

The CO₂ determination is performed as described by Van Slyke and Neill for 1 cc. blood samples.

Urine. In each of two 20 cc. cylinders, A and B, place 1 cc. of urine (or 2 cc. if the urine is dilute). To each cylinder add 5 cc. of a buffer solution containing per liter 4 grams of KH₂ PO₄ and 2 grams of Na₂ HPO₄. Dilute B to 20 cc. and A to 19 cc. and cover both with 3 or 4 cc. of paraffin oil. To A add 1 cc. of 10 per cent urease. Stir each solution gently by moving a footed rod in it up and down a few times. Let stand 30 minutes for enzyme to act. Determine CO₂ in 2 cc. samples from each solution, adding 1.5 cc. of 0.1 N lactic acid to decompose the carbonate, so that the total volume of solution in the blood gas apparatus is 3.5 cc. The CO₂ is determined as described by Van Slyke and Neill for 1 cc. of blood, except that absorption of CO₂ with alkali is unnecessary. The total gas pressure only is measured, the reading from A giving p₁ that from B giving p₂, for calculation as described by Van Slyke and Neill.

The determination can also be performed with the original volumetric apparatus of Van Slyke, although the results cannot be read with as great accuracy.

The entire blood determination requires about 15 minutes, the analysis of solutions A and B in the urine determinations 5 minutes each. The gasometric method has the advantages that aeration and distillation are avoided, and that standard solutions for titration or colorimetric comparison are unnecessary.

233 (2756)

A method for obtaining distribution of a therapeutic agent throughout the intestinal tract.

By JAMES W. JOBLING.

[From the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York City.]

Treatment of infections of the lower ilium and colon by the oral administration of drugs has been unsatisfactory, owing to the difficulty of getting the drug to these regions unchanged. Tablets coated with various substances have been used, but with poor results.

In the course of work which we have been doing during the past two years, a method has been developed which permits us to obtain a fairly uniform distribution of a chemical substance throughout the intestinal tract.

Gentian Violet has been used in most of our experiments. Gelatin capsules were filled with a mixture composed of the dye and sodium chloride or a buffer, and then coated with 3 per cent collodion. In our preliminary work we found that Gentian Violet will not dialyze through such a membrane, so a minute hole was made in one end of the capsule with a No. 12 cambric needle. The sodium chloride and buffer mixtures were used to raise the osmotic pressure and to neutralize any acids or alkalies which might be present. Following the entrance of fluid into the capsule the gelatin dissolves, leaving the thin collodion layer which collapses from the pressure of the intestinal contents. This aids in causing the expulsion of the dye. Capsules recovered from the feces are intact and usually empty.

When capsules prepared in this manner are administered to animals or human beings, the feces are uniformly colored with the Gentian Violet. We have had two autopsies on individuals who had been receiving the capsules, and in both instances the contents of the gastro-intestinal tract from the mouth to the anus were stained a deep violet. The mucosa throughout was also stained.

234 (2757)

Experimental production of intra-ocular hypertension.

By THEODORE KOPPÁNYI and THOMAS DYER ALLEN. (Introduced by A. J. Carlson).

[*From the Hull Physiological Laboratory of the University of Chicago, Chicago, Ill.*]

It is commonly believed that the intra-ocular tension is sustained by the blood pressure in the intra-ocular blood vessels, especially by those in the iris; and that it may be lowered either by fall of the general blood pressure, or by constriction of the vessels locally. Results achieved following administration of drugs have not been uniform; for instance, after cocaine, the intra-