water allowed by a reduction of sugar content. Even so low a sugar content as 25% preserves well and a product with 35% sugar remains essentially colorless for a year. Possibly a buffer might be found which would reduce the acidity without decreasing the effectiveness of the hypophosphorous acid. Replacing the sugar with glycerin is satisfactory if the glycerin is free from butyric acid, otherwise a repugnant odor develops.

Syrup Iodo-tannin, N. F.—Assay process for iodine advisable as method of manufacture makes loss liable.

Syrup Wild Cherry, U. S. P.—Generally does not keep well unless sugar content is increased to insure gravity of not less than 1.34 at 25° C.

Tincture Aconite, U. S. P., and **Fluidextract Aconite, N. F.**—It is to be hoped that some established means of stabilizing these products will be introduced into the next revisions.

Zinc Acetate, U. S. P., and **Zinc Phenolsulphonate, N. F.**—Assay process is very tedious, should be replaced by more practical one, such as the ferrocyanide titration method.

Zinc Chloride, Oxide, Stearate and **Sulphate** and **Liquor Zinc Chloride, U. S. P.**—A more distinctive assay process is advisable, such as the ferrocyanide titration method.

RESEARCH LABORATORIES,
TAILBY NASON COMPANY,
BOSTON, MASS.

GRAVIMETRIC DETERMINATION OF LEAD IN SOLUTION OF LEAD SUBACETATE.*

BY JOSEPH L. MAYER.

The United States Pharmacopœia, on page 221, directs that Solution of Lead Subacetate be assayed for its lead content by the following procedure:

"Place about 1 cc. of Solution of Subacetate, accurately weighed, in a 200-cc. volumetric flask, dilute with 50 cc. of recently boiled distilled water and add 50 cc. of tenth-normal oxalic acid. Agitate the mixture thoroughly for five minutes, fill to the mark with distilled water, shake and filter, rejecting the first 20 cc. of the filtrate. Add 5 cc. of sulphuric acid to 100 cc. of the filtrate, warm to about 70° C. and titrate the residual oxalic acid with tenth-normal potassium permanganate. Each cc. of tenth-normal oxalic acid corresponds to 0.01036 Gm. of Pb."

Due to the fact that the volumetric solutions employed in the assay must be frequently restandardized the method is time-consuming and I have therefore developed the following gravimetric one:

Into a tared 50-cc. flask accurately weigh about 5 Gm. of the sample, then add 5 drops of C.P. HNO_3 and distilled water sufficient to make 50 cc. Add 10 cc. of this diluted solution to a 400-cc. beaker containing about 300 cc. of distilled water and heat nearly to boiling, after which add NH_4OH to incipient precipitation, then dilute HNO_3 (1:10) to redissolve the precipitate, avoiding more than a slight excess; to this nearly boiling solution, add 50 cc. of a 10 per cent potassium-chromate solution and stir thoroughly during the addition. The chromate solution should be nearly boiling and added to the lead solution by means of a pipette delivering 50 cc. in about 40 seconds. If the lead chromate is precipitated hot and stirred vigorously during the precipitation it will settle clear in 15 minutes or less, when it is ready to be filtered. Filter while hot, collecting the precipitate in a weighed Gooch crucible, and wash with boiling distilled water, until the wash water does not show the least

* Read before the Kings County Pharmaceutical Society meeting, March 10th.

tinge of yellow. Dry the precipitate in an air oven at from 140° to 150° C., to constant weight. From the weight of lead chromate obtained calculate the per cent of lead by multiplying weight of lead chromate by the factor 0.6410.

SUMMARY.

The volumetric solutions employed in assaying Solution of Lead Subacetate for its lead content must be frequently restandardized; a gravimetric method employing potassium chromate as the precipitant is submitted with directions for making the analysis.

The method is accurate, rapid, easily carried out and has everything to commend it.

CHEMICAL LABORATORY, BROOKLYN COLLEGE OF PHARMACY,
LONG ISLAND UNIVERSITY, BROOKLYN, N. Y.

CHARLES RICE.*

BY VIRGIL COBLENTZ.

The U. S. Pharmacopœial Revision of 1880 was memorable in that it served as a transition from the old to the new, embodying innovations in admissions and the introduction of a more advanced scientific treatment and arrangement of text. In fact, our present Pharmacopœia represents the development of policies instituted by Charles Rice. His comprehensive grasp of general principles with an unusual mastery of minute details, eminently fitted him as pioneer in this line.

CHARLES RICE.

No Pharmacopœia has as yet appeared that compares with the U. S. P. in systematic arrangement and scientific treatment of its text, due chiefly to the foresight, unusual scholarly attainments and executive abilities of Charles Rice.

In order to properly estimate the abilities of this scholar, let us not overlook the following facts. During his time, all correspondence relative to revision work was carried out personally in long hand, all communications and reports were sent out in hektograph copies. I recall the time when one set of manuscripts, which he was running off, all stuck so firmly to the gelatin pads, that they could only be removed in shreds. Patiently he re-wrote the entire set and then made up a new gelatin composition, one set of pads for summer use and another for cold weather.

He conducted many experiments in order to verify reports coming in. In addition to this work, the onerous and exacting duties of his position as chief chemist and apothecary to Bellevue Hospital and allied institutions connected with the De-

* Some reminiscences relative to Pharmacopœial Revision and his private life.—Section Historical Pharmacy, A. PH. A., Baltimore meeting, 1930.