

arguments in the problem with detachment and clarity, so that a rational decision appeared possible once more. As a chairman, he was superb.

In recent years, he was much in demand as an expert in industrial psychology, who could make his subject appeal to audiences at all levels. He made outstanding contributions to the conferences held over a number of years by the National Coal Board at Oxford, and to the apprentices' conferences held since 1950 by the Industrial Welfare Society at Keble College.

As a person, he was happily extroverted and completely unselfconscious. He had a great affection for people, and took a deep and genuine interest in the academic progress, personal problems and later careers of hundreds of students who passed through his hands. He was sympathetic without being sentimental, he helped them to tackle their problems objectively and realistically, and men and women all over the world have reason to be grateful for his patience, his kindness and his wisdom.

ELIZABETH D. FRASER

Prof. W. E. Tröger

PROF. WALTER EHRENREICH TRÖGER, the distinguished German mineralogist and petrologist, died in Freiburg im Breisgau on January 13.

Born in Dresden on January 19, 1901, he studied mining and mineralogy in the Mining Academy of Freiberg in Saxony, an institution famous in the history of geology. From this Academy he graduated in 1924 with a degree in mining engineering. Another four years of study in the Dresden Technical High School culminated in a degree of Doctor of Engineering in 1928. In 1937 he became extraordinary professor of mineralogy at the University of Dresden, and from 1948 until 1952 he held a similar post at the Mining Academy of Clausthal, in 1952 extraordinary professor at the Technical High School in Darmstadt, and finally, in 1956, professor of mineralogy, petrology and ore deposits in the University of Freiburg im Breisgau.

Both the Darmstadt and the Freiburg mineralogical institutes had been greatly damaged during the War, and a great part of Tröger's time was spent in supervising the rebuilding of these institutions and in restoring and rearranging the collections, a difficult and laborious task which he carried out with great success. This work naturally cut into his time for his own research. This covered a wide field of mineralogy, petrology and ore deposits, first in his native Saxony and then in Odenwald and Harz. He described a number of minerals and igneous rocks and he gave the name 'bebedourite' to a variety of biotite-jacupirangite from Brazil. A characteristic feature of Tröger's writing was his terseness and precision, which are most clearly manifest in his two excellent and useful books.

One of these books is a tabular and diagrammatic representation of data relating to rock-forming minerals, the first edition of which was published in 1952, and the second in 1956. In this book the data are presented almost entirely in tabular form supported by numerous figures of crystals and various diagrams and projections.

The other book, much used by petrologists throughout the world, is entitled: *Spezielle Petrographie der Eruptivgesteine: Ein Nomenklatur-Kompendium*. It was published by the German Mineralogical Society in 1935 and the same Society published a supplement entitled *Eruptivgesteinsnamen (I Nachtrag)* in 1938. The original book contains names and data relating to 777 species of igneous rocks and a list of 345 group-names, synonyms, 'still-born' and obsolete rock-names. The supplement adds 140 new rock names, producing a total of 917 names of igneous rock species. Each of these species is given with concise information comprising the following items: author, reference, type locality, mineral composition, chemical composition, Niggli values, CIPW symbol, colour ratio, synonyms and varieties. The rocks are

classified according to the two main variables—silica percentage and alkali percentage. It is most unfortunate that copies of this book are no longer obtainable, for the entire stock was destroyed during the War and Tröger himself was using the only remaining single copy left in the departmental library of his Institute. During the last years of his life Tröger was busy amplifying and revising this book for a projected new edition, but his premature death has left it unfinished.

Tröger was an excellent organizer, a perfect field geologist and an excellent teacher. He possessed a most charming personality and acted as a kind host to the numerous geologists of many nationalities who came to Freiburg im Breisgau in order to examine the two 'star' geological localities in its neighbourhood: Kaiserstuhl and Schwarzwald.

Tröger's death, at the early age of 62, is a loss not only to science but also to the many scientists who, having met him, could appreciate him as a personality apart from his writings.

S. I. TOMKIEFF

Dr. Lyman J. Briggs

DR. LYMAN J. BRIGGS, director emeritus of the National Bureau of Standards, U.S. Department of Commerce and chairman emeritus of the Committee for Research and Exploration at the National Geographic Society, died on March 25. He was eighty-eight years old.

Dr. Briggs began his career in the Federal Service in 1895 as a physicist in the U.S. Department of Agriculture. During this period, he made historic contributions in the application of physics to agriculture, and organized what is now known as the Bureau of Plant Industry.

With the outbreak of the First World War, Dr. Briggs was assigned by executive order to work on war problems at the National Bureau of Standards. At the conclusion of the War, he stayed on and soon became chief of the Mechanics and Sound Division. In association with Paul R. Heyl, he invented the earth inductor compass, which later guided Lindbergh on his first trans-Atlantic flight. For this device, they received the Magellan Medal of the American Philosophical Society in 1922.

His interests in aerodynamics resulted in pioneer measurements of flow around aeroplane wings at very high speeds up to and exceeding the speed of sound. Much of this work was done in association with Hugh L. Dryden, now deputy administrator of the National Aeronautics and Space Administration.

In July 1932, Dr. Briggs was appointed acting director of the National Bureau of Standards. Although the Bureau's operating funds were almost immediately cut in half in an economy measure, he was able to guide the laboratory through the depression period while preserving nearly two-thirds of the career employees in a working organization.

With the advent of the Second World War, Dr. Briggs directed that almost 90 per cent of the staff be assigned to work on problems of national defence. This work later resulted in such developments as the radio proximity fuse, improved optical glass, and the *Bat* guided missile.

In 1939, Dr. Briggs was asked by President Roosevelt to head and organize a secret investigation of the possibility of utilizing energy of atomic fission of uranium. Two years later this committee became section S-1 of the Office of Scientific Research and Development with Dr. Briggs as chairman and Profs. H. C. Urey, E. O. Lawrence, J. B. Conant, E. O. Murphee and A. H. Compton making up the executive committee. Much of the early work on the methods of purification of uranium, establishment of specific properties, and separation of isotopes of uranium was done at the Bureau under Dr. Briggs's direction with the assistance of distinguished guest workers.

Dr. Briggs officially retired from the Bureau in October 1945 although he continued to pursue his research interests