ALKALOIDS OF Aconitum tranzschelii AND A. anthoroideum

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The present paper gives the results on the isolation and identification of alkaloids from two species of plants not studied previously. The comminuted air-dried roots of Aconitum tranzschelii (430 g) collected in the flowering phase in the Pamir-Alai (R. Nura) were wetted with 5% sodium carbonate solution and extracted with chloroform (eight overflows). The chloroform extracts were treated with 5% sulfuric acid. The acid solution was washed with ether, made alkaline with sodium carbonate under cooling, and extracted first with ether and then with chloroform. This gave 3.91 g (0.9%) of combined alkaloids. The combined alkaloids showed three spots in a thin layer of silica gel (ShSK) in the benzene–methanol (4:1) system. By making use of the different solubilities of the bases and of chromatography on alumina, talatisamine (0.6 g) [1] and isotalatisidine (0.2 g) [2, 3] were isolated.

The epigeal part of A. anthoroideum (1.53 kg) collected in the flowering period in the Dzhungar Ala-Tau (upper reaches of R. Bien') was extracted with chloroform (eight overflows). The extracts were treated as described above. This gave 4.95 g (0.36%) of combined alkaloids, which were separated by means of buffer solutions into seven fractions. The subsequent chromatography of fractions 1, 5, and 6 on alumina yielded three bases:

Condelphine (0.25 g) [2, 3].

A base $C_{31}H_{35}O_7N$, with mp 263-264°C (0.12 g), mol.wt. 533 (mass spectrometrically), the IR spectra of which had absorption bands at 1728 cm^{-1} (ester carbonyl) and 1650 cm^{-1} (double bond). The NMR spectrum of the base had signals due to a C-methyl group (three-proton singlet at 0.96 ppm) and to two acetyl groups (six-proton singlet at 1.97 ppm). In the weak-field region at 4.68-5.78 ppm, there were signals corresponding to five protons, and at 7.44 and 7.99 ppm signals characteristic for the five protons of a benzoyloxy group. The alkaloid proved to be new, and we have called it anthoroidine.

A base $C_{20}H_{25}O_3N$, with mp 259-261°C (decomp) (0.06 g), mol.wt. 327 (mass spectrometrically), the IR spectrum of which exhibited absorption bands at 3380 and 3300 cm^{-1} (OH) 1693 cm^{-1} (carbonyl), and 1660 cm^{-1} (double bond).

LITERATURE CITED

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