

LETTER TO THE EDITOR

Crystalline Emetine

SIR.—Although salts of emetine have been used in medicine for many years and the chemistry of the base has been extensively studied^{1,2}, the alkaloid is described in the literature as amorphous and, as far as we are aware, crystalline emetine has not been reported³. It is therefore of interest to record that some emetine, isolated by us during the manufacture of the hydrochloride, separated from solution as a mass of crystalline prisms. The manufacturing process had been carried out previously on many occasions but an amorphous alkaloid had always been obtained. The crystals may be used to bring about the crystallisation of further batches of alkaloid, for when concentrated solutions of the amorphous base in organic solvents (ether, toluene and xylene) are seeded, crystalline emetine separates on standing. Moreover, if a solution of emetine hydrochloride is treated with excess of ammonia solution and a few crystals of emetine added, the amorphous alkaloid first precipitated gradually changes to the crystalline form, when the mixture is stirred occasionally during several hours.

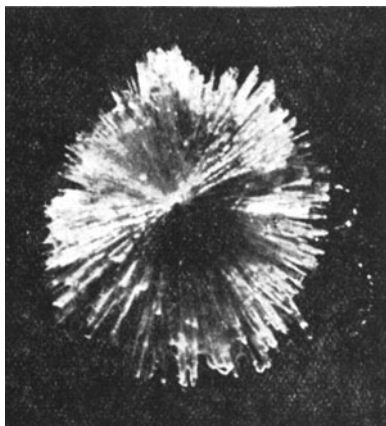


FIG. 1. Crystalline emetine.

A sample of crystalline emetine, a photograph of which is shown in Figure 1, gave the following results on analysis:—loss when dried to constant weight over phosphorus pentoxide, 0.75 per cent.; content of $C_{29}H_{40}O_4N_2$ by titration with standard acid, 100.2 per cent. calculated with reference to the anhydrous substance; m.pt., 104° to 105° C.; specific rotation $[\alpha]_D^{20} c. -24.4^\circ$ ($c. 1.8$ for anhydrous substance in ethanol (50 per cent.);

specific rotation of the hydrochloride prepared from base $[\alpha]_D^{20} c. +17.7^\circ$ ($c. 5.0$ for anhydrous hydrochloride in water); found for anhydrous substance C, 72.42; 72.40; H, 8.50 8.37; N, 5.99, 5.90. $C_{29}H_{40}O_4N_2$ requires C, 72.49; H, 8.39; N, 5.83 per cent.

It will be noted that the melting point is higher than that previously recorded (74° C.) for the amorphous base³.

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REFERENCES

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2. Hesse, *Liebigs Annalen*, 1914, **405**, 1.
3. Henry, "*The Plant Alkaloids*," 4th Ed., J. and A. Churchill, London, 1949, p. 396.