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Memorial

Memorial to James Robert Smith (1925-1972)

The premature and sudden death of James Robert Smith on October 25, 1972, in Saskatoon, robbed a wide circle of geologists, both in Canada and the United States, of a respected colleague and a true friend. Few who came in contact with Bob Smith failed to be impressed with the breadth of his knowledge, the depth of his understanding, and the sincerity and warmth of his friendship.

Bob lived much of his life where it began and ended—in the prairie province of Saskatchewan. He was born on August 17, 1925, in Regina, the younger child of Walter Charles Jordan and Kathleen Smith. He went to Connaught School and to Scott Collegiate in Regina, passing his senior matriculation in June of 1943. One month later, he joined the army to serve throughout the last two years of the Second World War, partly at home and partly overseas. He was discharged in September 1945 with the rank of corporal.

What initially triggered Bob Smith's interest in geology remains unknown, but within weeks of his discharge from the army, he had enrolled, together with other young, hardy war veterans, in the College of Engineering of the University of Saskatchewan in Saskatoon as a student in geological engineering. This happy decision brought him into contact with James Buckland Mawdsley (1894-1964), then Head of the Department of Geology, who more than any other person influenced his professional career. Mawdsley was quick to detect Bob's interest and to recognize his quite exceptional ability. In the summer of 1946, when he had completed only his first year of study, and again in the summer of 1948, Mawdsley took him under his wing as a junior field assistant on a party mapping the complex metamorphic rocks on the shores of Lake Athabasca in northern Saskatchewan; and so Bob was introduced to what was to become his great scientific love—field work in the vast, untamed wilderness of the Canadian Precambrian Shield. Bob's diligence as a student paid a handsome dividend in the spring of 1949, when he graduated B.Sc. in Geological Engineering with distinction. The members of his class were a tight-knit group: they had been raised on the prairies during the dust-bowl years, and many had been toughened by army life and had reached full adulthood amidst the horrors of war. The immediate post-war period was a time of release, and that release found expression in hard work and hard play. Members of the 'Class of '49' achieved a justified notoriety for the student pranks that they perpetrated, with youthful exuberance, on an unsuspecting campus and city. Professor Mawdsley used to recount their exploits in terms befitting a reprimanding father but in tones betraying pride in their devilry; and he delighted in telling of the occasion when he was summoned to bail Bob and his entire class out of jail!

Mawdsley strongly influenced Bob Smith's subsequent training in geology. No sooner had he graduated than Mawdsley sent him off to Université Laval, in Quebec, to begin graduate work under the direction of Professor F. F. Osborne. Osborne arranged that he should work for the summer of 1949 with the Quebec Department of Mines, mapping a gneiss belt in the Grenville Province known to contain a lead-zinc ore body. He based his thesis on this work and graduated M.Sc. *cum laude* in the summer of 1950. He was then steered by Mawdsley to Princeton University—his own *alma mater*—and began a doctoral study, under the direction of the late Professor H. H. Hess, on the optical properties of the plagiclase feldspars in rocks of the Stillwater Complex, which he completed in 1954. His work subsequently formed the basis of a valuable appendix to Professor Hess's account of the complex, published as a memoir of the Geological Society of America. During the summers of his Princeton years, Bob returned to Quebec as a temporary employee of the Quebec Department of Mines and acted as senior assistant and party chief in the Chibougamau district, mapping igneous and metamorphic rocks of Archaean and Proterozoic age and examining numerous associated base metal prospects.

In the fall of 1954, his doctoral studies completed, Bob Smith became a post-doctoral fellow in the Geophysical Laboratory of the Carnegie Institution in Washington, D.C., where, in association with Felix Chayes, J. F. Schairer, D. B. Stewart, and H. S. Yoder, he conducted a series of experiments on the hydrothermal inversion of natural plagioclases to their high-temperature modifications, x-ray powder diffraction studies of plagioclases, and phase-equilibrium studies on the

ternary feldspar-water system. Bob counted his years at the Geophysical Laboratory among the most valuable of his career: he treasured his association with the many distinguished mineralogists and petrologists who served on its staff, particularly N. L. Bowen.

In 1957, his aging mentor, Professor Mawdsley, again influenced the course of his career by offering him a position on the faculty of the Department of Geology in the University of Saskatchewan. At that time, the department was ill-equipped and understaffed, and Mawdsley recognized that, if Bob were to realize his potential, he would have to provide him with a modern laboratory. This he did with funds solicited from the National Research Council, the Saskatchewan Research Council, various mining companies, and a handful of philanthropic alumni. By 1959, Bob had the Mineralogy and Petrology Research Laboratory of the University of Saskatchewan in operation.

When he accepted his faculty position in the Department of Geology, Bob agreed also to become head of the embryonic Geology Division of the Saskatchewan Research Council, a governmental institution located on the university campus, but by 1960, he realized that he could not meet satisfactorily the demands of both positions. With the knowledge that he could continue to use the facilities of the university's research laboratory, he agreed to transfer full-time to the Saskatchewan Research Council, and subsequently, to enable him to continue to work with graduate students, he was appointed Adjunct Professor of Geology. He presided over the growth of the Council's Geology Division and drew upon his many contacts both in Princeton University and in the Geophysical Laboratory for the personnel to assume both the position he had held within the university and vacant positions on his own staff. Bob himself conducted detailed geological mapping and geochemical sampling in the Flin Flon region of the Saskatchewan-Manitoba borderland between 1959 and 1962, and between 1962 and 1966 co-ordinated and supervised a detailed geological-geochemical field study of the Hanson Lake region of Saskatchewan, where both lead-zinc and copper-zinc deposits were known to occur. Concurrently, he designed the instrumentation for semi-automation of x-ray analyses. During his years in the Saskatchewan Research Council, he served on various national committees, including the National Advisory Committee for the Storage and Retrieval of Geological Data.

Gradually, however, the administrative duties of the growing Geology Division demanded more and more of his time at the expense of field work and laboratory research, and this was not for him. He resigned from the Saskatchewan Research Council in 1970, and in large measure the last years of his life were spent doing what he enjoyed most—field work in the Precambrian Shield. He returned to the Chibougamau region of Quebec, which he knew so well from his student days, and ultimately, in the employ of an exploration company, found himself once again in that particularly attractive country between Amisk and Hanson Lakes in Saskatchewan, the geology of which had been his prime interest in the preceding decade.

Scientifically, Bob Smith's strength lay in his profound conviction that all geological investigations should begin and end in the field, and he himself would not accept the results of his meticulously executed laboratory experiments unless they could be reconciled with his equally meticulous observations on the outcrop. He was both a generalist and a specialist, who based his geological interpretations upon a rich knowledge, deep understanding, and skillful integration of the fields of mineralogy, petrology, and geochemistry.

In 1961, Bob Smith married Phyllis Doran, the daughter of a family that already had become linked to the geological fraternity. To his widow, his two sons, Michael and David, and his parents, now retired in Victoria, British Columbia, Bob's geological colleagues and friends extend a full measure of sympathy.

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