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STRUCTURE OF THALICSIMIDINE

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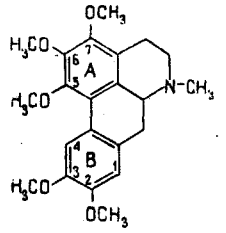
We have previously reported the isolation of an aporphine base from the roots of Thalictrum simplex L. [1]. The base proved to be new, and we called it thalicsimidine. It contains a N-methyl and five methoxy groups. The molecular weight determined by mass spectroscopy is 385. The fragmentation of the base (the mass spectra were taken on a MKh-1303 mass spectrometer at an energy of the ionizing electrons of 34 eV with an ionizing current of 150 μa, at 130° C) agrees with the data published for aporphines [2]. The mass spectrum of thalicsimidine has peaks of ions with m/e 385 (M^+), 384 $(M-1)^+$, 370 $(M-CH_3)^+$, 354 $(M-OCH_3)^+$, 342 $(M-CH_2=N-CH_3)^+$. The last ion, by losing a methyl group, gives an ion with m/e 327, the loss of one methoxyl leads to an ion with m/e 311, and the loss of two methoxyls to an ion m/e 280. However, the peaks with m/e 152 and 165 found in the spectra of three aporphine bases [2] are not present in the spectrum of thalicsimidine. The strongest peaks are those with m/e 57, 56, 55, and 43. Since the specific rotation of the base is less than 100°, the substituents in ring B must be located at C-2 and C-3 [3].



I

By analogy with other penta-substituted aporphines, we propose for thalicsimidine the structure I.

The NMR spectra of the base (taken by M. R. Yagudaev on a JNM-4H-100/100 MHz instrument in deuterochloroform) confirm the structure that we have proposed [4]. In the region of aromatic protons there are two one-proton singlets at δ 6.70 and 7.89, the latter relating to the hydrogen at C-4. The protons of N-methyl group appear in the form of a 3-proton singlet at δ 2.47. The methoxy groups give four peaks at δ 3.88 (C-7), 3.85 (two OCH_3, at C-2 and C-3), 3.82 (C-6), and 3.64 (C-5).

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ALKALOIDS OF PEDICULARIS OLGAE

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Continuing our investigation of the alkaloids of P. olgae [1,2], by chromatographing the ethereal fraction of the combined alkaloids on alumina (eluant: benzene–chloroform (2:1)], we have isolated a crystalline base with mp 188–189° C (ethanol), R_f 0.77 [1-butanol–water–acetic acid (20:20:1) system], $[\alpha]_D^{25}$ +61.5° (c 0.95; ethanol), $C_{10}H_{11}NO$,