

The Machine in Neptune's Garden: Historical Perspectives on Technology and the Marine Environment

Edited by Helen M. Rozwadowski and David K. van Keuren

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“To understand the human relationship with the sea, it is essential to look at how knowledge about the ocean has been produced: by whom, with what kinds of instruments; using what kinds of scientific practices; and in which historic contexts.”

The Machine in Neptune's Garden, edited by Helen Rozwadowski and David van Keuren, is a fascinating look back at some of the important moments in oceanographic history. Did you know the first self-registering tide gauge was invented in 1832? Or that Scripps Institute planned to build an island off the end of the campus pier to support “man-in-the-sea” research? Or that Mary Sears, a Harvard-trained planktonologist, joined the U.S. Navy in 1943 to help the war effort and became the head of the Hydrographic Office's Oceanographic Unit? *Neptune's Garden* is chock full of juicy tidbits for those lulls in conversation at cocktail parties.

Neptune's Garden is a compilation of ten papers commissioned for presentation at the Third Maury Workshop on the History of Oceanography, held June 20-23, 2001 in Monterey, California. The theme of Maury III was “oceanography's role in understanding global environmental conditions and the application of technology

to the project of understanding the ocean's aquatic environment.” A wide range of topics are covered—the invention of self-registering tide gauges, the first time mathematical physics and ocean circulation came together, the use of “cultural translators” to bridge the gap between Navy combat officers and oceanographers, how the development of the nuclear bomb influenced oceanographic research, the North Pacific Experiment and the Mohole drilling project in the 1960s, the development of fisheries acoustics in Norway, the Mary Sears story, the doomed Chesapeake Bay Hydraulic Model, and Scripps Island.

Whether you are an oceanographer, meteorologist, biologist, landscape architect or simply curious, there is something for everyone in *Neptune's Garden*. The most memorable passage for me in the entire book is in Michael Reidy's chapter on tide gauges. “Lubbock had secured twenty-five years of observations of high water from Isaac Solly, the Chairman of the London Docks Company, and this type of data determined Lubbock's approach to the subject. First, keeping separate the tides that took place on each day of the moon's age, Lubbock had his calculator, Joseph Foss Dessious of the Admiralty Hydrographic Office, form for each month of the year a column of the times of high water.” Where was my calculator when I was struggling with physics and calculus in college?

Most of the chapters are 20 - 30 pages long, minus endnotes. Several of the chapters have wonderful illustrations of early scientific instruments. It is especially enlightening to see, through the illustrations in Helen Rozwadowski's chapter, how the Institute's vision for Scripps Island evolved over the years as various designs were submitted and considered.

The history of oceanography is not simply a history of science. Oceanographers and their research are influenced by world events. World War II propelled Woods Hole Oceanographic Institute into the center of national defense preparations and led Mary Sears and other female scientists to challenge traditional notions of a woman's place in the military. The development of the atomic bomb altered the course of research at Scripps Institute of Oceanography, which became heavily involved in weapons testing, radioactivity tracers, and the debate surrounding the disposal of nuclear waste. The Army Corps of Engineers' Chesapeake Bay Hydraulic Model was rendered obsolete by computer modeling.

To understand where we are, it is important to know where we came from and how we got there. *Neptune's Garden* helps us do just that. *Neptune's Garden* also helps us remember that progress is rarely made by individuals operating in isolation. There are always calculators standing in the shadows of obscurity.