PHENOLIC COMPOUNDS OF *Artemisia palustris*

I. I. Chemesova, L. M. Belenovskaya, and L. P. Markova

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We have studied the phenolic compounds present in the epigeal part of *Artemisia palustris* L. growing in the Mongolian Peoples' Republic. The plants were collected by the resources-prospecting team of the Combined Soviet–Mongolian Complex Biological Expedition in the Khangai range in the flowering period. Two samples were investigated, and these were found to be identical in the phenolic compounds that they contained.

The comminuted raw material was extracted successively with petroleum ether (to free it from lipophilic substances), chloroform, and 70% ethanol.

The concentrated chloroform extract was treated with hot water to free it from an excess of chlorophyll, and was chromatographed on a column of polyamide [chloroform, chloroform–ethanol (19:1 and 9:1), ethanol]. The fractions obtained by elution with ethanol yielded two flavonoids, with mp 330 and 315°C. According to UV spectroscopy with ionizing and complex-forming additives, IR spectroscopy, and also the absence of depressions of the melting points of mixtures with authentic samples, the flavonoid with mp 330°C was identified as luteolin and that with mp 315°C as quercetin. The fractions eluted by chloroform were rechromatographed on a column of silica gel (benzene and benzene–chloroform). A coumarin was isolated with mp 234°C which was identified as umbelliferone.

The concentrated ethanolic extract was treated with hot water in the same way as the chloroform extract, and the aqueous solution so obtained was extracted repeatedly with ethyl acetate and butanol.

On chromatography on a column of polyamide (water–ethanol), the ethyl acetate fraction of the alcoholic extract yielded a flavonoid glycoside with mp 235°C in the form of yellow crystals. The substance was subjected to acid hydrolysis (6% solution of HCl, 100°C, 5 h), as a result of which an aglycone with mp 315°C, identified as quercetin by its IR spectrum and a mixed melting point, was obtained. When the aqueous fraction of the hydrolyzate was examined on FN-12 paper [ethyl acetate–pyridine–water (10:4:3)] with markers, it was established that the sugar moiety of the glycoside was identical with galactose. The IR spectrum of the substance investigated was identical with that of hyperoside. A mixture of this substance and hyperoside confirmed their identity.

The mother solution after the isolation of the substance with mp 235°C yielded a second flavonoid glycoside with mp 238°C. The acid hydrolysis of the glycoside (10% HCl, 100°C, 5 h) gave an aglycone with mp 330°C which was identified by its IR spectrum and melting point as luteolin. The sugar moiety of the glycoside was shown by an investigation of the aqueous fraction of the hydrolyzate on paper with markers [ethyl acetate–pyridine–water (10:4:3); FN-12] to be glucose. On the basis of the results of acid hydrolysis and UV and IR spectroscopy, the glycoside with mp 238°C was identified as luteolin 7-glucoside — cynaroside.

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