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Memorial of Lester William Strock
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Lester William Strock, crystal chemist and establisher of the Goldschmidt Medal of The Geochemical Society, died in Saratoga Springs, New York on March 21, 1982 at the age of 76. Born of native-born Pennsylvania Dutch parents in Chambersburg, Pennsylvania on January 23, 1906, he completed high school there and then went to Philadelphia to continue his education.

After receiving a B.S. at the Philadelphia College of Pharmacy and Science in 1927, he continued his study of chemistry at the University of Pennsylvania where he received an M.S. in 1929 and the Ph.D. in 1931. His graduate work focused on the crystallography of complex cobalt compounds, but he felt drawn to the field of crystal chemistry, which in the late 1920's was rapidly evolving in both the United States (Pauling) and Europe (Goldschmidt). While in his first two years of graduate school, Strock organized and taught a course in crystallography at Philadelphia College of Pharmacy and Science. He gave up teaching the course when a Harrison Fellowship at the University permitted him to concentrate totally on his doctoral research. While a graduate student, he studied geology part-time at the Wagner Free Institute of Science in Philadelphia and was also active in the Philadelphia Mineralogical Society.

Upon graduation, Strock married Mary Bullock of Philadelphia, on June 19, 1931, and then entered the professional job market in the middle of the Great Depression. Both of these actions had a most important impact on the course of his professional life; the former, because in his marriage he had the strong, sensitive support of his wife, Mary; the latter, because in launching his career he was denied the luxury of options. Strock found it impossible to find any kind of academic position in chemistry, mineralogy or crystallography and he felt fortunate when he was awarded a fellowship by the Rockefeller Institute for Medical Research in New York to work in the X-ray crystallography laboratory of R. W. G. Wyckoff. While at the laboratory, where he worked under the direction of Wyckoff and Corey on the structure of thiourea, he met Ludwig Chrobak of Cracow University, Poland, who was spending a year at the laboratory on a Rockefeller Foundation Grant. They became close friends.

In the early 1930's crystal chemistry was a field almost completely ignored in United States' universities and Strock was delighted to receive an invitation to work in Chrobak's laboratory. In July, 1932, he and his wife sailed for Europe and, with the help of a small grant from the Wagner Free Institute, spent a year working at Cracow University. In 1933, Strock went to the Goldschmidt laboratory in Göttingen, Germany with the expectation that at last, he would be able to carry out studies in crystal chemistry. However, upon arrival, he learned that Goldschmidt's own research efforts were being directed towards geochemistry, with emphasis on problems relating to the distribution of the rarer elements among the atmosphere, hydrosphere and solid crust of the earth. The study was later enlarged to the broader problem of the absolute abundance of all elements in the earth, planets and universe. For a time Strock continued his crystal chemistry research, but before long he joined the geochemistry research program and was able to make

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a significant contribution to the efforts of the laboratory as a member of its spectrographic group. Innovations that he introduced resulted in techniques that are still in use today.

In November of 1935, Strock and his wife sailed for America with a four-month stop-over in London in order to write the short but significant book "Spectrum Analysis with the Carbon Arc Cathode Layer." This first account of the quantitative use of the Carbon Arc to be published in English was widely used by spectrographers after 1936. Still unable to find an academic position, he worked in the commercial laboratories of Lucius Pitkin from April 1936 to May 1937, when he was persuaded by Goldschmidt to again join his geochemistry research team, this time in Oslo, where the Norwegian Department of Commerce had established a laboratory for the eminent geochemist. Strock worked at the laboratory from May, 1937 until December, 1938.

By 1938 Hitler had moved into the Ruhr, Czechoslovakia and Austria, and Strock accepted the offer by Oscar Baudisch of a position in Saratoga Springs, New York. He worked in a new laboratory established by the New York State Conservation Department. Although the research initially focused on the natural waters of the region, with the advent of World War II, the spectrographic laboratory quickly changed orientation to the search for strategic metal deposits. He conducted qualitative analyses on samples from New Mexico, as well as many other areas in the United States. While on an assignment to find optical grade fluorite in the United States, Strock discovered significant amounts of tin in rocks underlying a large area northwest of Hot Springs, New Mexico. He organized the Saratoga Mining Corporation and while prospecting for tin, discovered beryllium at Iron Mountain. This, because of the great importance of beryllium in nuclear technology, determined his spectrographic research activities for the remainder of the war. He undertook large scale beryllium assay contracts and, in addition, produced and supplied purified carbon electrodes to spectrographic laboratories throughout the country. At the end of the war these activities were organized into a commercial laboratory, first as Saratoga Laboratories and later Strock Laboratories, Inc. Among other products, Saratoga Laboratories produced Trace-L Fertilizer, a balanced water-soluble trace element fertilizer for house plants and commercial growers.

From January, 1939 until the early 1950's Strock served as a research radiographer for the Saratoga Springs Commission of the New York State Conservation Department. During part of this time (1949–1952) he was project leader of a cancer research program conducted jointly by Albany Medical College and the Saratoga Springs Commission, the research involving trace element analysis of cancerous kidney tissue. He also found time to help reestablish *Spectrochimica Acta* after World War II and to serve as American Editor from 1947 to the early 1950's.

In 1951 Strock joined the Bayside Research Laboratories of the Sylvania Electric Products Company in Danvers, Massachusetts and embarked on twenty more years of research, including studying crystalline disorder in phosphors used in electroluminescence applications, the crystal chemistry of refractory metals used in the lighting industry, and crystal defects and trace element contaminations in tungsten as functions of filament working operations. His research has had important applications in the development of modern, high wattage halogen lamps.

During the late 1950's and early 60's Strock was also involved in study of polytypism in a range of man-made and naturally occurring materials. He built numerous stacking models from which he developed a systematic categorization and description of polytyped structures. After presenting the results of his research at the 8th International Union for Crystallography meeting at Stony Brook in 1969, he traveled to Japan in order to present further results at the Kyoto meeting of the 9th IUCr in 1972. While in Japan he was suddenly stricken with a heart attack. During his tenure at Sylvania he published over 50 scientific papers and contributed innumerable oral presentations in the United States and abroad.

Upon retirement from Sylvania in 1971 he continued study and research at MIT, the Harvard University Department of Geology and the Smithsonian Astrophysical Laboratory. Typically, he had not the least intention of giving up active professional involvement, in spite of his failing health. Through the Society of Applied Spectroscopy he endowed an annual award for an outstanding publication in analytical atomic spectroscopy and provided substantial support for the geology program at Skidmore College by initiating an annual lecture in geochemistry and geology as well as establishing an endowed fund for increasing geology holdings in the Lucy Scribner Library.

During the last decade of his life Strock researched his family genealogy with the same intensity that he gave to the fields of spectroscopy and geochemistry throughout his career. The work, completed in 1980, resulted in a record to the year 1626 recorded on 65 folio sheets registered in limited edition in the Library of Congress under Serial TX 358425.

Lester Strock is survived by Mary, his wife for more than fifty years; his daughter Winifred, an administrative assistant in hospital management, and his sons Carl, a journalist, and Harold, a materials research scientist. His commitment to research and scholarship continues through his children. One needs no better memorial than this.

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