Ursolic acid. M.p. 290° (from $CH_3OH:H_2O$); $[\alpha]_D^{23°}$ + 70° (*c* 0·2, MeOH); NMR (τ): 0·71 (1H, *bs*, –COOH), 4·70 (1H, *m*, $W_{\frac{1}{2}}$ 9 Hz, olefinic), 6·80 (1H, *q*, $J_{aa'}$ 9·3 Hz, $J_{ae'}$ 6 Hz, axial >CHOH) and methyl singlets at 8·91 (1 –Me), 9·03 (2 –Me), 9·10 (2 –Me) and 9·23 (2 –Me). [Found: C, 78·45; H, 10·40. Calc. for $C_{30}H_{48}O_3$: C, 78·89; H, 10·59%].

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ISOFLAVONOIDS OF *DALBERGIA PANICULATA* SEEDS

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Key Word Index—*Dalbergia paniculata*; Leguminosae; dalpatien; caviunin; dalpanol-*O*-glucoside.

Plant. Dalbergia paniculata Roxb. *Source.* Madanapalle, A.P., India. *Previous work.* On seeds,[1,2] on root,[3] on flowers,[4] on wood,[5,6] and on bark.[7]

Present work. Shade dried, ripe seeds were extracted successively with light petrol, C_6H_6 and $CHCl_3$. The light petrol extract on chromatography over neutral alumina yielded, (a) an aliphatic alcohol (0·0055%), m.p. 80–81°, $C_{30}H_{60}O_2$, ν_{max} (KBr) 3400, 1737, 1472, 1462, 723 and 712 cm^{-1}. (b) Dalpatien, (0·0027%), identified as 6,2′-dimethoxy-4′,5′-methylene-dioxy-7-hydroxyisoflavone by m.p., m.m.p., co-chromatography, UV and superimposable IR spectra with an authentic sample of the aglycon of dalpatin.[2] NMR (DMSO-d_6) τ 1·89 (*s*, 2-H), 2·58 (*s*, 5-H), 3·03 (*s*, 6′-H), 3·13 (*s*, 8-H), 3·18 (*s*, 3′-H), 3·98 (*s*, –O–CH_2–O–), 6·10 (*s*, 6-OMe), and 6·33 (*s*, 2′-OMe).

The benzene extract gave dalpanol[1] and the mother liquor on alkali fractionation yielded caviunin.[8]

The chloroform extract deposited a light brown crystalline solid, purified by polyamide column chromatography to yield a colourless crystalline solid (0·0004%) (Found: C, 60·60, H, 5·83. $C_{29}H_{34}O_{12}$ requires: C, 60·63, H, 5·92), m.p. 203–204°, $[\alpha]_D^{34}$ –215·4° (*c* 0·26, 80% MeOH), R_f 0·9 (TLC, polyamide, EtOH–H_2O, 3:2). It gave reddish brown Molisch, blue-green Durham, green Roger–Calamari test and negative ferric reaction. λ_{max} (MeOH): 218 (log ϵ 4·33), 237 (4·13), 245 sh. (4·04), 295 (4·22) nm. ν_{max} (KBr): 3400 br., 1675, 1615: 1520, 1465, 1350, 1305, 1205, 1192, 1170, 1080 br. and 810 cm^{-1}.

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Acid hydrolysis of the compound gave dalpanol, identified by m.p., m.m.p., co-chromatography, UV and superimposable IR spectra with an authentic sample. The sugar from the aq. mother liquor was identified as glucose by PC. Acetylation gave the acetate, $C_{37}H_{42}O_{16}$, m.p. 98°, λ_{max} (MeOH): 218, 236, 244 sh. and 294 nm. ν_{max} (KBr): 1765, 1670 cm^{-1}.

Comments. Dalpanol-*O*-glucoside is the second rotenoid glycoside reported, the first being amorphin from the seeds of *Amorpha fruticosa.*[9]

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LORANTHOL: A NEW PENTACYCLIC TRITERPENOID FROM *LORANTHUS GREWINKII*

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Key Word Index—*Loranthus grewinkii*; Loranthaceae; structure elucidation; MS; triterpenoids; loranthol.

Abstract—Loranthol (VIII) has been shown by chemical and physical methods to be lup-20(30)-en-3β,7β-diol, a new triterpenoid of the lupane series. The stereochemistry was established by its degradation to the parent hydrocarbon, lup-20(30)-ene.

SIDDIQUI *et al.*[1] have reported a new triterpenoid, 'loranthol', from berries of *Loranthus grewinkii*, a parasite found widely in West Pakistan on pear, apricot and almond trees. The gum from these berries is highly valued in the indigenous system of medicine as a general tonic, relaxant and laxative.

Loranthol forms a diacetyl and a dibenzoyl derivative.[1] It must therefore bear two hydroxyl groups. Its formula as $C_{30}H_{50}O_2$ was confirmed by low and high resolution MS. MS also suggested the presence of a lupane type of skeleton.[2] This conclusion was further supported by the similarity of the IR spectrum of loranthol with those of betulin[3] and

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