

Memorial of Richard Henry Jahns March 10, 1915–December 31, 1983

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Richard Henry Jahns, distinguished Fellow of the Society, died of a massive heart attack on New Year's Eve, December 31, 1983, at the age of 68. At the time of his death, he was Dean Emeritus of the School of Earth Sciences and Welton J. and Maud L'Anphere Crook Professor of Geology and Applied Earth Sciences at Stanford University. He is survived by his wife, Frances, his son, Alfred, his daughter, Jeannette, and his grandchildren, Clayton, Taylor, and Fletcher.

Dick will long be remembered in the fields of mineralogy and petrology for his fundamental contributions to the understanding of granitic pegmatites, as summarized in the introduction to this special issue which honors this aspect of his work in the earth sciences. Dick also made significant scientific contributions in other areas of the earth sciences, including engineering geology, the geology of southern California, the glacial geology of New England, economic geology, and earthquake hazards. His early work also involved studies of the stratigraphy and mammalian fauna of the Ventura Basin, California. Such diversity is quite rare in any scientist, but Dick Jahns was indeed a rare breed of scientist and human being. In addition to being an internationally respected and highly productive scientist with widely ranging interests, he was also a superb educator and administrator who helped shape the modern approach to earth science education and who served as Dean of colleges of earth sciences at two major U.S. universities over a twenty-year period. During the last decade of his career, he became increasingly involved in public policy decision making in areas such as earthquake safety and land use planning. His passing leaves a huge void in the many areas that he contributed to, especially in the fields of mineralogy and petrology.

Dick was born in Los Angeles, California, on March 10, 1915, but grew up in Seattle, Washington, where he graduated from Seattle High as class valedictorian. He developed an interest in science from a high school class in analytical geometry and entered Cal Tech at the age of 16 to pursue a degree in chemistry. Exposure to the beauty and symmetry of natural crystals in a mineralogy class taught by the late Ian Campbell, former California State Geologist, and long hikes in the San Gabriel Mountains north of Los Angeles played a significant part in Dick's decision to change his major to geology during the last portion of his junior year at Cal Tech. To our knowledge,



he is the only Cal Tech geology major who ever substituted organic chemistry for the normally mandatory course in field geology. It was during his undergraduate days at Cal Tech that Dick developed his love of athletics, playing on the varsity baseball team, and perfected his talents as a practical joker—a talent that remained honed until his death. It was also during this period that Dick developed his lifelong fascination with railroads, working part time as a motorman on an early morning run of the Pacific Electric Railway from Pasadena to the San Gabriel and San Bernadino Valleys. This interest must have been stimulated in part by Dick's grandfather who was the chief civil engineer for the Southern Pacific Line and was responsible for the early survey work that led to construction of the first train lines from Texas to Mexico shortly before the Mexican Revolution.

After graduation from Cal Tech in 1935 with a B.S. degree in geology with honors, Dick pursued his new interests in geology at Northwestern University. He completed an M.S. thesis there in 1937, which involved a petrologic study of the Precambrian granitic rocks near South Park, Colorado, and of Tertiary intrusives of the Chalmers Area. During this period at Northwestern, Dick married his Cal Tech sweetheart, Frances Hodapp, who

became his lifelong companion both in the field and at home. In 1937 Dick and Frances began an eleven-year period during which much of their time was spent on field assignments for the U.S. Geological Survey. Dick's earliest Survey work involved the mapping of granite quarries in New England, including the well-known Fletcher quarry of northeastern Massachusetts. This work led to a continuing interest in the origin of granites. He also carried out studies of the glacial deposits and surficial geology of the Connecticut Valley in Massachusetts, producing maps of the Ayer, Greenfield, and Mt. Toby quadrangles that continue to be used as base maps by geologists working in this area.

During the war years, Dick pursued field studies of domestic deposits of strategic minerals for the Survey; mica deposits such as those in the Southeastern Piedmont were in great demand for the war effort, as were the strategically important metals beryllium, tantalum, lithium, which are concentrated in pegmatites and in certain contact metamorphic rocks such as those at Iron Mountain in the Sierra Cuchillo of south-central New Mexico. It was during this period that Dick developed an enduring interest in pegmatites. He also managed to find time during these busy years to turn his Iron Mountain study into a doctoral thesis, which was supervised by Ian Campbell, and to complete graduate-student residency requirements at Cal Tech. He was awarded the Ph.D. degree in Geology from Cal Tech in 1943, with a minor in vertebrate paleontology.

Dick must have found Cal Tech a very appealing place because he returned there in 1946 to begin his academic career as an Assistant Professor of Geology. In three short years, he rose to the rank of Full Professor and developed the legendary Jahnsian method of teaching. An integral part of Dick's teaching then and later was his blending of observations made in the field with modern geologic theory. He delighted in exposing students to field observations that either were not explained by current theories or contradicted them. In spite of his lack of formal training in field geology, Dick quickly developed a reputation as one of the premier field geologists in the United States. In the period between 1946 and 1955, he published a series of classic papers on layered pegmatite-aplite intrusives, which established him as one of the world's leading authorities on these fascinating and important rock types.

Between 1960 and 1965, Dick continued his studies of pegmatites at the Pennsylvania State University, where he was chairman of the Division of Earth Sciences and then Dean of the College of Mineral Industries. During this period, he collaborated with Professors C. Wayne Burnham and O. Frank Tuttle in a classic series of experiments on silicate melt-aqueous fluid phase systems that led to a quantitative model for the formation of pegmatites that is still widely accepted. Not surprisingly, this model figures prominently in many of the contributions to the Jahns Memorial Issue of the *American Mineralogist* entitled "The Mineralogy, Petrology, and Geochemistry of Granitic Pegmatites and Related Granitic Rocks."

Dick was persuaded to move back to California in 1965

by then President Wallace Sterling of Stanford University to become the third Dean of the School of Earth Sciences. Under Dick's guidance, the school flourished in spite of various belt-tightening campaigns by the university; the number of majors more than doubled, and the volume of research funding increased several fold without any increase in the number of faculty. Dick had the wisdom to establish a new department at Stanford (Applied Earth Sciences) which today serves as a model for the successful blending of traditional geology with the more applied aspects of the earth sciences. In spite of his many duties as Dean, Dick found ample time for his graduate students and delighted in teaching undergraduates about the mysteries contained in the rock record. His many field trips for students over the years to Death Valley, to the Pala and Ramona pegmatite districts of southern California, and to other points in the western United States became legendary because of Dick's ability to stimulate interest, to teach, and to leave all participants with the feeling that this gentle man really knew and loved his craft.

Dick's interests in the earth sciences spanned a number of specialties including mineralogy, igneous petrology, ore deposits, glacial geology, structural geology, engineering geology, hydrology, and tectonics, especially as related to the San Andreas fault system in California. His broad expertise and his ability to integrate a number of different fields led to many consulting jobs in the private sector and much public service during the last two decades of his remarkable career. To mention a few examples, Dick was called on by NASA to train the Apollo 15 and 16 astronauts in field geology to prepare them for the extravehicular excursions on the moon, and he was active in evaluating the earthquake hazards of numerous dam and nuclear power plant sites in California. At the time of his death, he served as chairman of the California Seismic Safety Commission and was an active member of the Stanford University Committee on Earthquake Preparedness.

Dick was a fellow or member of nineteen professional societies, including the Mineralogical Society of America, and held offices in many of them. He served as Councillor of the Mineralogical Society of America (1957-1960); as President of the Geological Society of America (1970-1971); as Chairman of the California Mining and Geology Board (1972-1974); as President of the Engineering Geologists Qualifications Board, City of Los Angeles (1958-1960); as a member of the Astronaut Training Program and Group for Lunar Exploration Planning, National Aeronautics and Space Administration (1965-1971); as Chairman of the Earth Sciences Advisory Panel, National Science Foundation (1964-1966); as a member of the National Public Lands Advisory Council, U.S. Bureau of Land Management (1979-1983); as a member and Chairman of the California State Seismic Safety Commission (1975-1983); and as President of the California Academy of Sciences (1978-1983).

Among the many honors that came his way (e.g., Distinguished Alumnus Award, California Institute of Tech-

nology, 1970; Distinguished Achievement Award, American Federation of Mineralogical Societies, 1972; and National Lecturer for the Society of Sigma Xi, 1965), Dick cherished particularly one that he received a few months before his death—the Stanford School of Earth Sciences Award for Outstanding Teaching. This honor late in his career reflected his great devotion to and special gift for teaching. The success of his teaching is indicated by the number of loyal former students who occupy positions of importance in academia, government, and industry. Other awards that he prized were two for public service granted during his last few years—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. These special honors reflected his commitment to bringing geological and scientific knowledge to bear on issues of great societal importance.

Above all else, Dick was a loyal friend to his students and colleagues. He was a joy to interact with and endless source of anecdotes and jokes which always seemed to catalyze successful interactions with people.

A selected bibliography follows which emphasizes Dick's publications in the areas of mineralogy and petrology.

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¹ To receive the complete bibliography of Richard H. Jahns, order document AM-86-298 from the Business Office, Mineralogical Society of America, 1625 I Street, N.W., Suite 414, Washington, D.C. 20006. Please remit \$5.00 in advance for the microfiche.