I thought it might be appropriate if I called on the ultramicrochemists first, and then I shall call on those who played important roles, perhaps equally important roles, although secondary to the weighing, in the Plutonium Project here at the Metallurgical Laboratory.

BURRIS B. CUNNINGHAM As I look at this assemblage, I can't resist remarking that rarely have so many made so much about so little.

The weighing experiments were only a part of a broad program of research on the properties of plutonium carried out under Glenn Seaborg's direction in the summer of 1942.

The experiments, which immediately preceded the weighings, and the weighings themselves represented two important scientific "firsts". They afforded the first human glimpse of a man-made element and they were, to the best of my knowledge, the first ultramicro, gravimetric, chemical experiments carried out in the United States.

Now after all these years, it is difficult to recall the psychological impact of these events. Today alchemy is a thriving, commonplace business. But at that time we, who had been brought up in an older tradition, saw it as a miracle and just a little bit difficult to believe in.

More than a year after the first isolation of plutonium, I recall one of the members of our group arguing vehemently that plutonium* wasn't really plutonium at all; it was just an oddly behaving isotope of uranium. And the ultramicro work met with similar skepticism. When I first showed Dr. Seaborg the data on the reproducibility of the balance that we intended to use for weighing the plutonium, he thought that I had slipped a couple of decimal places, and that these deviations must surely be in micrograms and not in hundredths of a microgram. And I recall a long conversation with Truman Kohman, in which I vainly tried to convince him that it was possible to measure a microliter of solution to 1% accuracy. I'm not sure that he believes it even to this day.

Mike and Louie and I believed in plutonium, but wondered constantly if the stuff that we were precipitating from our little cones was genuinely pure material. There was always the possibility that it might be grossly contaminated with other material.

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*"Plutonium is so unusual as to approach the unbelievable. Under some conditions it can be nearly as hard and brittle as glass; under others, as soft and plastic as lead. It will burn and crumble quickly to powder when heated in air, or slowly disintegrate when kept at room temperature. It undergoes no less than five phase transitions between room temperature and its melting point. Strangely enough, in two of its phases, plutonium actually contracts as it is being heated. It also has no less than four oxidation states. It is unique among all of the chemical elements. And it is fiendishly toxic, even in small amounts." Glenn T. Seaborg