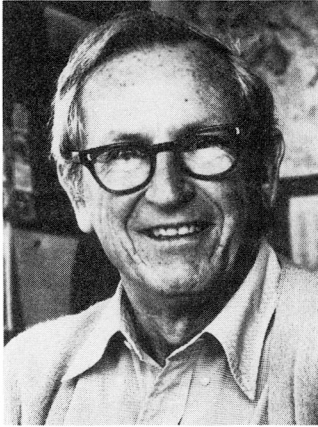


# Memorial to Henry William Menard

## 1920–1986

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Dr. Henry William Menard, 65, died of cancer on February 9, 1986, at his home in La Jolla, California. His untimely death ended a remarkable career as one of the world's leading marine geologists and geophysicists.

After World War II, the field of marine geology was little advanced from the *Challenger* expedition of the late 1800s. It was still possible to be a pioneer marine geologist, and to make basic contributions in a variety of present-day specialties. In this regard, Bill Menard was a pioneer and universal man in the older sense. He made basic contributions across the spectrum of marine geology and geophysics, from fine details of sediment properties, deposition and distribution of sediments, and properties and distributions of manganese nodules, through studies of the geomorphology, stratigraphy, and structure of the sea floor. His contributions included exploration and major discoveries, and

he was a leader in the geologic revolution of plate tectonics.

Bill Menard was born December 10, 1920, in Fresno, California, and reared in Los Angeles. He attended the California Institute of Technology where he received the Bachelor of Science degree. After service in the Navy during World War II, he returned to Cal Tech where he received the Master of Science degree. He later earned his Ph.D. degree (geology, 1949) at Harvard.

During World War II, Bill became a Naval Reserve Officer (1942). He served as a photo interpreter and intelligence officer on the staff of Admiral John McCain. Aboard the aircraft carrier *USS Hancock*, he was wounded in action. He received the Bronze Star Medal, a Navy Commendation, and his Pacific Theater ribbon had six combat stars.

After receiving his Ph.D. at Harvard, Bill's first job was at the Navy Electronics Laboratory (NEL) in San Diego, where he was a research scientist in geology of the sea floor in a section under Robert S. Dietz. At this time almost all marine geologists had been trained in land geology or peripheral disciplines. Bill's Ph.D. thesis concerned flume studies of sediment transportation and deposition and at NEL he investigated and published studies of the mass physical properties of sediments and of the transportation and deposition of sediments. These studies included sedimentation in general, but especially the hydraulics of turbidity currents, and the final forms these currents might create on the sea floor. These studies included original and important contributions to the geomorphology of deep-sea fans, deep-sea leveed channels, abyssal plains, and archipelagic aprons. Bill thus was a leader in the strong advances made in sedimentology in the early 1950s when the importance of turbidity currents was recognized.

After these early studies in sedimentology, Bill gradually began to investigate and publish on geomorphology, stratigraphy, and structure of the deep-sea floor, with emphasis in the Pacific and adjacent areas. These studies absorbed his attention in later years at NEL, after he became a faculty member (1955) at the Scripps Institution of Oceanography (SIO), and until his death in 1986.

During his career Bill published more than 100 scientific papers and six books (two in press at the time of his death), and participated in or led some 25 major expeditions at sea. He became a major contributor to the foundations on which the theories of sea-floor spreading and plate tectonics were established. And he made the transition from pioneer in exploration to a leader in investigations of plate tectonics. The diversity of his interests and his major contributions are noted in the selected bibliography

(below); in general they include studies of the topography and depths of the oceans, of oceanic basins, abyssal hills, seamounts and islands, and the great ridges and rises of the world's oceans (especially of the East Pacific Rise). He discovered and studied many of the great fracture zones (later "transform faults") and their offsets in distance and ages, and worked with the effects of plate movements on the topography of the sea floor and on distributions and changes in magnetic anomalies.

During his career in research and teaching, Bill became a full professor at Scripps Institution in 1961. From 1965–1966 he spent a year in Washington as a technical advisor in President Johnson's Office of Science and Technology. From 1967–1969 he was acting director of the Institute of Marine Resources of the University of California. His notable career was acknowledged when he became the 10th Director of the U.S. Geological Survey under President Carter (1978–1981). He then returned to Scripps Institution where he continued his research and writing to within a few weeks of this death.

Many knew Bill Menard only as a theoretician and "big picture" geologist. He was also a very practical man. He was an outstanding expedition leader at sea and acted as a consultant for many years, including years work in sea-floor topography for the Long Lines Department of the American Telephone and Telegraph Company in the 1950s. It was in scuba diving with the aqualung that he exhibited the practical side of his character. Bill was, he confessed, a poor swimmer. Therefore his decision to take up scuba diving in 1953 was an act of physical courage, inspired by his desire to see and study the sea floor at first hand. In the summer of 1953, the Navy Electronics Laboratory marine geology section, led by Bill, carried out the first sea-floor mapping job by diving, professional geologists (off San Nicolas Island). Shortly afterward, Bill and six other geologists at NEL and SIO formed a corporation which on weekends mapped sea-floor geology for a number of oil companies. In addition to logging hundreds of dives, Bill also published important contributions to the statistics of oil-well drilling.

Bill Menard was a Fellow of the Geological Society of America, the American Geophysical Union, the American Association for the Advancement of Science, and a member of the American Association of Petroleum Geologists. Among his many honors, Bill was elected a Fellow of the American Academy of Arts and Sciences and the California Academy of Sciences, he was awarded Fellowships at Churchill College of Cambridge, and in 1968 he was elected to the National Academy of Sciences. Shortly before his death, Bill was awarded the 1985 Bowie Medal of the American Geophysical Union in a ceremony in which he was cited by Dr. Marcia McNutt, one of several successful women scientists who were graduate students under his supervision. In his response, Bill said in reference to his career:

I cannot call it work because it constantly fills me with joy and wonder, and there is nothing that I would rather do. I first went to sea in 1942, so in 1984 I had been a sailor for 42 years—exactly half of this aging century. Except for the long absences from my family, I have loved every moment of it. Always new puzzles, old friends, the grey sea, and another sunrise. Nothing can match going to sea.

Bill Menard is survived by Gifford Merrill, his wife of 40 years, and three children: Andrew, of New York City; Elizabeth Menard, of Encinitas, California; and Dorthy Merrill Crist, of Silver Spring, Maryland. Three grandchildren also survive him; they are Kate Menard, and Alison and Benjamin Kurtz.

Through all of his brilliant career, Bill was generous in help, praise, and credit to others. A shining example of the gentleman scientist, he will be remembered forever in science, and always in the hearts and minds of his family and friends.

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