary, to Labrador; 6 July.

SIMON S. LEOPOLD, Philadelphia, Pa.; 65; emeritus professor of clinical medicine at the University of Pennsylvania's Medical School and Graduate School of Medicine, author of a standard textbook on diagnosis; 13 July.

FREDERICK J. LYNCH, Boston, Mass.; 67; formerly department chairman and professor of obstetrics at Tufts College Medical School and assistant in gynecology at the Harvard Medical School; a former vice president of the American Medical Association; 15 July.

JAMES B. NEALEY, Columbia, S.C.; 67; retired mining engineer, formerly mines and metals editor of the *New York Commercial*; 10 July.

LOUIS E. SCHMIDT, Chicago, Ill.; 88; urologist and early leader in the drive against venereal disease, formerly head of Northwestern University's department of urology; established the first genitourinary clinic west of the Alleghenies, fathered laws for premarital and prenatal tests for syphilis; 12 July.

MARTIN A. SPIELMAN, Chicago, Ill.; 51; research chemist and director of research evaluation at Abbott Laboratories; noted particularly for his work on antiepileptic drugs; formerly assistant professor of chemistry at the University of Wisconsin; 11 July.

FRED TONNEY, Chicago, Ill.; 76; public health officer who served in Ohio, Texas, Michigan, and Illinois; a member of the Chicago Board of Health for 30 years; 13 July.