OCCURRENCE OF THE SESQUITERPENES POLYGODIAL AND GUAIOL IN THE LEAVES OF *DRIMYS LANCEOLATA* (POIR.) BAILL.*

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Drimys lanceolata, known as mountain pepper, is a shrub or small tree confined to the mountains of south-east Australia and Tasmania. The fruit is said to have been used as a substitute for pepper, and the bark as a substitute for the medicinal Winter's bark (Maiden 1889). The plant is reported to contain a cyanogenetic glycoside (Petrie 1912). The barks of South American *Drimys* species contain sesquiterpenes (Appel *et al.* 1960) and the leaves of the related New Zealand pepper plant, or Maori pain-killer, *Pseudowintera axillaris* var. *colorata* (Raoul) Smith, contain a complex mixture of terpenes in which there is sufficient eugenol to account for the hot taste of the plant (Corbett and Grant 1958).

In the present investigation it was found that freshly gathered leaves of *D. lanceolata* contain no alkaloids. The pungent material was extracted from the dried leaves by percolation with cold petroleum, and following the isolation technique used for the pungent principle of *Polygonum hydropiper* (Barnes and Loder 1962), polygodial (drim-7-en-11,12-dial), was obtained in 0·26% yield. This compound is at least partly responsible for the pungent taste of the plant. The petroleum residues contained 0·035% of guaiol; no other crystalline compounds were isolated.

Experimental

Extraction: Dried milled leaves of *D. lanceolata* (660 g) collected at Mt. Macedon, Victoria, were percolated with hexane (19 l.). Removal of the solvent left an oil (30·3 g) which was redissolved in light petroleum and then partitioned between light petroleum–70% methanol–water.

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The pungent material concentrated in the methanolic layer and was subsequently isolated as described for *Polygonum hydropiper* (Barnes and Loder 1962). In this way colourless needles of polygodial were obtained, m.p. and mixed m.p. 57 °C, $[\alpha]_D^{19}$ −126° (*c*, 2·07 in $CHCl_3$), (1·73 g; 0·26%) with an i.r. spectrum identical with that of an authentic specimen. The light petroleum residues from the partition were distilled and the fraction, b.p. 86–150 °C/0·5 mm (4·29 g), was chromatographed on silica, eluting with light petroleum, benzene–light petroleum (1 : 1), benzene, and ether. Only the fractions from benzene–petroleum crystallized. The combined crystalline material was twice recrystallized from light petroleum giving colourless needles of guaiol (230 mg; 0·035%), m.p. and mixed m.p. 91 °C, $[\alpha]_D^{22}$ −36° (*c*, 1·2 in C_6H_6), with an i.r. spectrum identical with that of an authentic specimen, and giving a 3,5-dinitrobenzoate, m.p. 137 °C. Plattner and Lemay (1940) report m.p. 137–137·5 °C for the derivative.

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