ANTHRAQUINONES OF Gallium fagetorum. II

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Three substances of anthraquinone nature have been isolated previously from the epigeal organs of Gallium fagetorum Klok., family Rubiaceae [1]. In the present communication we give information on a further investigation of the anthraquinones of this raw material.

The extraction of the combined anthraquinone substances previously carried out with petroleum ether in a Soxhlet apparatus, was continued with benzene. The benzene extract, which contained 11 substances of anthraquinone nature (TLC on Silufol in the toluene–acetone–50% acetic acid (4:1:0.5) system) was evaporated to 500 ml. On cooling, a yellow precipitate deposited which was separated off and crystallized from acetone. This gave substance (I) with the composition $C_{15}H_{10}O_5$, in the form of yellow needles with a melting point above 330°C (with decomposition).

The benzene extract was evaporated to dryness and part (1.0 g) of the residue was chromatographed on a column of silica gel (150.0 g) that had been washed with hydrochloric acid. The substances were eluted with petroleum ether (40-70°C) and mixtures of it with chloroform. This gave fractions 1-9, containing mixtures of anthraquinone substances.

Rechromatography of the individual fractions gave substances (II) and (III) in the crystalline state. Substance (II), $C_{14}H_8O_5$, consisted of red needles from ethanol with mp 258-260°C, and substance (III), yellow needles from ethanol with mp 186-189°C.

On the basis of their physical and chemical properties, their UV spectra, and a comparision with authentic samples, substances (I) and (II) were identified as 1,3-dihydroxy-2-hydroxymethylanthraquinone (lucidin), and 1,2,4-trihydroxyanthraquinone (pupurin), respectively.

The structure of substance (III) is being studied.

LITERATURE CITED

1. N. S. Zhuravlev and L. M. Shtefan, Khim. Prir. Soedin., 520 (1984).

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