

FERMI'S OWN STORY¹¹

By Enrico Fermi

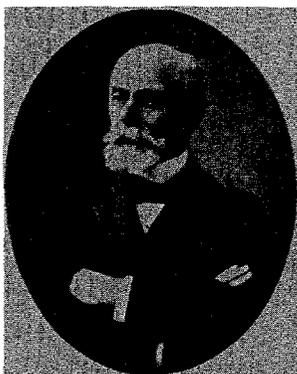
It is ten years since man first achieved a self-sustaining atomic reaction.

Many people link this event only with the development of the atomic bomb and the subsequent efforts to develop the hydrogen bomb, reference to which has been made in the last few days by the Atomic Energy Commission.

The history of the first self-sustaining nuclear chain reaction, like that of all scientific achievements, begins with man's first philosophical speculations about the nature of the universe. Its ultimate consequences are still unpredictable.

The sequence of discoveries leading to the atomic chain reaction was part of the search of science for a fuller explanation of nature and the world around us. No one had any idea or intent in the beginning of contributing to a major industrial or military development.

A partial list of the main stepping-stones to this development indicates many countries contributed to it.



A. H. Becquerel

The story begins in Paris in 1896 when Antoine Henri Becquerel discovered the existence of radioactive elements; that is, elements which spontaneously emit invisible, penetrating rays. Two years later, also in Paris, Pierre and Marie Curie discovered radium, for many years the best known of the radioactive elements.

In Zurich, Switzerland, in 1905, Albert Einstein announced his belief that mass was equivalent to energy. This led to speculation that one could be transformed into the other.

A most important discovery came in 1912 when Ernest Rutherford discovered the minute but heavy nucleus which forms the core of the atom. In ordinary elements this core is stable; in radioactive elements it is unstable.

Shortly after World War I, the same Rutherford achieved for the first time the artificial disintegration of the nucleus at the center of the nitrogen atom.

¹¹Written by Dr. Fermi and published in the *Chicago Sun-Times*, November 23, 1952, in observance of the tenth anniversary of Fermi's successful "First Pile" experiment. Copyright by the *Chicago Sun-Times*. Reprinted by permission.