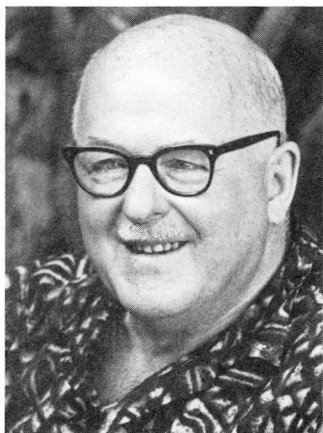


Memorial to Francis John Turner

1904–1985

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Francis John Turner, Professor Emeritus of geology at the University of California, Berkeley, died on December 12, 1985, at the age of eighty-one. He was born on April 10, 1904, in Auckland, New Zealand, where he began his career in geology in 1921 at the University of New Zealand. After graduating with a bachelor's degree, he worked for a short period with the Geological Survey of New Zealand while completing his master's thesis; then, in 1926, he accepted a lectureship at the University of Otago in Dunedin. During the next twenty years there, his lifelong interest in metamorphic and igneous rocks and processes developed, and he acquired the skills with the petrographic microscope that made him one of the world's great petrographers.

At the University of Otago, Turner devoted much of his time to the study of regions of metamorphic and plutonic rocks in the South Island, some of which—like the remote country surrounding Lake Manapouri in Fiordland—were scarcely accessible and largely unknown. These early field expeditions involved long traverses of rugged mountains and wild rivers, generally on horseback, and gave him a love of nature that stayed with him all his life.

Dating from this period in Otago are a large number of detailed publications on the petrology of specific regions. Probably the most important of these is his meticulous study of the Otago schists, a classic analysis of a region of low grade metamorphism that still stands today as one of the best documented in metamorphic petrology. Stimulated by these careful field and laboratory studies, his interests broadened to include more fundamental geologic topics, such as the interpretation of metamorphic mineral facies, the origins of schistosity and lineation, and their relations between mineralogy and structure in metamorphic rocks. His many publications while at Dunedin earned for him the D.Sc. degree from the University of New Zealand in 1934.

In the late nineteen thirties, Turner's growing interest in rock structure drew him into the new field of structural petrology—the study of rock textures and fabrics—that had been developed in Europe by Bruno Sander and others. Frank Turner was one of the first English-speaking geologists to apply these new ideas on a regional scale in his study of crystallographic preferred orientations of minerals in the Otago schist, published in 1938. This interest in structural petrology was soon reinforced by a year-long visit to the United States as a Sterling Fellow at Yale University. Although cut short by the outbreak of war in Europe, this visit greatly expanded his scientific horizons and brought him into personal contact with many earth scientists, in particular with David Griggs, then at Harvard, with whom he was to form a close research collaboration.

In 1948 Turner published one of the first truly modern treatments of both the petrology and structure of metamorphic rocks in his monograph, *Mineralogical and Structural Evolution of the Metamorphic Rocks* (Geological Society of America, Memoir

30). By the time this volume was released, he was back in the United States, having accepted a faculty appointment to the University of California at Berkeley in 1946, the same year he was elected a Fellow of the Geological Society of America.

Soon after his arrival in Berkeley, Turner began his long collaboration with David Griggs and others, experimenting with the deformation of carbonate minerals and rocks—especially the classic studies of Yule marble. There followed a long series of connected papers (the first in 1949, the last in 1975) that paved the way for much of the experimental work on rock deformation that followed and still continues.

At Berkeley he continued his purely petrologic and mineralogic studies by broadening his approach to include thermochemical and thermodynamic treatments of metamorphic processes, often in collaboration with colleagues and students. He also tackled many other problems, including the origin of the Franciscan glaucophane schist assemblages. The high quality of his research during this period was acknowledged in 1970 when he was appointed Faculty Research Lecturer—the highest honor his peers at the Berkeley campus could bestow.

For twenty-five years, until his retirement in 1971, Turner was an active member of the faculty at Berkeley. A stimulating teacher, he worked with many graduate students; and he revealed his pedagogic gifts to a much wider audience in the six influential textbooks he wrote himself or with others. These works are marked by a clarity of exposition and a depth of scholarship that has made them models for advanced texts. He made innumerable contributions to the Department of Geology and Geophysics at Berkeley, both professionally and personally. He served with distinction as chairman for five years, from 1954 to 1959, and left the department in a preeminent position in the academic community. On a personal level, he shared his knowledge and sound judgment unstintingly with colleagues and students with a rare generosity.

In his long career, Frank Turner received many academic and professional honors, including the Hector Medal of the Royal Society of New Zealand (1951), Fellowships from the John Simon Guggenheim Foundation (1952 and 1960), election to the National Academy of Sciences (1956), the Lyell Award of the Geological Society of London (1969), and the Roebling Medal of the Mineralogical Society of America (1985). Upon his retirement in 1971, the Berkeley campus honored him with the Berkeley Citation for his services to the university.

Frank Turner was a man who lived life to the fullest at both the professional and the personal level. Along with his great contributions to geology, he left behind a sense of warm appreciation in all who knew him. The generosity of spirit with which he shared his knowledge and his wisdom with those around him—students, colleagues, friends—and the vivacity and good humor that he brought with him wherever he went will be long remembered.

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