

ology, was awarded to Dr. Burgers for his contributions to general rheology and for his work on the flow of crystalline solids. His research on crystal imperfections and the effect of dislocations in plastic flow is regarded as fundamental to the subject and has been recognized by the naming of the Burgers circuit in lattice theory and the Burgers vector in dislocation theory.

A native of Arnhem, Holland, Dr. Burgers received his doctoral degree in mathematics and physical science from the University of Leiden in 1918. He subsequently served as professor of aerodynamics and hydrodynamics at the Technical University of Delft, and in 1955 was appointed to his current position of research professor in the Institute for Fluid Dynamics and Applied Mathematics at the University of Maryland. He is a fellow of the American Physical Society.

Franklin Institute awards

Gregory Breit, professor of physics at Yale University, received the 1964 Franklin Medal, highest honor of the Franklin Institute, at ceremonies held in Philadelphia on October 21. Professor Breit was cited by the Institute for "his more than forty-five years of research in physics, during which he pioneered in fields of increasing importance to our knowledge of nuclear structure, and especially for his theoretical analyses of the results of scattering experiments, which have given us an understanding of the quantitative features of nuclear forces". The



Gregory Breit



E. W. Mueller

gold medal, established in 1914, is awarded annually in recognition of achievements leading to the advancement of the knowledge of physical science or its applications.

Professor Breit is widely recognized for his part in the development of the Breit-Wigner theory of nuclear resonances and for his many contributions in areas of physics ranging from quantum theory to ionospheric research. A native of Nikolaiev, Russia, he emigrated to the United States in 1915 and was educated at Johns Hopkins University. He served as a mathematical physicist at the Carnegie Institute in Washington for several years, and later taught physics at New York University and the University of Wisconsin. After war-time service in the Manhattan Project, he joined the Yale faculty in 1947, and in 1958 was appointed the first Donner professor of physics at Yale.

In other awards, the Franklin Institute presented one of two Elliott Cresson Gold Medals given this year to Sir Richard Southwell of Trinity College, Cambridge, for his work in solving buckling problems in elastic materials, and for applying the relaxation method to solve differential equations having arbitrary boundary conditions. The second Elliott Cresson Medal went to Robert R. Wilson, professor of physics and director of the Laboratory of Nuclear Studies at Cornell University, for his contributions to particle-accelerator research, and in particular for his work in designing the instrumentation to control, measure, and direct beams of high-energy particles. The Cresson

Medal has been given since 1848 for discoveries or applications of research "adding to the sum of human knowledge, irrespective of commercial value".

The Howard N. Potts Gold Medal of the Franklin Institute was awarded to Erwin W. Mueller, professor of physics at Pennsylvania State University, for his invention and perfection of the field-electron-emission microscope and the field-ion microscope. The Potts Medal for distinguished work in science was established in 1906.

Two of the Institute's John Price Wetherill Silver Medals went to Bernd T. Matthias of the University of California at San Diego and Bell Telephone Laboratories and to John K. Hulm of Westinghouse Research Laboratories for their low-temperature studies on more than three hundred superconducting materials, more than half of which they discovered or significantly re-evaluated. A third Wetherill Medal was given to J. E. Kunzler, also of Bell Telephone Laboratories, for his discovery of the remarkable capabilities of superconductors when subjected to strong magnetic fields and high current densities. P. R. Bell of Oak Ridge National Laboratory received an Edward Longstreth Silver Medal for his work in developing a scintillation spectrometer used in medical research and diagnosis.

Michelson Award

Haldan K. Hartline of the Rockefeller Institute has received the annual Albert A. Michelson Award of the Case Institute of Technology. The \$5000 award was presented to Dr. Hartline in recognition of his research on sense organs and especially his discoveries in the physics and biology of visual perception.

Dr. Hartline is known for his pioneering work in applying measuring techniques to minute parts of the nervous system in order to gauge the electrical activity associated with sight. Through his work on the human retina in the 1920's, he demonstrated the feasibility of studying the electrical events in the eye and the visual response of the subject at the