

FLINDERSINE FROM *Haplophyllum perforatum*

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Continuing a study of the alkaloids of the epigeal part of *H. perforatum* (M. B.) Kar. et Kir. [1], we have separated the combined bases into neutral, acid, and basic fractions. The neutral fraction was chromatographed on alumina. From ethereal eluates we isolated a crystalline substance (I) in the form of colorless needles with mp 185-186°C (decomp.; from ethanol). The base is very weak; it dissolved in concentrated hydrochloric acid but precipitates when the solution is diluted with an equal volume of water and is not extracted by 10% acid from chloroform solution; it dissolves well in chloroform, sparingly in ethanol, acetone, and ether, and is insoluble in water and alkali.

The IR spectrum of the alkaloid isolated showed absorption bands at 3165 and 1665 cm^{-1} (NHC=O), and its UV spectrum [λ_{max} 334, 347, 364 nm ($\log \epsilon$ 3.74, 3.86, 3.54); λ_{min} 277, 340, 358 nm ($\log \epsilon$ 2.65, 3.71, 3.51)] is typical for pyrano-1,2-dihydroquinolin-2-one bases is identical with that of flindersine [2]. The NMR spectrum of (I) (taken in CDCl_3) has signals at the following τ values, ppm: 2.22 (doublet, 1H, H_5), 2.55-

3.00 (multiplet, 3H, $\text{H}_{6,7,8}$); 3.25 ($J = 10$ Hz) and 4.52 ($J = 10$ Hz) (doublets of 1H each, >C-CH=CH-C<) and

8.48 ppm (singlet, 6H, $\text{>C(CH}_3)_2$).

The hydrogenation of (I) in ethanol over a platinum catalyst gave a dihydro derivative (II) with mp 228-229°C (from ethanol), λ_{max} 216, 230, 272, 283, 313, 326 nm ($\log \epsilon$ 4.56; 4.58; 3.86; 3.86; 3.83; 3.77); λ_{min} 220, 256, 277, 292, 320 nm ($\log \epsilon$ 4.55, 3.62; 3.92; 3.50; 3.74).

The main peaks in the mass spectra were as follows: I - m/e 227 (M^+), 212 ($\text{M}-15$); (II) - m/e 229 (M^+), 214 ($\text{M}-15$), 200 ($\text{M}-29$), 186 ($\text{M}-43$), 174 ($\text{M}-55$).

These facts, and also the melting points of (I) and (II), agree with those of flindersine and its dihydro derivative [2, 3].

This is the first time that flindersine has been isolated from plants of the genus *Haplophyllum* growing in the territory of the USSR.

LITERATURE CITED

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