# FLAVONOIDS OF Chenopodium botrys

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Continuing a comprehensive study of Chenopodium botrys L. (Jerusalem oak goosefoot), family Chenopodiaceae, growing in the valley of the river Issyk, Alma-Ata oblast [1, 2], we have studied the flavonoid compounds from its epigeal part. The combined flavonoids were obtained by extraction with methanol, followed by purification. By chromatography on a polyamide sorbent with fractional crystallization and preparative chromatography on paper we isolated three flavonoid substances. To determine the nature of these compounds we studied the physicochemical properties of the initial substances and of the products of their hydrolysis.

From the products of acid hydrolysis we isolated and identified the aglycones. The filtrates remaining after the separation of the aglycones were neutralized and evaporated, and the nature of the carbohydrate was determined. The position of attachment of the sugar residues was found by UV spectroscopy with ionizing and complex-forming additives, and also by stepwise hydrolysis. Enzymatic hydrolysis showed the configuration of the glycosidic bond, and this was confirmed by differential IR spectroscopy. Substance (I), $C_{16}H_{12}O_6$, mp 265-266°C, $\lambda_{max}^{CH_3OH}$ 345, 276 nm, $\varepsilon_{1\%}^{1cm}$ 800, was identified by IR and NMR spectroscopy as the flavone chrysoeriol; substance (II) $C_{21}H_{20}O_{11}$, mp 200-222°C, $\lambda_{max}^{CH_3OH}$ 360, 267, 260 nm, $\varepsilon_{1\%}^{1cm}$ 360, is quercetin 3-O-$\beta$-D-glucopyranoside; and substance (III), $C_{27}H_{30}O_{17}$, mp 178-180°C, $\lambda_{max}^{CH_3OH}$ 365, 257, 270 nm, $\varepsilon_{1\%}^{1cm}$ 249, was characterized as quercetin 3-O-$\beta$-(6-D-glucopyranosyl-$\beta$-D-glucopyranoside).

The results of a bathochromic investigation [3] showed that the glucose residue is present in position 3, and the results of enzymatic hydrolysis and the molecular optical activity (calculated value) $[M]_D \cdot K_P$, calculated according to Klyne [4], showed that it has the pyranose form and is attached to the aglycone by a $\beta$-glycosidic bond.

The flavonoids from Chenopodium botrys L. have not been investigated previously.

This is the first time that chrysoeriol has been found in the genus Chenopodium.

## LITERATURE CITED

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