

RUBIACEAE

ANTHRAQUINONES OF *RUBIA CORDIFOLIA*

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Plant. *Rubia cordifolia* L. roots. *Sources.* (i) Mature roots from Delhi market. (ii) Fresh and young roots kindly supplied by Dr. M. A. Rau, Regional Botanist, Dehra Dun. *Uses.* Dye¹ and drug.² *Previous work.*^{1,3-6} Purpurin, munjistin, purpuroxanthin, pseudo-purpurin.

Present work. Identification of compounds were made by comparison of their properties and those of the derivatives with lit. data and confirmed by direct comparison with authentic samples (m.m.p., co-TLC and IR spectra).

Roots from Delhi. The air dried roots (1 kg) were extracted with petrol. (60–80°), ether and acetone in succession and finally with hot alcohol. The first three extracts contained the same components (TLC) and yielded on column chromatography, alizarin (0.2 g), purpurin (0.5 g) and purpuroxanthin (0.3 g). The alcohol extract was treated with water and extracted with ether which removed alizarin, purpurin and purpuroxanthin. The yellow aqueous solution was further extracted with EtOAc (extract E). The remaining aqueous solution yielded sucrose and the mother liquor was found to contain saponins. Extract E, on column chromatography, yielded ruberythric acid (0.11 g) (properties, direct comparison of the partial glucoside and parent glycoside with authentic samples⁷). None of the extracts contained asperuloside as shown by colour test.⁸

Roots from Dehra Dun. The roots (thin and young) (500 g) were extracted with acetone and alcohol in succession. Acetone extract yielded alizarin (0.08 g), purpurin (0.3 g) and purpuroxanthin (0.15 g). Alcohol extract did not yield any crystalline compound. It contained saponins and no asperuloside.⁸

Conclusion. *Rubia cordifolia* contains alizarin both free and as glycoside but the quantity depends on the age, varietal and other differences.⁹ It differs from *R. tinctorum* in the absence of asperuloside, and lucidin and its glycoside.

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Key Word Index—*Rubia cordifolia*; Rubiaceae; anthraquinones; alizarin; asperuloside.