ALKALOIDS OF Corydalis marschalliana

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We have studied the alkaloids of the plant Corydalis marschalliana Pers. (family Papaveraceae) growing in Bulgaria, the alkaloid composition of which has not been studied previously. The dry plant (1 kg) was extracted with methanol. The alkaloids were extracted from the evaporated methanolic solution with 2% hydrochloric acid. The acid solution was washed with ether. The solvent was distilled off, giving two substances: (I) – white crystals with mp 256-257°C; (II) – yellow crystals with mp 238-239°C. The acid solution was made alkaline with 25% ammonia and shaken with ether, and then with a mixture of benzene and butanol (3:1). Distillation of the solvents gave 0.56% of combined ether-soluble alkaloids and 0.1% of combined benzene–butanol–soluble alkaloids. When the ether-soluble alkaloids were treated with methanol, a base separated out with mp 220-221°C (ethanol), which was identified by a mixed melting point, IR spectroscopy, and TLC as *l*-adlumidine [1]. The methanolic mother solution from the ether-soluble alkaloids was chromatographed on alumina. The first fractions, eluted with benzene–ethyl acetate (95:5) yielded bases with mp 192-193°C (ethanol) and 194-195°C (ethanol). The latter was identified as d-bicuculline [1].

Another two alkaloids were isolated from the following fractions. The first had mp 197-199°C (ethanol), $[\alpha]_D$ +224° (c 0.53; $CHCl_3$), mol. wt. 325 (mass spectrometrically). This base formed a crystalline methiodide with mp 242-243°C (decomp.) and a O-methyl ether with mp 132-133°C. Their UV, mass, and NMR spectra were characteristic for aporphine alkaloids. The direct comparison of our base with an authentic sample of d-bulbocarpine showed their identity. The second alkaloid was identified as d-corydine [2]. The fractions eluted by a mixture of benzene and ethyl acetate (9:1) gave a base with mp 154-155°C, which was identical with an authentic sample of *l*-domesticine [3]. Benzene–ethyl acetate (1:1) eluates yielded alkaloids with mp 204-205°C and with mp 122-123°C (methanol), $[\alpha]_D$ +48.7° (c 1.15; $CHCl_3$), which were identified as protopine and d-isoboldine [4, 5]. A benzene–methanol (9:1) fraction yielded a base with mp 240-241°C (chloroform–methanol), and one with mp 258-260°C.

Thus, from Corydalis marschalliana we have isolated *l*-adlumidine, d-bicuculline, d-bulbocarpine, d-corydine, *l*-domesticine, protopine, d-isoboldine, and three bases unidentified because of their small amount with mp 192-193°C, 240-241°C, and 258-260°C.

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