at 139.7 and 113.8 ppm, and also at 21.8 ppm, relating to an isopropenyl fragment. The presence of such a group was also confirmed by the ^1H NMR spectrum (1.74 ppm, s (CH_3-21) and 5.07 and 4.98 ppm, both br.s (2 H-22)). Since all the signals of the carbohydrate chain and the ^{13}C NMR spectrum of glycoside (I) coincided those for the previously known cucumarioside G_1 while the number of signals for the aglycon moiety of (I) corresponded to 25 carbon atoms, we assume that the isopropenyl fragment in the aglycon of glycoside (I) is attached to C-17.

Thus, the minor component from the glycosidic fraction of the holothurian Eupentacta fraudatrix, cucumaroside G_2, is 3β-hydroxy-23,24,25,26,27-pentanorlanosta-7,20(22)-diene-18,16-carbolactone 3-O-β-D-glucopyranosyl-(1→4)-O-β-D-quinovopyranosyl-(1→2)-(4-O-(sodium sulfato)-β-D-xylopyranoside. This is the first time that a glycoside with an 18,16-carbolactone group and a shortened side chain in the aglycon has been isolated from holothurians. Consequently, it is a representative of a new structural type of holothurian glycosides.

LITERATURE CITED

1. Sh. Sh. Afiyatullov, L. Ya. Tishchenko, V. A. Stonik, A. I. Kalinovskii, and G. B. Elyakov, Khim. Prir. Soedin., No. 2, 244 (1985).
2. S. A. Avilov, A. I. Kalinovskii, and V. A. Stonik, Khim. Prir. Soedin., No. 1, 53 (1990).
3. V. I. Kalinin, A. I. Kalinovskii, and V. A. Stonik, Khim. Prir. Soedin., No. 5, 674 (1987).
4. V. I. Kalinin, A. I. Kalinovskii, V. A. Stonik, P. S. Dmitrenok, and Yu. N. El'kin, Khim. Prir. Soedin., No. 3, 361 (1989).

ALKALOIDS OF Cordydalis caucasica

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Continuing investigations of alkaloids of plants of the genus Corydalis [1, 2] of the flora of the Northern Caucasus, we have studied the alkaloid composition of the epigeal part of Caucasian corydalis Corydalis caucasica D.C. gathered in the region of Pyatigorsk (Stavropol'krai).

Alkaloids have been isolated previously from Caucasian corydalis: chelerythrine, sanguinarine, protopine, allocryptopine and bulbocapnine [2].

By chloroform extraction, from the epigeal part of Caucasian corydalis gathered in the flowering period we have isolated 0.85% of alkaloids and separated them into phenolic and nonphenolic fractions. Column chromatography of the nonphenolic fraction with elution by chloroform—ethanol in various ratios of the nonphenolic fraction enabled us to isolate stylopine, adluminidine, d-β-hydrastine, d-bicuculine, protopine and alloprotopine, and that of the phenolic fraction scoulerine, bulbocapnine, isoboldine, cheilanthifoline, N-methyllaurotetane, and norisocorydine. All the alkaloids isolated were identified on the basis of physicochemical properties and spectral characteristics and also from the absence of depressions of the melting point of mixtures [3-6].

The main alkaloids were stylopine and adlumidine, and also protopine, d-bicuculine, and allocryptopine.

Thus, the alkaloids scoulerine, d-bicuculine, d-β-hydrastine, adlumidine, cheilanthifoline, N-methyllaurotetanine, and isoboldine have been isolated from this plant for the first time.

LITERATURE CITED

1. I. A. Israilov, O. N. Denisenko, and M. S. Yunusov, Khim. Prir. Soedin., 673 (1984).

Pyatigorsk Pharmaceutical Institute. Translated from Khimiya Prirodnykh Soedinenii, No. 3, pp. 439-440, May-June, 1991. Original article submitted January 8, 1990; revision submitted January 22, 1991.

2. O. N. Denisenko, I. A. Israilov, and M. S. Yunusov, Paper deposited in the All-Union Scientific-Research Institute of Medical and Medicotechnical Information, Ministry of Health of the USSR, No. 3106—887, Pyatigorsk (1987).
3. V. A. Chelombit'ko, Current Questions of Pharmacy [in Russian], Stavropol' (1974), pp. 17-19.
4. I. A. Israilov, S. U. Karimova, and M. S. Yunusov, Khim. Prir. Soedin., 126 (1979).
5. I. A. Israilov, S. U. Karimova, and M. S. Yunusov, Khim. Prir. Soedin., 279 (1980).
6. S. Yu. Yunusov, Alkaloids [in Russian], Tashkent (1981).

SOLANIDINE AND DIACETYLSEVEDINE FROM Korolkowia sewerzowii

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Continuing a study of the chemical composition of the epigeal part of the Korolkowia sewerzowii growing in the Fergana province, by chromatographing (separately) fractions 1 and 2 obtained in the separation of 60 g of total ether-soluble material [1, 2] on a column of alumina, from the first chloroform (eluates), we have isolated a base (I) with mp 215-217°C (ethanol), R_f 0.44 (Al_2O_3, chloroform) $[\alpha]_D^{20}$ − 25° (c 0.04; ethanol).

The IR spectrum (ν_{max}^{KBr}, cm^{-1}) showed the presence of hydroxy groups (3320), of methyl and methylene groups (2960-2830), and of a double bond (3040, 1665). The mass spectrum of compound (I) contained the peaks of ions with m/z (%): 397 (M^+, 57), 396(43), 383(12), 382(37), 341(5), 340(5), 204(83), 178(13), 164(8), 162(7), 151(33), 150(100), 112(10), 111(7), 98(20), 97(10). These results were identical with those of the mass-spectrometric fragmentation of solanidine [3, 4].

The high-resolution mass spectrum of compound (I) showed the elementary composition $C_{27}H_{43}NO$ (exp. 397.3322; theor. 397.3345). The elementary compositions of the main fragmentary ions — 150 (exp. 150.1285; theor. 150.1283), $C_{10}H_{16}N$, and 204 (exp. 204.1754; theor. 204.1752), $C_{14}H_{22}N$ — also coincided with the pattern of mass-spectrometric fragmentation of solanidine [4].

The hypothesis of the identity of base (I) and solanidine was confirmed by a comparison of R_f values in TLC, by the melting point of a mixed sample (no depression), and by their optical rotations and IR spectra.

When the mother liquor from solanidine was chromatographed on silica gel (with elution by chloroform—methanol (10:0.5), a compound (II) was isolated with mp 202-204°C (acetone—petroleum ether (1:5)), R_f 0.42 (Al_2O_3, chloroform). The IR spectra of (II) (ν_{max}^{KBr}, cm^{-1}) showed absorption bands of hydroxy groups (3500), of a trans-quinolizidine system (2770), and of an ester carbonyl group (1740, 1240).

The signals in the PMR spectrum of (II) (100 MHz, $CDCl_3$) were assigned in the following way: 0.94 93H, s, CH_3-19), 0.81 (6H, d, CH_3-21, CH_3-27), 1.97 (6H, s, $OCOCH_3$), 4.68 and 4.95 (m, H, HC—$OCOCH_3$). Mass spectrum of base (II) m/z (%): 515 (M^+, 31), 514(6), 500(13), 498(13), 456(8), 432(21), 431(40), 416(38), 178(15), 166(20), 164(23), 125(9), 112(13), 111(100), 98(17). The nature of the mass-spectral breakdown of base (II) (M^+ 515) was very close to the fragmentation of the alkaloids sevedine (M^+ 431) [5] and acetylsevedine (M^+ 473) [6].

The hypothesis made on the basis of the spectral characteristics that compound (II) was diacetylsevedine was confirmed by comparing the physicochemical constants of base (II) and of diacetylsevedine obtained by the acetylation of sevedine [4], and also by the saponification of base (II) in methanolic caustic potash solution, which led to the alkaloid sevedine (mixed melting point giving no depression, R_f, mass and IR spectra).

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