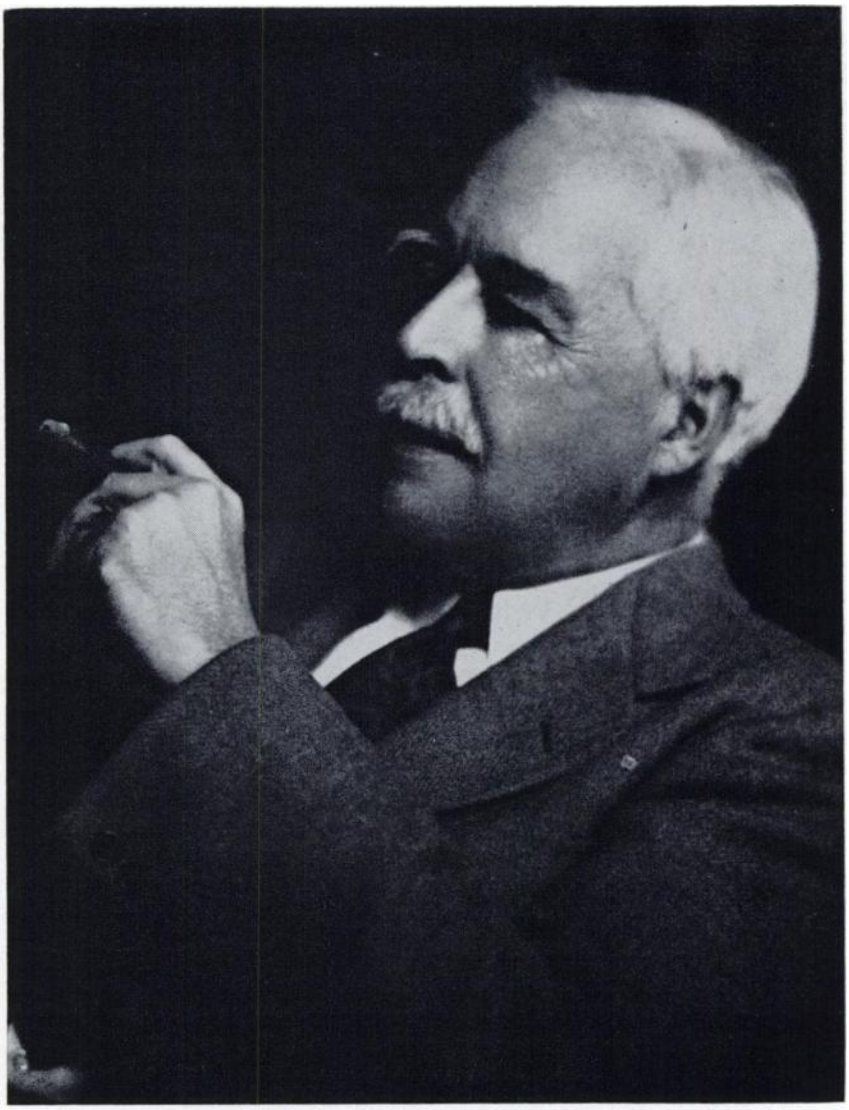
Honored by Eighth Annual Nuclear Pioneer Lecture, 14th Annual Meeting, Society of Nuclear Medicine



PROF. GILBERT NEWTON LEWIS 1875-1946

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BIOGRAPHICAL DATA

Gilbert Newton Lewis, the brilliant father of American physical chemistry, discoverer of the nature of the chemical bond, and spiritual founder of the great University of California, was born at Weymouth, Massachusetts, on October 23, 1875.

His father was a lawyer and broker. His mother taught him to read at the age of three and his parents tutored him until the age of fourteen when he entered the University of Nebraska. After four years he transferred to Harvard where he earned his Ph.D. six years later, at the age of twenty-four, in 1899.

ACHIEVEMENTS

Lewis was the leader of a wave of progress in physical chemistry in the United States which spread world wide from its beginning in 1899 and flowering in the years at Berkeley, beginning in 1912 when he was appointed Dean of the College of Chemistry.

Although the leading chemist in the United States for most of his life, he was deeply interested in the other sciences and in English literature. He seldom spoke in public lecture and shunned publicity and public acclaim, but had a wide circle of friends and acquaintances through which he exerted a large influence on the course of academic affairs at the University of California. His guidance probably was the major single factor in the development of the great schools of chemistry and physics at the University of California.

He was started on his career by T. W. Richards at Harvard and developed a major interest in chemical thermodynamics culminating in 1923 in the publication of the classic "The Free Energy of Chemical Substances" (with Merle Randall). The impact of Lewis' work in this area was very great and set the tone and stage for thermodynamic research throughout the western world for forty years.

Again in the area of the structure of atoms and molecules he was a giant. In 1916 he recognized for the first time and clearly stated the case for the importance of the pair of electrons in the chemical bond. He clearly preceded by eleven years the quantum mechanical result of 1927.

He encouraged Ernest Lawrence and Robert Oppenheimer in the founding and development of the great school of nuclear physics at Berkeley and himself first isolated heavy water and furnished Lawrence with the powerful deuteron projectile for his newly completed cyclotron in 1933. He encouraged the founding of the first school of radiochemistry and for nine years (1931-1940) attended a weekly seminar on the rapidly developing field of nuclear chemistry in the Berkeley chemistry department.

His last major contribution was to the study of the triplet excited state in organic compounds, which he succeeded in trapping in organic solvent glasses frozen in liquid nitrogen.

Perhaps his greatest role was as a teacher in choosing bright young men and encouraging them. In the 1940's the majority of the leading physical chemists in the United States were from Berkeley.

He received many honors and belonged to both the National Academy of Sciences and the Russian Academy of Sciences. Despite a dozen Nobel prizes to his students in the fifteen years following his death, he was never so honored. His teacher, T. W. Richards, was the first American scientist to receive the prize.

Prof. Lewis died suddenly while working in his beloved laboratory on March 23, 1946, at the age of 70.

Nuclear Pioneer Lecturer
Willard Frank Libby

Williard Frank Libby, Professor of Chemistry at the University of California at Los Angeles and Director of the Institute of Geophysics and Planetary Physics was born in Grand Valley, Colorado in the year 1908. He received his Ph.D. in Chemistry at the University of California in Berkeley in 1933 and almost immediately began that inquiry into environmental and low-level radioactivity which has characterized his continuously distinguished career in the world of science.

Professor Libby, a physical chemist specializing in radiochemistry, in particular hot-atom chemistry employing isotope-tracer techniques, became exceedingly well-known at the University of Chicago during the years 1945 to 1959 for his work on natural carbon-14 and its application to dating of ancient archaeological artefacts. Similarly, he discovered the natural cycle of tritium and its important use in dating water movements on the earth. Because of his ingenious work, especially on carbon dating, he was awarded the Nobel Prize in Chemistry in 1960.

Professor Libby was appointed a member of the United States Atomic Energy Commission in 1954 and continued to serve in that capacity until 1959. In addition, he has given generously of his knowledge and time by serving on various boards and committees. In recognition of such service as well as his scholarly achievements, Professor Libby has been honored many times. Seven universities, including Trinity College of the University of Dublin and the University of Newcastle Upon Tyne, have awarded him the honorary degree of Sc.D. He was a Guggenheim Fellow in the years 1949, 1959, 1959-62, and since 1960 has been a member of the Advisory Board of the Guggenheim Memorial Foundation. In 1951 he received the Research Corporation Award for discovering the radiocarbon dating technique; in 1954, the Chandler Medal of Columbia University for outstanding achievement in the field of chemistry; in 1955, the Remsen Memorial Lecture Award; in 1956, the City College of New York Bicentennial Lecture Award, and the American Chemical Society Award for nuclear applications in chemistry; in 1957, the Elliott Cresson Medal, Franklin Institute; in 1958, the Willard Gibbs Medal of the American Chemical Society; in 1959, the Albert Einstein Medal, and the Priestly Memorial Award of Dickinson Col-