

The plant *Oxytropis puberula* Boriss. (family *Fabaceae*) is one of the poisonous species and, growing in natural pastures, causes the poisoning and death of animals and considerable losses to animal husbandry [1]. With the aim of finding the toxic principle, we have undertaken an investigation of the alkaloid composition of this plant, which has not been studied previously.

The epigeal part of *O. puberula*, gathered at the end of the fruit-bearing phase on the territory of the Koktal'skii sovkhos [communal farm], Balkhash region, Alma-Ata province, was extracted with methanol. The methanolic extract was separated into basic, acidic, and neutral fractions. The basic fraction, comprising 0.22% of the weight of the dry raw material, was separated by column chromatography (silica gel). Ether-chloroform eluates yielded an alkaloid with mp 262-263°C,  $M^+$  212 (mass spectrometrically) (I), and chloroform-methanol eluates one with mp 157-158°C,  $[\alpha]_D -25.1^\circ$  (c 0.75; methanol),  $M^+$  242 (HRMS) (II). From their spectral characteristics and mixed melting points, (I) was identified as the  $\beta$ -carboline alkaloid harmine [2, 3], and (II) as (-)-N-nicotinoyl-2-hydroxy-2-phenylethylamine, belonging to alkamides of the 2( $\beta$ )-phenylethylamine group [4].

In order to confirm the structure of (II) put forward previously on the basis of its spectral characteristics [4] we saponified the substance with alcoholic alkali. From the hydrolysate we isolated a product with mp 235-236°C, a mixture of which with nicotinic acid gave no depression of the melting point, which confirmed the presence of this acid as an acyl radical in (II). Alkaloid (II) is the first representative of the 2( $\beta$ )-phenylethylamine group containing a nicotinic acid residues. Alkamides of this group are present in all species of the *Oxytropis* that have been studied up to the present time [4, 5]; however, their simultaneous presence with representatives of the indole bases has been observed only in the plant *O. puberula*.

By column chromatography we isolated from the neutral fraction of the plant extract a substance with mp 276-279°C (methanol),  $M^+$  576 (mass-spectrometrically) the physicochemical constants and spectral properties of which coincided with those of  $\beta$ -sitosterol glucopyranoside [7]; a direct comparison confirmed their identity.

This is the first time that harmine and  $\beta$ -sitosterol glucopyranoside have been found in plants of the *Fabaceae* genus. It is not excluded that one of the causes of the toxicity of the plant *O. puberula* is the presence of the toxic harmine in it [8].

## LITERATURE CITED

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