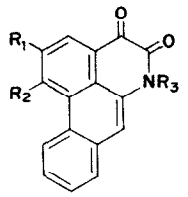
norcepharadione(**3**), liriodenine(**4**) and lysicamine(**5**) from the tissue.



(**1**) $R_1 + R_2 = OCH_2O$, $R_3 = Me$
(**2**) $R_1 = R_2 = OMe$, $R_3 = Me$
(**3**) $R_1 = R_2 = OMe$, $R_3 = H$

Norcepharadione(**3**) is a fluorescent compound, $C_{18}H_{13}NO_4$, mp 304–7° (decomp.), which appeared to have a similar structure to **1** and **2** from its UV and IR spectra. IR ν_{max} (KBr) cm^{-1}: 1668, 1650 (C=O), UV λ_{max} (EtOH) nm (log ϵ): 213 (4·55), 241 (4·60), 303 (4·24), 315 (4·27), 440 (4·22).

The NMR spectrum ($CDCl_3$, δ, ppm) of **3** showed signals for two OMe groups at 4·11 and 4·16, and aromatic protons (6H) at 7·60–9·52, which were observed in **2**. However, instead of the signal for NMe recorded in **2**, a proton (NH) 12·19 was observed. Furthermore, the MS showed the same fragment peak (M^+-28) characteristic of **1** and **2**, and a similar fragments pattern to **2**, except for the difference of 14. From the above results, the structure of norcepharadione was obviously **3**. The 7-oxoaporphine type compounds, liriodenine (**4**) and lysicamine (**5**) were also isolated from the callus and identified in the usual way (IR, UV, NMR, MS) [3,4].

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CONSTITUENTS OF BRAZILIAN MORACEAE*

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Key Word Index—*Clarisia racemosa*; *Chlorophora tinctoria*; Moraceae; 3,5-dihydroxy-4′-methoxystilbene; 1,3,6,7-tetrahydroxyxanthone; 6-prenylpinocembrin.

Plant. Clarisia racemosa R. et P. (Moraceae), trivial name "oiticica", was collected at the Linhares Reserve, Rio Doce, Espirito Santo, and identified by the botanist C. Mainieri. *Trunk wood.* The C_6H_6 extract (21 g ex 5·4 kg) was chromatographed on silica. Elution with solvent of gradually increasing polarity gave sitosterol (recryst. MeOH—$CHCl_3$, 140 mg) and 3,5-dihydroxy-4′-methoxystilbene (recryst. AcOEt–$CHCl_3$, 200 mg), all data as described for a sample from *Rheum rhaponticum* L. (Polygonaceae) [2].

Plant. Chlorophora tinctoria Gaud. (Moraceae), trivial name "tatajuba", was collected at Pacatuba ridge, near Fortaleza, Ceará, and identified by the botanist F. J. de A. Matos.

Previous work. An Et_2O ext. of the wood contained in the H_2O-insol. portion morin, and in the H_2O sol. portion dihydromorin, dihydrokaempferol and maclurin [3]. A commercial sample of this benzophenone contained 1,3,6,7-

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tetrahydroxyxanthone, considered to be probably an artifact since it can be obtained by UV irradiation of maclurin [4].

Heartwood, upon cutting, showed pockets of pure, crystalline 1,3,6,7-tetrahydroxyxanthone which was collected with a knife and identified by direct comparison with authentic material. The absence of maclurin and other impurities in the sample was verified by mp, TLC and spectral means. The insolubility of the cmpd. precluded its presence in the C_6H_6 extract (20 g *ex* 6·0 kg), which was chromatographed on silica. Elution with solvent of gradually increasing polarity gave aliphatic ester (washed with petrol, mp 94–97°), 6-prenylpinocembrin (recryst. EtOH, 100 mg) and fatty acid (10 mg). The C_6H_6 softwood extract (15 g ex 3·0 kg) gave sitosterol and fatty acid. 6-Prenylpinocembrin was identified by direct comparison with a natural product from *Derris rariflora* (Mart.) Macbr. [5] and a synthetic one produced by prenylation (with 2-methyl-3-buten-2-ol, $BF_3.Et_2$ [6]) of pinocembrin. Alkylation of 5,7-dihydroxyflavanones is known to occur preferentially at C-6 [7].

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TRITERPENOIDS OF *CALLISTEMON LANCEOLATUS* LEAVES

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Key Word Index—*Callistemon lanceolatus*; Myrtaceae; triterpenoids; 2-α-hydroxyursolic acid.

Plant. Callistemon lanceolatus L. leaves (collected from Delhi University Campus).

Previous work. Ellagitannins [1], ellagic acid, 3,3′-di-*O*-methyl ellagic acid and 3,3′,4-tri-*O*-methyl ellagic acid from bark [2], esters of glucose with gallic and ellagic acids from seeds [2], anthocyanins [3] and betulinic acid [4] from flowers.

Present work. Air dried and powdered leaves exhaustively extracted with hot petrol (60–80°), Me_2CO and EtOH.

Petrol extract. The neutral portion of the petrol extract was chromatographed over Si gel with C_6H_6–EtOAc combination giving following compounds in the order—*Sitosterol*, identified by comparison, IR, mp and mmp 136–138°, $[\alpha]_D$ −36° with authentic sample and by conversion to acetate mp 126°, $[\alpha]_D$ −38°; *Erythrodiol*, mp 228–229°, $[\alpha]_D$ +74·6° (*c*, 0·98 $CHCl_3$), (positive LB and TNM tests), diacetate mp 184°; *Betulin*, mp 253–255°, $[\alpha]_D$ +19·2 (*c*, 0·78, $CHCl_3$) (positive LB test), diacetate mp 216–218°, $[\alpha]_D$ +20·5° (*c*, 2·1, $CHCl_3$), identities confirmed by direct comparison with authentic specimens in both cases. *Acetone extract*, on alkali extraction (KOH 10%) formed an emulsion. This on neutralisation with dil. HCl and extraction with EtOAc afforded green solid which was chromatographed over Si gel. Elution with EtOAc–C_6H_6 (1:9) yielded betulinic acid, mp 309–311°, $[\alpha]_D$ +9° ($CHCl_3$) (Co-IR, Co-TLC, positive TNM, L.B. and Noller's tests), methyl ester mp 221–223°, $[\alpha]_D$ +7·9, acetate mp 286–288°. Subsequent fractions yielded ursolic acid mp 287–288°, $[\alpha]_D$ +66·3° (MeOH) (positive L.B. and TNM test, Co-IR & Co-TLC), methyl ester mp 170–172°, $[\alpha]_D$ +61·2 ($CHCl_3$), acetate mp 246–47°. EtOAc–C_6H_6 (2:8) eluate gave a mixture of two unidentified compounds (A and B) which were finally separated by chromatography over Si gel after diazomethane methylation. Substance A, mp 126–130°; Substance B, mp 211–212° (positive LB and TNM tests). Final