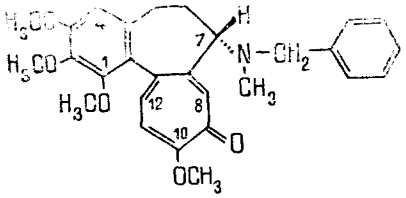
results of a study of the ^{13}C NMR spectrum of speciosamine. Its carbon spectrum contained the signals of all the C atoms of the colchamine skeleton [8] and those of five tertiary C atoms (127.6 × 2, 127.0 × 2, and 125.7 ppm), of a quaternary C atom in a benzene ring (133.4 ppm), and of a methylene group (59.4 ppm).

The facts given above permitted the conclusion that the colchinine moiety of the molecule of the base was linked, as in (II) with a monosubstituted benzene ring through a methylene bridge, and speciosamine is represented by structure (I):



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TRIGAMINE N-OXIDE FROM Merendera jolantae

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We have previously [1] reported the isolation from the epigeal part of Merendera jolantae E. Czernjak of a previously unknown alkaloid (I) with the composition $C_{19}H_{27}O_4N$, mp 201-202°C, $[\alpha]_D$ +10°. We have now determined its structure on the basis of the results of a study of spectral characteristics and chemical transformations.

The UV spectrum of (I) had absorption maxima at 216 and 290 nm, and the IR spectrum absorption bands of active hydrogen (3390-3210 cm^{-1}), cf the C=C bonds of a benzene ring (1600 cm^{-1}), and of methylene groups (1475 cm^{-1}). The PMR spectrum of the base (in $CDCl_3$) contained the resonance signals of the rotons of a N-methyl group (3 H, s, 3.40 ppm), of a O-methyl group obviously present in a benzene ring (3 H, s, 3.80 ppm), and of the proton of a benzene ring (6.50 ppm). The mass spectrum of (I) contained as the main peaks those of ions with m/z 334 $(M + 1)^+$, 333 (M^+), 317 $(M - 16)^+$, 316 $(M - 17)^+$ (100%), 315 $(M - 18)^+$, 300, 289, 275, 259, 248, 246 (100%), 218, 217. The downfield shift of the signal of the N-methyl group, the presence of a triplet of peaks of ions $(M - 16)^+$, $(M - 17)^+$, and $(M - 18)^+$ [2, 3] and the solubility of the base in water permitted (I) to be assigned to the N-oxides.

When (I) was reduced with zinc in hydrochloric acid, a compouond identified from its Rf value and spectral characteristics as trigamine (II), isolated previously from Merendera trigina [4], was obtained. Thus, (I) was trigamine N-oxide.

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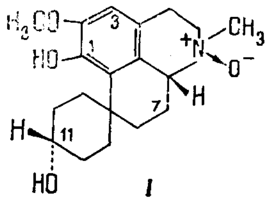

I

Trigamine N-oxide is the first representative of the homoproaporphine alkaloids containing a N-oxide group.

Furthermore, we have determined the configuration of the tertiary hydroxy group (C_{11}—H) of the base from the results of a study of the photon spectra of (II) and of its diacetyl derivative (III). In the spectra of compounds (I) and (II), the signals of this proton appeared at 3.95 ppm, and in (III), as the result of a downfield shift (5.02 ppm) it was possible to determine its half-width unambiguously, which amounted to 8.8 Hz. This showed that the H_{11} proton was equatorial and, therefore, the hydroxy group at C_{11} had the axial orientation. We confirmed the structure and configuration of trigamine by showing its identity with one of the products of the reductive decomposition of regelamine — 1-hydroxy-12-deoxy-1,12-de-epoxyregelamine.

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THE STRUCTURE OF REGILININE

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We have previously [1, 2] reported on the isolation from the epigeal parts of Colchisum kesselringii Rgl. of, together with other alkaloids, regelinine, which was characterized by its melting point (253-254°C) and the Rf value of its methiodide. The base in the free form is unstable and is fairly easily oxidized.

The UV spectrum of the base has absorption maxima at 243 and 293 nm, and the IR spectrum has absorption bands of active hydrogen (3370 cm^{-1}), of C=C bonds of a benzene ring (1600 cm^{-1}), and of methylene groups (1470 cm^{-1}). Its PMR spectrum shows the signals of the protons of a N-methyl group (2.36 ppm), of O-methyl groups present in a benzene ring (3.74 ppm), and of an aliphatic part of the molecule (3.32 ppm). In the weak field region of the spectrum there is the signal of one benzene-ring proton (6.44 ppm). The mass spectrum contains the peaks of ions with m/z 345 (M^+), 344 $(M - 1)^+$ (100%), 302, 298, 284, 244, 242, 229.

On the basis of the spectral characteristics given above, regelinine was assigned to the group of homoproaporphine alkaloids with a spirocyclohexane ring, and according to its developed formula, $C_{17}H_{17}$ (OH) $(OCH_3)_2$ (—O—) (NCH_3), it was analogous to regeline, isolated from the same plant [1-3]. We therefore assumed that this base might be an epimer of regeline differing by the configuration of the hydroxy group at C_{11}. A similar example was observed previously in relation to kesselringine and luteine in Colchicum luteum Baker [4-6]. To answer this question, regelinine methiodide was acetylated with acetyl chloride, giving an acetyl derivative. The IR spectrum of the latter contained the absorption band of an O-acetyl group (1750 cm^{-1}), and its PMR spectrum (in $CDCl_3$) contained the signals of the protons of two O-methyl groups (3.80 and 3.28 ppm), of two N-methyl groups (3.62 and 3.10 ppm), and of an acetyl group (2.08 ppm). The signal of an aromatic proton appeared at 6.50 ppm and that

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