5. Yu. A. Dranitsyna, S. Sh. Kerimov, G. V. Pigulevskii, Zh. Prikl. Khim., 38, 1172 (1965).
6. A. G. Kuznetsova, Natural Coumarins and Furocoumarins [in Russian], Leningrad (1967).

COUMARINS OF *Ptarmica bisserata*

É. S. Davidyats

UDC 577.15/17:582.89

In a study of the epigeal part of *Ptarmica bisserata* (Bieb.) DC. (*Achillea bisserata* M.B.), family *Compositae*, cultivated in the botanical garden of the Stavropol' Pedagogic Institute, we have detected a number of substances of coumarin nature. In order to isolate them, the comminuted epigeal part was extracted with 80% ethanol, and the extract obtained was concentrated in vacuum to an aqueous residue which was treated with chloroform.

The residue after the chloroform has been driven off was deposited on a column of silica gel. The following solvent systems were used for elution: 1) benzene—ethyl acetate (2:1); and 2) butan-1-ol—CH_3COOH—H_2O (4:1:5).

The fractions obtained were purified by preparative chromatography in a thin layer of silica gel in the above-mentioned solvent systems. Two compounds were isolated in the individual form.

Substance I — $C_{10}H_8O_4$, yellowish crystals, mp 204-205°C. UV spectrum, $\lambda_{max}^{C_2H_5OH}$, nm 229, 254, 298, 354. IR spectrum, ν_{max}^{KBr}, cm^{-1}: 1710 (C=O), 1613, 1570 (C=C), 3045 (OH). From its physicochemical properties, compound (I) was identified as scopoletin [1].

Substance (II) — $C_{16}H_{18}O_9$, mp 217-219°C, proved to a glycoside. R_f 0.41 in system 2.

When it was hydrolyzed with 10% H_2SO_4 for 3 h, scopoletin and D-glucose were found in the hydrolysate. The compound obtained is scopoletin 7-glucoside, i.e., scopolin [2].

This is the first time that coumarins have been obtained from this plant.

LITERATURE CITED

1. M. E. Perel'son, Yu. M. Sheinker, and A. A. Savina, The Spectra and Structures of Coumarins, Chromones, and Xanthones [in Russian], Moscow (1975).
2. G. A. Kuznetsova, Natural Coumarins and Furocoumarins [in Russian], Leningrad (1967), p. 75.

Pyatigorsk Pharmaceutical Institute. Translated from Khimiya Prirodnykh Soedinenii, No. 2, pp. 252-253, March-April, 1982. Original article submitted December 8, 1981.

0009-3130/82/1802-0233$07.50