A REACTION FOR CAULOPHYLLIN.

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(Read at the Meeting, May 3, 1911.)

CAULOPHYLLIN is a brownish-grey powder prepared from the Blue Cohosh (*Caulophyllum thalictroides*), the rhizome and roots of which were formerly included in the United States Pharmacopœia. It is prepared by precipitating the resins from an alcoholic tincture with water, and collecting and drying the precipitate. It is used chiefly by homeopaths and herbalists. According to Squire's "Companion to the British Pharmacopœia" (1908 edition, p. 349), caulophyllin has been recommended as an emmenagogue, sedative, diuretic and anthelmintic, and is best given in the form of a pill in doses of from 1 to 4 grains. It is also reputed to be used as an abortifacient (see Taylor's "Principles and Practice of Medical Jurisprudence," 5th edition, vol. ii., p. 167). A sample of caulophyllin which I examined contained :

Moisture (loss at 100° C.)	8.0
Matters soluble in 80 per cent. alcohol	72.5
Matters insoluble in 80 per cent. alcohol	19.5
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	100.0
Total matter soluble in cold water	51.5

In the course of an investigation, in which I assisted Dr. Dyer, into the composition of certain pills which were stated to contain this drug, it became important to find, if possible, some specific test for caulophyllin, no distinctive test for its recognition having, apparently, been hitherto recorded. After several unsuccessful attempts the following test was arrived at: Five c.c. of an alcoholic extract, obtained by digesting 0.1 gm. of caulophyllin in 25 c.c. of 80 per cent. alcohol and filtering, are evaporated to dryness on the water-bath in a flat porcelain capsule. The residue is taken up with

1 c.c. of water, and broken up with a flat-headed rod. Two c.c. of concentrated sulphuric acid are then slowly added, and the mixture well stirred. An intense purple-blue colour is produced within five minutes. (With some specimens of caulophyllin the colour is more inclined to reddish purple.) When testing a mixture of drugs (as, for example, a compound pill), 0.1 gm. of the pill is repeatedly extracted with 80 per cent. alcohol, filtered, and the filtrate evaporated in a porcelain capsule. The residue is broken up with 1 c.c. of water, and 2 c.c. of concentrated sulphuric acid are added. If caulophyllin be present, a distinct blue colour will be shown at the edges after a few minutes. The reaction is best seen by daylight, or by the light of burning magnesium.

The reaction appears to be characteristic of this resin, or of some constituent of it. The resins of many other drugs which were tested at the same time did not give the reaction.

DISCUSSION.

Dr. WILLCOX congratulated the author on the discovery of this reaction. The colour was very characteristic, and was produced quite definitely in the case of a mixture. He thought that the reaction might possibly be produced by other substances, and he did not imagine that the author would claim for it that it was characteristic of caulophyllin and of nothing else. In the case referred to, however—in which he (Dr. Willcox) had also been concerned—the test afforded valuable aid, for while the reaction was not given by the pills in question, it was given with certainty by pills made up according to the formula which was stated to have been followed, this formula containing caulophyllin with other drugs.