—OCH_3), 3.97 (s, 3 H, C_3,—OCH_3), 3.93 (s, 3 H, C_3—OCH_3), 3.87 (s, 3 H, C_6—OCH_3). The acetate of substance (II) had mp 185°C.

On the basis of the results obtained and a comparison of them with those given in the literature, we identified (II) as chrysosplenetin [3].

When the individual fractions of the ethyl acetate extract were rechromatographed, a substance (III) with mp 194°C was isolated the IR spectrum of which proved to be identical with that of caffeic acid. The absence of a depression of the melting point of a mixture of substance (III) with caffeic acid confirmed the identity of these compounds.

By the chromatography of the extract on paper (FN 11) and on a Silufol plate in the systems BAW (6:1:2) and $CHCl_3$—EtOH (19:1 and 9:1) with markers, we also established the presence of 6,7-dihydroxycoumarin (esculetin).

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LUTEOLIN 7-GLUCOSIDE FROM *Salix daphnoides* AND *Salix viminalis*

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Continuing the search for biologically active compounds with antiviral activity [1], we have investigated the leaves of the daphne willow (*Salix daphnoides*) and the basket willow (*Salix viminalis*).

The leaves of the daphne willow, collected at the end of August, 1981, in the environs of Riga, were extracted in a Soxhlet apparatus with methanol. The methanolic extract was evaporated, and the residue was dissolved in water and purified with chloroform. On standing, the purified aqueous extract deposited 4.2% of a precipitate consisting of a single flavonoid compound. After recrystallization from aqueous acetone and aqueous ethanol, a compound with the composition $C_{21}H_{20}O_{11} \cdot 1.5H_2O$, mp 250°C, λ_{max} (CH_3OH) 254, 267 sh., 350 nm was obtained.

D-Glucose and luteolin were detected in the products of the hydrolysis of the substance.

The PMR spectrum taken in pyridine-d_5 contained the following signals: 7.92, d, J = 2.5 Hz, 1 H (H—2'); 7.5, q, J_1 = 9 Hz, J_2 = 2.5 Hz, 1 H (H—6'); 7.30, d, J = 9 Hz, 1 H (H—5'), 6.88, two doublets, 1 H each, J = 2.5 Hz (H-6 and H-8); 5.80, d, J = 8 Hz (the signal of the anomeric proton of the β-glucose residue, the protons of this residue giving signals in the 3—4 ppm region).

The compound was identified as cyanaroside (luteolin 7-O-β-D-glucopyranoside) [2].

The leaves of the basket willow collected on August 18, 1981, in the Kachug region of the Irkutsk province were extracted similarly. The purified extract was subjected to separation on polyamide sorbent, giving a main flavonoid component, $C_{21}H_{20}O_{11} \cdot 1.5H_2O$, mp 236—238°C. λ_{max} (CH_3OH) 254, 267 sh, 349 nm.

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According to its UV, IR, and PMR spectra, the substance proved to be identical with that from the daphne willow. The yields of luteolin 7-glucoside from this species proved to be very low.

The high content of luteolin 7-glucoside in the leaves of the daphne willow gives grounds for considering this species as promising for introduction operations.

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ANTHOCYANINS OF THE FRUIT OF VARIOUS SPECIES OF THE GENUS *Amelanchier* Medic.

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We have investigated the anthocyanin pigments of the fruits of four species of the genus *Amelanchier* Medic. (serviceberry), family Rosaceae: *Amelanchier spicata* (Lam.) C. Koch., *A. alnifolia* Nutt., *A. oligocarpa* Roem., and *A. sanguinea* DC., which were collected in the Central Botanical Garden of the Academy of Sciences of the Belorussian SSR in the period of ripening. The fresh comminuted fruits (50 g of each species) were steeped in 95% ethanol containing 1% of hydrochloric acid (conc.) three times for three days each. The combined and filtered extract was evaporated in vacuum. The dry residue was dissolved in 30 ml of 95% ethanol containing 1% of hydrochloric acid.

The anthocyanins of the fruit were hydrolyzed (5 ml of extract + 5 ml of 2 N HCl) on the boiling water bath under reflux for 40 min. The aglycones were extracted with isoamyl alcohol [1, 2] for 20 h. To separate the anthocyanidins we used two-dimensional chromatography on Leningrad type S paper with two solvent systems: 1) acetic acid (glacial)—hydrochloric acid (conc.)—water (30:3:10), and 2) 15% acetic acid. It was established that the anthocyanins in the fruits are derivatives of three aglycones, which we have identified on the basis of combined chromatography with markers and spectral analysis as cyanidin, pelargonidin, and malvidin.

The anthocyanin glycosides were separated by preparative chromatography on Filtrak FN-7 paper in systems 3) butan-1-ol—hydrochloric acid (conc.)—water (7:2:5) and 4) 15% acetic acid* (in the second direction). It was found that the fruits of all the species contained seven anthocyanin glycosides, i.e., their qualitative compositions were identical. The glycosides were eluted from the chromatogram with methanol containing 0.01% of hydrochloric acid and were then hydrolyzed as described above. For neutralization, the hydrolysates were treated with Dowex 1 × 8 ion-exchange resin, 20/50 mesh, in the HCO_3^- form, after which they were subjected to spectral investigations [3].

The carbohydrate components were investigated by PC on Filtrak FN-3 paper [system 5: butan-1-ol—acetone—water (6:4:3)] with authentic samples of sugars.

*As in Russian original —

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