

water were forced through the resin bed. This procedure was then repeated with hot 0.05 M hydrochloric acid, and two drops of the acid were forced through the resin bed. The remainder of the acid was removed from above the resin.

The mixture of actinide elements, dissolved in two drops of 0.05 M hydrochloric acid, was carefully transferred to the top of the resin bed and allowed to flow slowly through. The tube which contained the actinides was washed successively with two more drops of 0.05 M hydrochloric acid and then with two drops of water. These washings were allowed to wash down the space above the resin bed and to flow slowly through. The tube was finally washed with two drops of ammonium lactate solution which were transferred to the top of the column and allowed to flow slowly through the resin bed. The first drop to fall after the transfer of the ammonium lactate to the resin bed was collected as "drop number 1".

The space above the resin bed was then filled with hot ammonium lactate from the side-tube, the ground glass stopper inserted, the height of the reservoir adjusted to give the desired flow rate (measured in drops per minute).

Effect of Flow Rate. Increasing the flow rate of the eluant did not alter appreciably the volume required to elute a given ion. It did, however, increase the width of the bands into which the individual elements were separated. Hence, a compromise must be reached between the requirements of speed and completeness of separation. Normally, separations were so complete that there was little