ALKALOIDS OF Physochlaina alaica

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We have previously reported the isolation from the plant Ph. alaica E. Korot. of the alkaloids hyoscyamine, 6-hydroxyhyoscyamine, hyoscine, α-belladonnine, β-belladonnine, apoatropine, apohyoscine, phycochlaine, and 6-hydroxyapoatropine [1].

Continuing the separation of the water-soluble fraction of the combined alkaloids by treatment with ether we have isolated tropine [2]. The ether-insoluble residue was chromatographed on a column of silica gel (1:20). From chloroform–methanol (19:1) and methanol eluates we obtained: -tropane-3α,6β-diol [3] and a new base with the composition $C_{17}H_{23}NO_5$ (I) with mp 105-106°C (methanol).

The IR spectrum of (I) has the absorption bands of a monosubstituted benzene ring at 705, 750 cm^{-1}, an ester carbonyl group at 1730 cm^{-1}, and of a hydroxy group at 3280-3420 cm^{-1}. On comparing the compositions and mass spectra of 6-hydroxyhyosciamine and (I) it can be seen that the latter differs from the former by 16 m/e. The nature of the fragmentation, i.e., the low intensity of the molecular ion (2%), the presence in the mass spectrum of intense peaks of ions with m/e 305 $(M-16)^+$ and 304 $(M-17)^+$, and its solubility in water permit the assumption that the base is 6-hydroxyhyoscyamine N-oxide.

The reduction of (I) with zinc in hydrochloric acid gave an alkaloid identical with 6-hydroxyhyoscyamine.

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