American Mineralogist, Volume 60, pages 514–517, 1975

Memorial of David Robert Waldbaum
March 22, 1937–April 11, 1974

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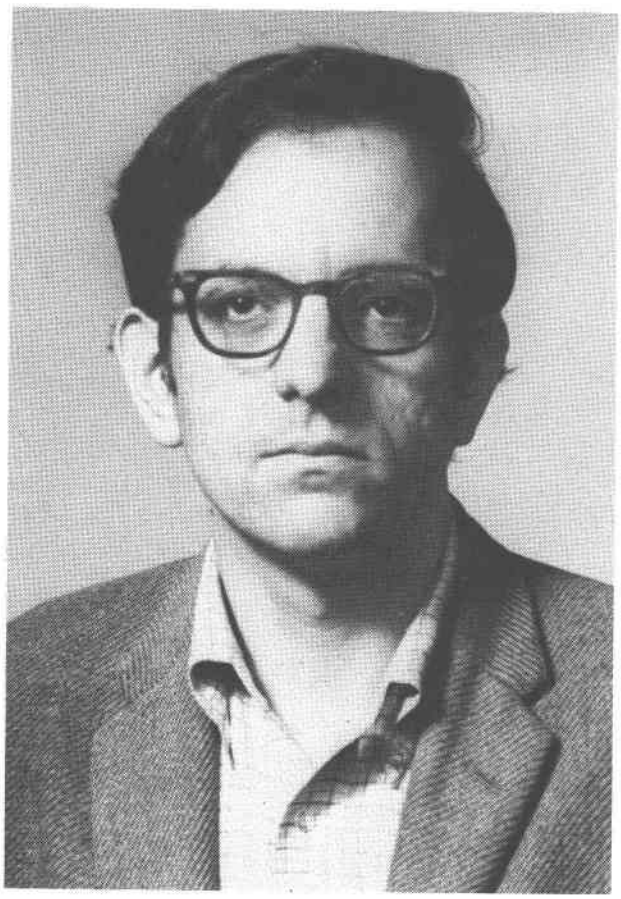

David Robert Waldbaum ended his life on April 11, 1974, at the age of 37, following several years of increasingly difficult periods of mental anguish. With this tragedy, we have lost a brilliant, young, imaginative colleague.

To those who didn't know Dave, it would be easy to type him as a lonely recluse who had long, intensive periods of mental concentration. Long periods of productive thought there were, but they were not without humor nor in an atmosphere of loneliness; Dave could count on quite a large number of close friends. Unfortunately, towards the end, his behavior puzzled or even antagonized some colleagues; I'm sure those people can now appreciate that their relationship with David was affected by forces with which the medical profession has not yet satisfactorily learned to deal.

Born March 22, 1937, in New York City, Dave spent most of his early years in Grand Island, Nebraska. His academic career began impressively. In high school, he achieved such a level of accomplishment that 20 years later his record is still held as a local example of the ultimate possible. Nevertheless, he was denied admission at his first-choice college, while high school classmates with lesser academic records were accepted there. The injustice of this inequity continued to haunt David throughout his life. Disappointed, he entered M.I.T. where he graduated in 1960 with both a Bachelor's and a Master's degree from the Department of Geology and Geophysics. His senior thesis was a complex field problem in Dutchess County, New York, under Professor William Brace, and his master's thesis was on the structure and thermodynamic properties of silver iodide under Professor Clark Stephenson from the Department of Chemistry. It was with Professor Stephenson that David acquired an interest in thermodynamics and an appreciation of the value of precise measurement that was to characterize all of his later work. With Professor Stephenson's encouragement and recommendation, Dave entered Harvard in 1960 to undertake a thermochemical study with Professor James Thompson.

In 1960 the civil rights movement also began, and Dave, stung by his earlier disappointment, spent long hours with his close friends educating them to the realities of discrimination. Later, he was among the first in his generation to recognize

[1]For their assistance in the preparation of this memorial, I am indebted to many of Waldbaum's friends and colleagues, in particular to Dr. R.A. Robie, Dr. J.L. Warner, and Professor J.B. Thompson, Jr. A memorial to Waldbaum has also been published by J.B. Thompson, Jr. in, *Bulletin of Thermodynamics and Thermochemistry.*

and deal positively with the more subtle discriminatory practices against professional women.

His quiet unselfishness and kindness showed in his relations with his fellow graduate students at Harvard. They could count on him to explain some subtle point obtusely presented by the professor, or to point out the trick to solving that difficult problem in the latest problem set. For the numerical solution to some of these problems at Harvard he would use bootlegged time on the computer at M.I.T. This was no small accomplishment when, in addition, we remember that the use of computers by geologists, not to mention students, was almost non-existent in the early 1960's.

For his Ph.D. thesis at Harvard, Dave began his pioneering calorimetric studies on the alkali feldspars. To accomplish this, he went to the laboratory of Dr. Richard Robie, at the U.S. Geological Survey in Washington, D.C., and, in collaboration with him, used the HF solution calorimeter to measure the heats of solution of difficult-to-dissolve silicates. This collaboration also resulted in the comprehensive compilation by Robie and Waldbaum: "Thermodynamic properties of minerals and related substances at 298.15°K (25°C) and one atmosphere (1.013 bars) pressure and at higher temperatures" published in 1968 as *U.S. Geological Survey Bulletin* **1259.** Demand was so high that a second printing was made in 1970. Following his years in Washington and the acceptance of his dissertation in 1966, "Calorimetric investigation of the alkali feldspars," Dave returned to Harvard as a Postdoctoral Fellow. There, with the assistance of NSF, he constructed a second HF solution calorimeter. During this time, he was also identified with the supervision of two Ph.D. theses, continuing the unselfish donation of his time to those students who stood to gain the most from his help.

In 1970, Dave accepted an appointment as Associate Professor at Princeton University. At that time he was sought by half a dozen major institutions, a tribute to the high caliber of his research and promise for the future. At Princeton he quickly established himself as a professor with uncompromisingly high standards for excellence, but balanced with an enviable lucidity of presentation of lecture material and a deep concern that no student's talents, no matter how well concealed, would go unrecognized. Those students who worked with him (there were five when he died) were also included amongst his close friends.

Most of Dave's publications have been concerned with the thermodynamic properties of the alkali feldspars and related minerals and substances; many of these papers were co-authored with J.B. Thompson, R.A. Robie, or Guy Hovis. Two papers authored solely by Waldbaum, however, are worth noting here not because they are representative of the bulk of his work but because they illustrate the manner in which Dave was beginning to apply his specialized knowledge to an understanding of broader problems: "Lunar thermal anomalies: magnetic phase transitions on the lunar surface?" and "Temperature changes associated with adiabatic decompression in geological processes." Clearly, he would have had a major influence on geologic thinking if he had not died so prematurely.

Dave's death was a blow to the already too small group of people dedicated to expanding our knowledge of the thermodynamic properties of rock-forming minerals. He left a number of manuscripts in various stages of completion, several of which will be posthumously published. One of these, "Intrinsic thermodynamic properties of minerals and related substances," which is a proposal for referring thermochemical data to an elemental standard state, could be considered his own memorial in that it illustrates his commitment not only for obtaining thermochemical data, but for tabulating and simplifying it in a manner which he hoped would be most available and useful to students as well as to the professionally sophisticated.

David Waldbaum is survived by his wife, Jane Cohn Waldbaum, his father and mother, Sidney and Serena Waldbaum, two brothers, Douglas and Howard, and a sister Caryl Stinson.

In addition to authoring or co-authoring 22 papers, his record includes 16 published abstracts, 5 reviews, and 6 unpublished manuscripts.

Editor's Note:

David Waldbaum served with great distinction as an Associate Editor of *The American Mineralogist.* He also provided a bequest which

will permit our Society to co-sponsor a Gordon Research Conference on Thermodynamics in Petrology to be held August 25-29, 1975, in honor of Clark Stephenson (see *Am. Mineral.* **60,** 346-347).

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American Mineralogist, Volume 60, pages 517–519, 1975

Memorial of David Knowlton Webb, Jr.
October 19, 1928–September 2, 1973

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The life and career of David Knowlton Webb was unexpectedly cut short by a heart attack on September 2, 1973, just 36 days short of his 45th birthday. Dave was deeply respected and liked by all who knew him and loved by those who knew him well.

David Webb was born in Chillicothe, Ohio, October 19, 1928, to Naomi Limle Webb and David K. Webb, Sr. Chillicothe is a city steeped in Ohio history. His parents were keen on Ohio folklore, and it was only natural that he would develop a deep and abiding interest in the history of Ohio. Dave developed a love for books and publishing during his youth by working in his father's printshop and used book store, which occupied the front of their home. The family legend is that