POLYPHENOLS OF THE ROOT BARK AND FLOWERS OF *Persica vulgaris*

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Continuing a study of the phenolic substances of P. vulgaris Mill., we have investigated the polyphenols of the root bark and the flowers of this plant. The paper chromatography of a methanolic extract of the root bark showed the presence of six substances.

By chromatography on a column of polyamide it was possible to separate the mixture of substances into five fractions, each of which consisted of various phenols. From fraction I we isolated pale yellow crystals with mp 257-258°C, $[\alpha]_D^{20}$ 112.8 (ethanol), R_f 0.73 [benzene–acetic acid–water (125 : 72 : 3)]. The substance gave the characteristic reactions for flavonoids. An analysis of the UV spectra with ionizing and complex-forming additives showed the presence of free hydroxy groups in positions $C_{3'}$ and C_7 and the presence of a substituent in position 5. Acid and enzymatic hydrolysis formed glucose and an aglycone with mp 224-225°C, $[\alpha]_D^{20}$ −37.6° (ethanol). On the basis of an analysis of the UV spectra with additives, and also of the results of a study of the products of alkaline fusion, the aglycone was identified as hesperetin [1].

From the facts given above, the flavonoid was identified as hesperetin 5-glucoside. This glucoside, under the name of persicoside, has been isolated previously [2] from Prunus persica, but the position of the sugar, which we have now established by UV and NMR spectroscopy, was unknown.

On passage through a column of silica gel (type ASK), fraction II of the methanolic extract of the root bark separated into fractions A and B. From fraction A we isolated a substance with mp 168-170°C, R_f 0.63, and from fraction B colorless acicular crystals with mp 234-235°C, R_f 0.70. The individuality of the compounds isolated was shown by chromatography on paper in the BAW (40 : 12 : 28) system. In addition, cochromatography with the complex of catechins of the tea plant of the substances with mp 168-170°C and 234-235°C increased the size of the spots of (+)-catechin and (−)-epicatechin gallates, respectively. Mixtures of these substances with (+)-catechin and (−)-epicatechin, respectively, gave no depression of the melting points.

On the basis of the facts presented above and also the results of a study of the products of alkaline fusion, these compounds were characterized as (+)-catechin and (−)-epicatechin gallate.

From fractions III-V we isolated three leucoanthocyanidins the structures of which are now being studied.

From a methanolic extract of the flowers we isolated a crystalline substance with mp 204-205°C which has been characterized as chlorogenic acid [3]. In addition, by extraction with methanol acidified with hydrochloric acid followed by chromatography on a column of cellulose we isolated another substance from the flowers which has been identified [4] as chrysanthemin (cyanidin 3-monoglucoside).

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