

Some Extractives from the Leaves of *Bosistoa sapindiformis* (Rutaceae)

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Abstract

From the leaves of *Bosistoa sapindiformis* F. Muell. (Rutaceae) small amounts of taraxerol, sawamilletin and β -sitosterol were isolated.

The isolation of several uncommon chromens and the triterpene, bosistoin, $C_{34}H_{58}O$, which was found to have an unusual skeleton, from the leaves of *Bosistoa euodiformis* F. Muell.¹ prompted an examination of the leaves of *B. sapindiformis* F. Muell. This species is a small tree up to about 13 m in height and it occurs in eastern Australia from the Clarence River in New South Wales to northern Queensland.

Previous work on this species has been restricted to tests for alkaloids in the leaves.² None were detected and this result was confirmed in the present work. The only substances isolated were taraxerol, its methyl ether, sawamilletin and the inevitable β -sitosterol, all in very small yield.

Experimental

Melting points are uncorrected. Light petroleum had b.p. 40–60°. The plant material (SN 9070) was collected at Mt Dryander, northern Queensland.

Extraction of the Leaves

The dried milled leaves (37 kg) were extracted at room temperature in turn with light petroleum, ether and methanol.

The light petroleum extract was concentrated and the dark residue (689 g) dissolved in ether. The solution was extracted with 2% hydrochloric acid, 5% sodium carbonate and 2% sodium hydroxide. Only negligible amounts of dark intractable products were recovered from these extracts. The neutral fraction was divided into an 'oxygenated' fraction (308 g) and a non-oxygenated fraction (317 g) by partitioning between methanol–water (9 : 1) and benzene–light petroleum (1 : 1). The latter fraction was chromatographed on alumina. After elution by light petroleum of a paraffin mixture (11.4 g) which was not further examined, light petroleum–benzene (3 : 1 to 1 : 1) eluted fractions which contained crystalline material, F1 (0.74 g), not readily soluble in ether. Mother liquors and succeeding fractions were combined, evaporated and the residue saponified with 10% ethanolic potassium hydroxide at room temperature for 5 days. The recovered neutral material was chromatographed on alumina to yield a further amount of F1 (0.27 g) and β -sitosterol

¹ Webb, L. J., CSIRO (Aust.) Bull., No. 241, p. 45 (1949); No. 268, p. 80 (1952).

² Croft, J. A., Ritchie, E., and Taylor, W. C., *Aust. J. Chem.*, 1975, 28, 2019.

(0.12 g), colourless plates from ethanol, m.p. and mixed m.p. 138–140°. The 'oxygenated' fraction on chromatography on alumina gave no crystalline fractions. The eluates were combined and evaporated. The residue (194 g) was saponified as above and the recovered neutral fraction chromatographed on alumina. Ethyl acetate–benzene (1 : 50) eluted crystalline material, F2 (0.2 g), but other eluates yielded no solid material.

The ether extract was concentrated and fractionated as above. Again the basic and acidic fractions were negligible and the phenolic fraction (19.4 g) was intractable. The neutral fraction (47 g) on chromatography yielded a further amount of F1 (1.2 g) but no other solid material.

The methanol extract was concentrated to a syrup which was shaken with water and ether when much dark tar was precipitated. The ether layer on treatment as above yielded no individual substance.

Fraction F1 (yield 0.006%) on recrystallization from benzene afforded colourless plates, m.p. 280°, undepressed on admixture with an authentic sample of sawamilletin of the same m.p.; the i.r. and n.m.r. spectra of the two samples were also identical.

Fraction F2 (yield 0.0005%) formed colourless plates from benzene, m.p. 278–280°, undepressed by authentic taraxerol of the same m.p.; the i.r. and n.m.r. spectra of the samples were also identical.

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