HYDROXYCOUMARINS AND FLAVONOL 7-MONORHAMNOSIDES OF *Sedum caucasicum*

V. G. Zaitsev, N. S. Fursa,
and L. E. Belyaeva

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The epigeal part of *Sedum caucasicum* (Grossh.) A. Bor. (Caucasian stonecrop), endemic to the Caucasus [1] was extracted with four portions of ethanol, and the extracts were worked up as described previously [2]. By two-dimensional paper chromatography, not fewer than twenty phenolic compounds, predominantly represented by flavonoids, were detected in the extract obtained. Chromatography of the ethyl acetate fractions on columns of Kapron [nylon-6] led to the isolation of four substances in the individual state (I-IV).

When qualitative reactions and spectral studies in the UV region with ionizing and complex-forming reagents [3, 4] were performed, it was established that one of these substances isolated was a hydroxycoumarin (I) and three (II-IV) were flavonoids.

Substance (I) with the composition $C_9H_6O_4$, mp 268-271°C, contains an ortho-dihydroxy grouping. According to PC in various solvent systems, with direct comparison with an authentic sample, the hydroxycoumarin being studied was identified as esculetin.

Substance (II) had the composition $C_{21}H_{20}O_{10}$, mp 230-233°C; (III) $C_{22}H_{22}O_{11}$, mp 247-249°C, and (IV) $C_{21}H_{20}O_{11}$, mp 264-267°C. On the basis of the results of UV spectroscopy with diagnostic reagents, free hydroxy groups were found in positions 3, 4', and 5 (substances (II) and (III)) and 3,3',4', and 5 (IV) of the flavonol nucleus. The nature of the mobility of substances on PC shows the glycosidic nature of the flavonoids isolated. In the products of acid hydrolysis with 10% H_2SO_4, L-rhamnose and kaempferol (substance (II)), isorhamnetin (III), and quercetin (IV) were found by PC. The absence of a bathochromic shift in the UV spectrum and the reaction of sodium acetate, and also the yellow fluorescence of the spots of the substance under investigation on paper chromatograms before visualization with specific reagents indicates that the carbohydrate components are present in position 7 of the flavonol nucleus. The substances investigated did not undergo enzymatic cleavage with emulsin, which permits them to be characterized as the 7-O-α-L-rhamnosides of kaempferol (substance (II) of isorhamnetin (III), and of quercetin (IV).

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