Memorial to Francis Parker Shepard 1897–1985

JOSEPH R. CURRAY, EDWARD L. WINTERER, AND DOUGLAS L. INMAN
Scripps Institution of Oceanography, University of California–San Diego, La Jolla, California 92093

Dr. Francis P. Shepard, who was widely recognized as "The Father of Marine Geology," died April 25, 1985, at his home in La Jolla, California. He had been affiliated with the Scripps Institution of Oceanography of the University of California at San Diego for nearly 50 years. Fran, as he was known to his friends, received his bachelor's degree from Harvard University in 1919 and his Ph.D. from the University of Chicago in 1922. His studies and his training as a scientist were influenced by R. A. Daly at Harvard and R. D. Salisbury and R. T. Chamberlain at Chicago. He seems to have been greatly influenced by Chamberlain, because he did his thesis on the Rocky Mountain Trench and worked principally in structural geology for the next decade. He served as assistant professor and professor of geology at the University of Illinois from 1922 until 1942.

We have taken some of our comments regarding Fran's early development of interest in marine geology from notes he wrote shortly before his death. "My start might be called an accident of birth." Although he had spent several summers doing field work in the Rocky Mountains, in 1923, when his wife Elizabeth was expecting their first child, he chose to stay closer to her at his family home in Marble Head, Massachusetts. His yachtsman father had suggested that he might like to spend that summer with him using his sailing yacht to collect sea-floor samples. His studies failed to confirm what was supposed to be "a firmly established principle of sedimentation," namely, that sediments become finer with distance from shore and increasing depth of water. "I suppose that I was a rebel at heart, like so many young men, and I took great joy in trying to point out this pecularity to skeptical audiences at the Geological Society of America meetings. I guess that few took the matter very seriously at that time." Now, all accept the fact that rise in sea level has left coarse near-shore sands as drowned relics far off shore. Fran's talent for upsetting cherished dogma with simple field data showed early and lasted a lifetime.

Fran continued to publish principally on structural geology for most of the next decade, questioning the theory of periodic diastrophism, reporting on experiments in folding, and proclaiming a belief in a shrinking Earth. His first publication on marine geology, in 1927, was an abstract on the "Influence of Oscillating Sea Level on the Development of the Continental Shelf." In 1932 he published a major paper on the sediments of the continental shelves, resulting from that early sampling from his father's yacht.

During those early years at the University of Illinois, another "trick of fate" started his study of submarine canyons. In Illinois a graduate student's master's thesis on the Hudson submarine canyon caught his eye. Intrigued at "what a curious thing it was to find canyon-like valleys on the sea floor," he began studying published navigation charts and discovered that canyons were common off many coasts of the world, including the coast of California. He first studied the submarine canyon off George's Bank in 1929 with the Coast and Geodetic Survey. In 1933 he took a sabbatical leave from Illinois and started to work on California canyons. In 1936 the president of the Geological Society of

America, having heard of this work, suggested to Fran that he apply to the Society for a large grant for further work on the canyons. The director of Scripps at the time, Harald Sverdrup, needed operating funds for the newly acquired research vessel *E. W. Scripps*. The grant of $10,000, the largest ever given by the GSA in prewar years, operated the *E. W. Scripps* for six months, provided the necessary scientific equipment, and employed two of his graduate students, R. S. Dietz and K. O. Emery, as assistants. Both went on to achieve fame in marine geology comparable to that of their mentor.

Fran's formal affiliation with Scripps and the University of California started with his canyon studies in 1937. While still on the faculty of the University of Illinois, he spent his summers at Scripps until 1942, when he joined the University of California Division of War Research and assisted the Navy in development of continental shelf bottom sediment charts for use in submarine warfare. In 1945 he became a professor at the Scripps Institution, a role which he continued until his formal retirement in 1966.

In Fran's words, "What you might call an act of God gave me my next undertaking." He and his wife were vacationing in Hawaii in 1946, combining swimming and snorkeling over the reefs with writing the first edition of his famous textbook, *Submarine Geology*, when an earthquake in the Aleutian Trench caused a major tsunami. With his typical enthusiasm, Fran photographed the tsunami before retreating to the protection of the limbs of an ironwood tree. Meanwhile, the waves distributed his notes and manuscript all over the sugar cane fields behind their cottage.

Fran's career was dotted with exciting events, most of which he treated as serendipitous. He characteristically followed up on all that occurred and all that he observed, and he observed a great deal. Especially in his later years, he and his beloved wife Elizabeth travelled extensively. They surveyed many of the coastlines of the world; they went as guests aboard research vessels; and Fran was showered with major honors. He was an honorary member of the Society of Economic Paleontologists and Mineralogists, the Natural History Society of Lausanne, Switzerland, and the Netherlands Geological Society. He received the Wollaston Medal from the Geological Society of London and the Sorby Medal of the International Association of Sedimentologists. He was president of the International Association of Sedimentologists and he received honorary doctorates from Beloit College and the University of Southern California. The Society of Economic Paleontologists and Mineralogists each year presents one of its major medals, the Francis P. Shepard Medal, for excellence in marine geology.

Fran was an observational, not an armchair geologist. He disdained the theoretician who never went to sea or looked at charts and samples; he made his own observations. With his boundless energy, he overwhelmed his opposition, not just with data and observations, but in publications. While he will not be remembered as primarily an idea man who formulated great new hypotheses to explain the Earth, he will be remembered for his challenging of authority by observing the Earth and backing his reports with massive amounts of data. He was dedicated to scientific inquiry. His hobby was his work, and he wasted no time with idle activities such as watching football games or playing cards. His sport was swimming and observing the sea floor, equipped with fins, mask, snorkel, and his sharp eyes.

Fran conveyed his enthusiasm to all around him and attracted a host of graduate students over his long years of teaching. To them and to his colleagues and associates, he was ever a kind and generous friend. His manner was gentle, even courtly. Among his honors was a preretirement banquet when a group of his former students dedicated a collection of papers to him. That was in 1964, and Fran's productivity as a scientist outlasted many of those students.

Fran continued to work long after his formal retirement in 1966, spending at least part of every weekday in his office, until frailty and illness made his visits less frequent during his last few months. Even then, he continued working, literally until the day before his death. In his lifetime, he published about 220 scientific papers and 10 books.

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