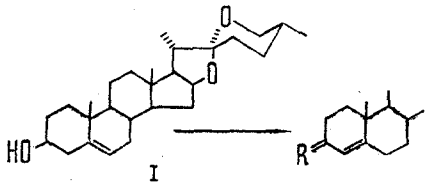

I

II. R=O
III. R=NOH
IV. R=N—NH—$C_6H_3(NO_2)_2$

The oxidation product – 3-oxo-Δ^4-diosgenin (II) – had mp 203-204°C (from methanol), $\lambda_{max}^{ethanol}$ 242 nm (log ε 4.36), which is the characteristic maximum for α,β-unsaturated ketone [4]. The IR spectrum showed absorption bands at 1685 cm^{-1} (C = O) at 1632 cm^{-1} (C = C). The absence of the broad absorption band of a hydroxy group (3400-3440 cm^{-1}) also confirmed the formation of a 3-oxo-Δ^4 grouping in compound (II). The PMR spectrum of 3-oxo-Δ^4-diosgenin contains a signal at 5.74 ppm (δ) (C_4-vinyl proton).

The ketone obtained was characteristized in the form of the oxime (III), mp 218-220°C (from ethanol) and the 2,4-dinitrophenylhydrazone (IV), mp 241-243°C (from ethanol). The elementary analyses of all the substances (I-IV) obtained corresponded to the calculated figures.

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ISOLATION AND IDENTIFICATION OF ERGOSTEROL PEROXIDE FROM Cetraria richardsonii AND Ganoderma applanatum

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The dry comminuted lichen Cetraria richardsonii Hook. (905 g) collected in August in the environs of the village of Stokovyi, Ten'kinskii region, Magadan oblast, was extracted with boiling petroleum ether (70-100°C). The extract obtained (weight of the dry residue 5.04 g) was chromatographed on a column of silica gel L (100-250 μ). The petroleum ether–chloroform system (4:1 → 3:1) eluted 0.33 of a compound (I) which, after rechromatography on KSK silica gel (175-200 mesh) and recrystallization had mp 179.5-181°C (hexane), $[\alpha]_D^{21}$ −29° (c 0.45; chloroform); acetate of (I): mp 199-201.5°C (ethanol), $[\alpha]_D^{21}$ −22.9 (c 0.43 chloroform).

Compound (I) was shown to be identical with the ergosterol peroxide (II) isolated from Thamnolia subuniformis (Ehrh.) W. Culb. [1] on the basis of the identity of the TLC behavior and NMR, IR, and mass spectra of (I) and (II) and the absence of a depression of the melting point of mixtures of (I) and (II) and of their acetates.

Compound G_2 [2] isolated previously from the basidiomycete Ganoderma applanatum (Fr.) Pat., after additional chromatography and crystallization, had mp 181-182°C (hexane), $[\alpha]_D^{21}$ −27.3° (c 0.48; chloroform); acetate of G_2: mp 200-202°C (methanol–ethanol) $[\alpha]_D^{21}$ −21.3° (c 0.48; chloroform). On the basis of their TLC behavior and the identity of the NMR, IR, and mass spectra of G_2 and (II) and the absence of a depression of the melting point of mixtures of G_2 and (II) and of their acetates, G_2 was also identified as ergosterol peroxide.

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