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BRYONOLIC ACID IN THE ROOTS OF BRYONIA ALBA

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From a chloroform extract of the roots of Bryonia alba collected in the spring of 1967 in the region of the village of Garni in Armenia, we have isolated bryonolic (3β-hydroxyurs-12-en-29-oic) acid. It has been found previously in the roots of Bryonia dioica [1].

For identification, several derivatives were obtained by the usual methods. The melting points and specific rotations of the substances obtained were compared with literature data.

Substance	Values found mp, °C, $[\alpha]_D$, deg		Literature data mp, °C, $[\alpha]_D$, deg		
Byronolic acid	303–305	—	303–305	—	[1]
Methyl ester	149–151	+14	140–142	+19	[1]
Acetate of the methyl ester	159–162	+22	162	+24	[1]
Acetate of the acid	267–270	—	267–268		[1]
3-Dehydro acid	240–242	—	227	—	[2]
Methyl ester of the 3-dehydro acid	154.5–157	—	132–133	—	[2]

The results of the elementary analysis of all the compounds agree with the calculated figures. The acid that we isolated and its methyl ester gave no depression of the melting point with samples kindly provided by Prof. G. Biglino.

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GLYCOSIDES OF THE LEAVES OF EUONYMUS EUROPAEA

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The dry comminuted leaves of Euonymus europaea L. (European euonymus) were exhaustively extracted with 70% ethanol at the boil in the water bath. By treatment with various solvents, chromatography on Kapron, and preparative separation on paper, individual substances B and C were obtained.

The glycoside C has not been described in the literature and we have called it beresklet in ["beresklet" is the Russian for euonymus]. It is a greenish yellow amorphous substance with R_f 0.35 [n-butanol–CH_3COOH–H_2O (4 : 1 : 5)], which is soluble in water, methanol, and ethanol, and insoluble in ether and chloroform. The hydrolysis of glycoside C with 2% hydrochloric acid in an air bath for 2 hr led to the formation of quercetin, glucose, rhamnose, galactose, and caffeic acid. UV spectrum: $\lambda_{max}^{C_2H_5OH}$ 328, 256 mμ; $\lambda_{max}^{CH_3COONa}$ 329, 256 mμ ($\Delta\lambda_1$ + 1, $\Delta\lambda_2$0); $\lambda_{max}^{CH_3COONa+H_3BO_3}$ 330, 254 mμ ($\Delta\lambda_1$ + 2, $\Delta\lambda_2$ – 2); $\lambda_{max}^{C_2H_5ONa}$ 328, 256, mμ ($\Delta\lambda_1$0, $\Delta\lambda_2$0); $\lambda_{max}^{AlCl_3}$ 371, 264 mμ ($\Delta\lambda_1$ + 43, $\Delta\lambda_2$ + 8); $\lambda_{max}^{AlCl_3+HCl}$ 336, 260 mμ ($\Delta\lambda_1$ + 8, $\Delta\lambda_2$ + 4), which shows the presence of a free hydroxy group at C_5 and the presence of substituents at C_3, C_7, and C_4'.

Hydrolysis with 0.5 N methanolic caustic potash for 15 min yielded a glycoside C' and caffeoyl D-galactoside, readily hydrolyzed with 1% hydrochloric acid to D-galactose and caffeic acid.

On acid hydrolysis, glycoside C' with R_f 0.48, mp 192°–196° C, gave quercetin, glucose, and rhamnose in equimolar amounts (amount of aglycone obtained 48.9%, calculated 49.5%). UV spectrum: $\lambda_{max}^{C_2H_5OH}$ 358, 256 mμ; $\lambda_{max}^{CH_3COONa}$ 358, 256 mμ ($\Delta\lambda_1$0; $\Delta\lambda_2$0); $\lambda_{max}^{C_2H_5ONa}$ 410, 256 mμ ($\Delta\lambda_1$ + 52; $\Delta\lambda_2$ + 10); $\lambda_{max}^{CH_3COONa+H_3BO_3}$ 376, 261 mμ ($\Delta\lambda_1$ + 18; $\Delta\lambda_2$ + + 5); $\lambda_{max}^{AlCl_3}$ 415, 266 mμ ($\Delta\lambda_1$ + 57, $\Delta\lambda_2$ + 10); $\lambda_{max}^{AlCl_3+HCl}$ 359, 257 mμ ($\Delta\lambda_1$ + 1, $\Delta\lambda_2$ + 1). Consequently, in glycoside