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HYDROXYCOUMARINS AND FLAVONES OF *Securigera securidaca*

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It is known that the seeds of *Securigera securidaca* (L.) Degen et Döerfler, family Fabaceae, contain cardiac glycosides of the cardenolide group [1, 2] which are identical with the hyrcanoside and deglucohyrcanoside obtained from several species of the *Coronilla* genus [3, 4].

We have investigated the coumarins and flavonoids of the epigeal part of *S. securidaca* collected in the flowering period. They were isolated in the following way. The comminuted herbage was treated with a 10-fold amount of 80% ethanol. The resulting extract was evaporated to an aqueous residue, the chlorophylls and other lipophilic substances that had precipitated were filtered off, the washed residue was discarded, and the filtrate was treated successively with chloroform and ethyl acetate.

By column chromatography on silica gel and polyamide sorbent using benzene, chloroform, and mixtures of them as eluents [5], the chloroform extract yielded the hydroxycoumarins scopoletin ($C_{10}H_8O_4$, mp 200–202°C) and umbelliferone ($C_9H_6O_3$, mp 230–232°C), which were identical with the compounds that we had obtained previously from crown vetch coronilla. No coumarins were detected in the seeds of the plant under investigation.

From the ethyl acetate extract, by chromatography on a column of polyamide, using chloroform-ethanol mixtures with 5 to 20% of the latter as eluents, we isolated the flavone C-glucoside saponaretin, $C_{21}H_{10}O_{10}$, mp 194–197°C $[\alpha]_D^{20} + 49^\circ$ (methanol) [6].

The structures of the substances isolated were confirmed by the results of elementary analysis, UV and IR spectroscopy, and a study of the products of dealkylation, acetylation, and methylation, and also by comparison with authentic samples.

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