

We have investigated the alkaloids of the seeds of *Dipsacus azureus* Schrenk. (family Dipsacaceae) collected in the Chimgan mountains (Tashkent oblast, September 12, 1968) in the stage of the withering of the epigeal part. The air-dry comminuted seeds (1 kg) were defatted with petroleum ether. The petroleum ether extractive substances amounted to 41.5 g. The seeds were dried in the air until the petroleum ether had volatilized completely. Then they were moistened with ammonia and extracted with chloroform. This gave 5.1 g (0.51% of the weight of the seeds) of total bases. This material was separated according to the basic strengths of its components with sodium phosphate buffer.

When the fraction with pH 2 was separated chromatographically, the ethereal-chloroformic eluate deposited crystals (0.3 g) with the composition  $C_{11}H_{13}O_3N$ , mp 130-131°C (ether), mol. wt. 207 (mass-spectrometrically),  $R_f$  0.85 [in the butanol-acetic acid-water (20:1:20) system].

The UV spectrum exhibited one maximum at 273 nm ( $\log \epsilon$  3.25). The IR spectrum had characteristic absorption bands at  $3255\text{ cm}^{-1}$  (-OH),  $1735\text{ cm}^{-1}$  (ester group), and  $1595\text{ cm}^{-1}$  (pyridine).

Because of the strong absorption of the pyridine chromophore, the optical rotatory dispersion (ORD) could be measured as far as 300 nm. A flat negative ORD curve corresponded to this region.

The mass spectrum of the base had peaks of ions with  $m/e$  207, 179, 175, 160, 147, 118, 91, 77, and 65. The NMR spectrum of the base showed two one-proton singlets at  $\tau$  1.22 and 1.69 ppm corresponding to two hydrogen atoms present in the  $\alpha$  and  $\alpha'$  positions to the nitrogen atom of the pyridine ring. The nonequivalence of these protons can be explained by the influence on them of the carbonyl of a  $\text{COOCH}_3$  group present in the  $\beta$  position to the nitrogen atom of the ring. A three-proton doublet at 8.68 ppm ( $J=7$  Hz) and a one-proton multiplet at  $\tau$  6.85 ppm correspond to a  $>\text{CH}-\text{CH}_3$  grouping. The appearance of a one-proton multiplet in the weak-field region is due to the propinquity of the pyridine nucleus. A two-proton doublet with its center at  $\tau$  6.65 ppm relates to the  $H_C$  protons. The signal from the  $H_B$  proton appears at  $\tau$  5.46 ppm and that from the hydroxy group at 6.14 ppm. The three protons of the methyl of the ester group give a sharp singlet at  $\tau$  6.16 ppm. The spectrum was recorded on a JNM-4H-100/100 MHz instrument in  $\text{CDCl}_3$  with HMDS as internal standard.

In its physical constants and elementary composition, the base that we have isolated is similar to the known alkaloid cantleyine [1, 2].

## LITERATURE CITED

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