A NOTE ON THE AROMATIC PRINCIPLE OF *TYLOPHORA INDICA* (BURM. f.) MERR.

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The previous examination of *Tylophora indica* (Burm. f.) Merr. (syn. *asthmatica* Wight and Arn.) by Hoopers' or by Ratnagiriswaran and Venkatachalam[2] does not record the presence of any aromatic constituent, though the plant as a whole, particularly the root, has a pleasant characteristic odour resembling somewhat that of vanillin.

It is now found that when the air-dried root powder is subjected to steam distillation, a colourless crystalline solid along with a little oil distils over, the yield being 0·18 per cent. But a better yield, 0·26 per cent., is obtained, if the material were to be first percolated with alcohol, and the extract, after removal of the solvent, is distilled with steam. From the distillate the crystalline solid is filtered, and from the mother-liquor the oil is recovered through ether extraction.

The solid, which forms 85 per cent. of the total essential oil, is sparingly soluble in cold water, more so in hot water and readily in organic solvents. From dilute alcohol it crystallises in rectangular plates, melting at 42°. It dissolves readily in dilute sodium hydroxide; in aqueous alcoholic solution it produces a deep purplish-red colour, indicating its phenolic nature. The formation of the phenyl hydrazone, m.p. 137–38°, and the oxime, m.p. 138°, shows the presence of an aldehyde group. These properties, as also its composition ($C_7H_5O_2 \cdot OCH_3$), reveal the identity of the compound as *p*-methoxy salicylaldehyde (4-O-methyl resorcylic aldehyde), and this has been confirmed by comparison with an authentic sample kindly supplied by Prof. T. R. Seshadri of the Andhra University.

p-Methoxy salicylaldehyde has been reported to be present in the roots of some plants belonging to the family Asclepiadaceæ, namely, a species of *Chlorocodon*,[3] *Decalepis hamiltonii* Wight and Arn.,[4] and *Hemidesmus indicus* Br.[5] Its presence in *Tylophora indica* is a further addition.

The aldehyde has a sweet and agreeable odour, a mild pungent taste and is said to possess powerful bacteriostatic properties. It has, therefore, been suggested to be a good natural preservative for the preservation of food.[6]

The oily part of the essential oil, after the removal of any dissolved *p*-methoxy salicylaldehyde by treatment with dilute sodium hydroxide, is a viscous oil having the same characteristic smell as that of the roots. On standing it deposits a small amount of a waxy solid. On account of the low yield of these substances, they have not been characterized.

The stems and leaves of the plant also yield the same essential oil but in smaller amount.

References

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