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## FLAVONOIDS OF *Caragana aurantiaca*

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The epigeal part of the shrub *Caragana aurantiaca* Koehne. (dwarf pea shrub) collected in the flowering period in the Susamyrskaya valley close to the village of Tunuk (KirghizSSR) has been investigated for the presence of flavonoids.

To obtain the combined flavonoids, 0.9 kg of the dried and comminuted raw material was extracted successively with 40, 70, and 96% ethanol. The ethanolic extracts were evaporated in vacuum to an aqueous residue, which was treated with chloroform to eliminate ballast substances. The flavonoids were extracted from the purified aqueous residue, and the ethyl acetate extract was evaporated in vacuum. The combined flavonoids that precipitated after cooling were separated off by centrifugation, dried, and deposited on a column of polyamide sorbent. Then the flavonoids were eluted successively with water and with various concentrations of ethanol.

Three individual substances were isolated from the dwarf pea shrub and identified.

Substance (I) (eluted with 20% ethanol) was identified as narcissin (isohamnetin 3-O-rutinoside),  $C_{28}H_{32}O_{16}$ , mp 175-178°C (aqueous ethanol),  $[\alpha]_D^{20} - 35.7^\circ$  (s 0.4, ethanol),  $\lambda_{\max}$  360, 257 nm [1, 2].

Substance (II) (eluted with 30% ethanol) was rutin (quercetin 3-O-rutinoside),  $C_{27}H_{30}O_{16}$ , mp 185-189°C (aqueous ethanol),  $[\alpha]_D^{20} - 32.4^\circ$  (s 0.2, methanol),  $\lambda_{\max}$  380, 258 nm [1, 3].

Substance (III) (eluted with 45% ethanol) -  $C_{21}H_{20}O_{12}$ , mp 258-261°C (aqueous ethanol),  $\lambda_{\max}$  380, 258 nm [1, 3].

Its chromatographic behavior and qualitative reactions showed that substance (III) was a flavonol glycoside.

Acid hydrolysis under mild conditions (0.2% sulfuric acid, 100°C, 30 min) did not split the glycoside into an aglycon and a carbohydrate moiety, which indicated the attachment of the sugar residue in position 7.

Hydrolysis with 5% sulfuric acid gave the aglycon and glucose. The monosaccharide was identified chromatographically. On the basis of its UV spectra and a comparison with authentic samples, the aglycon was identified as quercetin.

All these facts permitted the substance under investigation to be identified as quercimeritrin (quercetin 7-O-glucoside) [1, 3].

This is the first time that substances (I-III) have been isolated from a *Caragana* species.

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