STRUCTURE OF MARSHALINE

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From the nonphenolic alkaloids of *Corydalis marshalliana* Pers. collected on Mt. Beshtau (Caucasus) we have isolated a new base with mp 134-135°C, $[\alpha]_D$ −105° (c 0.2; chloroform), which we have called marshaline (I).

The UV spectrum of (I) has an absorption maximum at 290 nm (log 2.75) while its mass spectrum lacks the peak of the molecular ion and the maximum peak is that of an ion with m/z 190.

The PMR spectrum of marshaline reveals signals in the form of three-proton singlets at 2.29 ppm from a N-methyl group and at 3.77 ppm from a methoxy group and two-proton singlets at 5.77 and 5.92 ppm from two methylenedioxy groups. In the aromatic region of the spectrum there are one-proton singlets at 6.22 and 6.42 ppm and one-proton doublets at 6.40 and 6.67 ppm (J = 8 Hz). Methylene and methine protons are revealed at 2.30-3.70 ppm

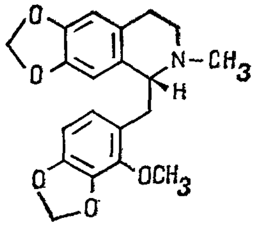
The facts given above show that the base belongs to the group of benzyltetrahydroquinoline alkaloids [1].

The presence in the mass spectrum of marshaline of the maximum peak of an ion with m/z 190 shows the presence of one methylenedioxy group in the isoquinoline moiety of the molecule. The second methylenedioxy group and the methoxy group are present in the benzyl moiety of the molecule.

The spectral characteristics of marshaline are very close to those of ledecorine [2]. A comparison of the developed formulas of marshaline and of ledecorine shows that the first has a methoxy group in place of the hydroxy group in ledecorine.

A direct comparison of marshaline with O-methylledecorine obtained by the methylation of ledecorine with diazomethane showed their identity (mixed melting point, TLC, IR spectrum).

The presence of two negative Cotton effects at 239 and 291 nm in the ORD spectrum of marshaline shows the R configuration of its asymmetric center [3]. Thus, marshaline has the following structure:



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