

trum: λ_{\max} 295 nm (log ϵ 3.75), shoulder at λ 237 nm (log ϵ 3.51) — was identified as hemanthanine from its mass and NMR spectra [7-10].

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ALKALOIDS OF *Veratrum dahuricum*

N. V. Bondarenko

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Together with the ester-alkaloids protoverine and germine [1], the combined alkaloids obtained by the ether extraction of the epigeal part of *Veratrum dahuricum* (Turcz.) Loes., have yielded alkaloids with R_f 0.18 (I), 0.22 (II), and 0.36 (III) (system 1 — chloroform saturated with formamide; Leningrad type M [slow] paper impregnated with formamide), 0.31 (IV), 0.43 (V), 0.7 (VI), and 0.73 (VII) (system 2 — chloroform-benzene (1:2) saturated with formamide).

Alkaloid (I) — $C_{27}H_{43}O_2N$, mp 239–241°C (ethanol), $[\alpha]_D^{22} +18^\circ$ (c 0.41; ethanol). The UV spectrum of the alkaloid in concentrated sulfuric acid (0.37 mg in 10 ml) obtained 24 h after dissolution [2] had λ_{\max} 250, 323, 444, 504 nm. The R_f value of the alkaloid coincided with that of rubijervine, and a mixture of the compound with rubijervine gave no depression of the melting point.

Alkaloid (II) — $C_{27}H_{43}O_3N$, $[\alpha]_D^{21} -85$, (c 0.43; chloroform). Amorphous. The UV spectrum of the substance in concentrated sulfuric acid (0.4 mg in 10 ml taken by Bondarenko's method [2] two hours after dissolution had λ_{\max} 264, 389, 472, 523 nm. The R_f value of the substance coincided with that of a sample of veramarine.

Alkaloid (III) — $C_{36}H_{51}O_{10}N$, mp 270–272°C (chloroform). $[\alpha]_D^{23} 27.1^\circ$ (c 0.34; chloroform). The UV spectrum of the alkaloid (0.14 mg in 10 ml of concentrated sulfuric acid) had λ_{\max} 229, 322, 411, 487 nm. The products of alkaline hydrolysis [3] were shown by paper chromatography to contain the amino alcohol zygadenine [butanol-1-ol-acetic acid-water (4:1:5) system] and veratric acid [butan-1-ol-1.5 N aqueous ammonia (1:1) system]. The R_f value of the compound coincided with that of veratrolyzygadenine; a mixture of the alkaloid with an authentic sample gave no depression of the melting point.

Alkaloid (IV) — mp 345–247°C (ethanol), $[\alpha]_D^{21} -167^\circ$ (c 0.30; chloroform). The UV spectrum in ethanol had λ_{\max} 250, 360 nm, and the spectrum in concentrated sulfuric acid λ_{\max} 282, 313, 405, 480 nm. Its R_f value coincided with that of jervine; a mixture showed no depression of the melting point.

Alkaloid (V) — mp 237–238°C, $[\alpha]_D^{20} +7^\circ$ (c 0.60; ethanol). The spectrum of the compound in concentrated sulfuric acid had absorption maxima at 247, 323, 409, and 504 nm. The R_f value of the alkaloid coincided with that of isorubijervine, and a mixture gave no depression of the melting point.

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Alkaloid (VI) — mp 173–175°C (from acetone–ether), $[\alpha]_D^{24} -91^\circ$ (c 0.35; chloroform). The UV spectrum in concentrated sulfuric acid had λ_{\max} 335, 417 nm. The R_f value of the alkaloid coincided with that of a sample of verazine; a mixture gave no depression of the melting point.

Alkaloid (VII) — $[\alpha]_D^{23} -94^\circ$ (c 0.32; chloroform). Amorphous. The UV spectrum in concentrated sulfuric acid had λ_{\max} 289, 416, 502 nm. The R_f value of the alkaloid coincided with that of a sample of veramine.

The results of the analysis of the compounds isolated coincided with those of known alkaloids: (I) — rubijervine; (II) — veramarine; (III) — veratroylzygadenine; (IV) — jervine; (V) isorubijervine; (IV) — verazine; and (VIII) — veramine [3–5]. This is the first time that the alkaloids (I)–(III) and (V)–(VII) have been isolated from *Veratrum dahuricum*.

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ALKALOIDS OF *Buxus sempervirens*

B. U. Khodzhaev, I. M. Primukhamedov,
N. Yu. Nakaidze, and S. Yu. Yunusov

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The alkaloids of *Buxus sempervirens* L. (box) cultivated in the environs of the town of Kobileti, Adzharsk ASSR have not previously been studied.

We determined the amounts of alkaloids in various organs of this plant by the chloroform method:

Date of collection (1982)	Plant Organ	Total Alkaloids, %
April 15	First year shoots	3.13
	Young roots	2.98
	Flowers	2.71
	Leaves and thin twigs	2.63
	Roots	2.51
	Perennial flowers	2.49
July 28	Young roots	2.65
	First-year shoots	2.47
	Roots	2.31
	Leaves and thin twigs	2.19
	Fruit	2.01
	Perennial flowers	1.31

The combined alkaloids of *Buxus sempervirens* consisted of a complex mixture of bases which was difficult to separate into individual components by the usual methods. In view of this, the ethereal fraction of the combined alkaloids isolated from 3.4 g of thin twigs and leaves (collected on April 15, 1982) were dissolved in benzene and separated according to basicity by McIlvaine's solutions at pH 8.0–2.2 (with an interval of 0.2 pH).

The combined fractions with pH 8.0–7.8, 7.6–7.4, and 7.2–6.8 were chromatographed on a column of alumina with elution by ether–ethanol mixtures containing increasing concentrations of ethanol — 5, 10, 15, 20, 25, 30, and 40%, respectively. In this way the following bases

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