This is the first time that any of the substance mentioned have been isolated from *Astragalus torrentum*.

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FLAVONOIDS OF *Astragalus floccosifolius*

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The epigeal part of the herbaceous perennial plant *Astragalus floccosifolius* Sumn. gathered in the flowering phase in May, 1982, in Tadzhikistan has been investigated for the presence of flavonoids. To isolate the total flavonoids, 0.10 kg of the dried and comminuted herb was exhaustively extracted successively with 96% and 70% ethanols. The combined extracts were evaporated in vacuum to an aqueous residue, which was treated with chloroform to eliminate ballast substances. The flavonoids were extracted from the purified aqueous extract with ethyl acetate. The aqueous residue and the ethyl acetate extract were chromatographed on columns of polyamide, and the flavonoids were eluted with water and with mixtures of water and ethanol.

The ethyl acetate extract yielded substances (I-VIII), and the aqueous residue substances (IX-XI).

Substance (I) (eluted by 30% ethanol) was identified as rutin (quercetin 3-O-rutinoside), mp 190-192°C (aqueous ethanol), $[\alpha]_D^{20}$ −43.2° (c 0.5; methanol), λ_{max} 360, 260 nm [1].

Substance II (eluted by 40% ethanol) was isorhamnetin 3-O-β-D-glucoside, $C_{22}H_{12}O_2$, mp 243-246°C (ethanol), $[\alpha]_D^{20}$ −60° (c 0.5; ethanol), λ_{max} 358, 257 nm [2].

Substance (III) (eluted by 40-50% ethanol) was isorhamnetin 3-O-β-D-galactoside (cacticin), mp 271-273°C (aqueous ethanol), $[\alpha]_D^{20}$ −44.2° (c 0.45; methanol, λ_{max} 358, 255 nm [3].

Substance (IV) (eluted by 40% ethanol) was quercetin 3-O-α-L-rhamnoside (quercitrin), mp 177-180°C (aqueous ethanol), $[\alpha]_D^{20}$ −164° (c 0.1; ethanol), λ_{max} 360, 260 nm.

Substance (V) (eluted by 60% ethanol) was quercetin, mp 312-314°C (ethanol), λ_{max} 372, 256 nm [5].

Substance (VI) (eluted by 70% ethanol) was kaempferol, mp 276-277°C (ethanol), λ_{max} 370, 265 nm [5].

Substance (VII) (eluted by 70% ethanol) was isorhamnetin, mp 302-304°C (decomp.) (methanol), λ_{max} 375, 255 nm [6].

Substance (VIII) (eluted by 70% ethanol) was apigenin, mp 347-348°C (ethanol), λ_{max} 335, 269 nm [1].

Substance (IX) (eluted by 30% ethanol) was rhamnetin 3-O-β-D-galactoside, mp 225-226°C (methanol), $[\alpha]_D^{20}$ −43.4° (c 0.5; dimethylformamide), λ_{max} 362, 260 nm [7].

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Substance (X) (eluted by 30-40% ethanol) was kaempferol 3-O-β-D-glucoside (astragalin), mp 175-177°C (aqueous ethanol), $[\alpha]_D^{20}$ −67.3° (c 0.1; ethanol), λ_{max} 360, 255 nm [8].

Substance (XI) (eluted by 96% ethanol) was rhamnetin, mp 296-298°C (ethanol), λ_{max} 375, 256 nm [7].

This is the first time that the flavonoids of *Astragalus floccosifolius* have been studied.

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ANTHRAQUINONES AND FLAVONOIDS OF *Rhamnus pallasii*

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We have isolated the total anthraquinones from the dry bark of the roots of *Rhamnus pallasii* Fisch. et Mey. [1] (Kavkazshie Mineral'nye Vody, town of Mashyk) [2]. For this purpose, with heating on the water bath, the raw material (≈ 500 g) was extracted with water that had been brought to pH 9.0 with NaOH. The extracts were combined, cooled, and acidified with hydrochloric acid to pH 5.0. Then they were left in the cold until the precipitate had deposited completely, and this was filtered off and treated with chloroform. The solvent was distilled off and the total material obtained was chromatographed in thin layers of silica gel (KSK). Two individual compounds were isolated preparatively [3-5].

Substance (I) — $C_{15}O_{10}O_5$, bright yellow needles with mp 197-198°C, R_f 0.92 on paper in system 1) [BAW (4:1:5)] and 0.34 in a thin layer of silica gel in system 2 [benzene–ethyl acetate–acetic acid (8:1:1)]. UV spectrum: λ_{max}^{EtOH} 225, 258, 287, 387, 430 nm; λ_{max}^{EtONa} 235, 282, 518 nm ($\Delta\lambda$ + 88).

The bathochromy on the addition of aluminum chloride, and also a band in the IR spectrum at 1628 cm^{-1} showed the formation of a chelate with the aluminum ion through the 1,8-OH groups. On the basis of the results obtained and a comparison with an authentic sample, the substance was characterized as chrysophanol (1,8-dihydroxy-3-methylanthraquinone) [3].

Substance (II) — $C_{15}H_{10}O_5$, bright orange crystals with mp 254-255°C (from ethanol), R_f 0.90 (system 1), 0.39 (system 2). UV spectrum: λ_{max}^{EtOH} 265, 293, 437 nm, λ_{max}^{EtONa} 298, 385, 522 nm ($\Delta\lambda$ + 85).

This permitted the assumption of the presence of hydroxyls in positions 1, 6, and 8 [4], which corresponds to frangula emodin (1,6,8-trihydroxy-3-methylanthraquinone) [5].

From ethanolic extracts of the flowers of *Rh. pallasii* the total flavonoids were obtained by the ethyl acetate method and these were chromatographed on a column of polyamide sorbent.

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