

## IN MEMORIAM

### LAURENCE E. "LARRY" EBER 1922–2005



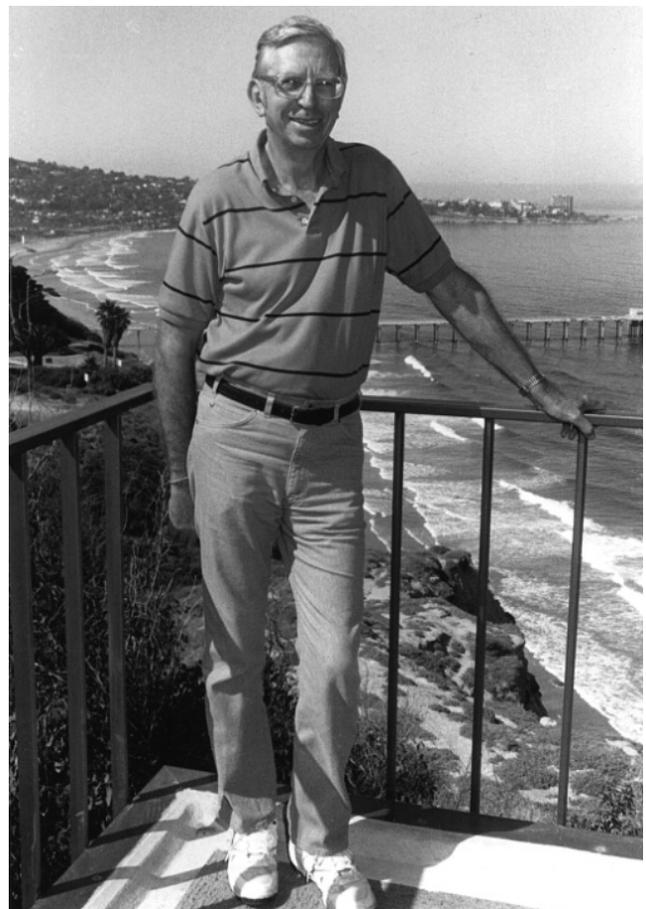
Mathematician, meteorologist, computer scientist, Larry Eber's career was propelled by tragedy and sustained by opportunities. The tragedy was the collapse of the Pacific sardine that propagated down the West Coast from Alaska to Baja California, Mexico in the mid 1940s. The Bureau of

Commercial Fisheries' Ocean Research Laboratory on the Stanford University campus was energized by the sardine collapse. Dr. Oscar Elton Sette established a long-range program to study the interaction of fisheries, oceanic and atmospheric physics, and biology of the North Pacific at Stanford University. For this purpose, Sette recruited an oceanographer, Ted Saur, and a meteorologist, Larry Eber. They began the Herculean task of extracting geostrophic wind estimates by entering and coding point pair differences in atmospheric pressure for wind-driven areas from the Oyashio exit from the Bering Sea across the North Pacific Current, the California Current, and its extension into the North Equatorial Current seasonally for 30 years. In addition to the quarterly time series of currents, they established a monthly mean time series of surface temperatures from two million ships' log entries of engine intake temperatures from 1949–62).

There were two main occurrences in Eber's career. One was the invention and construction of electronic digital computers just before the middle of the 20th Century. Another was the great El Niño of 1957–58. The former gave Eber the tools for assembly, analyses, and display of summaries of great masses of meteorological and oceanographic data. His computer skills, learned at the UCLA Department of Meteorology, were honed at the Stanford Computation Center and the Fleet Numerical Weather Facility of the U.S. Navy, before the arrival of high-level computer languages like FORTRAN and BASIC. This gave him a decade of opportunity in bending the electronic digital computer to the tasks adopted by Sette, Saur and Eber. The great El Niño of 1957–58 provided the climatic contrast necessary for

founding the science of interactions and climatic influences on the fisheries and biota.

Following the founding of NOAA, the retirement of Dr. Sette, and closure of the Ocean Research Laboratory, Eber undertook the next phase of his career at NOAA's Fishery Oceanography Center on the Scripps Institution of Oceanography Campus in the California Cooperative Oceanic Fisheries Investigations (CalCOFI). On his arrival in 1970, there were only fledgling attempts at creating meteorological, oceanographic and biological databases from the preceding decades of data collection in the California Current habitat of the Pacific sardine. He derived and documented the procedure for locating weather satellite suborbital positions in 1973. In the



Fisheries Research Division he excelled in three functions: providing clean files of oceanographic data to other researchers; setting the mathematical procedures for establishing Julian day equations still used on CalCOFI cruises for estimation of contemporary physical oceanographic anomalies; and participating with Ron Lynn and Ken Bliss in the analysis of temperature, salinity, oxygen, stability, and geostrophic flow in the complex oceanic habitat of the California Current and adjacent regions. In the latter instance, Larry wrote the analysis software used on the CalCOFI data, as well as the EDMAP contouring programs for producing surface plots—programs that continued to be used by oceanography students and a wide array of his colleagues for decades after their inception. He subsequently joined biologists Geoff Moser and Paul Smith in describing the effect of the great 1957–58 El Niño on the habitat boundaries, biota, and physical properties of the California Current. He also joined Mark Ohman and

Paul Smith in the analysis of zooplankton spatial patterns using the Acoustic Doppler Current Profiler echo amplitude files.

Larry Eber graduated from high school at Avalon, Catalina Island at the onset of World War II and attended Junior College and the UCLA Department of Meteorology where Jacob Bjerknes was his mentor. Eber's war duty was with the First Cavalry Division in Australia, the Philippines, and Japan where he attained the rank of Staff Sergeant. He joined a team in Hawaii in a fruitless effort to induce more rainfall over pineapple plantations. In 1992, after 39 years of Federal service, he retired from NOAA Southwest Fisheries Science Center, La Jolla. Larry is survived by his wife of 56 years, Audrey, two children and two grandchildren.

Eber's modesty, creativity and service are sorely missed.

*Ron Dotson  
Paul Smith*