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ALKALOIDS OF THE ROOTS OF Papaver oreophilum

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Papaver oreophilum Rupr. – a representative of the section Pseudo-Pilosa M. Pop. – is endemic but in our country is found in the wild form only in the Caucasus [1, 2].

The alkaloid composition of cultivated forms of this plant has been widely studied [3-5].

We give the results of a study of the alkaloids of the roots of P. oreophilum collected in North Ossetia (Kurtatinskoe gorge, flood plain of the R. Fiagdon) in the phase of mass flowering.

Methanolic extraction of the air-dry roots gave 0.31% of combined alkaloids, which were separated into phenolic and nonphenolic fractions.

By column chromatography on silica gel, the nonphenolic fraction yielded protopine, α-allocryptopine, mecambridine, and a base with mp 175-176°C.

All the known alkaloids were identified by their spectral characteristics (IR, UV, mass, and PMR spectra), and also by means of mixed melting points with authentic samples.

The base with mp 175-176°C, $[\alpha]_D$ −210° (c 0.8; chloroform). The UV spectrum of the base contained two absorption maxima, at 290 and 308 nm (log ε 3.56 and 3.68). In the IR spectrum of the base there were absorption bands at (cm^{-1}) 940 and 1040 (methylenedioxy group), 1610 (aromatic ring), and 1770 (γ-lactone carbonyl group). The PMR spectrum of the base, taken in deuterochloroform, showed signals in the form of three-proton singlets at 2.56 ppm from a N-methyl group and at 3.85, 4.04, and 4.08 ppm from methoxy groups, and also a two-proton singlet at 5.96 ppm from a methylenedioxy group. At 4.40 and 5.57 ppm there were two one-proon doublets with J = 4 Hz. One-proton doublets appeared in the aromatic region of the spectrum at 6.00 and 6.86 ppm (J = 8 Hz), together with a one-proton singlet at 6.30 ppm.

The mass spectrum of the base lacked the peak of the molecular ion, and the maximum peak was 1 m/z 220.

The spectral characteristics given, and also the properties of the base agree well with those of L-narcotine [6]; consequently it was narcotine. This is the first time that this compound has been isolated from P. oreophilum.

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