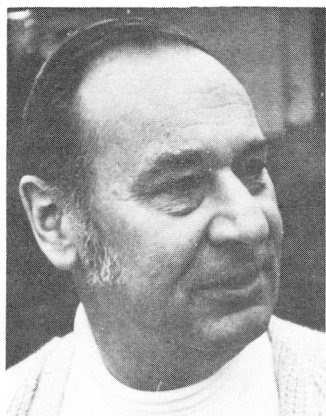


Memorial to Helmut G. F. Winkler

1915–1980

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Helmut G. F. Winkler died suddenly on November 10, 1980, in the 66th year of his life. The notice of his death after an attack of thrombosis caused a shock and deep mourning to all who were attached to him as friends and associates. His widespread interests and activities in various fields of the earth sciences, as well as his awareness of future trends in scientific research, characterized Helmut Winkler as an outstanding personality whose vivid way of lecturing always attracted his audience. Many of his colleagues all over the world will keep pleasant memories of such events. His death leaves a gap in the community of scientists.

Helmut Winkler was born in Kiel (Germany) on April 3, 1915. He developed an interest in geology during his early schooling, and when he entered the University of Rostock in 1934, he took up studies in mineralogy, geology, and chemistry, with mineralogy as his main subject. In Rostock he met Prof. C. W. Correns who had a persisting influence on his scientific career. Helmut Winkler completed his studies at the Universities of Tuebingen and St. Andrews in Scotland.

Winkler's first scientific activities from 1935 to 1938 were applied to the sediments of his North German home district. Furthermore (and this will be surprising for many of those who met him in his later days), he studied a paleontologic subject, "Lower Cretaceous Fauna of Copiapo, Chile." Stimulated by his participation in the St. Andrews-University Iceland Expedition in the summer of 1937, he studied the origin of Iceland fjords and the glacial formation of the Glama Plateau in northwest Iceland. His dissertation, "Thixotropy of mineral powders of microscopic size," was initiated by C. W. Correns, and he obtained the doctor's degree *summa cum laude* at Rostock in 1938.

Helmut Winkler's scientific career was interrupted from 1938 to 1944 by military service. In 1942 he married Ursula Wichmann, who by her sympathetic nature and perpetual concern for her husband's work always backed his activities and thus contributed to his successful life as a scientist.

In July 1944 Helmut Winkler became an assistant of C. W. Correns, who was then Director of the Mineralogical Institute of Goettingen. At that point, he was becoming more and more attracted to crystallographic problems, such as the synthesis of nepheline, correlation of cooling rate and crystal size demonstrated on nepheline melts, and he worked quite intensely on crystalline structures of eucryptite and similar compounds and many other crystallographic subjects. His research in this field resulted in a book, *Struktur und Eigenschaften der Kristalle*, published in 1950, with a second edition in 1955.

The nomination of Helmut Winkler as Director of the new Institute of Crystallography, University of Goettingen, in 1949 undoubtedly meant a recognition of the high standard of his research work, and none of his friends was surprised when, only two years later, he was offered chairs at three German universities simultaneously. Helmut Winkler decided to go to Marburg, where he was a full professor and was appointed Director of the Mineralogical Institute from 1951 to 1962. Although at first still involved in crystallographic problems, he changed his research interests entirely about 1955. On the one side, he turned to technical problems of ceramics, but his attention was also drawn to petrology, specifically, the investigation of the conditions under which metamorphic and magmatic rocks are formed. The latter question kept him occupied until the end of his life. The change from crystallography to petrology came when Helmut Winkler realized, after a visit to the United States, that the new high-pressure apparatus developed there after World War II would, for the first time, enable scientists to obtain, by petrological laboratory experiments, data of the physical and chemical conditions responsible for the formation of metamorphic rocks and anatectic melts. In his opinion, the method of approximating natural rocks by use of four-component systems was not sufficiently true to nature. Therefore, he used natural rocks for his experiments. From 1955 to 1961 he investigated metamorphism of differently composed natural clays and graywackes, and he was able to prove that, under the physical conditions of high-grade metamorphism, anatectic melts of granitic, granodioritic, and tonalitic composition are formed in metapelites and metagraywackes. These experiments contributed to solving the question as to which process is responsible for the formation of granitic rocks, the most common magmatic rocks of the Earth's continental crust.

In 1962 Helmut Winkler returned to Goettingen as a successor to C. W. Correns. In the following years, he and his team investigated a great number of metamorphic reactions, always endeavoring to find out the physico-chemical conditions of metamorphic parageneses by aid of the equilibrium parameters of those reactions. He also gave special attention to the problem of formation and crystallization of granitic melts. His painstaking endeavors in the field of rock metamorphism and anatectic formation of granitic magmas led to the publication of his book *Petrogenesis of Metamorphic Rocks*, which was printed in five editions and is available in six languages. This book may be considered the most essential product of Winkler's fruitful scientific career; it became very popular and was in great favor with students as well as scientists. Each time an edition was sold out, Helmut Winkler devoted himself with great pleasure to preparing the next reviewed and enlarged edition.

Helmut Winkler's contributions to the earth sciences earned him honors of several kinds. He was a Fellow of the Mineralogical Society of America, Honorary Member of the Geological Society of America, full member of the Academy of Sciences in Goettingen, member of the Academy of Sciences in Austria, honorary member of the Geological Society of Belgium and of the Geological Society of London, associate member of the Geological Society of France, and member of the Geological Society of Finland. In 1977 he was granted the Abraham-Gottlieb-Werner medal by the German Mineralogical Society and the Hans-Stille medal by the German Geological Society.

In our era, which can be characterized by an increasing trend to produce specialists in almost every professional field, a scientist like Helmut Winkler deserves all the more admiration for the breadth of his interests and activities extending from geomorphology to crystallography, technical mineralogy, and petrology, yet nonprofessional subjects

like history, the arts, and music also attracted and stimulated his imagination, so essential for creative and abundant scientific work. The ability and readiness to pass on his knowledge, as well as his enthusiasm, to his associates and his disciples made him an excellent teacher and colleague who will always keep his place in our memory.

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