Phytochemistry, 1975. Vol. 14, p. 583. Pergamon Press. Printed in England.

TERPENOIDS FROM *VERBESINA RUPESTRIS*.

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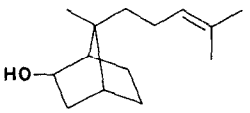
(*Received* 18 *June* 1974)

Key Word Index—*Verbesina rupestris*; Compositae; bornyl esters; isoepicampherenol; sesquiterpene.

Plant. Verbesina rupestris (Urb.) Blake. *Source.* Irish Town, Jamaica. *Previous work.* Rupestrol from leaves and stems[1]. *Present work.* The acetone extract of the leaves and twigs of *Verbesina rupestris* was evaporated to dryness and the resultant gum dissolved in C_6H_6 and allowed to stand for one week. A mixture of phytosterol glycosides was precipitated and removed. A portion of the benzene soluble fraction was chromatographed on alumina giving (−)-bornyl ferulate as a gum and (−)-bornyl *p*-coumarate, needles (MeOH–H_2O), m.p. 153–154°. Hydrolysis of each ester afforded (−)-borneol and the corresponding acid which were identified by direct comparison with authentic compounds.

The C_6H_6 soluble extract was partitioned between light petrol (b.p. 60–80°) and 80% MeOH. The petrol soluble fraction after chromatography on alumina and purification by PLC gave a sesquiterpene as a gum, $[\alpha]$ +6°. The spectral data on this sesquiterpene [ν_{max} 3400 cm^{-1}, δ (CCl_4) 0·87, 1·03, 1·61 and 1·67 (C Me), 3·56 (1H, *t*, *J* 5·5 Hz), 5·10 (1H, *m*)] were consistent with its formulation as isoepicampherenol **(1)**. Isoepicampherenol has been synthesised subsequently by Money *et al.*[2] and its identity with the naturally occurring sesquiterpene was shown by comparison of spectral data. This is the first report of the occurrence of isoepicampherenol in nature.



(1)

PLC of the petrol soluble fraction gave, in addition, a mixture of two phytosterols (also obtained by acid hydrolysis of the glycoside mixture referred to above). The sterols had identical R_f values in a wide range of solvent systems tried. The molecular formulae ($C_{29}H_{50}O$ and $C_{29}H_{48}O$) of the components of the mixture were established by high resolution mass spectrometry.

Acknowledgements—The authors thank Dr. C. D. Adams, Botany Department, U.W.I. for identification of the plant material, Professor T. Money for copies of the spectra of synthetic isoepicampherenol and Dr. G. E. M. Husbands, Wyeth Laboratories, for the mass spectrum of the sterol mixture.

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