Previously, [4], only papaverine was isolated from P. commutatum growing in the environs of the town of Erevan (at a height of 300-400 m), but this was not found in the samples of the plant that we studied. We are the first to have found (III) in P. commutatum. This shows the dependence of the alkaloid composition of this plant on the soil and climatic conditions of its growth.

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# ALKALOIDS OF Reseda lutea

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By ethanolic extraction of the epigeal part of Reseda lutea (family Resedaceae) collected in the Samarkand oblast in the fruit-bearing phase we have isolated 0.02% of total alkaloids. Chromatographic separation of the mixture of bases on a column filled with silica gel yielded phenyl-β-naphthylamine [1] and a new base which we have called luteanine.

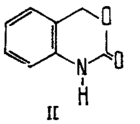
Luteanine (I) is a white crystalline substance with mp 185-187°C (benzene), composition $C_8H_7NO_2$.

The IR spectrum of the alkaloid has absorption bands of the stretching vibrations of a NH group (3240-3280 $cm^{-1}$), of a -NHCOO group (1710-1720 $cm^{-1}$), and of an ortho-disubstituted benzene ring (750 $cm^{-1}$).

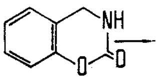
The mass spectrum of (I) with the peak of the molecular ion ($M^{+\cdot}$ 149), confirming the composition of the base, contains strong peaks of ions with m/e 106 (M − 43) and 78. The 149 → 106 and 106 → 78 transitions are confirmed by the corresponding metastable peaks. In the mass spectrum of deuteroluteanine the peak of the molecular ion is shifted by one mass unit in the direction of higher masses, while the peaks of the other ions do not change. This shows that the active hydrogen is present in the fragment eliminated with a mass of 43. On considering fragments frequently found in mass spectra with the above-mentioned mass, it can be seen that the NHCO fragment contains the active hydrogen [2]. Consequently, the ion with m/e 106 is formed from the molecular ion by the splitting out of the above-mentioned neutral fragment.

Because of its poor solubility, the NMR spectrum of the base was recorded in trifluoroacetic acid. The spectrum (JNM 100/100 MHz, δ scale, HMDS as internal standard) showed a multiplet of four aromatic protons with its center at 6.78 ppm and a two-proton singlet at 4.26 ppm. We assigned the latter to the protons of a methylene group attached to an aromatic ring.

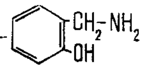
The facts given above permitted the assumption that luteanine is a cyclic carbamate and that it corresponds to structure (I) or (II):



II



I



III

The choice between them was made on the basis of the hydrolysis reaction.

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When luteanine was heated with 10% hydrochloric acid in the water bath for six hours, a crystalline substance (III) with mp 106-108°C (chloroform) was obtained. Its mass spectrum was: 123 ($M^{+}$), 106, 78, and 30 m/e. The physicochemical properties of (III) coincided with those of o-hydroxybenzylamine [3].

Thus, luteanine is 2-oxodihydro-1,3-benzoxazine [4], and this is the first time that it has been detected in plants.

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# TRIACETYLGLYCOPERIN – A NEW ALKALOID FROM Haplophyllum perforatum

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Continuing a study of the combined alkaloids of a methanolic extract of Haplophyllum perforatum [1], we have isolated a new base (I) with the composition $C_{25}H_{27}NO_{11}$, mp 181-182°C (benzene–petroleum ether), $[\alpha]_D$ −91° (c 0.4; ethanol), readily soluble in chloroform, acetone, and dilute acids, less readily in ether and petroleum ether, and insoluble in water and alkaloids. The individuality of the substance was checked on TLC in several solvent systems.

The IR spectrum of (I) has the absorption bands typical for an ester group (1750 $cm^{-1}$) and a furan ring (3130 and 3155 $cm^{-1}$). The UV spectrum of the base [$\lambda_{max}$ 248, 314, 323, 336 nm (log $\varepsilon$ 4.94, 3.91, 3.93, 3.83)] is characteristic for furanoquinoline alkaloids with alkoxy substituents in positions 7 and 8 [2].

The NMR spectrum of (I) ($\tau$ scale, $CDCl_3$, 0 – HMDS, JNM-4H-100) shows doublets at 2.14 and 2.88 ppm (J = 9.5 Hz), 1 H each (ortho aromatic protons); doublets at 2.54 and 3.09 ppm (J = 3 Hz), 1 H each (protons of a furan ring); singlets at 5.85 and 6.00 ppm, 3 H each (methoxy groups); a multiplet at 4.51 ppm (3 H), a triplet at 4.95 ppm (1 H, J = 10 Hz), a broadened multiplet in the 5.60-6.20 ppm region (1 H), singlets at 7.95, 8.08, and 8.12 ppm, 3 H each (protons of an acetoxy group), and a doublet at 8.95 ppm (3 H, J = 6.5 Hz, $CH-CH_3$ group). The facts given, and also the mass spectrum of the base [m/e (%): 517 ($M^{+}$ 5), 273 (41), 245 (93), 227 (52), 171 (30), 153 (100), 111 (80)] are close to those given in the literature for triacetylglycoperin [3]. A direct comparison of the alkaloid isolated with a sample of triacetylglycoperin prepared from glycoperin showed that the substances were identical. The magnitude and sign of the rotation of the base and of triacetylglycoperin also coincided and, therefore, (I) has the structure established for triacetylglycoperin [4].

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