high efficiency. In this case it was possible to observe the electrons emitted by some of the radioactive fission products such as yttrium, which were produced in the bombardments.

Some of the fractions containing element 98 were used for independent investigation of the chemical properties of the new element. These investigations included separations in a Dowex-50 resin column with concentrated (13M) HCl for elution and experiments employing powerful oxidizing agents with carriers such as zirconium phosphate and lanthanum fluoride.

Experimental Methods Used in Radioactivity Measurements

The thin deposits on platinum of the fractions expected to contain element 98 were examined in the differential alpha-particle pulse analyzer. In this instrument individual pulses from an ionization chamber are sorted electronically and recorded on 48 fast mechanical registers in such a way as to separate the individual alpha-particle energies from a mixture of alpha-emitters. In establishing values for the alpha-particle energies of the new isotope, direct comparison was made with pulse analyses of thin samples of isotopes whose alpha-energies are well known, using the same instrumental conditions.

No attempt was made to observe electrons and electromagnetic radiations in the element 98 fractions because of the possible presence of unseparated fission product isotopes in larger abundances which emit similar radiations.

Results of Radioactivity Measurements

The application of the procedures described above to helium ion bombarded targets of Cm^{242} and the examination in the pulse analyzer of the separated fractions expected to contain element 98 revealed a small amount of 7.1 ± 0.1 Mev alpha-particle radioactivity together with the expected amount of residual 6.08 Mev Cm^{242} alpha-particle activity.