

# OBITUARIES

## Leo Szilard

Leo Szilard, who collaborated with Enrico Fermi in 1942, to achieve the first nuclear chain reaction, died on May 30.

Dr. Szilard was born in Budapest on February 11, 1898. He began his education as an engineering student at the Budapest Institute of Technology and, in 1920, enrolled in the Technische Hochschule in Berlin-Charlottenburg, where he switched his academic endeavors to theoretical physics. He received a PhD from the University of Berlin in 1922 and spent the next eleven years there as a member of the faculty.

He left Berlin when Hitler came to power in 1933 and, after spending some time in Vienna, began research work in nuclear physics at St. Bartholomew's Hospital in London and the Clarendon Laboratory of Oxford University. At St. Bartholomew's, he developed with Chalmers a method of isotopic separation of artificially radioactive elements. In 1938 he came to this country and became a guest researcher at Columbia University.

Early in 1939, Dr. Szilard and Walter Zinn completed an experiment at Columbia which demonstrated that neutrons were emitted when atoms of uranium split and, through the emissions of neutrons, the fission process could produce a sustained nuclear chain reaction. Dr. Fermi, also working at Columbia, arrived at the same conclusions almost at the same time. In July of that year, Dr. Szilard and others drafted a letter to President Roosevelt, describing the discovery by Szilard and Fermi of a "new and important source of energy" which could be used to construct "extremely powerful bombs of a new type". Albert Einstein signed the final version of the letter and sent it to the President. Later that month, Dr. Szilard was appointed to the newly created Advisory Committee on Uranium. In 1940, Dr. Szilard and Dr. Fermi were placed in charge of the first contract for development of an atomic bomb. This work, begun at Columbia, was trans-

ferred to the University of Chicago in 1942. In Chicago's Stagg Field, Dr. Szilard helped to build the pile which, on December 2, 1942, produced the world's first successful nuclear chain reaction. Dr. Fermi then went on to Los Alamos to help develop the bomb, and Dr. Szilard remained at Chicago to work on a means for extracting large quantities of plutonium from uranium. Later, Fermi and Szilard shared the first basic patent issued for the combination of fuel and moderator that made the early reactors workable.

Dr. Szilard worked in nuclear physics throughout World War II, first in association with National Defense Research Committee at Columbia and later at Chicago with the title of chief physicist in the University's Metallurgical Laboratory. During this time, he contributed to the set of experiments which culminated in the 1945 explosion at the White Sands (New Mexico) Proving Grounds. When he learned about President Truman's plan to drop an atomic bomb on Hiroshima, he led a group of 156 scientists in signing a petition addressed to the President advising him to give Japan advance warning. The petition urged a demonstration of the bomb before dropping it on cities, but the petition was allegedly never delivered.

In 1946, Dr. Szilard became a professor of biophysics at the University of Chicago. For the remainder of his life, he was involved in numerous projects to benefit society, many of which he originated. In 1947 he wrote a letter to Premier Stalin of Soviet Russia asking that he address the American people directly on Russia's plans for general postwar settlement. The Justice Department refused to let Dr. Szilard send the letter directly to Stalin, but it was printed in the *Bulletin of the Atomic Scientists*. Throughout the postwar years, Dr. Szilard frequently testified before Congress, warning of the dangers of nuclear warfare and, with Einstein and other scientists,



Photo by Heka

Leo Szilard

formed the Emergency Committee of Atomic Scientists as a measure to educate the world on potential atomic catastrophe. Dr. Szilard was one of the original signers of the Einstein-Russell appeal which led to the Pugwash Conferences on science and world affairs. His most recent political project consisted of the organization, in 1961, of the Council for a Livable World, a plan to raise money for a "lobby for abolishing war". He wrote *The Voice of the Dolphins*, a collection of political and social satires published in 1961. He was awarded the Albert Einstein Gold Medal in 1959, and he shared, with E. P. Wigner, the Atoms for Peace Award in 1960.

Dr. Szilard's interest in physics extended in many directions. He did early work in the theory of automation, molecular energy, and the development of the electron microscope. His interest in biology led to fundamental work in microbiology, genetics, and immunology, which included a new theory on the process of aging and some studies on the molecular basis of man's memory. His last work in this area appeared posthumously in the *Proceedings of the American Academy of Sciences*. At the time of his death, Dr. Szilard was a resident fellow at the Salk Institute for Biological Studies in La Jolla, Calif.

He was a fellow of the American Physical Society and a member of the National Academy of Sciences.