SHORT COMMUNICATIONS

THE CHEMICAL CONSTITUENTS OF AUSTRALIAN *FLINDERSIA* SPECIES*

XII. THE CONSTITUENTS OF FLINDERSIA XANTHOXYLA DOMIN.

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Flindersia xanthoxyla Domin. (syn. Flindersia oxleyana F. Muell.), a large tree ranging from the Richmond River, N.S.W., northward into Queensland, is also commonly known as long jack because of its long clean stem. The timber, which is used in joinery, in shipbuilding, and sometimes in cabinet work, has a light to pronounced yellow colour, which occasions another vernacular name, yellow wood. It is stated by Maiden (1889)[‡] to yield a useful yellow dye.

This paper records the results of a systematic extraction of the bark, leaves, and wood. No pigment could be extracted from the wood, but instead a small yield of hesperidin (0.05 per cent.) was isolated. The same substance (0.035 per cent.) was obtained from the leaves but the bark afforded hesperidin (0.1 per cent.), maculine (0.003 per cent.), flindersiamine (0.005 per cent.), and sitosterol (0.02 per cent.).

Experimental

Melting points are uncorrected. Light petroleum refers to the fraction of b.p. 60-90 °C. Infra-red spectra were determined in paraffin mulls on a Perkin-Elmer Infracord 137. The substances isolated were identified by direct comparison (mired m p.'s and infra red spectra) SHORT COMMUNICATIONS

The remaining ethereal solution was concentrated to a dark brown oil (40 g), which was mixed with methanol (100 ml). After several days the crystalline material (5 g) which had separated was collected and identified after purification as situated.

The methanol filtrate was evaporated and the residue saponified by keeping its solution in 10% aqueous alcoholic potassium hydroxide for 2 days at room temperature. The reaction mixture on working up yielded no crystalline acidic fractions but a further amount of sitosterol (1 g) was obtained by chromatography.

The ether extract was separated into basic, acidic, and neutral fractions as above. The combined light petroleum and ether basic fraction was dissolved in chloroform and the solution passed through a short column of alumina to remove dark impurities. The material (2 g) in the eluate on chromatography on alumina (60 g) yielded maculine (0.31 g) and flindersiamine (0.94 g).

No crystalline material could be obtained from the small acidic and phenolic fractions, but the neutral fraction after saponification gave sitesterol $(1 \cdot 0 g)$.

The acetone extract deposited a dark brown solid which, after washing with warm ethanol and recrystallization from a large volume of methanol, afforded hesperidin (14 g).

The acetone filtrate was concentrated and the residue shaken with ether and water. The ethereal extract on working up as above yielded maculine (0.18 g) and flindersiamine (0.8 g).

The methanol extract was treated by the same procedure as that used for the acetone extract. Hesperidin (20 g) and maculine (0.46 g) were isolated.

(b) Extraction of the Leaves.—The leaves (17 kg) were processed by the above methods. The acetone extract gave hesperidin (6 g).

(c) Extraction of the Wood.—The finely milled yellow wood (6.9 kg) yielded hesperidin (1.2 and 2.3 g) in the acetone and methanol extracts respectively.

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