

Triterpene Constituents of *Alstonia neriifolia* D. Don*

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The chemical investigation of the stem-bark of *Alstonia neriifolia* revealed the presence of two alkaloids, nerifoline and echitamine. The non-alkaloidal constituents were separated by chromatography and identified as lupeol and β -amyrin.

The chemical investigation of the stem-bark of *Alstonia neriifolia* revealed the presence of two alkaloids, nerifoline** and echitamine^{2,3,4,5}. The non-alkaloidal constituents isolated from petrol extract of the plant material were separated by repeated chromatography and identified as lupeol and β -amyrin. The alcoholic extract of the defatted stem-bark yielded nerifoline and echitamine.

EXPERIMENTAL

Extraction and preliminary separation of the triterpenes. The dried and milled stem-bark (1 kg) was continuously extracted with light petroleum (b. p. 60-80°) (soxhlet) for 24 hrs. Evaporation of the solvent left a brown, gummy residue, which yielded lupeol and β -amyrin on chromatographic resolution but experimental difficulties were encountered due to the presence of an appreciable amount of saponifiable constituents in the gummy residue. So the latter was chromatographed after hydrolysis. It was saponified with alcoholic potassium hydroxide (20%, 250 ml) for 24 hrs. and the reaction mixture was diluted with water (500 ml). The unsaponifiable material was filtered, washed and dried (12 g). A portion (1g) of the crude triterpene was chromatographed over Brockmann neutral alumina. Upon elution with light petroleum, a solid A (0.4 g), m.p. 150-182°, preceded by a non-crystallizable oil, was obtained. Further elution of the column with benzene/light petroleum (1:2) afforded the solid B (0.35 g), m.p. 170-183°.

The solid A was rechromatographed on alumina. Elution with light petroleum gave a very small of a solid, m.p. 140-170°, which was not further processed. The column upon further elution with benzene/light petroleum (1:1) gave a colorless solid (0.32 g), m.p. 190-210° which crystallized from acetone in needles, m.p. 214-215°, (α)_D +27°.

*Taken from the D. Phil. thesis of S. K. R., Calcutta University, 1959.

**Nerifoline is not an artifact as isolation procedure under various conditions yielded the same nerifoline.

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(Found: C, 84.21; H, 11.45. Calc. for $C_{30}H_{50}O$: C, 84.50; H, 11.73%). It formed an acetate, m.p. 216° and a benzoate, m.p. 262°. Its identity with lupeol was established by the mixed m.p. with an authentic sample of lupeol.

Chromatographic purification of the solid B by similar method as above gave the solid (0.31g), m.p. 189-195°, which crystallized from acetone in colourless needles, m.p. 198°, (α)_D +89°. (Found: C, 84.38; H, 11.52. Calc. for $C_{30}H_{50}O$: C, 84.50; H, 11.73%). Mixed m.p. determinations of this compound, its acetate, m.p. 240-241° and benzoate, m.p. 233-234° respectively, with authentic β -amyrin, its corresponding derivatives remained undepressed.

Alcoholic extract of the bark was worked in the usual way for the isolation of alkaloids. The basic portion yielded a mixture of nerifoline and echitamine which could be separated in pure state by repeated fractional crystallisation. The purity of the sample was determined by paper chromatography and also by T.L.C.

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