the group of hydroxycoumarin glycosides. Esculetin and D-glucose were detected in the products of acid and enzymatic hydrolysis. On the basis of the R_f values in various solvent systems, spectral characteristics, and a mixed melting point with the authentic material, substance D proved to be identical with esculin (6-β-D-glucopyranosyloxy-7-hydroxycoumarin) [2].

This is the first time that these coumarins have been isolated from the herbage of the kidney bean.

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PHENOLIC COMPOUNDS OF *Artemisia gmelinii*

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We have studied the phenolic compounds of two samples of the epigeal part of *Artemesia gmelinii* Web. ex Stechm., collected in the early vegetation phase by the resources-prospecting section of a combined Soviet–Mongolian Complex Biological Expedition.

A preliminary comparative study by paper chromatography showed that the qualitative compositions of the two samples were similar. The plant material was extracted with 96% ethanol. The concentrated extract was treated with hot water, and then the aqueous fraction successively with chloroform and ethyl acetate.

The chromatographic separation of the chloroform extract on silica gel (L 100/160 μ) with elution by chloroform yielded substance (I), and a mixture of chloroform and ethanol (19 : 1) gave substance (II). Reseparation of the individual fractions on silica gel (L 40/100 μ) gave substances (III), (IV), (V), and (VI). By chromatography on polyamide, the ethyl acetate fraction yielded substance (VII).

Substance (I), with the composion $C_{10}H_8O_4$, mp 205°C, and substance (II) with the composition $C_9H_3O_4$, mp 104°C, were identified by IR and UV spectroscopy, and also by mixed melting points with authentic samples as scopoletin [1] and caffeic acid, respectively.

Substance (III) had the composition $C_{17}H_{14}O_5$, mp 168°C (96% ethanol). λ_{max}^{MeOH} (nm): 272, 310 sh., 338; IR spectrum (cm^{-1}): 1665, 1610, 1510, 1200, 1170, 1130, 1100, 840, 820. PMR spectrum ($CDCl_3$, δ, ppm): 7.81 (d, 2 H, J = 9 Hz, H-2', H-6'); 6.97 (d, 2 H, J = 9 Hz, H-5', H-3'); 6.54 (s, 1 H, H-3); 6.46 (d, 1 H, J = 2 Hz, H-8); 6.34 (d, 1 H, J = 2 Hz, H-6); 3.87 and 3.85 (s, s, 3 H each, 2 OCH_3). The demethylation product of (III) (pyridine hydrochloride, 170°C, 2 h), on comparison with an authentic sample, proved to be identical with apigenin. Analysis of the facts given and their comparison with the literature [2, 3] permitted the structure of 4', 7-di-O-methyl apigenin to be established for (III).

Substance (IV) with the composition $C_{16}H_{12}O_5$, mp 262°C (96% ethanol) λ_{max}^{MeOH} (nm) 272, 305, 340 and substance (V) with the composition $C_{17}H_{14}O_7$, mp 228°C (chloroform), λ_{max}^{MeOH} (nm) 250 sh., 274, 348 were identified on the basis of the results of PMR spectroscopy and their IR spectra, and also of a comparison by the chromatographic method with authentic samples, as acacetin [4] and 4',5,7-trihydroxy-3',6-dimethoxyflavone, respectively [5, 6].

Substance (VI) had the composition $C_{17}H_{14}O_6$, mp 228°C (ethanol–chloroform); λ_{max}^{MeOH} (nm) 245 sh., 255, 272, 349. The results of UV spectroscopy with complex-forming and ionizing additives permitted the assumption of the presence in (VI) of OH groups in the 4' and 5 positions. IR spectrum (cm^{-1}): 3440, 1650, 1600, 1500, 1180, 1169, 1130. PMR spectrum (DMSO, δ, ppm): 7.56 (m, 2 H, H-2', H-6'); 6.94 (d, 1 H, J = 8 Hz, H-5'); 6.90 (s, 1 H, H-3); 6.78 (d, 1 H, J = 2 Hz, H-8); 6.26 (d, 1 H, J = 2 Hz, H-6); 3.90 and 3.84 (s, s, 3 H each, 2

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OCH_3). By an analysis of UV, IR, and PMR spectra and melting points and a comparison of them with literature figures [7], substance (VI) was identified as 4',5-dihydroxy-3',7-dimethoxyflavone – velutin.

Substance (VII) had mp 230°C (90% ethanol); IR spectrum (cm^{-1}): 3500-3300, 1710, 1690, 1110, 1080, 1040, 1000; λ_{max}^{MeOH} (nm): 240, 250 sh., 288, 340. The acid hydrolysis of (VII) (6%) solution of HCl, 100°C, 3 h) gave an aglycone identical with scopoletin according to IR spectroscopy and the absence of a depression of the melting point of a mixture of the aglycone with an authentic sample. The glycosidic residue was identified as glucose by paper chromatography with a marker (FN-11, butanol–pyridine–water (6:4:3) system). However, the glucoside that we had isolated had a different melting point from that of the known acopoletin glucoside scopolin (mp 217-219°C) [1]. The structure of the glycosidic component could not be established definitively because of the inadequate amount of substance.

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PHENOLIC COMPOUNDS OF Artemisia adamsii

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We have studied the chemical composition of the epigeal part of Artemesia adamsii Bess, collected by the resources-prospecting section of the combined Soviet–Mongolian Complex Biological Expedition in the Mongolian Peoples' Republic. Three samples of this species were taken which differed with respect to their collection sites and the vegetation phase of the plants.

A comparative investigation with the aid of paper chromatography (FN-11 paper, BAW (6:1:2) and 2% acetic acid solution systems) showed the identical qualitative compositions of all the samples. The samples were treated under the following scheme: extraction with 70% ethanol, extraction of the flavonoids with hot water from the concentrated ethanolic extract, followed by treatment of the aqueous fraction with chloroform and ethyl acetate.

The chromatographic separation of the chloroform fraction on silica gel (L 100/160 μ) yielded substance (I). After reseparation of the individual fractions on silica gel (L 40/100 μ), substance (II) was obtained. Chromatography of the ethyl acetate fraction on a column of polyamide yielded substance (III).

Substances (I) with the composition $C_{10}H_8O_4$, mp 205°C and (II) with the composition $C_{17}H_{14}O_7$, mp 228°C were identified by IR and UV spectroscopy and the absence of depressions of the melting points of mixtures as scopoletin [1] and 4',5,7-trihydroxy-3',6-dimethoxyflavone [2], respectively.

Substance (III) had the composition $C_{16}H_{12}O_7$, mp 272°C, λ_{max}^{MeOH} (nm) 260 sh., 281, 353. The results of UV spectroscopy with complex-forming and ionizing additives [NaOAc (273, 382 nm); NaOAc + H_3BO_3 (270, 380 nm), NaOMe (273, 418 nm); $AlCl_3$ (283, 435 nm); and $AlCl_3$ + HCl (267, 292, 372 nm)], showed the presence of free hydroxy groups in the 3', 4', 5, and 7 positions IR spectrum (cm^{-1}): 3380, 1660, 1610, 1580, 1280, 1165.

The PMR spectrum had the following signals (DMSO, δ, ppm): 7.38 (m, 2 H, H-2', H-6'); 6.86 (d, J = 8 Hz, 1 H, H-5'); 6.60 (s, 1 H, H-8); 6.52 (s, 1 H, H-3); 3.72 (s, 3 H, OCH_3). The tetraacetate of (III) had mp 190°C (methanol). PMR spectrum of the tetraacetate ($CDCl_3$, δ, ppm): 769 (m, 2 H, H-2', H-6'); 7.37 (d, J =

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