

ALKALOIDS OF *ARGYRODENDRON PERALATUM* (STERCULIACEAE):
IDENTIFICATION OF *N*^α-CINNAMOYLHISTAMINE

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Argyrodendron peralatum (F. M. Bail.) H. L. Edlin ex J. H. Boas is a large tree of the family Sterculiaceae often attaining a height of 40–45 m, and it is quite common in the tropical rain forests of the Atherton Tableland and foothills of Mt. Bartle Frere in northern Queensland. A systematic examination of the leaves was begun in these laboratories when ethanolic extracts were found to have significant activity against Sarcoma 180 and Walker carcinosarcoma 256 implanted in mice. The anti-tumour activity is associated with the tannins in the extract (1.1% of the leaf). As tannins, in general, are considered to be of no clinical use, they were not examined further.

The leaves and stems afford a very low yield of crude alkaloids (0.008%), but there is only one major constituent that has been identified as *N*^α-cinnamoylhistamine. The same alkaloid has previously been isolated from *Acacia argentea* and *Acacia polystacha*¹ (family Leguminosae) and from a *Glochidion* sp. aff. *G. philippicum* (Cav.) C. B. Rob.² (family Euphorbiaceae). Earlier studies of plants of the family Sterculiaceae have shown that *Melochia corchorifolia*³ and *Waltheria americana* L.⁴ contain complex cyclic peptide alkaloids, but alkaloids of this type have not been detected in *A. peralatum*.

Experimental

Extraction of dried leaves and stems of *A. peralatum* (Voucher specimen IC 1,966) (7.5 kg) by the method previously described⁵ gave a crude alkaloid fraction (0.6 g) which still contained some non-alkaloidal material. Thin-layer chromatography on plates of Kieselgel G in the solvent system chloroform–methanol (9 : 1), and spraying with Dragendorff's reagent revealed the presence of only one distinct spot (R_F 0.27). Preparative thin-layer chromatography gave *N*^α-cinnamoylhistamine (c. 50% of the total crude alkaloid fraction) as colourless crystals, which after recrystallization from water melted at 178–179°. The i.r., n.m.r., and mass spectra were identical with those of synthetic *N*^α-cinnamoylhistamine,¹ and the m.p. of a mixed sample was undepressed.

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¹ Fitzgerald, J. S., *Aust. J. Chem.*, 1964, **17**, 375.

² Johns, S. R., and Lamberton, J. A., *Aust. J. Chem.*, 1967, **20**, 555.

³ Tschesche, R., and Reutel, I., *Tetrahedron Lett.*, 1968, 3817.

⁴ Pais, M., Marchand, J., Jarreau, F.-X., and Goutarel, R., *Bull. Soc. chim. Fr.*, 1968, 1145.

⁵ Johns, S. R., Lamberton, J. A., and Sioumis, A. A., *Aust. J. Chem.*, 1966, **19**, 2331.

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