

SHORT COMMUNICATION

STEROIDS AND TRITERPENES FROM *ALANGIUM LAMARCKII*, *ALLAMANDA CATHARTICA*, *ABRUS PRECATORIUS* AND *HOLOPTELEA INTEGRIFOLIA**

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Plant. *Alangium lamarckii* Thw. (Syn. *A. Salviifolium* Wang.)—Alangiaceae.

Occurrence. Throughout Northern India.

Previous work. Seeds,¹ Leaves.^{2,3}

Leaves. Benzene-soluble fraction of EtOH extractive (chromatographed alumina; the sterol mixture forming mixed crystals, m.p. 152–155°, resolved through the bromo derivatives to yield two sterols). β -Sitosterol $C_{29}H_{50}O$ [m.p., mxd. m.p., (α)_D, i.r., NMR, TLC of sterol, acetate and benzoate]. Stigmasterol $C_{29}H_{48}O$ [m.p., mxd. m.p., (α)_D, i.r., NMR, TLC of sterol, acetate and benzoate]. Friedelin $C_{30}H_{50}O$ [m.p., mxd. m.p., (α)_D, i.r., oxime and 2:4-dinitrophenylhydrazone]. Wolff-Kishner redn. gave a hydrocarbon $C_{30}H_{52}$, m.p. 248–250°, (α)_D + 20°. NaBH₄ redn. yielded an alcohol $C_{30}H_{50}O$, m.p. 278–280°; (α)_D + 20°; acetate $C_{32}H_{54}O_2$, m.p. 288–290°; (α)_D + 35°. Reduction with Na and *n*-amyl alcohol furnished an alcohol, m.p. 300–304°; (α)_D + 20°; acetate $C_{32}H_{54}O_2$, m.p. 316–318°; (α)_D – 10°. M⁺ peak at *m/e* 426. The other significant fragments were at *m/e* 193, 205, 274, 287, 302, 341 and 411. The tertiary methyl signals in NMR appeared at τ 9.28, 9.12, 9.04, 8.98 (two), 8.94 and 8.82. One secondary methyl at τ 9.14 as doublet (*J* 6.0 cps). Olefinic protons were absent.

In view of these findings, the compound "A", m.p. 152–154°, reported earlier by Das Gupta and Sharma³ in the leaves of *Alangium lamarckii* Thw. is most probably a mixture of stigmasterol and β -sitosterol and the compound "C" is an impure sample of friedelin.

Plant. *Allamanda cathartica* L.—Apocynaceae.

Occurrence. Widely grown in Indian gardens.

Previous work. Leaves⁴ and flowers.⁵

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¹ S. C. PAKRASHI, (Miss) J. BHATTACHARYYA, SIPRA MOOKERJEE and T. B. SAMANTA, *Phytochem.* 7, 461 (1968), and refs. cited therein.

² A. R. BATTERSBY, R. S. KAPIL, D. S. BHAKUNI, S. P. POPLI, J. R. MERCHANT and S. S. SOLGAR, *Tetrahedron Letters* 4965 (1966).

³ B. DAS GUPTA and S. SHARMA, *Experientia* 22, 647 (1966).

⁴ H. R. ARTHUR and W. H. HUI, *J. Chem. Soc.* 2782 (1954).

⁵ S. S. SUBRAMANIAN and M. M. SWAMY, *Current Sci. (India)* 32, 308 (1963).

Stem and leaves. Petroleum ether and benzene-soluble fractions of EtOH extractives (neutral part chromatographed alumina). β -Amyrin $C_{30}H_{50}O$ [m.p., mxd. m.p., $(\alpha)_D$, i.r., NMR, TLC of alcohol, acetate and benzoate]: from hexane: C_6H_6 (1:2) and C_6H_6 fractions. Ketone $C_{30}H_{48}O$, m.p. 178–180°, $(\alpha)_D + 105^\circ$. β -Sitosterol. From C_6H_6 : $CHCl_3$ (3:1) fractions. (Acid part purified through methyl ester acetate.) Ursolic acid [m.p., mxd. m.p., $(\alpha)_D$, i.r. of acid, methyl ester, acetate and benzoate]: methyl ester acetate $C_{33}H_{52}O_4$, m.p. 242–244°, $(\alpha)_D + 55^\circ$.

Plant. *Abrus precatorius* L.—Leguminosae.

Occurrence. Throughout the greater part of India.

Previous work. Seeds.^{6, 7}

Seeds. Benzene ext. (chromatographed alumina; sterol mixture separated through the bromo derivatives) gave β -sitosterol and stigmasterol.

Plant. *Holoptelea integrifolia* Planch—Ulmaceae.

Stem bark. Petroleum ether and benzene-soluble fractions of EtOH extractive (chromatographed alumina) gave β -sitosterol.

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⁶ A. H. KHAN, M. A. HASMI and M. K. KHAN, *Pakistan J. Sci. Ind. Res.* **4**, 53 (1961).

⁷ K. AHMAD and A. F. M. RAHMAN, *Pakistan J. Biol. Agr. Sci.* **8**, 218 (1965).