

## OCCURRENCE OF MAALIOL, ELEMOL, AND GLOBULOL IN SOME AUSTRALIAN ESSENTIAL OILS\*

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The volatile leaf oil of *Eriostemon myoporoides* DC. of the Family Rutaceae collected at Denman, N.S.W., and examined by Penfold‡ contained a crystalline sesquiterpenic alcohol which he considered to be ledol. On fractional distillation of Penfold's original sample, an alcohol was isolated from the residue, b.p.<sub>4</sub> > 80 °C. This alcohol solidified on standing, and on recrystallization from light petroleum (b.p. 50–60 °C) was shown to be the tricyclic sesquiterpenic alcohol, maaliol, m.p. 102–103 °C,  $[\alpha]_D^{23} +11^\circ$  (c, 4.7 in alcohol),  $[\alpha]_D^{23} +28^\circ$  (c, 6.7 in chloroform). It was characterized by a mixed melting point determination and comparison of its infrared spectrum with an authentic specimen kindly supplied by Dr. G. Büchi of the Massachusetts Institute of Technology. It can be further characterized by the preparation of its *phenylurethane*, m.p. 116–117 °C which has not been previously reported (Found: C, 77.4; H, 9.0; N, 4.2%. Calc. for C<sub>22</sub>H<sub>31</sub>O<sub>2</sub>N: C, 77.5; H, 9.1; N, 4.1%). The volatile leaf oil of *Prostanthera prunelioides* R.Br. (Labiatae) collected at Putty, N.S.W., which solidified on standing, has also been found to contain maaliol (60%).

The volatile leaf oil (yield 2.0%;  $d_{15}^{15} 0.9391$ ;  $\alpha_D +22.1^\circ$ ;  $n_D^{20} 1.4970$ ) of *Hedycarya angustifolia* A. Cunn. (Monimiaceae) collected at Mt. Tomah, N.S.W., on fractional distillation gave a fraction, b.p.<sub>2</sub> 99 °C, which solidified on standing. This yielded a solid, m.p. 48–50 °C, which was shown to be the monocyclic sesquiterpenic alcohol, elemol. It was identified by the preparation of its *phenylurethane*, m.p. 112–113 °C, which was characterized by a mixed melting point determination and comparison of its infrared spectrum with an authentic specimen prepared from Java citronella oil. Elemol constitutes 60% of the crude oil.

The volatile leaf oils of *Prostanthera sieberi* Benth. (Labiatae) collected at National Park, N.S.W., and *P. rotundifolia* R.Br. collected at Lilydale, Tasmania, deposited crystals, which on recrystallization from aqueous ethanol have been found to be the tricyclic sesquiterpenic alcohol, globulol, m.p. 87–88 °C. This was characterized by a mixed melting point determination and comparison of its infrared spectrum with an authentic specimen obtained from the oil of *Eucalyptus globulus* Labill.

This appears to be the first record of the occurrence of maaliol and elemol in the Australian flora.

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‡ PENFOLD, A. R. (1925).—*J. Proc. Roy. Soc. N.S.W.* 59: 206.