

Memorial of George W. Brindley June 19, 1905–October 23, 1983

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George W. Brindley, Professor of Mineral Sciences at the Pennsylvania State University, died October 23, 1983, at age 78. He was born June 19, 1905, in Stoke-on-Trent, England, a son of John William and Florence Salt Brindley. On May 2, 1931, he married Catherine F. Fenton. They had two children: S. Peter Brindley of Auckland, New Zealand, and Karin Patricia Milstrey of Denver, Colorado.

Dr. Brindley began his X-ray studies with the Bragg school at Manchester University where he received an M.Sc. in 1928. Leeds University awarded him a Ph.D. in 1933. Following graduation, he held various posts in the physics department at Leeds, becoming reader in X-ray physics in 1948. His research interests, until about 1945, were mainly in the scattering of X-rays by atoms and in line broadening in metals caused by mechanical deformation and thermal vibrations. The James and Brindley scattering factors were used by crystallographers throughout the world for more than twenty years.

Shortly after World War II, Dr. Brindley took up the study of clay minerals and achieved an international reputation for his work on the structures of kaolinite, dickite, halloysite, serpentine, and chlorite. Later he investigated the phase transformations in clays caused by thermal and chemical treatment, and more recently, the structural aspects of clay-organic complexes. The mineral *brindleyite*, a nickel-bearing clay, was named in his honor by colleagues in Yugoslavia.

Dr. Brindley came to Penn State in 1953, serving as a research professor of mineral sciences until 1955 when he was named Professor of Solid State Technology and head of the Department of Ceramic Technology. In 1962, he was named Professor of Mineral Sciences, serving in that capacity until his retirement in 1973. He was among the founders of Penn State's Materials Research Laboratory.

In 1969, he received the Wilson Outstanding Teaching Award of Penn State's College of Earth and Mineral Sciences. In 1978, the George W. Brindley Award for Undergraduate Excellence in Crystal Chemistry was established by the Materials Science Department at Penn State and is awarded annually.

Internationally recognized for his work as a clay mineralogist and X-ray crystallographer, Dr. Brindley wrote more than 300 research papers, including three editions of the book *Crystal Structures of Clay Minerals and Their X-Ray Identification*.

In 1970 the Mineralogical Society of America awarded Professor Brindley the Roebling Medal for his work on clay minerals. He was an honorary member of the Ceramic



Association of Brazil and the Mineralogical Society of Great Britain; a distinguished member of the Clay Minerals Society, member of honor of the French Society of Mineralogy and Crystallography, and Fellow of the American Ceramic Society.

Dr. Brindley was a past president of the Clay Minerals Society, editor of "X-Ray Powder Diffraction File" and associate editor of *Clay and Clay Minerals* and *American Mineralogist*.

After his retirement, he served as visiting professor at Tokyo Institute of Technology and the University of São Paulo, Brazil, and visiting lecturer at the University of the West Indies, Jamaica.

George Brindley was a descendant of James Brindley (1716–1772), a famous engineer of the Industrial Revolution who supervised construction of the canal system in Great Britain. Like his illustrious ancestor, George Brindley took great pride in his work and carried out scientific investigations in a dedicated and meticulous manner. His papers and lectures were delivered with a

graceful style based on carefully documented results. George Brindley was an international ambassador of good will for clay mineralogy who inspired students and colleagues alike to take up the study of this fascinating family of fine-grained minerals.

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