

ALKALOIDS OF ANTHOCERCIS FRONDOSA (SOLANACEAE)

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The Australian genera Duboisia, Anthocercis and Anthotroche, originally included in the Salpiglossideae of Wettstein's (1895) classification of the Solanaceae, are now considered to be more suitably placed in a separate tribe (Haegi 1979a). Because these genera are currently the subject of taxonomic revision, and also have pharmaceutical significance, a knowledge of their alkaloid characteristics could be of value. As part of a more extensive study we report here on the alkaloids of Anthocercis frondosa (Miers) J.M. Black, a shrub native to western Victoria.

Samples of the basified dried, powdered leaves (150 g), stem-bark (145 g) and roots (62 g) were separately extracted and the alkaloid mixture so obtained fractionated by standard chromatographic procedures. The alkaloids were characterised by data including R_F values; melting and mixed melting points of picrates; i.r., mass and p.m.r. spectroscopy; and by microanalysis.

The leaves contained nicotine (0.05%) together with hyoscyne (0.02%), hyoscyamine (0.005%) and smaller proportions of norhyoscyamine, tropine, anabasine, nor nicotine and other unidentified bases. Hyoscyne (0.01%), hyoscyamine (0.005%), nicotine (0.002%), apohyoscyne (0.001%) and traces of apoatropine and tropine constituted the alkaloid mixture of the stem-bark. The alkaloids of the roots were hyoscyne (0.02%), hyoscyamine (0.01%) and nicotine (0.01%) together with minor amounts of apohyoscyne (0.002%), apoatropine and unidentified bases.

In so far as the genus has been studied the presence of tropane alkaloids in A. frondosa is consistent, nicotine is also a principal alkaloid of the leaves of A. tasmanica (Bick et al 1974) and it is perhaps significant that based on morphological and cytological grounds, some members of Anthocercis are closely related (Haegi 1979b) to Duboisia, also a tropane and nicotine alkaloid-producing genus. In contrast, the two species A. littorea and A. viscosa contain no nicotine and exhibit a wider spectrum of tropane alkaloid production (Evans & Treagust 1973) than do either A. frondosa or A. tasmanica.

A voucher specimen (Haegi 1450) of A. frondosa is deposited in the National Herbarium of N.S.W. Sydney. We are greatly indebted to Mr. L. Haegi (National Herbarium, Sydney) and to Mr. D. Symon (Waite Agricultural Research Institute, Adelaide) for authenticating and supplying plant material.

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