ALKALOIDS OF THE CULTIVATED SPECIES *Aconitum tauricum* AND *Delphinium elatum*

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Continuing an investigation of alkaloids from the plant *Aconitum tauricum* Walf. cultivated in the Polar-Alpine Botanical Garden [1], by chromatography on alumina of the ether fraction from the roots of this plant remaining after the separation of hypaconitine, mesaconitine, and taurenine, we have obtained neoline, mp 161-162°C. Chromatography of the chloroform fraction of the total alkaloids gave taurenine, senbusine A (mp 97°C), and talatasamine (mp 145-146°C).

The total alkaloids (1.71 g) from the epigeal part, (400 g), on treatment with ethanol, yielded a crystalline mixture of substances (0.82 g) from, which, by chromatography on a column of alumina, we obtained hypaconitine (0.76 g, mp 189-190°C) [1], mesaconitine (0.01 g, mp 207-208°C) and base (I) (0.04 g, mp 174-176°C) with the composition $C_{34}H_{47}NO_{10}$ (M^+ 629).

From the epigeal part of *Delphinium elatum* L. gathered in the period of incipient vegetation we obtained a total mixture of bases (7.3 g, 0.24% on the weight of the dry raw material), and from this, by chromatography, we isolated nudicauline (2.4 g), which has been detected previously in the roots of this plant [2], an amorphous base (II) (0.25 g) with the composition $C_{36}H_{48}N_2O_{10}$ (M^+ 668), and delectinine (0.02 g, mp 166-167°C).

According to the results of a comparative analysis of its PMR and mass spectra with those of aconitine [3], base (I) had the structure of 3-deoxyaconitine [3]. Thus, in the mass spectrum of (I) the maximum peak was that of the $M^+ - 91$ ion formed through the splitting out of acetic acid and a methoxy radical (C_8-OAc and C_1-OMe) and lacked the peak of the $M^+ - 109$ ion (ejection of AcOH and OMe from M^+) that is characteristic of the aconitine type of alkaloids with a hydroxy group at C-3 [4].

According to its spectral characteristic, base (II) was 14-deacetylnudicauline [5], as was confirmed by its formation of nudicauline on its acetylation.

The known alkaloids neoline, talatisamine, hypaconitine, mesaconitine, nudicauline, and delectinine were identified by direct comparison with authentic samples (TLC, mixed melting points, and IR, mass, and NMR spectra), and senbusine A by a direct comparison of spectral characteristics (IR, mass and NMR spectra) with those published in [6].

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