COUMARINS OF Artemisia scotina

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We have investigated the epigeal part of Artemisia scotina Nevski (synonym Artemisia albicaulis Nevski) collected by the botanist V. G. Sidyakin in July in the region of the village of Gilyan, Kashkadar'ya oblast, Uzbek SSR, for its lactone content. The plant was extracted with ethanol, the solvent was distilled off, the residue was dissolved in 60% ethanol, and the solution was filtered and extracted with chloroform. The chloroform extract was treated with a 5% solution of sodium bicarbonate, and the sodium carbonate extract was acidified with 10% hydrochloric acid and shaken with chloroform. The chloroform extract showed on TLC (silica gel) four spots revealed by diazotized sulfanilic acid, like coumarins. The mixture was chromatographed on silica gel (1 : 30) and was eluted with benzene and then with petroleum ether–diethyl ether (1 : 2). The benzene eluates were concentrated and chromatographed on alumina, and the column was washed with chloroform–ether (9 : 1). After the eluates had been distilled off and the residue had been recrystallized twice, crystals with mp 233-234°C were obtained. The properties of this substance resembled those of umbelliferone, and their identity confirmed by a direct comparison. Its methyl ether, obtained by methylation with dimethyl sulfate, was identical with herniarin. The petroleum ether–ether (1 : 2) eluate, after rechromatography on silica gel (1 : 50) and elution with chloroform, yielded a crystalline substance with mp 203-204°C. This substance was identified as scopoletin by its R_f value, its fluorescence in UV light, its IR spectrum, and a mixed melting point. The coumarins of this plant have not been studied previously.

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