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FURANOCOUMARINS FROM THE ROOT OF *HERACLEUM MANTEGAZZIANUM*

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Key Word Index—*Heracleum mantegazzianum*, Umbelliferae furanocoumarins

Plant Heracleum mantegazzianum Somm & Lev *Source* Plants were collected at the Quartier-Léopold, Brussels Material was identified in the herbarium of the Jardin Botanique National de Belgique *Previous work* Roots[1], fruit[2]

Roots Dry roots (135 g) were extracted with light petrol (25–50°)–Et_2O (1 1), compounds were isolated by silica gel column chromatography, eluted with light petrol (25–50°) with increasing amounts of Et_2O and by silica gel preparative TLC with $CHCl_3$ and CH_2Cl_2 in various proportions Pimpinellin, angelicin, isobergapten, bergapten, xanthotoxin, isopimpinellin and sphondin were identified by UV, NMR and MS and m m p and by direct comparison with authentic samples by TLC[3] and GLC[4]

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TERPENOIDS AND FLAVONES OF *CALLICARPA MACROPHYLLA* AND *C LONGIFOLIA*

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Key Word Index—*Callicarpa macrophylla*, *C longifolia*, Verbenaceae, calliterpenone and its monoacetate, sitosterol ursolic acid, 7-*O*-glucuronides of luteolin and apigenin

Plant Callicarpa macrophylla Vahl (voucher specimen No 1/73, deposited at JIPMER) *Uses* Medicinal [1,2] *Previous work* Calliterpenone and its monoacetate,[3] on sister species [4–6]

Present work Dry leaves of *C macrophylla* were extracted with $CHCl_3$, followed by 80% EtOH $CHCl_3$ conc after purification by adsorption chromatography over alumina yielded (a) sitosterol (petrol–C_6H_6, 3 1 fraction), m p and m m p, acetyl, co-TLC ($AgNO_3$ impregnated silica gel), (b) calliterpenone (C_6H_6–$CHCl_3$, 9 1 fraction), m p and m m p 156–158°, $[\alpha]_D^{29}$ +30 8° ($CHCl_3$) I R ν_{max}^{KBr} 3320 (br, OH) and 1708 (cyclohexanone) NMR (δ values) 0 98, 1 01 and 1 06 (3H, *s*, each, C_{18}, C_{19} and C_{20} →Me) and 3 71 (*m*, 2H, C_{17}–CH_2OH), acetyl m p 121–123°, and co-TLC with authentic sample and (c) calliterpenone monoacetate (petrol–C_6H_6, 3 2 fraction), m p and m m p 121–123°, co-TLC with synthetic and authentic calliterpenone monoacetate

EtOH extract gave luteolin and apigenin (ether fraction), R_f, m p, λ_{max}, and co-R_f, apigenin-7-*O*-glucuronide (EtOAc fraction), R_f, m p, products of hydrolysis and co-R_f and luteolin-7-*O*-glucuronide (EtOAc fraction, less soluble in aq MeOH), m p 180–182° UV λ_{max} (nm) 254, 268 sh, 345 (MeOH), 255, 268 sh, 360, 400 (NaOAc), 272, 298 sh, 425 ($AlCl_3$) and 259, 368 (NaOAc + H_3BO_3) R_f 0 48 (H_2O), 0 23 (15% HOAc), 0 40 (BAW), 0 45 (phenol), 0 70 (Forestal) and 0 54 (*t*-BAW) and products of acid and glucuronidase hydrolysis

Plant Callicarpa longifolia Lam (voucher specimen No 2/73 deposited at JIPMER) *Uses* Medicinal [1,2] *Previous work* Nil

Present work Examination of the leaves $CHCl_3$ extract contained calliterpenone and calliterpenone monoacetate (identified as above) and ursolic acid (m p, m m p and TLC of acetyl and methyl ester of acetyl derivative and co-TLC) and the alcohol extract, the same flavonoids as *C macrophylla* in minute quantities

Comment This appears to be the first record of isolation of luteolin-7-*O*-glucuronide though it has been identified earlier in *Digitalis purpurea*,[7] *Anisochilus carnosus*[8] and *Trifolium pannonicum*[9] The isolation of calliterpenone and its monoacetate (11-oxo kaurane derivatives) from these 2 species of *Callicarpa*, together with the occurrence of callicarpone (tricyclic diketo diterpene) in *C candicans*[5] and maingayic acid (furan diterpene acid) in *C maingayi*[6] suggests that the occurrence of diterpenes in *Callicarpa* is common

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