According to UV spectroscopy, the results of alkaline degradation, which led to phloroglucinaol and vanillic acid, and a mixed melting point with an authentic sample, the aglycone was identical with chrysoeriol. The behavior of the glycosides on acid hydrolysis, their IR spectra [3], and the fact that after hydrolysis no new hydroxy groups were liberated give grounds for assuming that the L-rhamnose and D-glucose are bound directly to the D-glucose forming a C-glycosidic bond, i.e., according to the results of our analysis compound (Ia) is probably chrysoeriol 8-C-β-D-glucopyranoside and (I) is a chrysoeriol 8-C-[(O-L-rhamnosyl-O-D-glucosyl)-β-D-glucopyranoside].

From the leaves of *C. reticulatus*, in addition to (I) after its recrystallization and removal from the mother solution by filtration, we isolated the glycoside (Ia). No less than seven O-glycosides were detected in the leaves among which we have shown the presence of kaempferol glycosides.

LITERATURE CITED

1. G. A. Drozd, Khim. Prirodn. Soedin., 443 (1972).
2. H. Kiliani, Ber., 63, 2866 (1930).
3. H. Wagner, in: Methods in Polyphenol Chemistry (ed. by J. B. Pridham), Vol. 2, Pergamon Press, Oxford (1964), p. 37.

GLYCOSYLATION OF CARDENOLIDES.

V. PERIPLOGENIN FUCOSIDE AND STROPHANTHIDOL DIRHAMNOSIDE

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UDC 547.918:547.926

Partial syntheses of periplogenin fucoside (I) and of strophanthidol dirhamnoside (II) has been performed by the orthoester method [1] in the same way as in previous work [2]. The syrupy glycosylating mixture, containing, according to its NMR spectrum, 50% of 3,4-di-O-acetyl-α-D-fucopyranose 1,2-O-(methyl orthoacetate) was obtained under the conditions described previously [3]. The condensation product formed in the reaction of this glycosylating mixture with periplogenin was saponified with a methanolic solution of ammonia and the resulting mixture of substances was chromatographed on a column of SiO_2. This gave with yield of 64.9% periplogenin β-D-fucoside (I), $C_{29}H_{44}O_9$, mp 169-175°C (from methanol); $[\alpha]_D^{24}$ +9.3 ± 3° [c 1.1; chloroform–ethanol (1:1)], $\lambda_{max}^{C_2H_5OH}$ 217 nm (log ε 4.21); ν_{max}^{KBr}, cm^{-1}: 3400-3550 (OH), 1780, 1745, 1633 (butenolid ring). NMR spectrum (C_5D_5N), ppm: 0.89 (3H at C_{18}, s); 0.93 (3H at C_{19}, s); 1.40 (3H at C_6', d, J = 7 Hz), 4.40 (H at C_3, m); 4.75 (H at C_1', d, J = 8 Hz — β-configuration of the glycosidic bond); 4.90, 5.20 (2H at C_{21}, q, centers of doublets, J = 18 Hz); 5.98 (H at C_{22}, s). Literature data [4]: mp 169-175°C; $[\alpha]_D^{23}$ +5.2 ± 1.5° (c 1.13; methanol).

3,4-Di-O-acetyl-β-L-rhamnopyranose 1,2-O-(methyl orthoacetate) was condensed with strophanthidol and the reaction products were saponified with a solution of ammonia in methanol. Subsequent chromatography on a column of SiO_2 gave a 35.8% yield of strophanthidol 3,19-di-α-L-rhamnoside (II), $C_{35}H_{54}O_{14}$, mp 200-201.5°C (from ethanol); $[\alpha]_D^{24}$ −29.5 ± 3° (c 0.87; methanol); $\lambda_{max}^{C_2H_5OH}$: 218 nm (log ε 4.20); ν_{max}^{KBr}, cm^{-1}: 3400-3500 (OH), 1780, 1740, 1630 (butenolide ring). NMR spectrum (C_5D_5N), ppm: 0.88 (3H at C_{18}, s); 1.54 (6H at C_6', and C_6'', m, [the single prime denotes the signals of the protons of the sugar residue at C_3 and the double prime that at C_{19}]; 4.87, 5.17 (2H at C_{21}, q, centers of doublets, J = 18 Hz); 5.12 (H at C_1'', br. s); 5.33 (H at C_1', br. s.); 6.00 (H at C_{22}, s). Literature data [5]: $[\alpha]_D^{19}$ −18 ± 2° (methanol).

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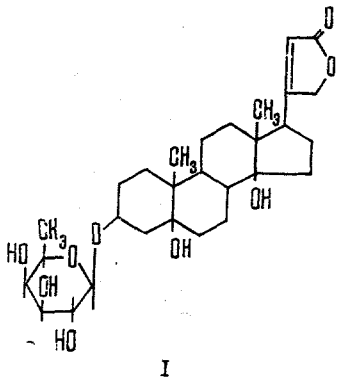
Translated from Khimiya Prirodnykh Soedinenii, No. 1, pp. 125-126, January-February, 1977. Original article submitted October 13, 1976.

The NMR spectra were taken on a JNM-4H-100 instrument (100 MHz, HMDS, δ scale, ppm).



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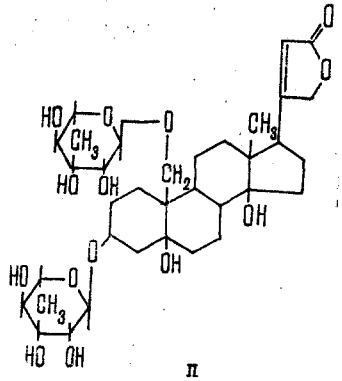

II

LITERATURE CITED

1. N. K. Kochetkov, A. J. Khorlin, and A. F. Bochkov, Tetrahedron, 23, 693 (1967).
2. N. Sh. Pal'yants, A. F. Bochkov, and N. K. Abubakirov, Khim. Prirodn. Soedin., 58 (1976).
3. M. Schulz, H.-F. Boeden, P. Berlin, and W.-R. Bley, Ann. Chem., 715, 172 (1968).
4. H. Lichti, Ch. Tamm, and T. Reichstein, Helv. Chim. Acta, 39, 1914 (1956).
5. V. T. Chernobai, Zh. Obshch. Khim. 34, 1690 (1964).

ALKALOIDS OF *Hyoscyamus niger* AND *Datura stramonium*

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UDC 547.94

Extraction of the epigeal part of *Hyoscyamus niger* collected in the Urgut region, Samarkand oblast, in June, 1975 in the incipient fruit-bearing phase, yielded 0.13% of combined alkaloids. Separation of the combined bases according to their solubilities in benzene and subsequent chromatography on a column of silica gel gave hyoscyamine [1].

The fraction of the combined bases soluble in benzene consisted mainly of a mixture of hyoscine and hyoscyamine (60%). The individual fractions contained tropine and apoatropine (checked chromatographically).

From *H. niger* collected in the Urtakaiindy gorge, settlement of Chon-Kemin, Kirghiz SSR, on June 2, 1975 in the incipient fruit-forming phase was obtained 0.095% of combined bases. They were separated according to their solubilities in benzene and by chromatography on a column of Al_2O_3. Hyoscyamine, hyoscine, and a base with mp 175-176°C were isolated. The latter was identified as skimmianine [2]. The fractions contained apohyoscine, apoatropine, tropine, and α- and β-belladonnines.

Extraction of the epigeal part of *Datura stramonium*, collected on July 15, 1975, in the Surkhandar'ya oblast, village of Tupalang in the flowering and incipient fruit-bearing phase yielded 0.34% of combined bases. Separation of the mixture of alkaloids gave hyoscyamine, hyoscine, α-belladonnine, tropine, and skimmianine. A plant from this growth site was richest in hyoscyamine (74.5%) and hyoscine (19.5%).

The epigeal part of *D. stramonium* collected in the Lenin sovkhov, Fergana oblast, on June 15, 1975 in the flowering and incipient fruit-bearing phase contained 0.30% of a mix-

Institute of the Chemistry of Plant Substances, Academy of Sciences of the Uzbek SSR, Tashkent.

Translated from Khimiya Prirodnykh Soedinenii, No. 1, pp. 126-127, January-February, 1977. Original article submitted September 21, 1976.