

SHORT COMMUNICATIONS

THE CONSTITUENTS OF *LEGNEPHORA MOOREI* F. MUELL.*

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Legnephora moorei F. Muell., family Menispermaceae, is a robust vine with stems and roots up to 9 in. in diameter, which occurs infrequently in the rain-forest and "dry" rain-forest areas of eastern Australia. A Prollius extract of the root-bark gave faintly positive alkaloid tests, but strong tests were obtained on a 2 per cent. hydrochloric acid extract. These preliminary tests indicated that a water-soluble quaternary alkaloid was probably present and this was confirmed by a large-scale extraction which yielded *isocorydine* methiodide. It is interesting to note that the first natural occurrence of this alkaloid was recently recorded in the Australian species *Zanthoxylum brachyacanthum* F. Muell. (Cannon *et al.* 1953). The cyclitol, *d*-quercitol (named (+)-*protoquercitol* by Angyal and Macdonald 1952) was also isolated in small yield.

Experimental

Analyses are by Miss J. Fildes, University of Sydney.

(a) *Extraction*.—The dried milled root-bark (9 kg.) was exhausted with methanol in a continuous extractor and the extract concentrated to 1500 cc. After standing for several weeks in a refrigerator the brown liquid had deposited a mixture of crystals and amorphous material. By swirling with a little methanol the lighter amorphous material was separated from the heavier crystals, which were subsequently identified as *d*-quercitol (0.025% yield).

The mother liquors were concentrated as far as possible under reduced pressure and the black viscous residue extracted with several portions of hot 1% hydrochloric acid until alkaloid tests were negative. The extract was kept for 2 days in the refrigerator, then saturated with potassium iodide, filtered, and exhausted with chloroform. Evaporation of the chloroform left the crude alkaloid as colourless needles (0.1% yield).

(b) *Identification of d-Quercitol*.—Crystallization from 70% aqueous methanol gave colourless prisms, m.p. 234 °C., $[\alpha]_D^{20} + 22^\circ$ (c, 1.14% in water) which gave an iodoform test (Found: C, 43.7; H, 7.7%. Calc. for $C_6H_{12}O_5$: C, 43.9; H, 7.4%). According to van der Haar (1922) *d*-quercitol gives an iodoform test and has m.p. 233–234 °C., $[\alpha]_D^{25} + 24^\circ$.

Benzoylation in pyridine with benzoyl chloride gave the pentabenzoyl derivative which was recrystallized from ethanol as colourless needles, m.p. 155 °C., $[\alpha]_D^{15} + 59.5^\circ$ (c, 1.16% in chloroform). Bauer and Moll (1942) record m.p. 155 °C., $[\alpha]_D^{23} + 61.4^\circ$.

(c) *Identification of isoCorydine Methiodide*.—The crude alkaloid was recrystallized first from dilute aqueous potassium iodide and then from absolute ethanol giving colourless needles, m.p. 229 °C. (decomp.), $[\alpha]_D^{20} + 132^\circ$ (c, 1.71% in water) (Found: C, 52.0; H, 5.4; N, 2.5; I, 26.5%. Calc. for $C_{21}H_{26}O_4NI$: C, 52.3; H, 5.5; N, 2.9; I, 26.2).

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The values recorded for *isocorydine* methiodide are m.p. 224–225 °C. (Barger and Sargent 1939) and $[\alpha]_D^{20} + 143.3^\circ$ (c, 1.02% in 50% ethanol) (Gadamer 1911). The ultraviolet absorption spectrum and the X-ray powder photograph were respectively identical with those of an authentic specimen.

Methylation of the alkaloid by the method of Cannon *et al.* (loc. cit.) gave colourless needles, m.p. 258 °C. (decomp.), $[\alpha]_D^{24} + 180^\circ$ (c, 0.48% in water). An authentic sample had m.p. 258 °C. (decomp.), $[\alpha]_D^{25} + 180^\circ$ (c, 0.48% in water).

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