Alkaloid (VI) — mp 173-175°C (from acetone—ether), $[\alpha]_D^{24}$ —91° (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° (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*

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UDC 547.944/945

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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Translated from Khimiya Prirodnykh Soedinenii, No. 6, pp. 802-803, November-December, 1984. Original article submitted June 7, 1984.

were isolated: (I), $C_{25}H_{42}N_2O$, mp 240-242°C (ethanol), $[\alpha]_D$ +100.43° (c 0.651; chloroform); (II), $C_{26}H_{46}N_2$, mp 227-229°C (ethanol), $[\alpha]_D$ +70.61° (c 0.511; chloroform); (III), $C_{26}H_{44}N_2O$, mp 234-236°C (ethanol), $[\alpha]_D$ +124.54° (c 0.721; chloroform); and (IV), $C_{28}H_{50}N_2$, mp 199-201°C (ethanol), $[\alpha]_D$ +76.1° (c 0.671; chloroform).

The mother liquors from the alkaloids (II), (III), and (IV) were treated with acetone. The fraction of the total that was insoluble in chloroform was chromatographed on a column of alumina with the elution by benzene–ethanol (4:1 and 4:3). Fractions 7-15 were rechromatographed on a column of silica gel with elution by benzene–hexane–ammonia (5:2:0.16 and 5:4:0.25).

From the benzene–hexane–ammonia (5:4:0.25) fraction base (V) $C_{26}H_{46}N_2$ was isolated with mp 139-141°C (benzene), $[\alpha]_D$ +98.81° (c 0.573; chloroform).

Alkaloid (I) was identified as cyclobuxine-D, (II) as cyclovirobuxine-D, (III) as cyclobuxine-B, (IV) as cycloprotobuxine-A, and (V) as cycloprotobuxine-D (mixed melting points, and also the IR, NMR, and mass spectra of the bases and their derivatives) [1-6]).

The combined alkaloids from the pH 4.2-4.0 fraction were treated with acetone. From the fractions soluble in acetone a base (VI) with mp 187-189°C (acetone) was isolated.

The IR spectrum of this alkaloid exhibited bands at (cm^{-1}) 1672, 968 ($-H_2C-CH=CH-CH=CH_2$) and 2930 (CH_2; CH_3). Its mass spectrum had the peaks of ions with m/z 44, 84, 85, 354, 380, 381 (100%), 382, and 424 (M^+), which are characteristic for the mass-spectrometric fragmentation of the buxamines [7]. According to its spectral characteristics this alkaloid was a base of the type of 19-nor-B-homo-4,4'-trimethylpregnane-5, which differs from alkaloids previously isolated from the genus *Buxus*.

Thus, from *Buxus sempervirens* L. we have isolated cyclobuxine-D, cyclovirbuxine-D, cyclobuxine-B, cycloprotobuxine-A, cycloprotobuxine-D, and a base with mp 187-189°C.

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