ALKALOIDS OF Buxus hyrcana

ISOLATION OF BUXPIINE AND OF BASE II

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Continuing a study of the alkaloids of Buxus hyrcana Pojark, from the leaves collected in the flowering phase (April, 1976) in addition to those isolated previously [1-4], by ethanolic extraction we have obtained another two alkaloids.

The combined alkaloids (25 g) were chromatographed on a comumn of alunina (here and below, activity grade II) with elution by benzene–ethanol (19:1).

On TLC, fractions 8-14 each gave three spots with the same R_f values, and they were therefore combined, and the dry residue after the evaporation of the solvent (4 g) was rechromatographed on a column of alumina and was eluted with benzene. From benzene fractions 4-6 (150 ml), as the solvent evaporated, a crystalline base deposited with mp 171-172°C (benzene), $[\alpha]_D^{24}$ +157° (c 0.31; chloroform) which was identical with the product of the methylation (by Hess's method) of buxtauine–buxpiine (melting point, IR spectra, R_f values [5-7].

This is the first time that buxpiine has been isolated from a plant of the domestic flora. The dry residue (6 g) obtained by eliminating the solvent from fractions 8-14 was rechromatographed on a column of alumina with elution by benzene–ether (6:4). Fractions 7-10, after evaporation of the solvent, gave a crystalline substance, base (II), with R_f 0.64 [TLC; Al_2O_3; benzene–ethanol (9:1) system]; after recrystallization from acetone it had mp 318-320°C (decomp.) $[\alpha]_D^{26}$ −316° (c 0.19; chloroform).

The IR spectrum of (II) showed absorption bands at (cm^{-1}) 720, 810 (C=C), 1030, 3470 (OH), 1690 (C=O), 1458, 3038 (methylenecyclopropane system), 1200, 1380 (gem-dimethyl groups), and 1145, 2930 ($-CH_2-$, $-CH_3$).

Base (II) differs markedly from all the alkaloids isolated previously from various species of the family Buxaceae by its high melting point and specific rotation, and we therefore consider that it is a new base for this family.

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