

Anniversary of Radiocarbon Laboratory

September 19, 1967

The father of the "atomic time clock" will keynote the observance on September 22 of the 10th anniversary of the establishment of the La Jolla Radiocarbon Laboratory of the University of California, San Diego's Scripps Institution of Oceanography.

He is Dr. Willard Frank Libby, professor of chemistry at UCLA and 1960 recipient of the Nobel Prize for chemistry for his discovery of a method to determine geological age by measuring the amount of radioactive carbon-14 in organic or carbon containing objects.

The observance is a tribute by his colleagues to Dr. Hans E. Suess, UCSD professor of geochemistry, who set up the Scripps Radiocarbon Laboratory in August, 1957. It will be held in Scripps' Sumner Auditorium.

The day's agenda includes a welcome by Dr. Frederick T. Wall, UCSD vice chancellor for graduate studies and research; Dr. Libby's address and Dr. Suess' response; an informal luncheon; presentation of scientific papers; and a dinner.

Scientists from the UCLA Radiocarbon Laboratory, which Dr. Libby directs; and from similar laboratories at the University of Arizona, Tucson; University of Washington, Seattle; and Washington State University, Pullman, have been invited to attend.

Dr. James R. Arnold, UCSD professor of chemistry, is arranging the day-long affair.

Although Dr. Suess heads up the Scripps Radiocarbon Laboratory, its day-to-day operations are supervised by Dr. George S. Bien, specialist in UCSD's Department of Chemistry.

Dr. Libby, who is director of the University's statewide Institute of Geophysics and Planetary Physics, majored in chemistry at the University of California, Berkeley, and received his doctorate there in 1933. He taught at Berkeley until 1940.

During World War II, he worked in the War Research Division at Columbia University on the development of the gaseous-diffusion process for separating the isotopes of uranium-- an essential step in the production of the atomic bomb.

From 1945 to 1954 he was professor of chemistry at the Institute for Nuclear Studies at the University of Chicago. In 1954 President Dwight D. Eisenhower appointed him to the U.S. Atomic Energy Commission, on which he served until 1959. In that year he joined the faculty of UCLA. He was elected to the National Academy of Sciences in 1950.

First conceived by Dr. Libby, radiocarbon dating is a dating method that has produced important new data about world-wide climate changes, recent geologic events, and man's prehistoric development. This dating method has enabled scientists to determine the absolute ages of such organic materials as wood, charcoal, parchment, shells, and skeletal remains formed within the past 50,000 years. It is a laboratory technique whereby the amount of radioactive carbon in a substance is measured and compared to the amount presumed to have

originally been present in the substance. This is in a sense like measuring the spring tension in a watch and determining how long it has been running on the assumption that it was wound tightly to begin with.

Among the honored guests on Friday will be Dr. Meyer Rubin, Director, Radiocarbon Laboratory, U.S. Geological Survey, Washington, D.C. This laboratory was founded by Professor Suess 15 years ago. Under the guidance of Dr. Suess and Dr. Rubin, it has played a major role in developing an understanding of recent geological history, especially that of the great ice ages.

Since the Scripps Radiocarbon Laboratory was established, it has recorded some 1,500 radiocarbon measurements involving a large variety of projects, Dr. Suess recalled today.

"Our original goal was the measurement of radiocarbon distribution in the Pacific," he said. "We have done much work of this nature and have gained considerable insight into ocean currents and the mixing of ocean waters.

"About 20 percent of our work has been in connection with research conducted by other Scripps scientists.

"We have done archaeological dating of La Jolla Man as far back as 7,000 years and have dated many ocean-floor sediments.

"More recently we have been cooperating with the Arizona Tree-Ring Laboratory at Tucson, to help them refine their radiocarbon dating techniques and their own radio 'time clock.'

"We now know that the radiocarbon content of the atmosphere is a valuable geophysical parameter from which we can learn about the solar activity of ages ago and the magnetic fields of the earth."

Dr. Suess joined Scripps Institution in 1955 as a research geochemist and served the next three years on Scripps' research staff. He was one of the first four professors appointed to the UCSD faculty and since 1958 has been professor of geochemistry.

He came to Scripps from a three-year tour of duty as physical chemist for the U.S. Geological Survey, Washington. In 1950-51, he was at the University of Chicago as a guest professor and research fellow in chemistry.

A native of Vienna, Austria, Professor Suess, who earned his doctorate in chemistry at the University of Vienna, was research assistant and professor at the University of Hamburg, Germany, from 1937-50.

He has published many articles in chemical journals on such subjects as systematics of nuclear species, nuclear shell structure, the origin of the elements, radiocarbon dating, the chronology of the ice ages, the geochemistry of carbon dioxide, and the problems of cosmochemistry.

In 1966 he was elected to the National Academy of Sciences.