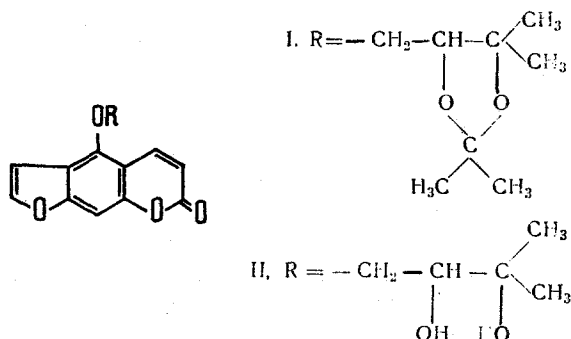


there are the signals of the protons of four methyl groups attached to quaternary carbon atoms with hydroxy groups (singlets at 1.22 and 1.48 ppm, 3 H each, and 1.44 ppm, 6 H) and of a Ar-O-CH<sub>2</sub>-CH- grouping (multiplet at 4.20-4.51 ppm, 3 H). These facts agree completely with the structure of oxypeucedanin hydrate acetonide, as was confirmed by the results of the treatment of (I) with a mixture of acetic and hydrochloric acids in a ratio 3:1. This led to the formation of oxypeucedanin hydrate (II), C<sub>16</sub>H<sub>16</sub>O<sub>6</sub>, mp 132-133°C and of isooxypeucedanin (III), C<sub>16</sub>H<sub>14</sub>O<sub>5</sub>, with mp 145-146°C, both of which were identified by their IR and PMR spectra.

Thus, the compound investigated must be regarded as oxypeucedanin hydrate acetonide (I). This is the first time that it has been found in nature.



The IR spectra were taken on a UR-20 (in paraffin oil) and the PMR spectra on a HX-90 spectrometer (in CDCl<sub>3</sub>, 0 - TMS). Melting points were determined on a Kofler block.

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#### COUMARINS FROM THE ROOTS OF *Prangos arcis-romanae*

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UDC 547.992.547.587.59

We have analyzed for the first time the qualitative composition of the combined coumarins obtained by Svendsen's method [1] and of an ethanolic extract from the roots of *Prangos arcis-romanae* Boiss. et Huet collected in the budding stage on Mount Arganats in the environs of the village of Sevan, Armenian SSR. The roots contained 1.20% of coumarins.

The coumarins were identified (with markers) by gas-liquid chromatography in a column (ℓ 1.5 m) containing the stationary phase OV-17 (3%), as previously [2], and also by paper chromatography in two systems [3] before and after treatment with solutions of alkali and diazo compounds.

The following natural coumarins were detected in the roots of *P. arcis-romanae*: osthole, meranzin, meranzin hydrate, and suberosin. The following furocoumarins were found: psoralen and its 5- and 8-substituted derivatives: bergapten (traces), isoimperatorin, oxypeucedanin, oxypeucedanin hydrate, pranferol (traces), an isomer of pranferol (traces), xanthotoxin (traces), and imperatorin. Of linear dihydrofurocoumarins we identified marmezin and pranchingin (traces).

Osthole is the main component of the total coumarins from roots of *P. arcis-romanae*.

V. L. Komarov Botanical Institute, Academy of Sciences of the USSR, Leningrad. Translated from *Khimiya Prirodnykh Soedinenii*, No. 6, pp. 848-849, November-December, 1979. Original article submitted June 25, 1979.

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COUMARINS FROM THE ROOTS AND EPIGEAL MASS OF Prangos acaulis

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UDC 547.992.547.587.59

We have studied for the first time the qualitative composition of the coumarins of the roots and epigeal mass of Prangos acaulis (DC.) Bornm. collected in the fruit-bearing stage in the environs of Nakhichevan', Nakhichevan ASSR. The roots contained 1.39% and the epigeal mass 0.19% of coumarin. Analysis of alcoholic extracts and of the coumarin fractions obtained from this plant by Svendsen's method [1] was carried out by paper chromatography (with markers) in two systems [2] and by gas-liquid chromatography on a column ( $\approx 1.5$  m) with the stationary phase OV-17 (3%) under programmed conditions [3].

The following natural coumarins were identified: osthole, meranzin, meranzin hydrate, and suberosin and also the furocoumarins psoralen and its 5- and 8-substituted derivatives - bergapten, isoimperatorin, oxypeucedanin, oxypeucedanin hydrate, pranferol, an isomer of pranferol, xanthotoxin, and imperatorin, and the dihydrofurocoumarins marmezin and deltoin.

The qualitative difference between the coumarin compositions of the roots and epigeal mass was slight: xanthotoxin (traces) and oxypeucedanin hydrate were detected only in the roots of this species. The sets of coumarins of the roots and epigeal mass of P. acaulis differed to a considerably greater degree by the quantitative ratios of the individual components - in particular, suberosin, osthole, psoralen, isoimperatorin, and deltoin. The majority of these compounds, apart from the deltoin, were detected in the epigeal mass in this stage of development of the plant in minor amount.

The roots of P. acaulis are particularly rich in suberosin and deltoin, while osthole is found in minor amount, which distinguishes this species of Prangos from P. arcis-romanae growing in the Armenian SSR.

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V. L. Komarov Botanical Institute, Academy of Sciences of the USSR, Leningrad. Translated from *Khimiya Prirodnykh Soedinenii*, No. 6, p. 849, November-December, 1979. Original article submitted June 25, 1979.