

Memorial of John Williams Anthony 1920–1992

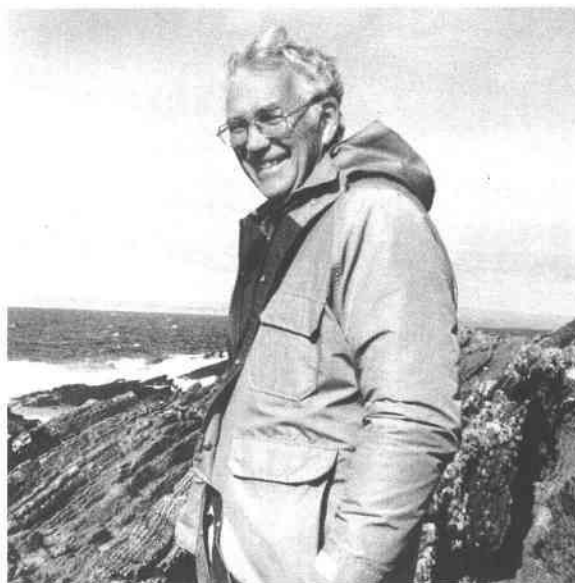
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John Williams Anthony, mineralogist and emeritus professor of geosciences at the University of Arizona, died November 8, 1992, of heart failure following surgery. A Fellow of the Geological Society of America, the Mineralogical Society of America, and the American Association for the Advancement of Science, John possessed a lust for life, a sincere personal warmth that attracted students and colleagues, and an enthusiasm for learning that characterized his diverse professional career. For 35 years at the University of Arizona, John Anthony played a significant role in the evolution of a small geology department focused on mining into a large diversified geosciences program. John's scientific contributions include *Mineralogy of Arizona* (1977), the standard-setting descriptive mineralogy of his adopted state, senior authorship of the *Handbook of Mineralogy* (vol. 1, 1990), and a series of papers describing new mineral species and their crystal structures. John was also the founding editor of the *Digest* of the Arizona Geological Society.

John moved to Tucson to enroll at the University of Arizona, arriving on a typically sweltering July day in 1945. He moved there at the suggestion of his father, who saw an opportunity for John to finish the geology degree that he had begun at the family alma mater, Brown University. John's study there had been interrupted by World War II. There was also an expectation that Arizona's therapeutic climate might heal John's lungs. In reality, the move was a homecoming because John had lived near Kingman, Arizona, in the early 1920s when his father managed a polymetallic mine in the Cerbat Mountains. The early introduction to Arizona and the mining industry had little impact on John's memory (he was only three at the time), aside from recollections of an incident between his father and a skunk under the family home and an irresistible jar of rattlesnake rattles that his mother collected as trophies of numerous successful defenses of her poultry.

The two decades between John's childhood adventures near Kingman and his arrival in Tucson after World War II included a brief stay in Berkeley, California, and the family's return to the environs of Boston, Massachusetts. John had been born near Boston, in Brockton, after Thanksgiving Day dinner November 25, 1920. Nurtured throughout his youth by New England's cultural diversity and bleak winters, John taught himself to play a wide assortment of musical instruments (snare drums, tuba, trumpet, guitar, sousaphone, and piano) and admittedly tried the patience of several orchestra leaders with his



free-form style. Years later, at age 64, John resumed piano lessons and adopted the habit of practicing melodies on a portable keyboard that he carried wherever he traveled. Many former U of A graduate students also remember John and his guitar at student-faculty social gatherings. Musical performance was one of several outlets through which John expressed his keen aesthetic sense.

The sites of John's formal education included Hebron Preparatory School, Stevens Technical Institute (John had intended to pursue his father's profession, engineering), Brown University, the U.S. Navy Radio and Radar School, the University of Arizona, and Harvard University. John's appreciation for geology began with a course in physical geology at Brown University and a textbook by Longwell, Knopf, and Flint that John said he could not put down. This fascination with geology was a surprise because one of John's clearest childhood memories of summer camp was his dislike for learning about nature, especially rocks. Fortunately, John had completed the courses in mineralogy and crystallography before World War II interrupted his paleontology course and John's tenure as a student at Brown. However, Brown University would reappear in John's life through the undergraduate education of two of his children.

After finishing his B.S. degree in geology at the University of Arizona, John accepted a position as a miner-

alogist with the Arizona Bureau of Mines in 1946. His years with the Bureau offered valuable exposure to the diverse geology of Arizona mineral occurrences through regular contacts with prospectors, identification of minerals and rocks for the public, and ongoing studies of mineral resources for the booming Arizona mining industry. Two stories illustrate the diverse opportunities available 45 years ago to an inquisitive mineralogist in Arizona. For one assignment, John was issued a steel safety helmet and sent to Bisbee to conduct a Geiger-counter survey of the underground workings of the Cole shaft. John completed this task by sloshing along through puddles while stooping his six-foot-plus frame to avoid touching that steel helmet to the bare high-voltage wires that were strung overhead. In another incident, John proved that he was able to find adventure even in his office. One day while examining a specimen through a microscope, John's face was sprayed by an exploding bottle of aqua regia. In this case, John's athletic prowess and quickness of mind were demonstrated by his ensuing dash to the men's room and the quick dousing of his face in a toilet bowl. During his time at the Bureau of Mines, John's interests in determinative mineralogy and Arizona localities blossomed, and almost certainly seeds for his *Mineralogy of Arizona* must have taken root.

After earning his M.S. from the University of Arizona in 1951, John left the Bureau of Mines, joined the faculty of the Geology Department, and assumed responsibility for teaching introductory mineralogy and polished-surface mineragraphy courses formerly taught by his recently deceased graduate adviser, Max Short. While a student, John had spent untold hours polishing Max Short's extensive reference collection of flat-surface ore-mineral specimens, perhaps never fully realizing that some day he would be responsible for that significant collection.

Also during this early part of John's teaching career, he met two graduate students, Spence Titley and Sid Williams, who would become his life-long friends and colleagues. John's teaching responsibilities expanded to include topographic surveying and field mapping, during the era before the departmental field camp was established. This was also the era when four faculty members shared one phone.

In 1965 John completed his Ph.D. under the direction of Clifford Frondel at Harvard. In the process of synthesizing the monazite crystals required for his dissertation research he destroyed the equivalent of a small fortune in Dr. Frondel's Pt crucibles.

The remainder of John's teaching career centered on courses in mineralogy, crystal structure determination, and occasional stints as the dedicated director and an instructor at the summer field camp. John described his extracurricular field-camp duties as including the removal of prickly pear barbs, manhandling gasoline drums at the field station, and translating the colloquialisms of occasional students from back East. John's service to the Geology Department also included two years as its chairman.

Long-time friend Spence Titley described John's deep-

ly rooted fascination with the order and harmony in the physical world as a reflection of a "mathematician's mind combined with the heart of an artist." John's published descriptions of crystal structures clearly document his attitude for both the artistry and analysis of that challenging discipline. The breadth and unpredictability of John's fascination with order are illustrated by two anecdotes. Spence related a story about John's advice on the proper orientation of a peanut butter and jelly sandwich, which certainly must have been based on crystallographic principles. In another example, John's eye for symmetry was offended by a pair of louvered doors in an apartment that my wife and I rented while attending the U of A. Each door had the same handedness (probably the result of a bargain at the lumberyard), unlike the typical case where one door is the mirror image of its neighbor. Those doors were the focus of several subsequent conversations between us that, characteristically, led us to reexplore a book about the subject at hand, in this case, Martin Gardner's *Ambidextrous Universe*.

Visits to John's office for academic advice were normally as unpredictable as they could be intellectually challenging. Conversations routinely covered current events, the fine arts, music, jokes, puns, jogging, tennis, and anything else that recently had caught the attention of John's inquisitive mind. John's craft as a teacher was recognized by the Arizona Alumni Association in 1967 through its Outstanding Faculty Member Award.

John's stewardship of the mineralogical museum at the Department of Geosciences for more than a quarter century helped preserve and expand one of the best university mineral collections during a time when support for museums was almost nonexistent. Anyone who spoke seriously with John about the museum observed a passion for both the scientific and aesthetic values of mineral specimens that influenced the careers of many of his students. John strongly supported the Tucson Gem and Mineral Society, recommended numerous students for the Society's scholarships, and encouraged students to get involved with the Society's many activities. John Anthony's contributions to popular mineralogy were recognized in 1979 by the Rocky Mountain Federation of Mineralogical Societies American Federation Scholarship Foundation Award and the Tucson Gem and Mineral Society Lifetime Award in 1985. Anthonyite, a hydrous Cu-Cl mineral described by Sid Williams, also honors John's contributions to mineralogy.

Following his retirement from active teaching in 1986, John concentrated professionally on the *Handbook of Mineralogy* project and a second edition of *Mineralogy of Arizona* and actively supported the academic career of his wife at the University of Texas at El Paso. In characteristic style, John also found ample time for personal interests in world travel, music, painting, drawing, and applications of personal computers. John Williams Anthony is survived by his wife, Libby; three children, John, Jr., Ryan, and Dorrie; and his former wife, Arline Bate-man.

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