time, three successive three-hour bombardments were made, and, in turn, their transmutation products were quickly and completely separated by the ion-exchange method. Some of the nuclide \s(253, 99)Es was present in each case so that, together with the $^{246}_{98}Cf$ produced from $^{244}_{96}Cm$ also present in the target (via the ^{244}Cm (^{4}He,2n) reaction), it was possible to define the positions in which the element came off the column used to contain the ion-exchange resin. Five spontaneous fission counters then were used to count simultaneously the corresponding drops of solution from the three runs.

A total of five spontaneous fission counts were observed in the element 101 position, while a total of eight spontaneous fission counts were also observed in the element 100 position. No such counts were observed in any other position.

The rate of spontaneous fission in both the element 101 and 100 fractions decayed with a half-life of about three hours (later determined to be 160 minutes). This and other evidence led to the hypothesis that this isotope of element 101 has the mass number 256 and decays, by electron capture (designated by the symbol EC), with a half-life of the order of one-and-one-half hours, to the isotope $^{256}_{100}Fm$, which is responsible for the spontaneous fission decay. The discovery reactions were:

$$^{253}_{99}Es + ^{4}_{2}He \rightarrow ^{256}_{101}Md + ^{1}_{0}n$$

$$^{256}_{101}Md \xrightarrow[t_{1/2} = 1.3h]{} ^{256}_{100}Fm$$

$$^{256}_{100}Fm \xrightarrow[t_{1/2} = 2.63h]{} \text{spontaneous fission}$$

On the basis of this evidence and the experiments which led to the production of 17 atoms of element 101, Ghiorso, Harvey, Choppin, Thompson, and I (Figure 15) announced the discovery of element 101 (17). The name mendelevium (symbol Mv) was suggested for the element, in recognition of the role of the great Russian chemist, Dmitri Mendeleev, who was the first to use the periodic system of the elements to predict the chemical properties of undiscovered elements, a principle which was used in nearly all the transuranium element discovery experiments. The chemical symbol, Md, was later adopted for this element.

It is comforting to be able to record that subsequent experiments using larger amounts of einsteinium in the target led to the production of thousands of atoms of mendelevium, lending confirmation to the sparse evidence on which the original conclusions were made. The indications are clear that, as expected, mendelevium is a typical tripositive actinide element.