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.