SOME MICROCHEMICAL TESTS FOR BETA-EUCAINE.

BY C. H. STEPHENSON.

During the course of an investigation on microchemical tests for some of the alkaloids, the writer had occasion to test out solutions of Beta-Eucaine hydrochloride with more common alkaloidal reagents. It was found that five reagents gave crystalline precipitates with a 2 percent solution of Beta-Eucaine hydrochloride, these being. Picric Acid, Sodium Salicylate, Platinum Chloride, Palladous Chloride and Mercuric Chloride.

Four aqueous solutions of Beta-Eucaine were used as follows: 1 : 50, 1 : 200, 1 : 500, and 1 : 1000.

Out of a list of some fifty reagents, used including all of the more common alkaloidal reagents, about twenty gave non-crystalline precipitates with Beta-Eucaine.

The reagents which gave crystalline precipitates were all 5 percent aqueous solutions with the exception of the Picric Acid, which was a saturated aqueous solution.

In making the tests described below one drop of the test solution is placed on a microscopic slide and a small drop of the reagent added by means of a glass rod.

PICRIC ACID.

This is the most sensitive of the reagents used as a slight precipitate is formed in the 1 : 1000 solution which crystallizes rather quickly into small rosettes. With the more concentrated solutions, the crystals are of the same general form as with the 1 : 1000 solution, but they are larger and naturally obtained in greater numbers (Fig. 1).

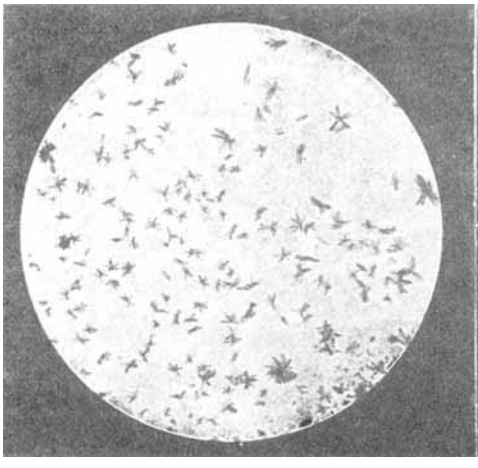

Fig. 1—Crystals Formed with Picric Acid (×100).

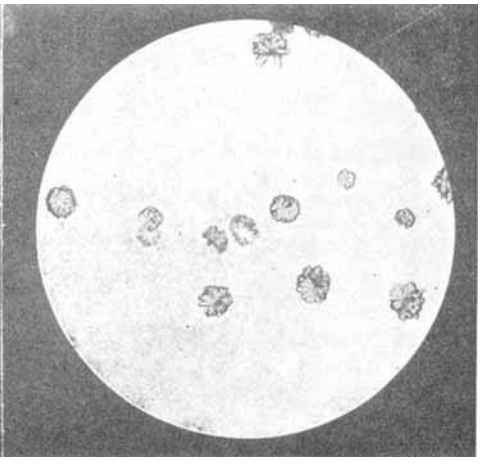

Fig. 2—Crystals Formed with Sodium Salicylate (×100).

SODIUM SALICYLATE.

No precipitate in the 1 : 1000 or the 1 : 500 solutions but upon stirring the latter with a glass rod, great numbers of small rods or rosettes of same are formed.

In the 1 : 1000 solution rosette crystals are quickly formed and these crystals are similar to those obtained from the heavy amorphous precipitate in the 1 : 50 solution (Fig. 2).

PLATINUM CHLORIDE.

A precipitate from which crystal rosettes are slowly formed is found only in the 1 : 50 solution (Fig. 3).

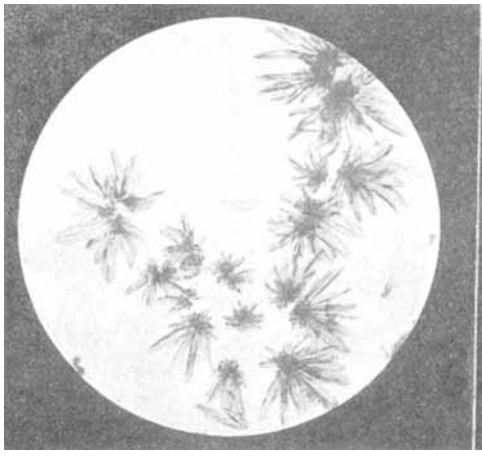

Fig. 3—Crystals Formed with Platinum Chloride (×75).

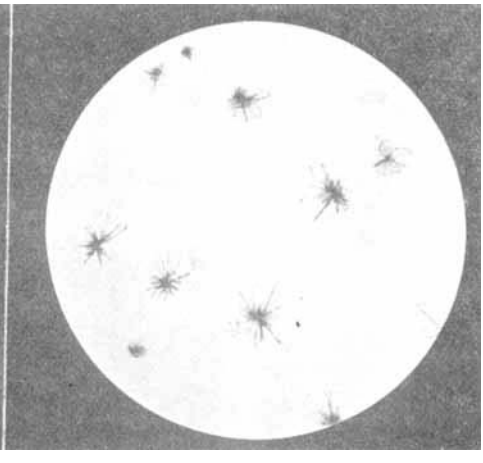

Fig. 4—Crystals Formed with Palladous Chloride (×150).

PALLADOUS CHLORIDE.

A non-crystalline precipitate is formed in the 1 : 200 and 1 : 500 solutions but not in the 1 : 1000 solution. In the 1 : 50 solution crystal rosettes grow slowly from the heavy precipitate first thrown down (Fig. 4).

MERCURIC CHLORIDE.

No precipitates in any but the 1 : 50 solution. This latter crystallizes slowly into large rosettes. Stir the slide with a glass rod and the crystalline formation is then rapid (Fig. 5).

The five photographic reproductions herewith published are all from the reactions with the 1 : 50 solution of Beta-Eucaine hydrochloride.

MICROCHEMICAL LABORATORY,
BUREAU OF CHEMISTRY,
U. S. DEPARTMENT OF AGRICULTURE,
WASHINGTON, D. C.

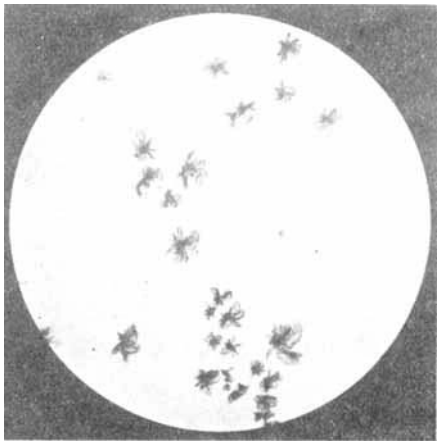

Fig. 5—Crystals Formed with Mercuric Chloride (×75).