

THE ALKALOIDS OF *MITRELLA KENTII* (ANNONACEAE)

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Mitrella kentii (Bl.) Miq. of the family Annonaceae is a tree-climbing liana, found in the oak-forests of New Guinea. The alkaloidal constituents of this species have not previously been examined though field tests¹ indicated their presence in the bark. Thin-layer chromatograms of the crude alkaloid mixture (yield: 0.063% of dry weight) resembled those originating from *Schefferomitra subaequalis*,² another New Guinean liana of the same plant family. In fact all four alkaloids isolated were also present in *S. subaequalis*. The three main constituents were identified as liriodenine, anonaine, and asimilobine by direct comparison with authentic specimens. The fourth, minor, alkaloid was shown to be identical with aequaline.

Experimental

Extraction of the Alkaloids

M. kentii (Bl.) Miq. (TGH 11488) was collected from steep mountain slopes (elevation: 1400 m) at Kuali Creek, c. 5 miles south of Wau, in the Morobe District of New Guinea. Extraction of the dried, milled bark (2.7 kg), as described for *S. subaequalis*,² gave 1.7 g crude alkaloids. They were separated by chromatography on deactivated alumina; chloroform, with increasing methanol content, was used as eluent. The R_f data refer to 9:1 chloroform-methanol on Kieselgel G.

Liriodenine and Anonaine

The first few fractions from the alumina column showed the presence of two components (R_f 0.95 and 0.53). Trituration of the mixture with acetone gave, on recrystallization from chloroform, the yellow liriodenine, m.p. 281–284°C,³ identical with (mixed m.p. and i.r. spectrum) an authentic specimen. Rechromatography of the mother liquors on a silica column gave—after removal of an additional amount of liriodenine—anonaine, isolated as its hydrochloride salt, m.p. 270–275°C (dec.).⁴ It was identical with (mixed m.p. and i.r. spectrum) an authentic specimen.

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¹ Lamberton, J. A., personal communication.

² Gellert, E., and Rudzats, R., *Aust. J. Chem.*, 1972, **25**, 2477.

³ Taylor, W. I., *Tetrahedron*, 1961, **14**, 42.

⁴ Barger, G., and Weitnauer, G., *Helv. chim. Acta*, 1939, **22**, 1036.

Asimilobine

The intermediate fractions from the alumina column yielded a base (R_F 0.28) isolated as its hydrochloride salt, m.p. 244–246°C. Basification gave asimilobine, m.p. 176°C,⁵ identical with (mixed m.p. and i.r. spectrum) an authentic specimen.

Aequaline

The final fractions from the alumina column contained several minor components. Those containing the one with R_F 0.68 were rechromatographed on a preparative t.l.c. plate. Extraction of the appropriate zone gave c. 5 mg oil which was converted into its hydrochloride salt, m.p. > 220°C (dec.). Its identity with aequaline was established by comparison (u.v. and mass spectra, and t.l.c. behaviour in five solvent/absorbent systems) with an authentic specimen.

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⁵ Johns, S. R., Lamberton, J. A., Li, C. S. and Sioumis, A. A., *Aust. J. Chem.*, 1970, **23**, 363.