5. S. M. Sharafutdinova and A. S. Sadykov, Khim. Prir. Soedin., 198 (1968).
6. I. A. Bessanova and S. Yu. Yunusov, Khim. Prir. Soedin., 303 (1977).
7. D. Lavie, N. Danieli, R. Weitman, and E. Glotter, Tetrahedron, 24, 3011 (1968).

BUCHAPINE — A NEW ALKALOID FROM *Haplophyllum bucharicum*

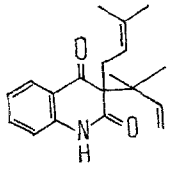
E. F. Nesmelova, I. A. Bessonova, and
S. Yu. Yunusov

UDC 547.944/945

Continuing a study of the chemical composition of the epigeal part of *Haplophyllum bucharicum* Litv. [1], from the neutral fraction of the methanolic extract, by chromatography on columns of alumina and silica gel, we have obtained a new alkaloid (I) with mp 134-135°C (hexane) and have called it buchapine. Buchapine has the composition $C_{19}H_{23}NO_2$, identical with that of 3-dimethylallyl-4-dimethylallyloxy-2-quinoline (II) [2].

The mass spectrum of (I) — m/z (%) 297 (M^+ 10), 229 (M — 68, 34), 228 (M — 69, 100), 214 (20), 212 (24), 200 (16), 186 (38), 174 (24), 69 (20) — almost coincides with that of (II): There are only slight differences in the intensities of some peaks. These results, and also the presence in the IR spectrum of buchapine of absorption bands at 1692 cm^{-1} together with the band of an amide carbonyl group at 1660 cm^{-1} have permitted the suggestion that it is based on a 1,2,3,4-tetrahydroquinoline-2,4-dione nucleus with two prenyl substituents in position 3. This conclusion is in harmony with the UV spectrum of (I).

UV spectrum of buchapine: λ_{max} (nm) 234, 238 (shoulder), 242 infl., 244 infl., 258 shoulder, 324, 329 shoulder, 325 infl. (log ε 4.44, 4.41, 4.32, 3.72, 3.60, 3.41, 3.50, 3.40) differs from those of the 4-alkoxy-2-quinolone alkaloids, in particular (II) [2], by the absence of maxima in the 260—290 nm region characteristic for this group of substances [3], but it is close to those of 3,3-diprenyl-1,2,3,4-tetrahydroquinoline-2,4-dione compounds [4]. The structure of buchapine follows from its PMR spectrum ($CDCl_3$, δ scale), which contains signals at 7.74 and 7.5—6.82 ppm (doublet, 1 H, J = 8.5 Hz, and multiplet, 3 H) relating to the H-5 and H-6,7,8 aromatic protons, and also at 5.76 and 4.81 ppm (A_2B system, 1 H and 2 H respectively: $-CH=CH_2$), 4,65 and 2.77 ppm (triplet, 1 H; doublet, 2 H, J = 7.5 Hz, $=CH-CH_2$), and 1.88, 1.40, and 1.09 ppm (singlets, 3 H, 3 H, and 6 H, respectively), belonging to the protons of two prenyl substituents one of which has the structure $-C(CH_3)_2-CH=CH_2$ and the other $-CH_2-CH=C(CH_3)_2$. Consequently, buchapine has the structure of 3-(α,α-dimethylallyl)-3(γ,γ-dimethylallyl)-1,2,3,4-tetrahydroquinoline-2,4-dione.



I

Buchapine is the only alkaloid of the 1,2,3,4-tetrahydroquinoline-2,4-dione type with phenyl substituents of different structures in position 3.

LITERATURE CITED

1. E. F. Nesmelova, I. A. Bessonova, and S. Yu. Yunusov, Khim. Prir. Soedin., 532 (1982) [preceding paper in this issue].
2. D. Lavie, N. Danieli, R. Weitman, and E. Glotter, Tetrahedron, 24, 3011 (1968).

Institute of the Chemistry of Plant Substances, Academy of Sciences of the Uzbek SSR, Tashkent. Translated from Khimiya Prirodnykh Soedinenii, No. 4, pp. 532-533, July-August, 1982. Original article submitted April 27, 1982.

 0009-3130/82/1804-0508$07.50

3. I. A. Bessonova and S. Yu. Yunusov, Khim. Prir. Soedin., 303 (1977).
4. D. L. Dreyer, Phytochemistry, 19, 941 (1980); P. Venturella, A. Bellino, and M. L. Marino, Heterocycles, 16, 1873 (1981).

ALKALOIDS OF THE EPIGEAL ORGANS OF *Hippeastrum equestre*

D. A. Murav'eva and Abul Hasan Mahbub Alam

UDC 615.322 (Hippeastrum):547.94

From the total bases obtained by chloroform extraction from the epigeal organs of *Hippeastrum equestre* Herb. (family Amaryllidaceae) (2 kg) collected in the Peoples' Republic of Bangladesh in the flowering period, on the basis of solubility differences in organic solvents, we have isolated 2.36 g of lycorine [1], 0.30 g of galanthine [2], and 0.28 g of galanthamine [3]. Chromatography of the residual material on a column of type KSK silica gel using as solvents mixtures of chloroform and methanol with successive increases in the concentration of methanol has yielded 0.54 g of hippeastrine [4], 0.76 g of tazettine [1], 0.40 g of hemanthamine [5], and 0.32 g of a base (III) with mp 243–245°C (decomp, methanol) The identification of the compounds mentioned was carried out with the aid of the determination of physicochemical constants, thin-layer chromatography, and UV, NMR, andmass spectroscopy.

This is the first time that any of the alkaloids mentioned has been isolated from the epigeal organs of *Hippeastrum equestre*.

LITERATURE CITED

1. R. V. Krishna Rao and R. Vimaladevi, Planta Med., 21, No. 2, 142 (1972).
2. N. F. Proskurina and A. P. Yakovleva, Zh. Obshch. Khim., 17, 6 (1947).
3. N. V. Proskurina and A. P. Yakovleva, Zh. Obshch. Khim., 22, 1899 (1952).
4. H. G. Boit, Chem. Ber., 89, 1129 (1956).
5. H. G. Boit, Chem. Ber., 87, 1339 (1954).

Pyatigorsk Pharmaceutical Institute. Translated from Khimiya Prirodnykh Soedinenii, No. 4, p. 533, July-August, 1982. Original article submitted April 13, 1982.

0009-3130/82/1804-0509$07.50