

ALKALOIDS OF ACACIA*

I. N_bN_b -DIMETHYLTRYPTAMINE IN *ACACIA PHLEBOPHYLLA* F. MUELL.

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Acacia phlebophylla F. Muell. of the family Leguminosae, subfamily Mimosoideae, has not previously been examined for the presence of alkaloids. The species is unique as it is found only in a narrow range of altitude on Mount Buffalo, Vic. The leaves yielded about 0.3% of N_bN_b -dimethyltryptamine. Thin-layer chromatography of crude extract indicated that this was the only base present.

N_b -methyltryptamine and N_bN_b -dimethyltryptamine have been found in *Acacia maidenii*,¹ as well as in other genera of Leguminosae (*Mimosa*,² *Piptadenia*,² and *Lespedeza*), in the Apocynaceae (*Prestonia*), in the Chenopodiaceae (*Anthrophytum*² and *Girgensohnia*) and in the Gramineae (*Phalaris*).

Experimental

Melting points are uncorrected; microanalyses were performed by the Australian Micro-analytical Service, Melbourne.

Isolation of the Alkaloid

Leaves of *A. phlebophylla* gave a very strong test with both Mayer's reagent and silicotungstic acid reagent in a standard field test for alkaloids.⁴ The plant tops, collected at Mount Buffalo, were oven-dried (60°) and milled, and 12 kg extracted by repeated maceration with methanol. The extract was concentrated, an equal volume of dilute sulphuric acid added, and after filtration the filtrate was made basic with ammonia. Extraction with chloroform gave a crude alkaloid solution. The alkaloid was extracted back into dilute sulphuric acid, the acid fraction basified with ammonia, and extracted with chloroform. The chloroform was evaporated off to give the alkaloid (40 g, 0.3% dry wt.). It was purified from coloured material by elution with 2% methanol/benzene from a column packed with neutral alumina. A crystalline fraction was obtained.

N_bN_b -Dimethyltryptamine

Thin-layer chromatography of both the crude and purified base on alumina, using 10% methanol/benzene, gave a single spot, R_F 0.45, which corresponded to that of an authentic sample of N_bN_b -dimethyltryptamine. The base recrystallized readily from light petroleum, m.p. 44° (lit.² m.p. 48–49°) (Found: C, 77.2; H, 8.6; N, 14.6. Calc. for $C_{12}H_{16}N_2$: C, 76.6; H, 8.6; N, 14.9%). Picrate, yellow crystals, m.p. 169° (lit.³ m.p. 170°). During recrystallization the picrate showed the typical colour changes previously reported for the picrate of N_bN_b -dimethyl-

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¹ Fitzgerald, J. S., and Sioumis, A. A., *Aust. J. Chem.*, 1965, **18**, 433.

² Boit, H.-G., "Ergebnisse der Alkaloid-Chemie bis 1960." p. 478. (Akademie-Verlag: Berlin 1961.)

³ Culvenor, C. C. J., Dal Bon, R., and Smith, L. W., *Aust. J. Chem.*, 1964, **17**, 1301.

⁴ Culvenor, C. C. J., and Fitzgerald, J. S., *J. pharm. Sci.*, 1963, **52**, 303.

tryptamine¹ (Found: C, 52.1; H, 4.6; N, 17.0; O, 27.1. Calc. for $C_{12}H_{16}N_2, C_6H_3N_3O_7$: C, 51.8; H, 4.6; N, 16.8; O, 26.8%).

The infrared spectrum of the base was identical with that of an authentic sample of N_8N_6 -dimethyltryptamine. The nuclear magnetic resonance spectrum of the base was interpreted as that of N_6N_6 -dimethyltryptamine and was consistent with published data.⁵

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⁵ Cohen, L. A., Daly, J. W., Kny, H., and Witkop, B., *J. Am. chem. Soc.*, 1960, **82**, 2184.