

## METELOIDINE FROM *ERYTHROXYLUM AUSTRALE* F. MUELL.\*

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*Erythroxylum australe* F. Muell. (family Erythroxylaceae) has been reported to give strongly positive field tests for alkaloids, although there appeared to be considerable variation in alkaloid content with place of collection and season.<sup>1,2</sup> Evidence has been quoted<sup>3</sup> that cocaine-like alkaloids may be present, but detailed examination of the alkaloids had not been made. It has now been found that the major alkaloid and the one most readily isolated is meteloidine, 6 $\beta$ ,7 $\beta$ -dihydroxy-3-tigloyloxytropine. The total alkaloids are a complex mixture composed chiefly of tiglate esters with only a small proportion of benzoate. Drastic hydrolysis of the total alkaloids afforded no tropine, but only bases (presumably dihydroxy or trihydroxy tropanes) which were not extracted from aqueous solution into chloroform.

The occurrence of meteloidine in *E. australe* may be of chemotaxonomic interest, as meteloidine has been found previously in a number of *Datura* species of the family Solanaceae<sup>4</sup> but not in the family Erythroxylaceae.

### Experimental

The total non-quaternary alkaloids were extracted from 460 g milled dried leaves of *E. australe* in 0.8% yield by the method already described.<sup>5</sup> Chromatography on weak neutral alumina with benzene and benzene/ether solvent mixtures gave a series of non-crystalline fractions which were in every instance mixtures of several components, but chloroform eluted several crystalline fractions amounting to 30–40% of the original mixture. Crystallization from a small volume of acetone gave meteloidine as colourless prisms, m.p. 141–142° (Found: C, 61.3; H, 8.3; N, 5.5. Calc. for C<sub>13</sub>H<sub>21</sub>NO<sub>4</sub>: C, 61.5; H, 8.3; N, 5.4%). Meteloidine was characterized spectroscopically, and its identity was confirmed by direct comparison with authentic specimens of meteloidine and meteloidine picrate, m.p. 177–178°.

The total alkaloids, like the individual fractions collected from the chromatographic column, and meteloidine had i.r. spectra (CCl<sub>4</sub>) typical of a tiglate ester. The n.m.r. spectrum showed strong peaks typical of tiglate esters. Hydrolysis of the total alkaloids gave tiglic acid and a small amount of benzoic acid, which were detected by gas chromatography of the methyl esters.

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<sup>1</sup> Webb, L. J., CSIRO Aust. Bull. No. 268, p. 40 (1952).

<sup>2</sup> Webb, L. J., CSIRO Aust. Bull. No. 241, p. 21 (1949).

<sup>3</sup> Webb, L. J., CSIRO Aust. Bull. No. 232, p. 51 (1948).

<sup>4</sup> Boit, H.-G., "Ergebnisse der Alkaloid-Chemie bis 1960." p. 65. (Akademie-Verlag: Berlin 1961.)

<sup>5</sup> Johns, S. R., Lambertson, J. A., and Sioumis, A. A., *Aust. J. Chem.*, 1966, **19**, 2331.