THE QUANTITATIVE DETERMINATION OF SILVER IN ORGANIC COMPOUNDS.*

BY JOSEPH L. MAYER.

The United States Pharmacopœia, on page 63, directs that the following method be employed for determining the amount of silver in the official compounds of silver and protein:

> Ignite about 2 Gm. of strong Silver-Protein accurately weighed in a porcelain crucible until all of the carbon is burned off. Transfer as much as possible of the residue to a beaker, add to the crucible 5 cc. of nitric acid, warm to dissolve any adhering silver, and transfer the solution to the beaker with the aid of a little distilled water. Cover the beaker and heat on a water-bath until all of the metallic silver is dissolved, adding a little more nitric acid if necessary. Filter into a flask, wash the insoluble residue thoroughly with distilled water, cool and dilute with distilled water, if necessary, to about 50 to 75 cc. Add 2 cc. of ferric ammonium sulphate T. S., and titrate with tenth-normal potassium thiocyanate. Each cc. of tenth-normal potassium thiocyanate corresponds to 0.01079 Gm. of silver.

Recently many samples of mild silver-protein solution were submitted to me to be assayed for their silver content and in employing the above method it was difficult to obtain concordant results and I, therefore, adopted the following procedure:

Accurately weigh about 1 Gm. of the silver-protein, or accurately measure 5 cc., or accurately weigh about 5 Gm. of the solution and transfer to a Kjeldahl flask. In the case of the solution evaporate over a naked flame until the residue is practically dry, then add 10 cc. concentrated H_2SO_4 and 5 cc. concentrated HNO_3 and with the flask in an inclined position and a funnel in the mouth to act as a reflux condenser, heat over a naked flame until the material is colorless. (Should difficulty be experienced in obtaining a colorless solution, heat until the appearance of white fumes, allow to cool and add 5 cc. concentrated HNO_3 and heat again over naked flame as before.) Allow to cool, add 75 cc. of distilled water, 5 cc. of concentrated HNO_3, 2 cc. ferric ammonium sulphate indicator and titrate with $N/10$ KSCN.

This method in addition to being rapid, possesses the additional advantage that the entire operation of destroying organic matter, dissolving the residue and titrating are all done in the same flask, the result being there is no danger of loss from foaming, spurting, transferring, filtering, etc., factors which serve to weaken the U. S. P. procedure.

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"What Is the Pharmacist's Professional Service Worth?" Robert J. Ruth.—The paper is based upon a personal experience which the writer recently had at one of the largest hotels in the country. He had patronized the barber shop, the public stenographer and the drug store in the hotel on the same afternoon. The pharmacist rendered professional service for which he apparently charged nothing while the barber and the public stenographer charged handsome fees for their time and services.—Section Practical Pharmacy and Dispensing, A. PH. A.

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* Read at the 1930 meeting of the New York State Pharmaceutical Association.