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Sidney A. Williams 1933–2006



Photo courtesy of Kent England and the *Mineralogical Record*.

Sidney Arthur William died in his home in Douglas, Arizona on the 8th of December, 2006 from lung cancer. He is survived by his loving wife Betty Jo, and their daughter, Sandy.

Sid was born on the 26th of December, 1933 in Ann Arbor Michigan, son of Edward Watkin and Helen (Southgate) Williams. He attended the Michigan College of Mining and Technology (currently Michigan Technological University), where he completed a Bachelor of Science programme in Geology and Master of Science programme in Mineralogy (1957) with a thesis entitled 'A Study of Chlorastrolite'.

Sid's interest in mineralogy was sparked at an early age when he found a 2.5 carat diamond that had been lost in the family driveway many years before. This interest was reinforced by Clarence

Seebaldt, a neighbour. Seebaldt's father was a practicing mining engineer in Colorado and had assembled a mineral collection that was eventually given to Sidney by the family. Dr Edward Kraus at the University of Michigan also encouraged Sid to pursue a career in mineralogy.

He continued his education at the University of Arizona, and graduated with a PhD in 1962 with a dissertation *The Mineralogy of the Mildren and Steppe Mining Districts, Pima County, Arizona*. During this time he met and became good friends with Richard Thomssen, and Richard Bideaux. The three published the 'Mineral Collector' series of informal notes on mineralogy and mineral collecting locations.

Sid returned to Michigan Tech, from 1960 to 1963, while finishing his dissertation, becoming

an assistant professor. During the summer of 1962, Sid worked for Anaconda as a petrographer in the Salt Lake City Office, and returned to Michigan Tech in the fall. He left Michigan Tech and joined Einer Erikson at Silver King Mines in Ely, Nevada in 1963, where he worked as an exploration geologist. In January 1964 Sid received a two-circle goniometer, from Heidelberg, Germany, that he used to measure crystal forms. This was a pride of his and he was always ready to show it off.

In 1965 he left Silver King Mines to manage the Research Laboratory for Phelps Dodge Corporation, Western Exploration Office, in Douglas, Arizona. The main emphasis of the lab was research into porphyry copper and molybdenum systems. Sid had an arrangement with Phelps Dodge whereby he was allowed to take consulting jobs on his own time. It was then that Sid, with wife and partner, Betty Jo, began Globo de Plomo Enterprises.

In 1971 he took a sabbatical from Phelps Dodge to spend some time in the British Museum of Natural History in London (as it was then known). During his studies there he worked on the naturally occurring lead-chromate minerals, resulting in the description of embreyite. He then met Fabian Cesbron, and developed a lasting friendship with Fabian, Peter Embrey, Max Hey and several others on the staff at the Museum. In September of 1980, Sid had expanded his consulting business to include a Kivex (X-ray Fluorescence) unit, while continuing to manage the research laboratory for Phelps Dodge. Within a few years he purchased a new microprobe, for his consulting company.

In 1985, Fabien Cesbron named a new molybdenum oxide mineral, sidwillite, in honour of Sid and his work in copper-molybdenum porphyry exploration. In 1982, he left Phelps Dodge when the company moved the Western Exploration Office from Douglas to Tucson. Sid remained active in his consulting business until 2005, with the amount of work tapering off in later years.

Sid Williams was a remarkable mineralogist and a good friend. His contribution to mineralogical research has provided science with 53 new mineral species and a much greater understanding of the occurrence and character of many other species. Sid authored or co-authored in excess of 80 papers in mineralogy, and related exploration geology. As an exploration geologist,

his understanding of mineralizing systems, based on mineralogy and chemistry, led to several major discoveries. His concepts were so successful in Chile that he earned the nickname 'El Mago' (the magician).

Sid was a mentor to many of the young geologists at Phelps Dodge Corporation during the 1960s and 1970s, with his unique style of teaching by detailed observation and questioning. As a student you had to understand the concepts in order to ask the questions that would take you to the next level. This form of education instills confidence as well as understanding of the physical and chemical systems involved in the formation of mineral deposits.

In closing it must be noted that his real love was mineralogy and the description of new minerals. In addition he had a great interest in history of chemistry and mineralogy, especially during the eighteenth and early nineteenth centuries. His studies of the petrology and mineralogy related to the oxidized zones of base and precious metal deposits will be used by geologists far into the future.

Dr Sidney A. Williams was a Fellow of the Mineralogical Society of America, and a member of the following organizations: Society of Economic Geologists, Mineralogical Association of Canada, Mineralogical Society of Japan, and Mineralogical Society of Great Britain & Ireland.

His greatest contribution to Mineralogy is the monumental effort that he put into co-authoring the *Mineralogy of Arizona*, all three editions. This is a reference work that will be used, for decades to come, by professional as well as amateur geologists and mineralogists working in Arizona.

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