

SHORT COMMUNICATION

THE TRITERPENOIDS OF *ERVATAMIA ORIENTALIS**

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(Received 15 May 1969)

Plant. *Ervatamia orientalis* (R. Br.) Turrill—Apocynaceae.

Uses. Not known.

Previous work. On sister species.¹⁻¹⁴

Bark. (Extd. petrol ether, chromatographed-kieselgel.)

Triterpene acetates from petrol ether:ether (49:1) fractions, separated by chromatography on argentized kieselgel into β -*amyrin acetate*, $C_{32}H_{52}O_2$ (0.48 per cent of bark; m.p., mxd. m.p., $[\alpha]_D$, i.r., m.s., TLC), and *lupeol acetate*, $C_{32}H_{52}O_2$ (0.36 per cent; m.p., mxd. m.p., $[\alpha]_D$, i.r., m.s., TLC).

Triterpene alcohols from petrol ether:ether (9:1) fractions, separated as acetates by chromatography (argentized kieselgel) into β -*amyrin*, $C_{30}H_{50}O$ (0.22 per cent; m.p., mxd. m.p., $[\alpha]_D$, i.r., TLC) and *lupeol*, $C_{30}H_{50}O$ (0.13 per cent; m.p., mxd. m.p., $[\alpha]_D$, i.r., TLC). β -*Sitosterol*, $C_{29}H_{50}O$ (0.21 per cent; m.p., mxd. m.p., i.r.) from petrol ether:ether (4:1) fractions.

Roots. (Extd. petrol ether, chromatographed—kieselgel.)

β -*Amyrin acetate* (0.21 per cent of the roots; m.p., i.r., TLC), *lupeol acetate* (0.26 per cent; m.p., i.r., TLC), β -*amyrin* (0.14 per cent; m.p., i.r., TLC), *lupeol* (0.16 per cent; m.p., i.r., TLC), β -*sitosterol* (0.09 per cent; m.p., i.r., TLC), traces of alkaloids.

Stems. (Extd. petrol ether, chromatographed-kieselgel.)

* Part II in the series "The constituents of the Apocynaceae": for Part I, See *Phytochem.*, in press. 8, 1833 (1969).

¹ A. N. RATNAGIRISWARAN and K. VENKATOCHALOM, *Qt. J. Pharm. Pharmacol.* **12**, 174 (1939).

² S. A. WARSI and B. AHMED, *Pakistan J. Sci.* **1**, 128 (1949).

³ S. P. RAMAN and A. K. BARUA, *J. Indian Chem. Soc.* **34**, 912 (1957).

⁴ M. O. FAROOQ, W. RAHMAN and M. ILYAS, *Naturwissenschaften* **46**, 401 (1959).

⁵ M. GORMAN, N. NEUSS, N. J. CONE and J. A. DEYRUP, *J. Am. Chem. Soc.* **82**, 1142 (1960).

⁶ O. P. SHUKLA and C. R. KRISHNA MURTI, *J. Sci. Ind. Res.* **20C**, 225 (1961).

⁷ S. M. KUPCHAN, A. BRIGHT and E. MACKO, *J. Pharm. Sci.* **52**, 598 (1963).

⁸ A. M. KIDWAI and C. R. KRISHNA MURTI, *Indian J. Chem.* **1**, 177 (1963).

⁹ A. M. KIDWAI and C. R. KRISHNA MURTI, *Indian J. Biochem.* **1**, 41 (1964).

¹⁰ MING-LU KING, *Diss. Abs.* **25**, 3854 (1965).

¹¹ B. ANJANEYULU, V. BABU RAO, A. K. GANGULY, T. R. GOVINDACHARI, B. S. JOSHI, V. N. KAMAT, A. H. MANMADE, P. A. MOHAMED, A. D. RAHIMTULA, A. K. SAKSENA, D. S. VARDE and N. VISWANATHAN, *Indian J. Chem.* **3**, 237 (1965).

¹² R. PANT and S. C. SRIVASTAVA, *Current Sci. (India)* **34**, 212 (1965).

¹³ M. E. HUQ, S. MAHMOOD ZAKIRULLAH and S. A. WARSI, *Sci. Res. Pakistan Council Sci. Ind. Res.* **4**, 165 (1967).

¹⁴ S. K. TALAPATRA, S. SEN GUPTA and B. TALAPATRA, *J. Indian Chem. Soc.* **44**, 416 (1967).

β-Amyrin acetate (0.04 per cent of the stems; m.p., i.r., TLC), lupeol acetate (0.045 per cent; m.p., i.r., TLC), *β*-amyrin (0.014 per cent; m.p., i.r., TLC), lupeol (0.009 per cent; m.p., i.r., TLC), *β*-sitosterol (0.002 per cent; m.p., i.r., TLC).

Leaves. (Extd. petrol ether, chromatographed-kieselgel.)

Aliphatic hydrocarbons, $C_{26}H_{54}$ to $C_{33}H_{68}$ (0.16 per cent of the leaves; i.r., m.s.), *β*-amyrin acetate (0.51 per cent; m.p., i.r., TLC), lupeol acetate (0.62 per cent; m.p., i.r., TLC), *β*-amyrin (0.18 per cent; m.p., i.r., TLC), lupeol (0.32 per cent; m.p., i.r., TLC), *β*-sitosterol (0.05 per cent; m.p., i.r., TLC), ursolic acid (0.05 per cent; m.p., i.r., TLC).

(Extd. ether, chromatographed-kieselgel.)

Ursolic acid, $C_{30}H_{48}O_3$ (0.78 per cent of the leaves; m.p., $[\alpha]_D$, i.r., NMR, m.s., TLC; methyl ester, methyl ester acetate, m.p., $[\alpha]_D$, i.r.) from ether fractions.

Acknowledgements—The authors are grateful to Mr. J. W. Parham, Dept. of Agriculture, Fiji, for plant material and to Dr. D. W. Young, University of Sussex, for some of the mass spectra.