

We have investigated a little-studied species of tea shrub *Caragana arborescens* Lam. (Siberian tea shrub or yellow acacia), family Fabaceae, which is widely used in folk medicine as an antiphlogistic. The chemical composition of the seeds of the yellow acacia [1] and a phytochemical study [2-4] have been reported previously.

According to the preliminary results of a chromatographic study in the butanol-acetic acid-water (4:1:2) system and qualitative reactions, no less than nine substances of flavonoid nature were detected in an extract from the epigeal part of yellow acacia.

To isolate the substances that had been detected, the dried and finely comminuted leaves and flowers of yellow acacia were extracted with 96% ethanol. After the elimination of the ethanol, the extract was purified with chloroform to eliminate chlorophyll, waxes, and fats. The purified extract was reextracted first with butanol and then with ethyl acetate. Mainly flavonoid diglycosides were detected in the butanol extract and monoglycosides in the ethyl acetate extract.

When the butanol extract was chromatographed on polyamide, elution of the column with ethanol-chloroform (2:8) yielded substance (I). The separation of the ethyl acetate extract on polyamide with elution of the column by ethanol-chloroform (2:8) and (3:7) led to the isolation of two more compounds, designated as substances (II) and (III).

Substance (I):  $C_{27}H_{30}O_{16}$  mp 188-192°C. UV spectrum, nm:  $\lambda_{\max}^{C_2H_5OH}$  358, 258,  $\lambda_{\max}^{+CH_3COONa}$  390, 272,  $\lambda_{\max}^{+CH_3ONa}$  410, 274,  $\lambda_{\max}^{+AlCl_3}$  412, 273,  $\lambda_{\max}^{+H_3BO_3+CH_3COONa}$  378, 264. On the basis of the formation of quercetin, D-glucose, and L-rhamnose as the result of acid hydrolysis and of spectral characteristics, (I) was identified as rutin.

Substance (I):  $C_{21}H_{20}O_{12}$ , mp 220-225°C. UV spectrum, nm:  $\lambda_{\max}^{C_2H_5OH}$  357, 257 nm,  $\lambda_{\max}^{+CH_3COONa}$  392, 274,  $\lambda_{\max}^{+CH_3ONa}$  404, 273,  $\lambda_{\max}^{+AlCl_3}$  425, 274,  $\lambda_{\max}^{+H_3BO_3+CH_3COONa}$  378, 261. Quercetin and D-glucose were found in the products of the hydrolysis of substance (I) with 5% hydrochloric acid. The results of the investigations performed permitted substance (II) to be identified as 3', 4', 5, 7-tetrahydroxyflavone 3-O- $\beta$ -D-glucopyranoside (isoquercitrin).

Substance (III) was identified as quercetin.

Thus, in the epigeal part of yellow acacia we have identified quercetin derivatives not previously found in this species of *Caragana*.

## LITERATURE CITED

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