

The First Weighing of Plutonium

GLENN T. SEABORG The first weighing of plutonium was a significant event in the history of science and technology. A number of scientists assembled here in the Metallurgical Laboratory at the University of Chicago in the spring of 1942. Among those were a group of chemists working with me on a process to extract plutonium from uranium and its fission products. The uranium would be irradiated in the huge production reactors at some site not yet chosen.

It occurred to me that central to achieving of such a separation process would be chemical work on concentrations that would exist in the chemical extraction plant. This seemed a very far out idea, and I can remember a number of people telling me that they thought it was essentially impossible, because we had no large source for plutonium. But I thought we could irradiate large amounts of uranium with the neutrons from cyclotrons since the indications were that we probably could produce sufficient plutonium, if we could learn to work on the microgram or smaller-than-microgram scale. That way we could get concentrations as large as those that would exist in the chemical extraction plant.

I knew rather vaguely about two schools of ultramicrochemistry—the School of Benedetti Pichler at Queens College in New York, and the School of Paul Kirk in the Department of Biochemistry at the University of California at Berkeley.

I went to New York in May 1942, looked up Benedetti Pichler, and told him that I needed a good ultramicrochemist. He introduced me to Mike Cefola and I offered him a job, which he accepted immediately. He was on the job about three weeks later, which is illustrative of the pace at which things moved in those days.

Then I took a trip to Berkeley, early in June, where I looked up my friend Paul Kirk and put the same problem to him. By the way, I couldn't tell any of these people why we wanted to work with