CHEMICAL STUDY OF Platitenia absinthifolia

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On studying the roots of Platitenia absinthifolia (family Umbelliferae) collected in the mountains of Bol'shoi Chimgan (Tashkent oblast) we found in them a mixture of four substances consisting of coumarins and flavonoids.

The roots (4 kg) were steeped with methanol (2 × 20 liters), the extract was concentrated to 1 liter and diluted with water (1:2), and extracted with ether. The ethereal extract was washed with water and with 1% caustic potash solution and was evaporated to dryness. This gave 135 g (3.2%) of an oily residue, 80 g of which was chromatographed on alumina (column 70 × 7 cm). The column was washed with petroleum ether. Distillation of the eluate gave a coumarin with the composition $C_{15}H_{16}O_3$, mp 89-90°C, yield 15% (from petroleum ether). The substance was readily soluble in ether, sparingly in petroleum ether, and insoluble in water.

On the basis of a comparison of IR spectra and a mixed melting point, this substance was identified as 6-(3',3'-dimethylallyl)-7-methoxycoumarin (suberosin [1, 2]).

When the column was eluted with benzene, a flavanone with the composition $C_{20}H_{20}O_4$, mp 169-170°C (from benzene), readily soluble in chloroform and acetone and insoluble in water was isolated. According to its NMR, IR, and mass spectra, and also a mixed melting point, it was identical with 8-(3',3'-dimethylallyl)-5,7-dihydroxyflavanone (glabranin), isolated previously from the herb Glycyrrhiza glabra L. [3]. A benzene–methanol (9:2) eluate yielded a sterol $C_{29}H_{50}O$, mp 135°C (from methanol), which according to its spectral characteristics and a mixed melting point is β-sitosterol.

LITERATURE CITED

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