(V) led to an aglycon with mp 305-307°C, M^+ 316, λ_{max} ethanol 255, 266, 372 nm, identified as isorhamnetin (IR spectrum, mixed melting point), and D-glucose. By a study of IR, UV, and PMR spectra, and also on the basis of the results of acid hydrolysis, flavonoid (V) was identified as isohamnetin 3-O-β-D-glucopyranoside.

This is the first time that flavonoids (I-V) have been detected in the above-mentioned species of *Haplophyllum*.

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KAEMPFEROL GLYCOSIDES FROM *Astragalus dipelta*

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We have investigated the epigeal part of *Astragalus dipelta* Bunge, family Fabacaeae collected in the flowering–fruit-bearing period in the Uganmskii range close to the village of Khumsan for the presence of flavonoid compounds.

The dried comminuted raw material was exhaustively extracted with 70% ethanol. The ethanolic extracts were concentrated in vacuum and treated with chloroform. The purified aqueous extract was deposited on a column of polyamide and was eluted with aqueous solutions of ethanol. Analysis of some of the eluates obtained showed that they contained a mixture of flavonol glycosides. On rechromatography of individual fractions under the same conditions, substances (I-IV) were obtained.

Substance (I) (eluted with 20-25% ethanol) was identified as astragalin (kaempferol 3-O-β-D-glucopyranoside), $C_{21}H_{20}O_{11}$, mp 179-180% (ethanol), $[\alpha]_D^{20}$ − 16° (s 0.5; ethanol), λ_{max} 355, 270 nm [1].

Substance (II) (eluted with 20-25% ethanol) was robinin (kaempferol 7-O-β-rhamnopyranoside 3-O-β-robinobioside) $C_{33}H_{40}O_{19}$, mp 190-191°C (water), $[\alpha]_D^{20}$ − 120.4° [pyridine–ethanol (1:1)], λ_{max} 350, 265 nm [2].

Substance (III) (eluted with 25% ethanol) was trifolin (kaempferol 3-O-β-D-galactopyranoside), $C_{21}H_{20}O_{11}$, mp 229-231°C (ethanol), $[\alpha]_D^{0}$ − 18.1° (s 0.13; ethanol), λ_{max} 355, 266 nm [2].

Substance (IV) (eluted with 30-35% ethanol) was populin (kaempferol 7-O-β-D-glucopyranoside), $C_{21}H_{20}O_{11}$, mp 269-271°C (ethanol), $[\alpha]_D^{20}$ − 48.2° (s 0.1; ethanol), λ_{max} 365, 221 nm [2].

The structures of the glycosides isolated were confirmed by the results of elementary analysis, by UV and IR spectroscopy, and by the results of a study of the products of acid and enzymatic hydrolysis, and also by comparison with authentic samples.

The quantitative determination of the kaempferol glycosides was performed by a spectrometric method from the maximum densities of the spots directly on chromatograms treated with aluminum chloride.

The following amounts were found, %: astragalin — 0.09; robinin — 0.02; trifolin — 0.06; populnin — 0.03.

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FLAVONOIDS OF *Astragalus coluteocarpus*

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Continuing a study of plants of the genus *Astragalus* [1], we have investigated the epigeal part of *A. coluteocarpus* Boiss. collected in the environs of Dushanbe. The two-dimensional paper chromatography of an ethanolic extract in the solvent systems butan-1-ol–acetic acid–water (4:1:5) and 15% acetic acid revealed the presence in the epigeal part of this milk vetch of more than 12 substances of flavonoid nature, six of which were isolated in the individual form.

The air-dry raw material was exhaustively extracted with 70% ethanol. The extract was concentrated, the ethanol was distilled off, and lipophilic substances were eliminated and precipitated with chloroform and were then separated on a column of polyamide sorbent. Six flavonoid compounds were obtained in the individual state.

Substance (I) – $C_{15}H_{10}O_6$, mp 275-277°C, λ_{max} 265, 230 nm (ethanol) – was characterized as kaempferol [2].

Substance (II) – $C_{21}H_{20}O_{11}$, mp 180-181°C, $[\alpha]_D^{20}$ – 56° (s 0.1; dimethylformamide), λ_{max} 357, 255 nm (ethanol) – was characterized as astragalin [3].

Substance (III) – $C_{15}H_{10}O_7$, mp 311-313°C, λ_{max} 256, 370 nm (ethanol) – was identified as quercetin [2].

Substance (IV) – $C_{27}H_{30}O_{16}\cdot 2H_2O$, mp 189-191°C (aqueous ethanol) $[\alpha]_D^{20}$ – 43.2° (s 0.5; methanol), λ_{max} 260, 360 nm – was identified as rutin [4];

Substance (V) – $C_{21}H_{20}O_{12}$, mp 237-238°C (aqueous ethanol) $[\alpha]_D^{20}$ – 27.8°C (s 0.5; methanol), λ_{max} 237, 363 nm – was identified as hyperoside [4].

Substance (VI) – $C_{15}H_{10}O_6$, mp 328-330°C (aqueous ethanol), λ_{max} 260, 355 nm – was identified as luteolin [5].

The structures of all the compounds isolated were confirmed by the results of elementary analysis, by UV and IR spectroscopy, and by the results of a study of the products of acid and alkaline hydrolysis, and also by a comparison with authentic samples. This is the first time that any of the substances mentioned have been isolated from *Astragalus coluteocarpus*.

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