

## EXTRACTIVES OF THE TERNSTROEMIACEAE\*

### I. THE OCCURRENCE OF BETULIC ACID IN TERNSTROEMIA CHERRYI (BAIL.) AND T. MERRILLIANA KOBUSKI

By J. L. COURTNEY,<sup>†</sup> J. J. H. SIMES,<sup>†</sup> and W. STERN<sup>†</sup>

Positive tests for the occurrence of free triterpenes and saponins are given by the barks of *Ternstroemia cherryi* and *T. merrilliana* which were examined as part of a phytochemical survey of Australian plants.<sup>1</sup> This communication describes the examination of the free triterpene fraction. The saponins will be dealt with in a later publication.

The free triterpene fractions were isolated by extracting the dried ethanolic extracts of the barks with ether. In both cases this fraction was found to consist almost entirely of betulic acid and no other substances could be isolated.

#### Experimental

Melting points are uncorrected. The silica gel used for chromatography was B.D.H. chromatographic grade. Infrared spectra were determined on a Perkin-Elmer 21 spectrometer.

The finely milled dried bark of *Ternstroemia cherryi* (23.8 kg) was extracted by percolation with ethanol at room temperature. The ethanolic extract was evaporated to dryness and the residue (1.43 kg) was extracted with ether. Removal of the solvent yielded the free triterpene fraction (660 g). Crystallization of this material from methanol gave betulic acid, m.p. and mixed m.p. 306–308°,  $[\alpha]_D$  (EtOH) +17.5° (c, 0.39; 2-dm tube). Treatment with diazomethane afforded methyl betulinate, m.p. and mixed m.p. 225–226°,  $[\alpha]_D$  +7° (c, 1.0). The infrared spectra of the acid and its derivatives were identical with those of authentic specimens. The mother liquors from the betulic acid crystallizations were evaporated to dryness, and the residue was dissolved in chloroform/methanol and chromatographed on silica gel. The only crystalline material which could be isolated was betulic acid.

When the milled bark (14.5 kg) of *T. merrilliana* was extracted in the same way a free triterpene fraction (180 g) was obtained. Crystallization and chromatography showed that it consisted essentially of betulic acid.

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<sup>†</sup> School of Chemistry, University of New South Wales, Kensington, N.S.W.

<sup>1</sup> Simes, J. J. H., Tracey, J. G., Webb, L. J., and Dunstan, W. J., CSIRO Aust. Bull. No. 281, 1959.