ALKALOIDS OF Echium vulgare AND Berberis oblonga

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The epigeal part of <u>E. vulgare</u> (family Borraginaceae), collected in the Dzhungarian Ala-Tau in the flowering phase (June 28, 1973) contained a total of 0.12% of alkaloids. When the combined alkaloids were separated on a column of silica gel with elution by chloroform, an individual base was obtained in the form of an oil giving a crystalline picrate. According to its spectra and a direct comparison with an authentic sample, the alkaloid was identified as asperumine. Elution with chloroform-methanol (9:1) gave a second base in the form of a microcrystalline powser identified as asperumine N-oxide.

This is the first time that asperumine and its N-oxide have been isolated from the genus <u>Echium</u>. It is interesting to note that the isomeric alkaloid heliosupine has been isolated from the same plant collected in the Khar'kov oblast [1].

We investigated an aqueous ethanolic extract of the bark of the roots of <u>Berberis oblonga</u> after the separation of berberine iodide [2]. When the concentrated extract was made alkaline and treated with chloroform, magnoflorine iodide was isolated. By separating the mixture of bases into phenolic and nonphenolic fractions and repeated separation on columns of silica gel, we isolated the bisbenzylisoquinoline bases oxyacanthine and berbamine and the protoberberine alkaloids palmatine, columbamine, and jatrorrizine. On reduction with zinc in sulfuric acid, the latter gave the corresponding tetrahydroprotoberberines. All the bases were identified by comparing their melting points and UV, mass, and NMR spectra with those given in the literature, and magnoflorine also by a direct comparison with an authentic sample.

This is the first time that any of the six bases have been isolated from Berberis oblonga.

LITERATURE CITED

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