Ian Campbell was born in Bismarck, North Dakota, on October 17, 1899, and died in San Francisco, California, on February 11, 1978. That span of nearly eight decades represented, for this most uncommon man, a lifetime of intense activity, remarkable accomplishment, and widespread influence as a geologist, educator, administrator, and public servant. The world was specially blessed in many ways by the Campbell presence thanks to his numerous skills, his capacity for getting things done, and his unswerving devotion to others. Unusual personal characteristics and operating style, much appreciated by all who knew him, were vital elements of a career and of achievements that can be but briefly recounted here.

Ian enjoyed a happy and lively boyhood, first on a North Dakota sheep ranch and then in Eugene, Oregon, where his father had a cherry orchard. That western move was a good one for him, who even then was a sensitive observer of his surroundings. He quickly fell in love with the fields, the trees, and the climate of his new state, and he was to remain an articulately loyal Oregonian for the rest of his life.

Some of his activities during early school years provided tip-offs for things to come. Young Ian was, for example, a bright and diligent student unusually well-liked by others. He sought and recognized humor in nearly all things, and he was a tough competitor both in the classroom and in a variety of extracurricular activities that he later would refer to as "friendly little games of skill and chance." Frequently emerging as the unassuming winner of spelling bees, arithmetic exercises, and other scholarly contests, he also excelled in one-on-one outdoor pastimes such as marbles, footracing, and the propelling of various objects at selected targets. With his relatively slight build but excellent agility and quickness, he would have been a sensation with the frisbee or hula hoop had either device then been available. As it was, he developed capabilities that were to confound some of his associates in later years.

It was only natural that Ian should matriculate at the University of Oregon in Eugene. His academic work was soon interrupted, however, when he volunteered for World War I military service at the age of seventeen. He was accepted by the U.S. Army and assigned to duty as an ambulance driver on the Western Front in France and Belgium, where he served in the 91st Division of the A.E.F. for two years. Not surprisingly, the records indicate that he did a good job; less formal records indicate that he also became "racehorse rummy" champion of the 361st Ambulance Company. After his military discharge, he evidently retained a keen interest in tough vehicular exercises, soon embarking on a kidney-pounding motorcycle trip from Portland, Oregon, to Portland,
THE GEOLOGICAL SOCIETY OF AMERICA

Maine. For this successful effort, no small accomplishment at the time, he was awarded a medal by the Harley-Davidson Company. Ian and his motorcycling friends were known as the "Kindred of the Dust," for few roads were paved in the early 1920s.

Ian received an A.B. degree in geology from the University of Oregon in 1922 and an A.M. degree two years later. He left Eugene in 1922 to accept appointment as a University Fellow at Northwestern University, hoping to return someday to a career in Oregon. Except for occasional visits and two sessions of field work, this was not to be. From Northwestern, Ian moved to Harvard University as a Teaching Fellow (1924–1925), thence to Louisiana State University as an Assistant Professor of Geology (1925–1928), and back to Harvard as an Instructor in Mineralogy and Petrography (1928–1931). He received his Ph.D. in Economic Geology from Harvard in 1931. During the span of his graduate years, he spent a field season with the Wisconsin Geological Survey and also worked as a mineralogist/petrologist for the Vacuum (now Mobil) Oil Company; the Panama Corporation, Ltd.; the Texas (now Texaco) Company; and Standard Oil Company of California. His unusual skill with the petrographic microscope opened many laboratory doors for him, and he contributed to a rapidly growing body of knowledge about heavy minerals in sedimentary rocks and the usefulness of these minerals in stratigraphic correlation.

In 1929, through a series of contacts stemming from that sheep ranch back in North Dakota, Ian met Catherine (Kitty) Chase, who had been an Instructor in Geology at Mt. Holyoke College and then a graduate student at Radcliffe College. They were married the following year, and for nearly half a century theirs was a remarkably tender and understanding relationship from which students, colleagues, and countless friends drew many benefits. Kitty received her M.A. degree from Radcliffe in 1930 and a Ph.D. in micropaleontology in 1932, a year after she and Ian had left the area for a life in California.

With his acceptance of a post as Assistant Professor of Geology at the California Institute of Technology in 1931, Ian Campbell entered upon a new and fruitful phase of his career. Caltech, then emerging as an institution of considerable distinction, proved to be a good home for him, and he served it well for nearly three decades. A truly vintage year came early in this long period of affiliation, for in 1934 a son was born to the Campbells, Ian was promoted to Associate Professor (an impressive step in that depression year), and he was appointed a Research Associate of the Carnegie Institution of Washington. Under the aegis of the Carnegie Institution, he studied the Archean terrane in the Grand Canyon of the Colorado River, and in 1937 he was leader of a pioneering Carnegie-Caltech geological expedition through the canyon. That strenuous but successful trip, made with John H. Maxson, Robert P. Sharp, John T. Stark, and Edwin D. McKee, led to several useful publications.

On other fronts, part-time field work with the U.S. Geological Survey involved Ian with altered volcanic rocks at Tonopah, Nevada; with metamorphic rocks in Montana and Idaho; and with magnesite deposits in eastern Washington. Over a period of nearly three decades, he also found time for studies of stratigraphy and structure in eastern Oregon, some remarkable dike rocks in western Arizona, and clay deposits and metasomatic deposits of magnesium in southern California.

During his Pasadena years, Ian's greatest and perhaps most lasting influence stemmed from his role as an able teacher and warm friend of many, many students. Then as now, the average Caltech student was exceptionally bright and hard-working, rather demanding, and capable of corrosive criticism. Ian fueled the brightness, supplied plenty of challenging work, satisfied all but the most unreasonable expectations, and was spared any serious attempts at corrosion. His courses were well organized and up to date, he was
an articulate and informative lecturer, and his overall approach was balanced and thorough. He insisted upon mastery of basic information and procedures, especially in work with the microscope, and he then urged his students to think about what it all might mean. He was capable of imaginative departures from the pedagogical routine, as when he presented to a finely tuned Ph.D. candidate one hard, smoothly rounded specimen for identification that turned out to be a kidney stone from his Norwegian elkhound. And several of us still recall our long-past shock resulting from a final-examination question in his crystallography course, asking us to describe the symmetry elements of a die lying in random position on a craps table.

Students were drawn to Ian Campbell by his humor and informality, they respected his mental quickness and sound judgments, and they were improved in countless ways by his energetic example. Most of all, they knew that he cared about them, each and every one. They saw him as a delightful person whose strong pride in his Scottish ancestry was reflected by a liking for Highland history, bagpipe music, porridge, and Scotch whisky. He took consistently liberal stands on political issues and conservative stands on many academic ones, and he enjoyed the role of vigorous advocate for causes in which he believed, but he was most relaxed and happy in the field, whether alone or in a large company.

Ian was extraordinarily generous with others but sparing in attention to his own requirements. Perhaps it was self-imposed Scottish thrift that held him for years to an ancient office telephone, a petrographic microscope of even greater vintage, and a dictation device of early Edison affinities. He punched at a noisy, somewhat fractious typewriter that generally responded with faint impressions from a worn-out ribbon, but a product from that machine was much to be preferred if the alternative were one of his hand-tooled messages. Charitably put, his handwriting was abominable. Often taken as a sort of friendly challenge by baffled readers, it was an odd mix of tiny script and lettering that issued with astonishing rapidity from his pen, appearing as runes rather than normal characters. Even his wife Kitty and long-time department secretary Norma Reno had deciphering problems. They once clipped a passage from a letter he wrote, mailing the words back to him for a translation; he was completely stumped, but quickly pointed out that he couldn't be expected to "recognize those words out of context." In a letter Ian once wrote to me while riding on a train, the word "confidential" was all I could recognize at first reading; he had little cause to worry about leaks on that one!

The knack for combining competition and fun was a Campbell hallmark appreciated by many generations of students. With a cup of coffee or a soft drink at stake, for example, Ian was routinely awesome at tossing darts and rolling pennies in semi-dark basement rooms where the Caltech rock collections were stored. And in the field, no wise person tried to compete seriously with him at identifying minerals or at tossing stones into rodent holes from seemingly impossible distances. Among the more formalized contests that he organized, the Micrometric Sweepstakes probably are best remembered by geologists who were trained at Caltech. Conceived as a means for lessening the tedium of quantitative modal analysis of rocks under the microscope, this annual competition yielded a long series of winners (and losers), among them several of today's most distinguished geoscientists. It was regularly staged in parallel with a contest for fashioning hand specimens of any rock type to exacting specifications of dimensions and appearance. All participants in these two required events were treated to an elaborate awards ceremony during a garden party at the Campbell home. That home, incidentally, vibrated with happy gatherings many times each year; specially enjoyed were an annual Christmas party for the entire department and a lively bash for successful Ph.D. candidates each spring.
World War II prompted Ian's entry into a new area of action, beginning with membership on Selective Service Board 190 in 1940. He contributed six years of characteristically painstaking effort to this tough assignment, after which he served another eleven years as Chairman of Board 92. He acquired an intimate knowledge of the selective service system, and he applied it with penetrating insight on behalf of hundreds of young people. Judging among many deferment requests under the pressure of imposed draft quotas was a particularly difficult task that involved agonizing decisions for this sensitive and sympathetic man, but he handled it with quiet proficiency.

After participating with Caltech colleagues in a Pasadena-based wartime project, Ian lent his talents to the University of California—U.S. Navy Radio and Sound Laboratory in San Diego. There he served as Senior Training Engineer and senior member of the Editorial Section, Division of War Research, from 1944 to 1946, with a 1945 assignment to Seattle as Field Engineer for the Bureau of Ships, U.S. Navy. He found much of interest in this work, especially with the developing applications of sonar technology to antisubmarine warfare, but he was happy to return to Pasadena after the end of hostilities. Long-distance commuting at irregular intervals had become wearisome, and there now was much to be done in the Division of the Geological Sciences at Caltech. Faculty replacements were needed, an influx of new and returning students required attention, and it was a time for considering fundamental changes of direction.

His return to full-time academic work plunged Ian into a spate of activities that gradually evolved along altered lines. To be sure, his teaching continued with customary emphasis on petrology and the industrial minerals, he resumed modest consulting work in economic and engineering geology, and he retained his commitment to the completion of research started earlier. But he had by now realized that neither the 24-hour day nor his own remarkable energies could accommodate all the operations that appealed to him. This resulted in a conscious and genuinely humble decision, made with Kitty's help, to shape the remainder of his career along "people-oriented" lines. Thus geology lost a competent researcher but retained an active scholar, an able teacher, and an increasingly influential statesman. Departmental colleagues were served by Ian in measures not possible to fully appreciate, for he assumed a growing role in countless operational matters. And his students continued to benefit from his friendship, his always sympathetic ear for their concerns, his thoughtful advice, and his direct help on many fronts. Not a few of them admitted to having elected geology as their major because of Ian's influence, or to having chosen Caltech for graduate work because of a long personal letter from this remarkable man. Later, sometimes years later, they were to discover the enduring nature of his ties with them, most commonly expressed as an unexpected suggestion for new employment, a recommendation for membership in a professional or scientific society, or a letter with a bit of personally pertinent news. Somehow he always kept in touch, and we were always impressed by his ability to stand up, in an alumni gathering at a geological meeting, and introduce each attending person by name and affiliation.

Following lengthy duty as Associate Chairman of the Division and a brief time as Acting Chairman, Ian was named Executive Officer in 1952. He had been promoted to the rank of Professor in 1946. He received a courtesy appointment as Research Associate in 1959, and he was awarded the title Professor Emeritus in 1970.

Another turning point in Ian's career came in 1959 when he left Caltech to succeed Olaf P. Jenkins as California's State Mineralogist and Chief, State Division of Mines. Two years later his title was changed, through his own instigation, to State Geologist and Chief, Division of Mines and Geology. The move to San Francisco was a wrenching one,
as he had become deeply rooted in Caltech ground, but he smilingly observed that it put him a bit closer to his beloved Oregon.

Certainly Ian's new position presented its own set of responsibilities and challenges, to which he immediately applied himself. Recognizing that his predecessor had built an organization of great value to the people of California, he maintained already-established emphases on geologic mapping and a strong program of publication. He also encouraged the development of new programs in geophysics and geochemistry while initiating, with a nice sense for the future, a major program focused on geologic hazards in the State. He soon learned his way around the halls of Sacramento, where he supported the introduction of useful new legislation and was successful in obtaining the appropriations needed by his growing organization. His integrity and candor won him many friends on the capital scene, even though a few people there expressed mild concern over his academic background. Perhaps those worriers were unaware of the carefully developed balance among the activities of the Division of Mines and Geology and of the enhanced national stature that the Division was enjoying from Ian's presence and actions as Chief.

The Division staff felt the Campbell touch in many positive ways. They were treated as professionals capable of independent work at their respective levels of responsibility. According to Gordon B. Oakeshott, Deputy Chief in those times, all "the geologists had the same working hours, the same responsibilities to work independently in field and office, the same privileges, and the same individual initiative with wide latitude in handling their professional assignments." This policy, long advocated by Oakeshott and strongly backed by Campbell, was not sustained without some difficulties in "bending State Government's rather rigid personnel regulations." Ian expected competent and conscientious performance from his staff, and that is what generally was delivered. He was quick and warm in his praise, and gently penetrating in his criticism of project progress and completed work. As Oakeshott put it, "Through Ian's kind and thoughtful words, we usually knew when we had been criticized and what the problem was! On the rare occasions when it was necessary to take disciplinary action, he did so with the greatest reluctance." Small wonder that the "Campbell Decade" was a period of pleasant productivity for the Division.

Ian served for a few months in 1966-1967 as Director of the State Department of Conservation before returning to the Division of Mines and Geology and his post as State Geologist. In 1969 he reached the statutory retirement age of 70 and entered a decade in which his activity level seemed to diminish not at all. For eight years he remained busy in serving many organizations, undertook several consulting assignments, and enjoyed, with Kitty, some foreign travel.

During these later years, the California Academy of Sciences played an increasingly important role in Ian's life. He was a member of the Board of Trustees from 1960 to 1976, served as Secretary in 1970 and 1971, and was President of the Academy from 1971 to 1975. In 1969 he was made a Research Associate in Geology, and upon his retirement as State Geologist he moved his desk, library, and various memorabilia to the Academy. The geology group there was highly congenial, and he was a warmly welcomed addition. Meetings of the "lunch bunch" in the Instrument Shop were lively and stimulating affairs to which Ian contributed in his inimitable way. Through this and other elements of his Academy association, his retirement years were made both happy and productive.

Ian Campbell's impact on his fellow man cannot be fully understood or appreciated without some note of his organizational and public services. This man was a born "joiner," but by no means an ordinary one. As he saw it, an affiliation committed him to
strongly active involvement and to leadership wherever it was needed and he could contribute to it. Thus he served on literally hundreds of committees and rose through series of "chairs" in many organizations. That his unselfish services were widely recognized and valued was indicated by his election to the presidency of the Pacific Division, American Association for the Advancement of Science in 1958; of the American Geological Institute in 1961; of the Mineralogical Society of America in 1962; of the Association of American State Geologists in 1965; and of the Geological Society of America in 1968. He was otherwise honored in 1962 with the Hal W. Hardinge Award of the American Institute of Mining, Metallurgical, and Petroleum Engineers; in 1969 with the Scholarship Foundation Award of the American Federation of Mineralogical Societies; in 1970 with the Ben H. Parker Award of the American Institute of Professional Geologists; in 1973 with the Public Service Award of the American Association of Petroleum Geologists; and over the years with honorary life memberships in the A.A.P.G., the Association of Engineering Geologists, the Pacific Mineral Society, and the Society of Mining Engineers. He was a delegate to the Eighteenth International Geological Congress in London in 1948, to the Twenty-first Congress in Copenhagen in 1960, to the Twenty-third Congress in Prague in 1968, and to the Twenty-fifth Congress in Sydney, Australia, in 1976.

In addition to the organizations already noted, Ian was a member of the American Association of University Professors (National Council, 1957–1960), the American Geophysical Union, the Association of Geology Teachers, the Branner Geological Society (President, 1938) and its northern California counterpart, the Le Conte Geological Society (President, 1963–1964), the Geochemical Society, the International Union of Geological Sciences, Phi Beta Kappa, and the Society of the Sigma Xi. He also served on the Advisory Committee for the Institute of Marine Resources, University of California; on the U.S. National Committee for Geology; and on the Visiting Committee for the Geological Sciences at Harvard University for eight years (Chairman, 1975–1978). Governmental groups in which he worked included the Federal Committee on Surface Mining and (in California) the Advisory Committee on Geologic Names and the State Geothermal Resources Board. He was appointed as a charter member of California's Board of Registration for Geologists by Governor Ronald Reagan in 1969, and he served as president of that Board from 1972 to 1974. In less technical contexts, he was a member of the Athenaæum at Caltech, the Commonwealth Club and Engineers Club in San Francisco, and the Masonic Order. He was a Unitarian and a member of the Layman's League.

Ian's personal influence reached well beyond his professional affiliations. He was, above all, a very able, strong, and deeply caring man with astonishing resilience. He was a quiet leader and a gifted problem solver whose advice and help were widely sought and unselfishly given. He carried on a prodigious correspondence that was rich in personal warmth, humor, and interesting ideas, and he was recognized by all who encountered him as a man of rare wisdom and sincerity. Perhaps his overriding characteristic was an undeniably optimistic view of others; in the words of one of his earliest students, "Ian believes in a world inhabited only by good guys!" On occasion he could disagree strongly with others, but never disagreeably, and he was always the master at persistent persuasion. His finely honed sense of whether to push, to compromise, or to withdraw resulted in many a solution to apparently insoluble problems. Thus it was he who rescued the proposed program for registration of geologists in California from almost certain founding through last-hour persuasion of others to adopt a united view on this vital matter. Too, his tireless efforts in the marshalling and eloquent delivery of sound arguments carried the day for several worthy changes in operations of the Geological Society of
MEMORIAL TO IAN CAMPBELL

America, including adoption of informal dress at the Annual Dinner and a much-needed move of Society Headquarters from New York City to Boulder, Colorado.

Ian Campbell is survived by his wife Catherine C. Campbell of San Francisco; his son Dugald of Whittier, California; two grandchildren, Michael and Denise; and a host of friends who remember him as a great and good man. The Division of Geological and Planetary Sciences at Caltech is establishing a Graduate Fellowship in Petrology in his memory, and the American Geological Institute has established the Ian Campbell Medal, appropriately to be awarded "in recognition of singular performance in and contribution to the profession of geology."

SELECTED BIBLIOGRAPHY OF IAN CAMPBELL

1944 The word "microfacies": Economic Geology, v. 39, p. 70–71.


1959 The industrial minerals, research, and mineral policy: Utah Academy of Sciences Proceedings, v. 36, p. 27–43.


1960–(and others) Annual report of the State Mineralogist, Chief, Division of Mines: Fifty-sixth Report for the 110th fiscal year, p. 7–75; Fifty-seventh Report for the 111th fiscal year, p. 7–76.


--- (with others) Engineering geology on the job and in the classroom — discussion: Boston Society of Civil Engineers Journal, v. 49, p. 44–86.

--- (with others) Symbols for mineral deposits and mine workings: American Geological Institute Data Sheet No. 38, GeoTimes, v. 7, p. 41–43.


--- The industrial minerals: Mining Congress Journal, v. 50, p. 79–84.


MEMORIAL TO IAN CAMPBELL


Is the game worth the candle?: The Professional Geologist, v. 12, n. 4, p. 12-13.
