

MEMORIAL OF BENNO WASSERSTEIN\*

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Benno Wasserstein's many friends were shocked to learn of his death on December 12, 1956, when a chartered plane crashed during takeoff from the airport at San Salvador, El Salvador. Two other employees of the Kaiser Aluminum and Chemical company and the pilot were also killed in the accident. Wasserstein had left his native South Africa only a month previous to establish and supervise a minerals research laboratory on the west coast for the Kaiser Co.; he had approached his new position with characteristic enthusiasm and impatience to get things moving.

Benno Wasserstein was born on July 23, 1906, at Wynberg, Cape Province, Union of South Africa. His parents were of Austrian descent. He attended the South African College School in Cape Town, then from 1926 to 1929 the University of Cape Town, where he received the degrees of B.S. and M.S. in Geology and Mineralogy. From 1930 to 1932, he studied at the University of Munich, Germany, from which he received the Ph.D. degree (*magna cum laude*). His thesis dealt with the petrogenesis of the sandstone between Nürnberg and Weissenburg.

On his return to Africa, he was employed by the British South Africa Co. as a field geologist in Northern Rhodesia and Bechuanaland Protectorate, then joined the Mines Department of the Union of South Africa in 1934 as assistant geologist. Wasserstein remained with the Department of Mines until 1956. His work dealt with field investigations of mineral deposits until 1939, when he was placed in charge of laboratory work in mineralogy, succeeding F. C. Partridge. He told me some years later that although he was well trained in mineralogy, he accepted the transfer with considerable apprehension when he learned that he was expected to use the new spectrograph, which he had never seen! As anyone who knew him could have predicted, Wasserstein not only became an accomplished spectrographer, but an enthusiast on the possibilities of applying spectrographic analysis to the solution of geological problems.

In 1945 Wasserstein came to the United States to spend a year at the Massachusetts Institute of Technology for advanced training in spectrographic analysis and also in  $x$ -ray methods. He and Mrs. Wasserstein, who joined him for part of the year, made many friends among American mineralogists. On his return, he introduced  $x$ -ray methods and differential thermal analysis in his laboratory, which he headed until 1955, when he became Principal Geologist in charge of the Economic Branch. In July 1956, he attended, by special invitation, the Gordon Research Con-

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ference in New Hampshire to discuss his suggestion that the size of the unit cell of uraninite could be used as a measure of geological age. The invitation to join the Kaiser company followed. The decision to leave South Africa was a difficult one to make, but the challenge of the new position was too great for him to set aside.

Wasserstein brought to his laboratory work the viewpoint of the field geologist; he was equally impatient with the laboratory worker who, ignoring field relations, treated samples as though they had grown in a vacuum, and with the field geologist who did not avail himself of the help offered by the laboratory. His enthusiasm was infectious; I like to re-read our correspondence of fourteen years for the stimulation of the many ideas he had and so freely passed on to others.

The attached bibliography represents only a small part of his contribution to science. A number of the younger mineralogists of South Africa were trained in his laboratory and have already made notable contributions of their own.

Wasserstein was elected a Fellow of the Mineralogical Society of America in 1949. He was also a member of Sigma Xi and of the Geological Society of South Africa. He served for several years as Observer, Commission on Geochemistry, International Union of Pure and Applied Chemistry.

Wasserstein is survived by his father, his son Louis, age 12, and his wife, Doreen, who supplied much information for this memorial.

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