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 (Δλ + 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 (Δλ + 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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This gave three individual compounds, one of which had mp 220-221°C, R_f 0.56 (15% AcOH); $\lambda_{max}^{C_2H_5OH}$ 265, 355 nm. Qualitative reactions and UV spectroscopy showed the presence of free hydroxy groups in positions 3, 4', and 5, and also of a substituent in position 7. On the basis of its physicochemical properties and transformations, the substance was identified as 3,4',5-trihydroxy-7-methoxyflavone, or rhamnocitrin, and the other two compounds also proved to be aglycones and were characterized as quercetin and kaempferol [6, 7].

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PHENOLIC COMPOUNDS, STEROLS, AND IRIDOIDS OF VALERIAN. VII. COMPOSITION OF THE PHENOLIC COMPOUNDS, β-SITOSTEROL, AND VALEPOTRIATES OF *Valeriana rossica*

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In an ethanolic extract of the epigeal part of *Valeriana rossica* P. Smirn (Russian valerian) [1], collected in the Streletskii steppe, Kursk province, there were, according to two-dimensional PC [2], not less than 25 phenolic compounds consisting of flavonoids and hydroxycinnamic acids. Column chromatography on Kapron [polycaprolactam] led to the isolation in the individual state of a number of substances, individual ones of which were identified on the basis of physicochemical investigations as caffeic and chlorogenic acids, apigenin, luteolin, diosmetin, quercetin, and the 7-mono-β-D-glucosides and rutinosides of the first three aglycones. Comparative PC analysis showed that the flavonoid glycosides of the vegetative organs consisted predominantly of derivatives of quercetin, diosmetin, and luteolin. The leaves were also found to contain protocatechuic and p-hydroxybenzoic acids and derivatives of apigenin, of acacetin, and of kaempferol. In the inflorescences the predominating components were biosides of apigenin, of luteolin, and of diosgenin.

When the leaves were extracted with chloroform in a Soxhlet apparatus, a white substance was obtained. After purification on a column of alumina, it consisted of white acicular crystals with the composition $C_{29}H_{50}O$, mp 138-139°C (acetone), giving an acetate melting at 124-125°C. The IR spectra of the substance isolated and of β-sitosterol were identical. In a direct comparison by TLC on silica gel they had the same R_f values.

In a methylene chloride extract of the epigeal organs, by chromatography on Silufol plates [3], we detected a different set of weakly polar substances of the essential oils and no less than eight valepotriates, among which the dominating components were valtrate and the anevaltrate and dihydrovaltrate accompanying it.

According to the results of PC, an ethanolic extract of the hypogeal organs contained considerable amounts of caffeic and chlorogenic acids. Consequently, the qualitative composition of the phenolic compounds an valepotriates of *Valeriana rossica* is close to the composition of other dry-valley valerians from the cycle of common valerian — for example,

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