

Communications to the Editor

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The Structure of Nepodin

Nepodin, m.p. 158°, was first isolated by Hesse¹⁾ in 1896 from *Rumex nepalensis* WALL. Recently, Nonomura, *et al.*²⁾ obtained a yellow crystalline pigment, m.p. 158°, C₁₆H₁₆O₄, having no methoxyl group but two hydroxyl groups (diacetate, m.p. 193°), from the roots of *Rumex japonicus* HOUTT. and from the similarity between nepodin and the latter pigment, they suggested that these might be the same substances.

However, the structure of nepodin was not clarified at all at that time. The constituent of the roots of *R. japonicus* was reinvestigated to see if it might contain other principles.

Rumex roots were extracted successively with hexane, acetone, and methanol. From the hexane extracts, nepodin was obtained as light yellow prisms, m.p. 162~163°, which has the molecular formula of C₁₃H₁₂O₃. It dissolves in sodium carbonate solution and gives a green ferric chloride reaction. The formation of a dimethyl ether (m.p. 63~64°) with diazomethane, a diacetate (m.p. 186~187°), and a dibenzoate (m.p. 188~189°) indicates that nepodin contains two hydroxyl groups. The infrared spectrum (in Nujol) of nepodin indicates the presence of a chelated aromatic carbonyl group (1630 cm⁻¹), while that of the acetate shows a conjugated aromatic carbonyl band at 1705 cm⁻¹. When fused with alkali, nepodin afforded a dihydric phenol, C₁₁H₁₀O₂, m.p. 137° (diacetate, m.p. 115°). Ultraviolet absorption of the phenol is superimposable with that of 1,8-dihydroxynaphthalene ($\lambda_{\text{max}}^{\text{EtOH}}$ m μ (log ϵ) : 230 (4.72), 306 (3.76), 320 (3.80), 335 (3.89)). These facts suggested that nepodin might be a 1,8-dihydroxy-2- or -7-acyl-naphthalene derivative. Due to scarcity of the sample the structure remains unsettled.

Quite recently, Covell, *et al.*³⁾ isolated bright yellow crystals of m.p. 164~165° from *Maesopsis eminii*, designated musizin and established its structure as 2-acetyl-1,8-dihydroxy-3-methylnaphthalene. Since the properties and reactions of musizin are quite similar to those of nepodin, the identity of two compounds was examined. From a mixed fusion and comparison of the infrared spectra, nepodin was proved to be identical with musizin.

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