

**RALPH EARLY GRIM 1902–1989**



By the sudden death of Dr. Grim on August 19th, 1989 in Urbana, Illinois, we have lost and mourn the passing of one of the most outstanding scientists in the field of clay science and technology. His wife, Frances Brown Grim, survives.

He was born on February 25, 1902 in Reading, Pennsylvania, where he received his primary and secondary education. He entered Yale University in 1920 and received a PhD degree in 1924. In 1931, he received his PhD degree from the State University of Iowa.

He began his professional career in 1926 as Assistant Professor at the University of Mississippi and as Mississippi's Assistant State Geologist. During his 4 years there, he published 3 publications, one of which was a "Preliminary Report on the Bentonite in Mississippi". In 1931, Dr. Grim joined the staff of the Illinois State Geological Survey as petrographer, a position he held until 1945, when he was promoted to Principal Geologist of the Geological Group, and Geologist and Head of the newly formed Clay Resources and Clay Mineral Technology Section. He resigned as Principal Geologist in 1948 and became Research Professor at the Geology Department of the University of Illinois, retaining his position as Head of the Clay Section at the Survey until 1958. He was Research Professor at the University until he retired in 1967 as Professor Emeritus.

Dr. Grim worked for over 60 years in pure and applied research on clay minerals and materials, and wrote and co-authored more than 125 bulletins and technical reports; he was the author of 3 books and co-author of one. His investigations of clay materials, alone and jointly with his colleagues and others, covered almost the whole field of clay materials research. These investigations included diagenesis; petrographic methods for studying clay minerals; differential thermal analysis; dehydration and rehydration of clay minerals; effects of heat on clay minerals; properties of clay-water systems of clay minerals, including the effects of particle size, effects of exchangeable cations, and pH; soil mechanics; clay minerals in underclays, shales, limestones, sandstones, loess, tills, lake clays, natural bonding sands, and recent marine sediments; bonding properties in synthetic moulding sands; relation of the composition to the properties of clay materials; weathering of clay materials and minerals; clay minerals in soils and their significance; reaction of clay minerals with some organic cations; petrology of underclays, kaolinite, fuller's earths, and shales; ceramic properties of clays and shales; the role of clay minerals in the origin of petroleum and its recovery; the amenability of clay minerals to alumina extraction; use of clay in the practice of medicine and in medicines; use of clays in the manufacture of catalysts; clay minerals as fillers; and a detailed study of clay micas which resulted in the definition and

naming of one group — illite. Because of the quality, quantity and the number of firsts in his investigations of clay materials and their uses, he has become known as the “father of clay mineralogy.”

He was an excellent teacher and consultant. He supervised around 40 graduate students and their theses, worked with a number of postdoctorate fellows, and consulted with a number of graduate students from other universities. He consulted extensively with people in clay-producing and clay-using industries; people in state, federal and foreign governments working with clay materials; and people in companies using secondary recovery methods for petroleum.

Dr. Grim held the offices of Vice-President of the Mineralogical Society of America, 1957–58, and President, 1958–59. He was a member of the Nominating Committee of the Geological Society of America, 1957; Chairman of the Clay Mineral Committee, US National Research Council, 1948–67; Chairman of the International Committee for the Study of Clays, 1952–58, which was later organized into AIPEA in 1961; and editor of the *Journal of Sedimentary Petrology* for a few years beginning in 1954.

He was elected the first distinguished member of the Clay Mineral Society of America in 1968, Honorary Member of the Mineralogical Society of Great Britain in 1970, Emeritus Member of the Geological Society of America in 1977, and Honorary Member of the Society of Economic Paleontologists and Mineralogists, 1982. He was an Honorary Foreign Member of the Ceramic Society of Brazil since 1953, a Foreign Member of the Indian National Academy of Sciences since 1957, Honorary Member of the French Ceramic Society, Honorary Member of Keramos; and he received an Honorary Doctorate from the University of Illinois in May 1984. He was awarded the Medal of the Ordre Nationale and designated a Chevalier of the Ordre Nationale of the Republic of the Ivory Coast in 1973. He was also awarded the Gold Medal and Honorary Membership of the Clay Mineral Society of Spain, 1972, the only gold medal ever given, and received the Roebing Award and Medal of the Mineralogical Society of America in 1974. Dr. Grim was honoured posthumously with a citation from the Illinois House of Representatives.

I have known Dr. Grim for 53 years. He was my boss, teacher, colleague, and good friend, and I found him to be honest, generous, and kind. He was quick to praise good work and was willing to let one learn from one's mistakes. He was fair in dealing with other scientists and people regardless of their station in life.

Dr. Grim was an excellent and effective teacher. He was proud of his students and their accomplishments. His students loved and respected him and were proud to be his students. He kept close contact with them and helped them in their careers whenever he could because he always wanted the best possible for them. He liked to think of them as family.

As a colleague, he was always fair and gave credit where credit was due. He willingly read manuscripts and made valuable comments. He published jointly with his colleagues and others. The famous team of Grim and W. F. Bradley worked separately and together for about 30 years. Another team, although they did not publish jointly, was that of Dr. Grim and Dr. Karl Terzaghi, professor at Harvard and the father of soil mechanics, and Dr. Ralph Peck, professor of soil mechanics at the University of Illinois. They worked together on failures of earth materials in nature, and on failure of construction of projects in, on, and with earthen materials. Terzaghi and Peck furnished samples from the failures and did the soil mechanic tests, and Grim determined the clay minerals present, their content and their possible role in the failure.

Dr. Grim had many good friends throughout the world in industry, business, and the academic world. He made friends easily and they tended to remain friends for life.

Dr. Grim made contributions to many causes. Some of his major contributions were the establishment and funding of the Ralph E. Grim Chair in the Geology Department at the University of Illinois and a gift of a new JEOL Scanning Electron Microscope equipped with an X-ray chemical analyser. His comment was that he wanted to repay partially the University for what it had given him. He gave the First United Methodist Church of Champaign money for a pipe organ in memory of Hazel Tucker Grim, his deceased wife. He and Fran gave money for a pipe organ to a church in Fitzgerald, Georgia, in memory of Fran's parents and have also given money for a pipe organ to a church in Reading Pennsylvania in memory of his parents.

Dr. Grim loved music, gardening, travel, and photography—he especially enjoyed photographing the wild animals of Africa. Both he and Fran were avid golfers.

W. ARTHUR WHITE

#### BOOKS

*Clay Mineralogy* (1953) McGraw-Hill Book Co., New York, 384 pp.

*Applied Clay Mineralogy* (1962) McGraw-Hill Book Co., New York, 422 pp.

*Clay Mineralogy* (2nd Edition) (1968) McGraw-Hill Book Co., New York, 596 pp.

*Bentonites—Geology, Mineralogy, Properties and Use* (1978) Elsevier Scientific Publishing Co., Amsterdam, 256 pp. Published with Necif Guven.