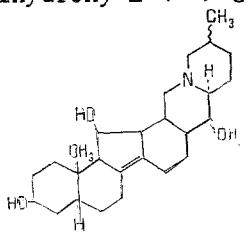
The upfield shift of the proton of the 19-CH_3 group in the PMR spectrum of (II) by 0.05 ppm as compared with (I) showed that the second hydroxy group was present at C_{11} in the β orientation [7].

The presence in the mass spectra of (I) and (II) and the peaks of ions with m/z 111, 112, 125, 149, 164, 166, and 178 and also the absence from the PMR spectra of (I) and (II) of the signals of olefinic protons permitted the assumption that in (I) the double bond could be present between C_8 and C_{14} or between C_8 and C_9. The chemical shifts of the protons of the 19-CH_3 group in (I) were close to the calculated values — 0.91 ppm according to [7] and 0.95 ppm according to [8]. Consequently, the position at C_8 and C_{14} remained for a double bond. According to the chemical shifts of the protons of the 19-CH_3 group, rings A/B are trans-linked.

On the basis of the facts presented above, stenanzamine has the most probable structure and partial configuration of 3β,11β-dihydroxy-$\Delta^{8(14)}$-cevanine (I).



LITERATURE CITED

1. K. Samikov, R. Shakirov, and S. Yu. Yunusov, Khim. Prir. Soedin., 341 (1984) [in this issue].
2. R. N. Nuriddinov and S. Yu. Yunusov, Khim. Prir. Soedin., 101 (1968).
3. K. Samikov and R. Shakirov, Khim. Prir. Soedin., 252 (1981).
4. R. N. Nuriddinov, A. I. Saidkhodzhaev, M. R. Yagudaev, and S. Yu. Yunusov, Khim. Prir. Soedin., 333 (1968).
5. R. N. Nuriddinov and S. Yu. Yunusov, Khim. Prir. Soedin., 334 (1968).
6. I. Fried, P. Grabowich, E. F. Sabo, and A. I. Cohen, Tetrahedron, 20, 2297 (1964).
7. T. Masamune, N. Sato, K. Kobayashi, I. Yamazaki, and Y. Mori, Tetrahedron, 23, 1591 (1967).
8. R. F. Zürcher, Helv. Chim. Acta, 45, 2054 (1963).

STRUCTURE OF DIPTALINE

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UDC 547.944/945

Continuing a study of the combined alkaloids of the seeds of *Dipthychocarpus strictus* (Fisch.) Trautv., collected close to the village of Dzhilga, Chimkent province, after the isolation of the main alkaloids the mother liquors from the ethereal and chloroform materials were chromatographed on a column of silica gel (1:30). Elution with chloroform–methanol (9:1) gave an optically active oily substance with the composition $C_{13}H_{28}N_2O_2S$, M^+ 276, $[\alpha]_D$ −10.20° (methanol), readily soluble in chloroform, methanol, and water and sparingly soluble in ether, benzene, and acetone, with R_f 0.45 (benzene–chloroform–methanol (5:3.5:1.5) system), R_f 0.52 (chloroform–benzene–methanol (5:3.5:1.5) system), which we have called diptaline (I).

The IR spectra of (I) showed absorption bands at 3220 and 3380 cm^{-1} (NH, NH_2), and 1660 cm^{-1} (amide carbonyl group), and the absorption band of a sulfoxide group (1030 cm^{-1}). Mass spectrum: 276 (M^+; 5%), 261 (13), 259 (5), 213 (24), 188 (46), 142 (100), 126 (33), 114 (86), 83 (38), 71 (33), 64 (54). The PMR spectrum of (I) revealed the signals of the protons of methylene groups (1.10-2.10 ppm, 18 H, m) and of a sulfinyl group (2.52 ppm; 3 H, s);

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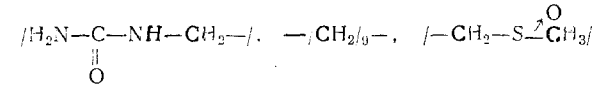
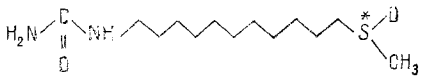
of a $-CH_2-S-O$ group (2.70 ppm; 2 H, q, J = 6 Hz); of a $-CH_2-N$ group (3.03 ppm; 2 H, t); and of $-NH$ and NH_2 groups (6.87 ppm, 1 H; 5.49 ppm, 2 H). Diptaline gave a positive biuret reaction for urea derivatives and, consequently, it was a N-alkyl derivative of urea.

Taking into account its composition and spectral characteristics and the other information given above, the following developed formula may be proposed for (I)



The reduction of diptaline with zinc in hydrochloric acid gave an optically active substance with M^+ 260 (II). In a comparative study of (I) and (II) it was observed that the signal of the protons of the methyl group attached to sulfur had undergone a diamagnetic shift by 0.54 ppm. The difference in the molecular weight of (I) and (II) by 16 m.u. shows the reduction of the sulfoxide group.

The spectral characteristics of (I) were close to those for diptocarpaine (III) [1]. The observed difference in the molecular weights of (I) and (III) by 70 m.u. showed that diptaline was a homologue of diptocarpaine differing from the latter by five methylene groups. Thus, the structure of N-(11-sulfinylundecyl)urea may be proposed for diptaline.



LITERATURE CITED

1. S. F. Aripova, O. Abdilalimov, V. M. Malikov, and S. Yu. Yunusov, Khim. Prir. Soedin., 556 (1976).

DNase AND RNase ACTIVITIES OF THE VENOMS OF CENTRAL ASIAN SNAKES

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It is known that snake venoms are rich sources of various phosphodiesterases, including those specifically hydrolyzing DNA and RNA [1-3]. In the past, the activities of the phosphoesterases of individual venoms of Central Asian snakes have been investigated, but no broad comparative studies have been made. In order to select the most suitable source for the isolation of enzymes, we have studied phosphoesterase activities of the venoms of Renard's viper *Vipera ursini renardi*, of the cobra *Naja oxiana* Eich., of the kufi *Vipera lebertina turan.*, of the saw-scaled viper *Echis carinatus* S., and the mamushi *Ancistrodon hal.* (from the Central Asian zonal Uzbek Zoological Combine).

The deoxyribonuclease activity was investigated by a method based on the colorimetric determination of the deoxyribonucleotides liberated under the action of the enzyme on a substrate and characterized by the property of dissolving in acid [4] (cited by Orlowski [5]). The hydrolytic action of these venoms of the Central Asian snakes on DNA were compared with the corresponding effect of DNase I from cattle pancreas. The results obtained (Fig. 1a, b) show that for the conditions and concentrations of venoms that we used the hydrolysis of DNA takes place as a zero-order reaction. According to the level of their activities, the DNases of the venoms that we studied form the following sequence: venoms of the kufi > cobra > saw-scaled viper > mamushi > Renard's viper. The results obtained by I. I. Nikol'skii et al. [6] in an investigation of the DNase activity in the venoms of the cobra, kufi, and saw-scaled viper showed a high DNase activity in the cobra venom and very slight activity in the kufi venom, the venom of the saw-scaled viper occupying an intermediate position. It is known that the venoms of different snakes differ substantially in their composition and properties and may differ according to the set of phosphodiesterases that they

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