ALKALOIDS OF Veratrum lobelianum

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We have continued an investigation of the alkaloids of the epigeal part of Veratrum lobelianum Bernh., collected in the Caucasus [1, 2]. The bases that had been extracted with chloroform (490 g) were dissolved in chloroform and separated into 63 fractions by means of acetate buffer solutions with pH 5.57-3.72 (in steps of 0.2 unit).

The 1st and combined 12th and 13th fractions were chromatographed separately on columns of silica gel (KSK). From chloroform–methanol (20:1) eluates we isolated an alkaloid (I), $C_{27}H_{43}NO_8$, mp 220-222°C (methanol), identical with the germine obtained by the saponification of germerine [3], and an alkaloid (II), $C_{33}H_{53}NO_7$, mp 238-240°C (methanol), $[\alpha]_D -30.3°$ (c 0.5; chloroform).

The last fraction was treated with benzene. The benzene-soluble part was chromatographed on a column of alumina (activity grade II). From ethereal eluates we obtained veralodisine [4] and an alkaloid (III), $C_{27}H_{39}NO_3$ with mp 255-257°C (acetone), identified as veralodine [5] (by its IR spectrum and a mixed melting point).

The acid hydrolysis of (II) yielded D-glucose (paper chromatography) and an amino alcohol $C_{27}H_{43}NO_2$, mp 153-155°C, identical with veralosidine [1]. These facts show that (II) is deacetylveralosine, obtained previously by the saponification of veralosine [2].

In order to determine that the alkaloid (II) was present in the native state, veralosine was dissolved in 5% sulfuric acid, and the solution was made alkaline with concentrated ammonia and was left at room temperature overnight. We found that the veralosine was not cleaved under the action of ammonia. Consequently, the deacetylveralosine is a native glycoalkaloid.

Thus, from the combined chloroformic alkaloids of the epigeal part of V. lobelianum we have isolated for the first time veralosine, germine, and deacetylveralosine (and this is the first time that the last-mentioned compound has been found in a plant).

LITERATURE CITED

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