

## ALKALOIDS OF THREE *PALMERIA* SPECIES (MONIMIACEAE)

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The earlier investigation<sup>1</sup> of *Palmeria* species has been extended to the leaf and stem alkaloids of *Palmeria arfakiana* Becc. (voucher number TGH 11709), a tropical liana from New Guinea. Examination of the alkaloids by thin-layer chromatography indicated the presence of laurotetanine as by far the major constituent, with only a relatively slight amount of *N*-methyllaurotetanine. The presence of laurotetanine has been confirmed by its isolation and characterization as *N*-acetyllaurotetanine.

Laurotetanine and *N*-methyllaurotetanine have already been reported<sup>1</sup> as bark alkaloids of a *Palmeria* species (herbarium voucher numbers TGH 11958 and TGH 12470) which has now been determined as *P. gracilis* Perkins but in the earlier publication<sup>1</sup> was named as *P. fengeriana* Perk. The same two alkaloids have been obtained from the bark of a *Palmeria* species (herbarium voucher number NGF 24998) identified as close to TGH 12470, but botanically different in having stellate hairs on the underside of the leaves. Another alkaloid which coincided in *R<sub>F</sub>* with laurotisine was detected in the bark alkaloids from NGF 24998 by thin-layer chromatography.

### *Experimental*

(i) Crude alkaloids (0.7 g) were isolated from leaf and stem (1.5 kg) of *P. arfakiana* by the method described previously.<sup>1</sup> Chromatography on alumina as described in the earlier study gave the main series of fractions (0.5 g) eluted by chloroform-methanol mixtures, as essentially pure laurotetanine. Its identity was confirmed by conversion in quantitative yield into *N*-acetyllaurotetanine, m.p. and mixed m.p. 143–144°,  $[\alpha]_D +336^\circ$  (c, 0.05 in CHCl<sub>3</sub>). Examination by t.l.c. of the relatively small chromatographic fractions eluted by benzene-chloroform indicated the presence of *N*-methyllaurotetanine, but the amount was too small for detailed characterization. The i.r. and n.m.r. spectra of this material were consistent with its being largely *N*-methyllaurotetanine.

(ii) The crude bases (1.5 g) from the bark (0.5 kg) of *Palmeria* NGF 24998 were chromatographed as above, and yielded 50 mg of *N*-methyllaurotetanine, obtained as a colourless gum  $[\alpha]_D +80^\circ$  (c, 0.5 in CHCl<sub>3</sub>), having i.r. and n.m.r. spectra identical with those of *N*-methyllaurotetanine, and 0.8 g of laurotetanine which was converted into *N*-acetyllaurotetanine, m.p. 143–144°,  $[\alpha]_D +340^\circ$  (c, 0.10 in CHCl<sub>3</sub>). The identity of *N*-acetyllaurotetanine was confirmed by a mixed m.p. determination and by comparison of i.r. and n.m.r. spectra. Thin-layer

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<sup>1</sup> Johns, S. R., Lambertson, J. A., and Sioumis, A. A., *Aust. J. Chem.*, 1967, **20**, 1787.

chromatography on silica gel with chloroform-methanol (9 : 1) as solvent indicated the probable presence of laurolitsine,  $R_F$  value 0.09. Fractions containing this alkaloid were not obtained free from laurotetanine.

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