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COUMARINS AND FLAVONOIDS OF *Coronilla varia*

V. N. Kovalev and A. N. Komissarenko

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Axseed (crown vetch) is known as a cardenolide-containing plant. The cardiac glycoside hircanoside [1] is isolated from its seeds, the flavonoid compounds kaemferol, astragalín, and trifolin from its inflorescences, and homoorientin from its herbage [2, 3]. We have studied the herbage of *C. varia* L. collected in the environs of Khar'kov in the flowering phase. To isolate the coumarins and flavonoids, the comminuted herbage was treated with a tenfold amount of 80% ethanol. The extract was evaporated until the solvent had been eliminated, the residue was mixed with distilled water, and the precipitate of chlorophyll and lipophilic substances that deposited was filtered off. The washed precipitate was discarded and the filtrate was treated successively with petroleum ether, chloroform, and ethyl acetate.

From the chloroform extract, by partition chromatography on silica gel using a mixture of benzene and chloroform as eluent we isolated hydroxycoumarins: umbelliferone (C₉H₆O₃, mp 231-233°C), scopoletin C₁₀H₈O₄, mp 200-202°C), and daphnoretin (C₁₉H₁₂O₇, mp 254-256°C), which have been obtained from the seeds of this species [1].

From the ethyl acetate extract with the aid of column chromatography on a polyamide sorbent we isolated flavonoids: saponaretin, C₂₁H₁₀O₁₀, mp 195-198°C, $[\alpha]_D^{20} + 48^\circ$ (methanol); homoorientin, C₂₁H₂₀O₁₁, mp 220-223°C, $[\alpha]_D^{20} + 21^\circ$ (methanol); and kaempferol C₁₅H₁₀O₆, mp 275-278°C.

The structures of the compounds isolated were confirmed by the results of elementary analysis, UV and IR spectroscopy, and a study of the products of acid and enzymatic hydrolysis, and also by comparison with authentic specimens.

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