Memorial to Richard H. Jahns
1915–1983

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On the evening of December 31, 1983, while preparing to spend New Year's Eve with friends, Richard H. Jahns was overtaken by a fatal heart attack, and our Society was deprived of one of its most respected and commanding figures. He was known throughout and beyond the geologic profession as a scientist-educator-administrator of extraordinary talent. To the many fortunate enough to have known him personally, he was all of that and inexpressibly more.

Dick was born in Los Angeles in 1915. Among his earliest memories was a love of the outdoors and the ways of nature, an attachment sustained during his boyhood and youth in exploring the trails of the San Gabriel Mountains and later the shore of Puget Sound where he had moved with his family. Upon graduating from high school in Seattle in 1931, he entered Cal Tech where he proceeded to excel as a chemistry major. He also found time to indulge another passion that began in boyhood and lasted his lifetime—railroads in general and the big red cars of the Pacific Electric Railway in particular. Not content as an observer, he hired on as an "extra board motorman" on the run that carried the morning papers from Pasadena to the San Gabriel and San Bernardino Valleys, returning in time to meet his eight o'clock classes.

After his junior year, uneasy with the confining atmosphere of the laboratory and inspired by an elected course in mineralogy taught by Ian Campbell, he changed majors, achieving the next-to-impossible by taking nearly all of the required geology courses in his senior year. Still legendary among contemporaries of his student days is the apparent ease with which he handled that excessive course load while playing on the varsity baseball team and enjoying a number of other extracurricular activities.

He then entered a master's program at Northwestern, which he frequently recalled as a major learning experience. He was always quick to acknowledge his indebtedness to a succession of great teachers at both Cal Tech and Northwestern, including Chester Stock, John P. Buwalda, C. H. Behere, Jr., and, of course, Ian Campbell.

At the end of his first year at Northwestern, he married Frances Hodapp, the "only girl" of his undergraduate days at Cal Tech and his future devoted and lifelong companion. He obtained his master's degree in 1937, the title of his thesis being "Precambrian Rocks of South Park, Colorado, and Tertiary Intrusions of the Chalmers Area." He later recalled that the "first draft of that thesis was simply awful" and claimed to reread it whenever he needed a good dose of humility.

Also in 1937, he successfully competed for one of the few depression-time openings in the U.S. Geological Survey and plunged into an eleven-year period devoted mostly to a succession of field assignments involving 47 changes of address. Contrary to custom and to Survey policy at that time, Dick and Frances determined that they should set up housekeeping wherever Dick was assigned. Later, one of his great pleasures lay in relating

instances that revealed her resilience, good humor, and loyalty during those exciting but trying years.

The two years that followed his graduation were divided between summer employment with the Survey and the fulfillment of the residency requirement toward a Ph.D. degree at Cal Tech. In what would seem an abrupt shift in interest, he chose to pursue a minor in vertebrate paleontology, but to those aware of Dick's admiration of Chester Stock, his choice seemed entirely logical. His thesis dealt with mammalian remains of the Miocene Mint Canyon Formation and related stratigraphic problems in the eastern part of the Ventura Basin.

His early years with the Survey were spent in New England. One of his assignments concerned the mapping of granite quarries and provided the starting point for his continuing interest in the origin of granites, their structural features, and the problems involved in quarrying them. Through the years he was to return many times, particularly to the huge Fletcher quarry of northeastern Massachusetts, to help guide the operation and for reunions with his close friends, the Fletcher family. He also investigated the glacial deposits and the phenomena of recent floods of a part of the Connecticut Valley, Massachusetts, producing maps of the surficial geology of the Mt. Toby, Ayer, and Greenfield quadrangles. Their quality continues to be a standard for excellence.

With the entry of the United States into World War II, Dick began a succession of field studies of domestic sources of mica, lithium, tantalum, and beryllium, all critical to the war effort and in short supply. Dick reveled in this assignment because of its national importance and because it involved the investigation of numerous bodies of pegmatite, permitting a continuation of his research on the origin of granites. He was apprehensive, however, because he was also to be supervising the work of others. At that time, those closest to Dick observed the beginning of a lifelong inner struggle between two fundamental characteristics of the man. On the one hand was his enormous capacity for research and creative thinking; on the other hand was an equally impressive ability to relate to others and to respond to their needs. He thoroughly enjoyed both pursuits. To persons of lesser talent and gentler urges, the problem of how best to spend one's alloted time on Earth may be of minor consequence, but to Dick Jahns it was cause for much agonizing.

The first of the strategic mineral assignments involved a detailed investigation of a contact-metamorphic, rather than a pegmatitic, occurrence of beryllium, specifically the relatively large-tonnage, low-grade, and mineralogically complex deposits at Iron Mountain in the Sierra Cuchillo of south-central New Mexico. The deposits were worthy of a doctoral thesis, and through a combination of fortunate timing, ability, and diligence, Dick was able to produce one, again in close-to-record time. It was supervised, quite naturally, by Ian Campbell.

Dick then headed small teams in investigations of pegmatite bodies in northern New Mexico, including the well-known Harding pegmatite and the mica-bearing pegmatites of the Petaca district. Largely as a result of his observational abilities, the Harding pegmatite was to become, for several years, the principal domestic source of beryllium, as it had been for lithium and tantalum in earlier periods. He discovered that large masses, previously believed to be quartz, were actually pure beryl. He later undertook supervision of a much larger group engaged in investigations of the mica-bearing pegmatites of the Blue Ridge and Piedmont.

In his war-time pegmatite investigations, Dick was instrumental in establishing techniques for mapping the internal structure of complexly zoned pegmatites. He was also a guiding influence in the formulation of mineralogic and textural criteria for defining the zones and for the introduction of an appropriate terminology. In addition, he confronted

the long-recognized problem of explaining the compositional variability and also the extreme textural variability, from aplitic to very coarse grained, displayed by many individual pegmatite bodies. The result was a theoretical model for the generation of such bodies from closed or restricted systems of silicate melt and associated aqueous fluids.

In 1946 he left the Survey to accept an assistant professorship at Cal Tech, becoming a full professor only three years later. He embraced his return with a predictable combination of academic rigor and informality—hard work liberally laced with just plain fun for both Dick and those about him. So at Cal Tech, in the late 1940s, was firmly established the Jahnsian teaching tradition of superb lectures, legendary field trips, long hours in consultation with students, and all in an ambience of excitement and caring.

There, as always, he delighted in the Cal Tech tradition of the practical joke, maintaining a posture of academic dignity while arranging to have one of his associates confronted with the unexpected. The victims ordinarily feigned outrage, but inwardly were more than a little pleased that they had received special attention from "that guy Dick Jahns." What many did not realize was that his practical jokes were indeed, practical, being Dick's ways of testing us for future reference. He was keenly interested in our reaction to sudden adversity.

In the Cal Tech years of the late 1940s and in the 1950s Dick escaped to the field whenever his busy academic schedule permitted. Again he demonstrated his tendency to become deeply attached to a particular area, to its geologic features, and to individuals who lived or worked there. No one could feel more passionately about bodies of rock than Dick did about the gem-bearing pegmatites of San Diego County. He mapped and described them in detail, pondered their origin, and at intervals for the rest of his life returned to the mines, gleefully describing to his associates the opening of particularly spectacular pockets of gems.

In those years, too, his field work involved in-depth investigations of many other features. He expanded his background in engineering geology by developing techniques for mapping such landslide-plagued areas as the Palos Verde Hills and proceeded to map much of that area. He continued his mapping of the Cenozoic formations and fault patterns of the eastern Ventura Basin, traced occurrences of monolithologic sedimentary breccias throughout southern California, mapped a large part of the Avawatz Mountains, and studied late Cenozoic volcanoes of the Pinacate area of northwestern Sonora. He also mapped a large area in and around the Sierra Cuchillo of south-central New Mexico. With a bemused expression, he once predicted that a number of surprises awaited whoever would sort through the unpublished maps he left behind.

In the early 1950s he also undertook the organizing and editing of Bulletin 170 of the California Division of Mines. Dick literally conned (in the highest sense of the term) his good friend and State Geologist Olaf Jenkins into publishing that huge and multi-authored compendium on the geology of southern California. Olaf, himself one of the great "doers" of California geology, was at first incredulous, then anxious to an extreme when he realized the extent of his own commitment, and finally enormously proud of the product.

Dick began an association with Penn State in 1957 when, attracted by its program in experimental petrology and the presence of good friends, including Elburt Osborn, Frank Tuttle, and Wayne Burnham, he and Frances and their children, Alfred and Jeanette, spent a pleasant and rewarding six-month sabbatical there. In 1960, influenced in part by a discouragement with changes in the southern California scene, he accepted an offer from the Penn State College of Mineral Industries to head the Division of Earth Sciences. Two years later he became dean of the college. Though now encumbered with

responsibilities of academic administration, he tried to leave his basic style intact, maintaining major commitments to teaching, to graduate students, and to an active research program while remaining available to faculty and staff. Even for Dick, this would have been an impossible undertaking without the support of Dolores Warrington, his administrative assistant and family friend. Thanks to her expertise in office management and budgetary affairs, Dick could escape periodically to Wayne Burnham's laboratory and with him test experimentally Dick's previously conceived model for pegmatite genesis. The resulting coauthored paper is probably the most widely cited of his publications.

But despite how much he may have wished otherwise, the acceptance of his administrative responsibilities at Penn State was Dick's turning point. From then on his people-oriented side was dominant. As an administrator he was guided by a conviction that groups function most effectively when permitted, within broad limits, to make their own decisions. He was quite firm, however, in enforcing matters of fundamental policy. He used to say, half seriously and half in jest, that on some matters some of his associates were so consistently wrong that he relied upon their judgment to help him make the correct decisions.

Dick was especially adept in fostering harmonious working relationships, particularly when he found that people were not communicating or were communicating poorly. He could lighten the mood of an individual or a large group, it seemed, by simply being there. He was a master teller of funny stories and used this talent skillfully. But in his years with the Survey and at Cal Tech, he liked most of all to involve his associates in friendly games of touch football and basketball.

In speaking admiringly of Ian Campbell, Dick often quoted a mutual friend as observing that "Ian believed in a world inhabited only by good guys." Dick obviously shared this belief. But when annoyed by the actions or attitudes of others, he clearly and forcefully expressed his disapproval.

In 1964, urged by his friend and Stanford President Wallace Sterling, and also by a desire to return to the familiar landscapes and geology of the West Coast, he accepted an offer to become dean of the School of Earth Sciences, Stanford University. He brought to Stanford the same salutary style that characterized his tenures at Cal Tech and Penn State. He quickly found, however, that the Stanford deanship carried a major commitment to fund-raising. He also found that, owing to his growing reputation in engineering geology, his services as a consultant were to be increasingly sought. So these two were added to his already long list of activities. His private consulting during the years at Stanford was concerned mainly with the engineering geology related to major projects, specifically tunnels, dams, and power plants, and was done for various federal, state, and city agencies and for utility companies.

In his growing role as an advocate of geology in the service of society, he established the Department of Applied Earth Sciences at Stanford, which included the fields of ore deposits, hydrogeology, engineering geology, and remote sensing. In teaching courses and supervising the theses of many graduate students in this department, he included much material learned in his consulting practice. Also, under his leadership the Department of Geophysics was expanded, and the financial base of the School of Earth Sciences was considerably strengthened.

Dick's professional affiliations and his corollary activities are far too numerous to detail here. He was a fellow or member of nineteen professional societies and held offices in many of them. He also served on many high-level committees. He was, to name a representative few of his responsibilities, president of the Geological Society of America (1970–1971); president of the California Academy of Sciences (1978–1983); chairman of the Earth Sciences Advisory Panel, National Science Foundation (1964–1966); chairman

of the California Mining and Geology Board (1972–1974); president of the Engineering Geologists Qualifications Board, City of Los Angeles (1958–1960); a member of the Astronaut Training Program and Group for Lunar Exploration Planning, NASA (1965–1971); a member of the National Public Lands Advisory Council, U.S. Bureau of Land Management (1979–1983); and a member of the California State Seismic Safety Commission (1975–1983).

He was National Lecturer for the Society of the Sigma Xi in 1965. He received the Distinguished Alumnus Award from the California Institute of Technology in 1970, the Distinguished Achievement Award from the American Federation of Mineralogical Societies in 1972, the Ian Campbell Award from the American Geological Institute in 1981, and the Public Service Award from the American Association of Petroleum Geologists in 1982.

In his later years, when asked to comment on the full scope of his professional career, he invariably focused on pleasures derived from his interaction with students. During a recent interview he reflected that "the most exciting and rewarding aspect of teaching is seeing already able young people come alive intellectually and seeing the emergence in them of a basic drive, enthusiasm and enjoyment. That's the real thrill, and you can't achieve it by opening a hole in a guy's head, putting a funnel there and pouring the stuff in!" His former graduate students continue to recall how absolutely free he was with his own ideas. As one of them recently expressed it, "He simply said 'take this idea, run with it, but don't screw it up'."

Impressive as Dick's more tangible accomplishments were, his principal legacy, I am sure, remains with us, in that he was able so effectively and so willingly to increase the self esteem of those about him. We sought Dick's company not only because he made us "feel good" and to hear his latest funny story, but because he forced us to raise our sights and to function more effectively than we otherwise would have.

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