respectively. *Previous work. S. chamaedryfolia* and *S. luteola* none; *S. hyssopifolia* studies of the essential oil [1]. *Present work.* The diterpene constituents of the three species quoted above have been investigated.† *S. chamaedryfolia* yield two compounds previously described: *ent*-15-kaurene-7α,18-diol (sideridiol) [2] and *ent*-16-kaurene-3β,7α,18-triol (foliol) [3]. *S. hyssopifolia* gave only a known diterpene: *ent*-7α-acetoxy-15-kauren-18-ol (siderol) [2]. Finally *S. luteola* gave three diterpenic compounds also known: *ent*-16-kaurene-3β,7α,18-triol (foliol), *ent*-3β-acetoxy-16-kaurene-7α,18-diol (sidol) and *ent*-18-acetoxy-16-kaurene-3β,7α-diol (linearol) [3].

All compounds as well as their acetylated derivatives have been characterized by their physical and spectroscopic (IR, NMR and MS) data and by comparison with authentic samples.

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† For general details on extraction and separation of diterpenes from *Sideritis* see Von Carstenn-Lichterfelde, C., Valverde, S. and Rodriguez, B. (1974) *Aust. J. Chem.* **27**, 517.

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BENZYLISOQUINOLINES FROM *OCOTEA* SPECIES*

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Plant. Ocotea macrophylla H.B.K., trivial name "louro fôfo", a tree, was collected at Ducke Forest Reserve, near Manaus, and identified by the botanist W. Rodrigues upon comparison of a voucher specimen (42226) with specimen 14721, both deposited at Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas.

Trunk wood (1·4 kg). A C_6H_6 ext. was crystallized from C_6H_6 to crude nantenine (16 g) which was chromatographed on a silica column. Elution with C_6H_6 gave, in order, fatty esters (1 g), dehydronantenine (800 mg), sitosterol (1 g) and (+)-nantenine (8 g). Elution with C_6H_6–AcOEt 1:1 gave a mixture (3 g). This was chromatographed on an alumina column. Elution with C_6H_6 gave dehydronantenine (50 mg), (+)-nantenine (1 g) and a mixture (150 mg). This was separated by TLC on alumina (C_6H_6–AcOEt 8:2) into (+)-isocoridine (50 mg) and (+)-glaucine (40 mg). Identities were

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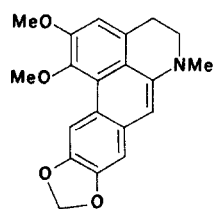
established by comparison of mp and spectral data with lit. data of (+)-nantenine, (+)-isocoridine and (+)-glaucine [2–4]. The structure of dehydronantenine (**1**) was deduced by spectral data and confirmed by comparison of the isolate with a synthetic sample prepared by $KMnO_4$ oxidation [5] of nantenine in 70% yield. While (+)-isocoridine is widespread in Lauraceae genera (*Beilschmiedia*, *Cryptocarya*, *Litsea*, *Ocotea*, *Phoebe*) and (+)-nantenine was located at least in *Cassytha* [6], the occurrences of (+)-glaucine in the family and of dehydronantenine in nature do not seem to have been reported previously.

Dehydronantenine, yellow needles, mp 197° (C_6H_6–C_6H_{14}) [M 337·1320, $C_{20}H_{19}NO_4$ requires 337·1314]. ν_{max}^{KBr} (cm^{-1}) 1625, 1600, 1500, 1460, 1400, 1300, 1225, 1085, 1040, 1000. λ_{max}^{EtOH} (nm): 258, 295, 333 (log ϵ 4·51, 3·95, 3·82). PMR ($CDCl_3$, τ, singlets): 1·36 (H-11), 3·00 and 3·07 (H-3 and H-8), 3·50 (H-7), 4·01 (O_2CH_2), 6·03 (OMe-2), 6·15 (OMe-1), 6·75 ($2CH_2$), 7·00 (NMe). MS (*m/e*): 337 (100%) M, 322 (33), 320 (20), 293 (10), 279 (13), 264 (10).

Plant. Ocotea sp. trivial name "louro", a tree, was collected at Ducke Forest Reserve, near Manaus, and classified by the botanist W. Rodrigues. A voucher specimen (42208) was deposited at Instituto Nacional de Pesquisas da Amazonia, Manaus.



(1)

Trunk wood (10 kg). A C_6H_6 ext. (8 g) was chromatographed on a silica column. Elution with C_6H_6 gave, in order, aliphatic alcohols, *n*-tetracosyl ferulate (1·5 g), sitosterol (200 mg), 1-(*p*-methoxybenzyl)-6,7-methylenedioxyisoquinoline (2 g) and 1-(*p*-methoxybenzyl)-6,7-dimethoxyisoquinoline (800 mg). The structural proposals were based on spectral comparisons with other alcaloids of the papaverine type [7]. Although hitherto unreported, their presence in Lauraceae is in line with the isolation of 1-(*p*-hydroxybenzyl)-6,7-dimethoxyisoquinoline from a *Cryptocarya* species [8].

n-*Tetracosyl ferulate*, mp 63° (CCl_4). ν_{max}^{KBr} (cm^{-1}): 3600, 2850, 1675, 1625, 1600, 1280, 1250, 1185, 980, 840, 725. PMR (CCl_4, τ): 2·54 (*d*, *J* 16·0 Hz, ArCH=), 3·0–3·2 (*m*, 3ArH), 3·85 (*d*, *J* 16·0 Hz, =CHCO), 4·03 (*s*, OH), 5·9 (*t*, *J* 6·0 Hz, OCH_2), 6·10 (*s*, OMe), 8·7–9·1 (broad *s*, $(CH_2)_{22}Me$). EM (*m/e*): 530 (3%) M, 207 (1), 194 (62), 179 (21), 177 (19), 150 (46), 137 (100), 125 (8), 111 (8).

1-(p-*Methoxybenzyl*-6,7-*methylenedioxyisoquinoline*, mp 122° ($CHCl_3$). [Found: C, 73·62; H, 5·42. $C_{18}H_{15}NO_3$ requires: C, 73·69; H, 5·15%]. ν_{max}^{KBr} (cm^{-1}): 3000, 2880, 1610, 1580, 1510, 1245, 1215, 1040, 1030, 950, 940, 860, 840, 820. λ_{max}^{EtOH} (nm): 237, 267, 276, 315, 329 (log ϵ 4·77, 3·84, 3·85, 3·65, 3·74); $\lambda_{max}^{EtOH+HCl}$ (nm): 248, 308, 328, 341. PMR ($CDCl_3$, τ): 1·74 (*d*, *J* 6·0 Hz, H-3), 2·74 (*s*, H-5), 2·77 (*d*, *J* 6·0 Hz, H-4), 2·85 (*d*, *J* 9·0 Hz, H-2′, H-6′), 3·10 (*s*, H-8), 3·26 (*d*, *J* 9·0 Hz, H-3′, H-5′), 4·06 (*s*, O_2CH_2), 5·55 (*s*, CH_2), 6·30 (*s*, OMe). MS (*m/e*): 293 (79%) M, 292 (100), 278 (28), 261 (23), 250 (4), 121 (7).

1-(p-*Methoxybenzyl*)-6,7-*dimethoxyisoquinoline*, mp 125° (Et_2O). [Found: C, 73·58; H, 5·77. $C_{19}H_{19}NO_3$ requires: C, 73·75; H, 6·19%]. ν_{max}^{KBr} (cm^{-1}): 1625, 1575, 1520, 1270, 1245, 1160, 1045, 1028, 865, 855. λ_{max}^{EtOH} (nm): 238, 269, 278, 314, 326 (log ϵ 4·77, 3·78, 3·76, 3·57, 3·63); $\lambda_{max}^{EtOH+HCl}$ (nm): 227, 253, 311. PMR ($CDCl_3$, τ): 1·72 (*d*, *J* 6·0 Hz, H-3), 2·72 (*d*, *J* 6·0 Hz, H-4), 2·80 (*s*, H-5), 2·88 (*d*, *J* 9·0 Hz, H-2′, H-6′), 3·10 (*s*, H-8), 3·30 (*d*, *J* 9·0 Hz, H-3′, H-5′), 5·52 (*s*, CH_2), 6·10, 6·18, 6·32 (*s*, 3 OMe). MS (*m/e*): 309 (62%) M, 308 (96), 294 (100), 278 (14), 266 (9), 121 (8).

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