

# Memorial to Edgar Paul Rothrock

## 1889-1977

DAVID P. ROTHROCK

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Drawn by R. C. Moore

On 2 August 1977, Edgar Paul Rothrock was claimed by cancer. His death ended many years of public service to the people of South Dakota. His association with the Geological Survey and the University at Vermillion began in 1922 and was concurrent with the economic growth of the state. Dr. Rothrock was sixty-eight days older than the State of South Dakota and part of the pioneer generation who brought the state to its present economic development.

Edgar was born on 26 August 1889, the eldest of three sons of a Congregational minister in Garrettsville, Ohio. He graduated from Lincoln High School, Cleveland, in the class of "naughty eight" (1908). Reading ability in Latin and Greek was a requirement in those days. As late as the 1970s, he took pleasure

from his Greek copy of Xenophon. After a year at Western Reserve University, he entered Oberlin College and completed the A.B. in 1912, the M.A. in 1914. At Oberlin, Dr. George Hubbard encouraged him to enter the profession of geology. The Oberlin summer camps of 1912 and 1913 were good neophyte training because the New River Narrows country in Giles County, Virginia, has rough topography and is not overly generous with outcrops. The school year of 1914-1915 found Edgar at Kidder Institute, Kidder, Missouri. That job paid \$800 for nine months work as "science" instructor teaching physics, geometry, algebra, and agriculture. But greater ambitions moved him to study at the University of Chicago in 1915-1917 and 1921-1922. Older members of GSA will recall the illustrious names of T. C. Chamberlin, Johannsen, Weller, Bastin, and Leith who were his teachers. The Ph.D. in geology was bestowed 1 September 1922 at Chicago.

Many activities overlapped during the period 1915-1922. Six summers were spent with the Geological Surveys of Wisconsin, Illinois, and Oklahoma. At other times he did reconnaissance geology for Empire Gas and Fuel Company, Washington Oil Company, and Standard Oil of California.

In Wisconsin, the field crew was doing a primitive magnetic survey for iron deposits. They hiked all day long with pace-and-compass mapping, stopping to read the dip needle. An oil company job in the hills of Kentucky was done from horseback in a region where the stranger had to move carefully among the Hatfields and the McCoys. His thesis work in Cimarron County, Oklahoma, had an improvement in equipment. Where the Model "T" odometer could not measure road miles, alidade and plane table were used. An open touring car was also the field transportation in the Blackfoot country of Montana. His brother, Howard E. Rothrock, joined him on that consulting job in 1920, as did his wife Grace and little son David, aged three months.

Amid all the work and schooling he had found time to marry Grace R. Foster, a girl from Clyde, Ohio. They met at Oberlin College and were wed 15 September 1917

at his father's parsonage in Cleveland. Grace was to be his moral support and inspiration for fifty-four years. She lent purpose to what had been a restless nature.

A passing event of 1918 was Edgar's brief service in the military. He volunteered on 24 October 1918 for training in the Field Artillery Officer Candidate School at Camp Zachary Taylor, Kentucky. But the Armistice soon occurred, and then the camp was hobbled by the flu epidemic. Following discharge on 5 December 1918, he taught briefly in the Cleveland high schools and then went to the University of Oklahoma as assistant professor of geology and mineralogy for the salary of \$1,700. Edgar and Grace set up their first housekeeping in Norman, Oklahoma.

The frequent moving ceased in September 1922 when the Rothrocks arrived in Vermillion where the University of South Dakota is located. Edgar was one of two associate geology professors under Freeman Ward for the annual salary of \$3,000. When Dr. Ward left in 1926, "E. P." became the head of the Department of Geology and also acting head of the South Dakota Geological and Natural History Survey, a dual role that continued until his retirement in 1957. That long career nearly aborted in 1927, when all funds for the Survey were cut off by the economy axe of Governor Bulow and his contentious legislature. "E. P." was sustained by his teaching salary for the 1927-1929 biennium and started to rebuild the Geological Survey from a zero base.

By 1957 the Survey was a thriving service with an annual appropriation of \$69,000. The events of this growth are much too detailed to review here; they are well covered by Patricia M. Vanorny in "A History of the S. Dak. Geological Survey," South Dakota Geological Survey Educational Series 4, p. 38-74, 101-102, 106-108, 111-112, 1970.

The bibliography with this memorial gives a good idea of the varied activities undertaken by the Survey under Dr. Rothrock. The first need of South Dakota, as with sister states in the central plains, was to get out of the mud. Locating gravel for roads helped solve that problem. During the drought years of the 1930s, water studies were paramount. Dr. Rothrock established bench marks on a chain of lakes and wells in order to monitor ground-water recovery. Manganese, bentonite, uranium, pegmatite, and coal all merited special field studies. Gravity, magnetic, and structural mapping surveys were designed to aid oil exploration. A law was sponsored to protect underground water sources from pollution by unplugged deep wells. A sample library of well cuttings was collected for public reference.

Imminent flooding of the Missouri Valley from the Fort Randall, Big Bend, and Oahe Dams called forth a maximum Survey effort from 1948 to 1951. Areal geology was mapped for twenty-six quadrangles. These geologic maps were made in fifteen-minute quadrangles at a scale of one inch to the mile. Long-time associate Bruno C. Petsch is the unsung hero of the color-plate drafting.

By 1957, Dr. Rothrock had come a long way toward his goal of applying geology to the development of the South Dakota economy. His retirement banquet on 20 May 1957 was the occasion for a genuine outpouring of affection from friends, associates, and former students.

Edgar next did consulting work for several years, but flying still had its fascination. Between 1946 and 1948, he and son Donald owned and flew a 65 hp. Aeronca Champion. From foot-slogging ground surveys in Wisconsin, he had graduated to flying his own aircraft to well sites needing inspection. Edgar last renewed his private flying license at age sixty-seven. Following retirement he taught meteorology in the spring quarters of 1959 and 1960 to ground-school aviation cadets at the university.

In 1960, "E. P." completed a long talked-about family genealogy, when he assembled and privately published by his own hand, "Some Descendants of Johann

Georg Rothrock, 1721-1806." Johann Georg was the Rhineland immigrant who started the Pennsylvania "Dutch" line of Edgar Paul Rothrock. "Rothrock" is an old German name meaning "Red Coat." On his mother's side the ancestors were English.

During the summers of 1961 through 1965, "E. P." taught general geology to high school teachers attending the Summer Science Institute at the university. Between 1922 and 1957 he had taught freshmen and sophomores who frequently needed special coaching in basic science. But now he could teach the teachers and greatly magnify his efforts. The Department of Geology at the university had been a two- to four-teacher operation, and so was not equipped to educate beyond the bachelor of science level. Nevertheless, some students had completed those requirements and gone on to careers in geology and engineering. He rejoiced in the success of his graduates. They in turn benefited from the personal teaching possible in a small department with the added advantages of summer work with the Survey.

Since his youth, Edgar had enjoyed music. His instrument was the cello. In school days, he and his brothers had a small musical group consisting of piano, flute, and cello. After coming to Vermillion in 1922, he occasionally played with a small ensemble that supplied "mood music" to accompany the silent movie films at the local theater. But by retirement time a touch of arthritis had ended cello playing so he turned to other hobbies. An early interest was beekeeping. He cared for several hives throughout his retirement and taught others the art. The teacher instinct emerged in lapidary work. He enjoyed his association with the Coyote Rock and Lapidary Society. At the annual rock shows he had exhibits of machines and techniques and was always ready with advice to the interested. Whatever line of endeavor he entered, he did so with vigor and purpose. He was a "Renaissance" man who considered that any activity he undertook was within his abilities.

Dr. Rothrock was a Fellow of the Geological Society of America (1933), a Fellow of the American Association for the Advancement of Science (1920), an Honorary Member of the Association of American State Geologists (1958), a Member of the South Dakota Academy of Science (1924) and a Life Member of it (1965), a Member of the American Association of Petroleum Geologists (1919), a Member of the American Institute of Mining and Metallurgical Engineers, Professor Emeritus of the University of South Dakota (30 March 1967), and a Member of the Society of Sigma Xi.

His nonprofessional affiliations include: Masonic Order, Order of the Eastern Star, Rotary International, American Legion, United Church of Christ (formerly the Congregational Church), and Coyote Rock and Lapidary Society.

Dr. Rothrock is survived by his brother, Howard E. Rothrock of Silver City, New Mexico, who is active in petroleum and mining consulting. A son, David P. Rothrock, formerly in petroleum geology, lives in Lakewood, Colorado. Another son, Donald F. Rothrock, is a civil engineer who lives in Phoenix, Arizona.

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