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TRITERPENOIDS AND STEROLS FROM THREE *MILLETTIA* SPECIES

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Key Word Index—*Millettia pachycarpa*; *M. dielsiana*; *M. nitida*; Leguminosae; pentacyclic triterpenoids; phytosterols.

Plant. Millettia pachycarpa Benth. (Hong Kong Herbarium voucher Specimen No. 6913). *Uses.* As insecticide and fish poison.[1-4] Of sister species for same purpose.[3,5,6] *Previous work.* Rotenone in seeds,[2] in roots.[4] Rotenone and rotenoids in *M.* species.[5-7] On sister species: *M. auriculata*;[8] *M. stuhlmannii* (flavonoids);[9] *M. ferruginae*,[10] *M. dura*,[11] and *M. auriculata*[12,13] (isoflavonoids).

Leaves. (Extracted light petrol., chromatographed—alumina): friedelin $C_{30}H_{50}O$ (m.p., m.m.p., $[\alpha]_D$, IR): by re-chromatographing earlier light petrol. fractions. Friedelan-3β-ol $C_{30}H_{52}O$ (m.p., m.m.p., $[\alpha]_D$, IR of both alcohol and acetate): from late light petrol. fractions. A sterol mixture (m.p., m.m.p., IR): from light petrol.–benzene (1:1) fractions, separated into campesterol (trace), stigmasterol and sitosterol (GLC).

Stems. Friedelin, friedelan-3β-ol, sterol mixture (as for leaves).

Plant. M. dielsiana Harms. (Hong Kong Herbarium voucher Specimen No. 6872). *Previous work.* Occurrence of triterpenoid.[14]

Leaves. (Extracted light petrol., chromatographed—alumina): Friedelin from light petrol.–benzene (7:3) fractions. Friedelan-3β-ol from light petrol.–benzene (3:2) fractions.

Stems. (Extracted light petrol., chromatographed—alumina): Friedelin from light petrol.–benzene (9:1) fractions. Taraxerone $C_{30}H_{48}O$ (m.p., m.m.p., $[\alpha]_D$, IR) from light petrol.–benzene (4:1) fractions. Friedelan-3β-ol from light petrol.–benzene (1:4) fractions. A sterol mixture from benzene fractions, separated into campesterol, stigmasterol and sitosterol (GLC).

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Plant. M. nitida Benth. (Hong Kong Herbarium voucher Specimen No. 6903). *Previous work*. None.

Leaves. Friedelin and friedelan-3β-ol as for *M. dielsiana* leaves.

Stems. Extracted light petrol., chromatographed—alumina): Friedelin from light petrol.–benzene (4:1) fractions. Taraxerone from light petrol.–benzene (7:3) fractions. Friedelan-3β-ol from light petrol.–benzene (1:1) fractions. Taraxerol $C_{30}H_{50}O$ (m.p., m.m.p., $[\alpha]_D$, IR) from light petrol.–benzene (2:3) fractions. A sterol mixture from benzene fractions, as for *M. dielsiana* stems.

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TRITERPENOIDS OF *ISERTIA HYPOLEUCA* LEAVES*†

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Key Word Index—*Isertia hypoleuca*; Rubiaceae; α-amyrin; sitosterol; taraxasterol.

Plant. Isertia hypoleuca Benth. *Occurrence*. Ecuador,[1] Brazil,[2,3] Colombia,[4–6] the Guianas,[7] Panama,[8] Peru,[5,9] Venezuela.[6] *Source*. Leticia, Colombia. *Uses*. Unknown. *Previous work*. Alkaloids,[10,11] biological and phytochemical screening.[12]

* Part III in the series "Constituents of *Isertia hypoleuca*". For Part II see C. A. LAU-CAM and J. TASHIRO, *Phytochem.* **10,** 1655 (1971).

† Experimental work reported herein was conducted at the University of Rhode Island, College of Pharmacy.

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