236 to 241, of which Pu^{236}, Pu^{238} and Pu^{239} are known to be beta-stable. Pu^{241} is shown in this work to be unstable to the emission of beta-particles, leading to the production of 95^{241}. The helium ion bombardment of Np^{237} and the deuteron bombardment of Pu^{239} are capable of forming isotopes of element 95 directly, the expected mass numbers being 235 to 240. Of these, 95^{238} and 95^{239} should be formed in the highest yields.

At the beginning, in the search for activities due to isotopes of element 95, it was assumed that the chemical properties would be similar to those of the lanthanide elements in the (III) oxidation state. It has been pointed out by Seaborg(1) that the chemical properties of the elements following actinium (element 89) in the periodic system may be explained on the assumption that they constitute a rare-earth-like series (actinide series) in which the 5f shell of electrons is in the process of completion. On this basis it was predicted that the increasing stability of the (III) state of the actinide elements should culminate in very stable (III) states in elements 95 and 96.

The first positive evidence for the existence of element 95 was found in the late fall of 1944, in the form of nuclear and chemical data pertaining to the isotope 95^{241}. It is suggested that the new element be named americium (in honor of the Americas) and have the symbol Am. This name is based on the strong analogy between element 95 and europium (after Europe), Eu, of the lanthanide rare-earth series.

II. Am^{241} and Related Isotopes

A. Helium-ion Bombardment of U^{238}.

Uranium in which the isotopic content of U^{235} was reduced by the electromagnetic process(2) was bombarded, in the sixty-inch cyclotron at Berkeley, with helium ions of ca. 38 Mev energy. Such bombardments are discussed in more detail in another paper(3). The activated uranium