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PULVERIN, A NEW CHROMONE FROM THE FRUITS OF *NEOCHAMAELEA PULVERULENTA**

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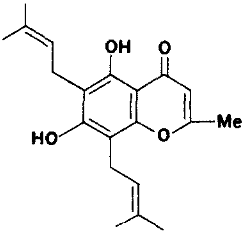
Key Word Index—*Neochamaelea pulverulenta*; Cneoraceae; leña santa; chromones; 3,3-dimethylallylspatheliachromene; pulverin; sitosterol; spatheliabischromene.

Plant. Neochamaelea pulverulenta Erndt (Vent) [1] (*Cneorum pulverulentum* Vent.) A voucher specimen is deposited in the Herbarium of the Botanical Department, University of La Laguna. *Source.* Guaza Mountain, Tenerife, Canary Islands, in August. *Uses* Medicinal. *Previous work.* Aerial parts [2,3].

Present work. Green fruits (300 g) were extracted with hot EtOH, concentrated *in vacuo* and chromatographed over SiO_2. Elution with C_6H_6, C_6H_6–EtOAc and EtOAc gave: 3,3-*dimethylallylspatheliachromene* [4,5], the new natural product *pulverin* (45 mg), *sitosterol* and *spatheliabischromene* [4,5].



(1)

Pulverin. (2-methyl-6,8-di-*C*-prenyl-5,7-dihydroxychromone) **(1)**, (Found: C, 73·29; H, 7·42; $C_{20}H_{20}O_4$ requires: C, 73·15; H, 7·37%) mp 147–149°, MS: *m/e* 328 (M^+), 313, 285, 273, 257, 229, 217 (100%) 205, 177, 128. UV λ_{max}^{EtOH} 214, 230, 265, 305(sh) nm. IR $\nu_{max}^{CHCl_3}$ 3350, 2960, 2900, 2850, 1660, 1600, 1420, 1100, 860 cm^{-1}. NMR ($CDCl_3$, τ) $-2{\cdot}96$ (1H, phenolic proton at C_5), 3·62 (1H,

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* Part 6 in the series *Chromenes and Chromones*. For Part V see González, A. G., Fraga, B. M. and Pino, O. (1975) *Rev. Real Acad. Ciencias* **69**, 347.

s, pyronic hydrogen), 4·75 (2H, *m*, 2 C=CH–), 6·55 (4H, *d*, *J* 8 Hz, 2 $-CH_2-Ar$), 7·66 (3H, *s*, pyronic methyl), 8·18 (6H, *s*, 2 Me–C≡) and 8·25 (6H, *s*, 2 Me–C≡). This compound was synthesized by Seshadri *et al.* [6], mp 149–150°, identical NMR spectrum. The other compounds isolated were identified by comparison with authentic samples.

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N-METHYL-L-TYROSINE FROM SEEDS OF *COMBRETUM ZEYHERI*[*]

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Key Word Index—*Combretum zeyheri*; Combretaceae; *N*-methyl-L-tyrosine; surinamine; new amino acid; andirine; ratanhine; geoffroyine; angeline.

Early reports of the isolation of a nitrogenous compound from the bark of the legumes *Geoffroya surinamensis*, *Ferreira spectabilis* and *Andira anthelmintica* and an American ratanhia extract were summarized by Johnson and Nicolet [2]. The compound was named by various workers, surinamine, geoffroyine, ratanhine, angeline and andirine before the identity of the different isolates was recognized. Goldschmiedt [3] confirmed earlier work which indicated that the empirical formula of the compound was $C_{10}H_{13}NO_3$ and established that his "ratanhine" gave a negative optical rotation in acid solution. Subsequent syntheses of racemic *N*-methyltyrosine [4] and of the D and L isomers [5, 6] confirmed that the natural compound was N-methyltyrosine and that the specific rotation reported by Goldschmiedt for the natural product corresponded to that of the synthetic D isomer.

While investigating the free amino acids present in the seeds of an East African plant, *Combretum zeyheri* (Combretaceae), we observed several ninhydrin-reacting "spots" occupying unfamiliar positions on 2D paper chromatograms of the seed extract. One of the more prominent of these gave a brown-purple reaction with ninhydrin and moved slightly faster than tyrosine in both solvents. The compound was isolated by ion exchange chromatography and characterized as *N*-methyl-L-tyrosine, identical in all respects to a synthetic sample.

EXPERIMENTAL

Paper chromatography. Finely ground seed (100 mg) was shaken with 70% EtOH (1 ml) for 2 hr at room temp. After standing for a further 17 hr the suspension was centrifuged and the supernatant liquid used for analyses. 2D chromatograms were descending on Whatman 3 MM paper using 0·1 ml of extract. Solvents used were (1) *n*-BuOH–HOAc–H_2O

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