

with known flavonoid compounds [5-7]. The positions of the free hydroxy groups in the components investigated were confirmed by spectral investigations in the UV region with diagnostic reagents [7]. These compounds were also characterized from the specific color reactions, the colors of the spots on chromatograms in visible and UV light, mobilities in paper chromatography in various solvent systems, and the products of alkaline cleavage, and also by direct comparison with authentic samples and from literature information [3, 5-9].

On the basis of the results obtained, compound (I) was identified as quercetin, (II) as quercetagenin, (III) as luteolin, (IV) as kaempferol, and (V) as isorhamnetin.

The presence of quercetin in the roots of *Rhaponticum carthamoides* has been reported previously [9], but we are the first to have detected the other flavonoids.

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#### QUERCITRIN FROM PLANTS OF THE GENUS *Hypericum*

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I have investigated the epigeal parts of *Hypericum perforatum*, *H. quadrangulum*, *H. hirsutum*, *H. elegans*, and *H. montanum* (family Guttiferae) collected in Kursk province in the flowering period. The herbage was extracted with 96% ethanol in a ratio of 1:10 with heating on the water bath. After evaporation in vacuum, the extracts were treated with boiling distilled water. The resinous substances were separated off by filtration. The extracts were chromatographed on a column of polyamide sorbent. Elution with aqueous ethanol yielded an individual substance in the form of pale yellow acicular crystals with mp 185-187°C,  $C_{21}H_{20}O_{11}$ . UV spectrum, nm:  $\lambda^{C_2H_5OH}$  257, 355;  $\lambda^{CH_3COONa}$  272, 361;  $\lambda^{CH_3COONa+H_3BO_3}$  262, 375;  $\lambda^{C_2H_5ONa}$  275, 387.

The IR spectrum of the substance showed absorption bands characteristic of the carbonyl group of a flavonol (1655-1600  $cm^{-1}$ ) [1, 2] and of hydroxy groups (3300-3500  $cm^{-1}$ ).

Acid hydrolysis of the substance (2%  $H_2SO_4$ , 40 min) yielded quercetin and L-rhamnose [3].

Thus, the substance that I have isolated from plants of the genus *Hypericum* has been identified as quercetin 3-O- $\alpha$ -L-rhamnoside, or quercitrin.

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