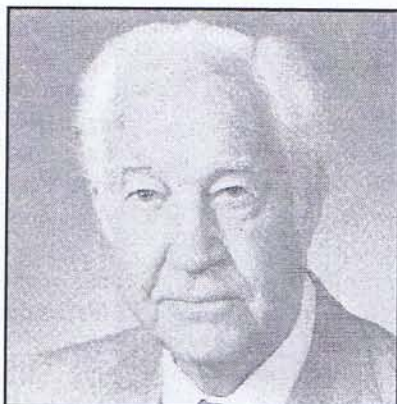


MASON LOWELL HILL (1904-1993)

Richard J. Proctor



Our friend and geologist-historian, Dottie Stout, had an extensive taped interview with Mase (as his friends called him) years before his passing. The purpose of her interview was to record for posterity the accomplishments of a few outstanding geologists who have made significant con-

tributions to geology. Specifically, Mason Hill has made vital contributions and pioneering studies in two fields – petroleum exploration and earthquake fault movements. I do not know the disposition of Dottie's tape; however, Mase provided me with the information below, when in 1990 I was honored that he asked me to be his citationist for Honorary Member in the American Institute of Professional Geologists.

Mase was born on January 17, 1904 in Pomona, California he graduated Pomona College in 1926, under the fortunate tutelage of Professor A.L. Woodford, who was just starting a geology program there.

After graduation, he got a job at the Blackhawk gold mine in the San Bernardino Mountains, Professor Woodford visited Mase at the mine site and convinced him to return to college for a master's degree. The professor saw so much promise in Mase that he gave his guarantee for a loan at a local bank!

Before returning to school, Mase spent a year working locally for Shell Oil company, on one of their first field reconnaissance geology teams. He then returned to college and completed his Master's degree at Claremont Graduate School in 1920. Mase made use of experience gained while working in the area for Shell. His thesis dealt with fault displacement, and was titled "Geology of the Western San Gabriel Mountains." Mase contradicted the conventional thinking when he correctly identified the southern boundary of the San Gabriel Mountains as a reverse fault, not typical Basin and Range faulting. His thesis was published in 1930 by the University of California, Berkeley.

Mase then went on to the University of Wisconsin where he obtained his doctorate in 1932. His dissertation was titled "A Study of the Mechanics of Faulting." This was a precursor to his landmark paper, "Classification of Faults," which appeared in the 1947 AAPG Bulletin. He expanded on the concept in the same journal in 1959 and introduced the term "right-lateral strike slip," and was first to suggest more than 350 miles of right-lateral offset on the San Andreas fault.

In the Depression years, Mase took a job at Coalinga Community College teaching geology, math, and child psychology (!), as well as coaching the track and basketball teams. When the oil industry began to revive, Mase returned to Shell Oil where he worked until 1937. That year Mase was offered a salary increase of \$250 a month to join the

newly-formed exploration department of Richfield Oil Corporation under Harold Hoots. He accepted and soon became District Geologist.

His fame in the petroleum industry began in 1947 when he and his field geology team, including Tom Dibblee, Discovered oil in the Cuyama Valley, west of the San Andreas fault. Other oil companies had explored this area of complex faulting and considered it to have no potential for oil production. The Cuyama Valley discovery doubled Richfield's reserves.

Mase also applied his geological expertise in Alaska, where, in 1957, Richfield discovered oil on the Kenai Peninsula near Anchorage. This marked the first commercial oil production in Alaska and was one of the inducements to make the territory the 50th state in 1959. Then Mase directed his Richfield geologists to map on the desolate North Slope with helicopter-supported field parties. This work led to the discovery of the successfully Prudhoe Bay structure. Atlantic-Richfield's Company president, geologist Rollin Eckis, promoted Mase to Manager of Exploration, International Division.

Continued studies by Mase resulted in his writing two more landmark papers: In 1965, "San Andreas System, California and Mexico;" in 1971, "A Test of the New Global Tectonics."

Most importantly, he became reacquainted with Marie, who also had been a geologist at Richfield. This charming lady became his wife in 1974.

Mase retired in 1969 and began consulting. Soon after, the Metropolitan Water district (MWD) began having problems with oil seeping into the 3.5-mile-long Newhall Tunnel, contaminating the water. (Even though the 21-ft-diameter tunnel had a 20-inch thick reinforced concrete lining.) Richard Proctor, who knew Mase personally, suggested to the MWD bosses that they hire him to help find the source of the oil, and a solution. He briefly joined MWD's other geologist-consultants, Richard H. Jahns, V.P. Pentegoff, and Thommy F. Thompson. Mase traced the oil source to the nearby Cascade Oil Field. The contamination would not go away during the useful life of the tunnel. The solution to the problem was to install a thin, welded plate inside the tunnel. A very expensive but necessary solution.

Mase served on the Council of the Geological Society of America, and in 1961 was president of the American Association of Petroleum Geologists. In 1981, he was presented AAPG's highest award, the Sydney Powers Memorial Medal. In 1964, at the urging of his good friend Martin Van Couvering, the first president of the American Institute of Professional Geologists, Mase became a charter member of AIPG (Certified Professional Geologist No. 20). After his passing, Pomona College created the Mason L. Hill Memorial Award in Geology, to be given annually to deserving students.

So when you use the term right-lateral strike slip fault, reflect on the geologist whose passions, and achievements, were structural and petroleum geology.