



Robert Louis Folk

On June 4, 2018 the sedimentary geology community lost one of its heroes (www.jsg.utexas.edu/news/2018/06/remembering-bob-folk/). Robert Louis Folk's international reputation was founded on his classifications for limestones and sandstones but also on an ebullient personality that allowed him to build friendships and collaborations with colleagues all over the world. His entertaining presentation style always drew a happy crowd. He was popularly known as Bob Folk, although at times he would introduce himself as "Luigi", an Italian version of his middle name.

Bob authored over 100 research papers in international scientific journals and professional volumes. The value of his written and oral contributions earned him

the W.H. Twenhofel Gold Medal from the SEPM (1979), the H.C. Sorby Medal from the IAS (1990), and the Penrose Gold Medal from the GSA (2000). In addition, he was awarded the Neil Miner Outstanding Teacher Award from the National Association of Geology Teachers (1989).

Bob Folk was born September 30, 1925, in Cleveland, Ohio. His father, George Billmyer Folk, grew up on a farm in the Shenandoah Valley and became a lawyer in Cleveland. His mother, Marjorie Kinkead Folk of Columbus, Ohio, was an accomplished pianist and painter. Bob became interested in rocks and minerals around age five because of all the pretty pebbles in the moraines that had been carried down from the Canadian shield. He became attracted to sedimentary rock

classification because there existed exotic names for igneous rocks like andesite or gabbro, but sedimentary rocks were just sandstone, limestone or shale; he thought there must be a better way. Later, he found the better way and his classification of sedimentary rocks is still the gold standard and established him as one of the founders of “Soft Rock Geology.”

Bob entered Penn State as one of only three geology majors that year. The turning-point in his career was in 4th semester when he took hand specimen petrology under the incomparable Paul D. Krynine, a titan of sedimentology who instilled into students the need for detailed observation and classification, and showed them how to think critically. In college Bob was a long-time member of the Nittany Co-op, where 20 meals were \$5.25 a week. In 1946, while working as a waiter in the dining hall of the co-op, Bob met, Marjorie Thomas of Kennett Square, Pennsylvania. They were engaged three weeks later and married in six months.

After getting a Ph.D. in 1952, Bob worked briefly for Gulf Research & Development Company in Houston, Texas and Pascagoula, Mississippi, examining marine sediments and river sands of the eastern Gulf Coast. At that time, textural analysis was thought to be the “key to finding oil fields”. But Bob decided that his future lay in teaching, and in February, 1952, while driving through Austin, Texas, Bob walked in off the street to the Geology Department and asked if they had any jobs. Luckily, their sedimentologist was about to retire, so the department chair virtually hired him on the spot for \$4,200 a year.

In those days, before the pressure of grant-driven science, the department allowed him to work on anything he pleased – dune sands, pebble shapes in Tahiti, modern carbonate sediments of Yucatan, the petrology of avian urine, the petrography of roofing tiles, enhanced stereo vision using two hands, black phytokarst from Hell, a unit of scuffle abrasion on stone steps, vitrified rat feces of aragonite, and a challenge to the concept that the pyramids of

Egypt are made of epoxy-cemented crushed stone. He did this research without having to squander science-time writing proposals. Wherever he traveled Bob sought out the local culture and cuisine, using bits of languages he quickly acquired and applied with abandon. He was passably fluent in Czech and Italian, but never hesitated to make exclamations in Chinese. He liked to grade graduate student papers in Egyptian hieroglyphics, leaving it up to them to translate his marking system.

Teaching field camp in the Marathon Basin, Trans-Pecos Texas, Bob became involved in the problem of radiolarian/spicule cherts and the deep vs. shallow controversy he carried on with Earle McBride for over 3 decades. In 1973, at the invitation of Riccardo Assereto, Marge, Bob, and daughter Jenny spent six months at the University of Milano and fell in love with the Italian life style. As a result, in 1974-75, Bob and Earle expanded their interests in chert to Sicily, the Appenines, and the Alps. Thanks to the support from the University of Texas, Bob spent many summers working in bell’ Italia, usually with a student (preferably a “schiava” rather than a “schiavo”) or a colleague in tow.

From the introductory course he taught for many years to now well-established colleagues who revered him as a master, Bob’s impact as a teacher was tremendous. “Transformative” and “life-changing” are common descriptions from students speaking of their time in his classes. Perhaps unthinkable in modern classrooms, flying chalk bits regularly punctuated his lectures. Woe to a student who’s attention drifted! In graduate level lab sessions he went from microscope to microscope with his favorite wood-carved Australian snake stick; all of his students recall that poke in the ribs and the command to “Speak! What do you see?”. He had a near-magical ability to make people see more. Stories collected from his students on the occasion of his 90th birthday give an impression of what it was like to study and do research with Bob Folk: http://www.jsg.utexas.edu/alumni/files/folktales_book.pdf

His *Petrology of Sedimentary Rocks*, known as the Orange Book, a soft-bound locally published semi-text that grew from his course notes, first appeared in 1957 and was revised periodically until 1980. It was used as a reference for his graduate petrography courses and sold for little more than production costs. The 1980 version is available in a searchable pdf format: <http://hdl.handle.net/2152/22930>. Although dated and lacking references, it remains a fundamental resource for sedimentary petrologists and enjoyable reading. This humble-looking book is held by libraries world-wide and is a treasured volume on the personal shelves of many geologists.

In 1979 Bob's career took an abrupt turn. Always looking for another excuse to continue fieldwork in Italy, he hit on the idea of working on Roman travertines with his colleague Hank Chafetz. There he discovered that bacteria had played a major role in the formation of these carbonates. Bob retired from teaching in 1988 and that summer another scientific ("great leap forward, or catastrophic fiasco, your choice" – Bob's words) occurred when he and student Paula Noble studied the aragonite-forming hot springs at Viterbo, near Roma. Examining the samples with the SEM, Bob realized that he was seeing minute 0.1 micron ovoids that he interpreted as — NANNOBACTERIA! Few paid much attention to his 1992 GSA talk on this discovery, until four years later, a team from NASA shocked the world by their claim to have found nanno bacteria of similar size and shape in a Martian meteorite. Bob wondered "Do you think I could have ever gotten funding for a grant entitled 'Search for extraterrestrial life starting with hot-water Italian travertines'? No way!" Forms resembling nanno bacteria have since been found in mammal blood, dental plaque,

kidney stones, clogged human arteries and arthritic joints. L.S. Land (as well as nearly all biologists) thought this was a career-busting fiasco. Regardless of one's preferred interpretation it is, however, undeniable that at small scales, many crystals do not display the expected euhedral shapes, as you can see in Folk's 2005 contribution to *Journal of Earth System Science* (Proceedings. Earth and Planetary Sciences /Indian Academy of Sciences), v. 114, no. 3, p. 369-374.

He had many hobbies, including a very complicated dice baseball game that he started in 1944 and maintained until last year. He enjoyed history, particularly about the Civil War (both of his great-grandfathers were in that war), non-realistic painting (several people have his acrylics), and collecting rocks, stamps and coins, as well as amateur astronomy.

Bob liked to dance with his wife and/or students at the iconic Austin bar and music hall the Broken Spoke, and loved country music as well as Grand Opera, symphony, and popular melodious music. Marge and he were members of the Wedding Ring class at First Methodist Church from 1954 on. They enjoyed almost every weekend at their log cabin overlooking Lake Travis. Bob was also an accomplished pasta chef (sauces only). The last item in his recipe for carbonara is "add a smattering of fireplace ashes."

We continue to collect stories and remembrances of Bob Folk. We are working together with Folk students Murray Felsher, Gus Cotera, and Miles O. Hayes to compile these materials for a web posting that documents the impact Bob Folk had on our community, to augment those already available. Please feel free to send us your contributions. Materials will be published as submitted, with no editing (except in a case of poor taste and/or bad spelling).

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