QUERCETIN, ISOQUERCITRIN, AND APOCYNIN FROM *Apocynum lancifolium* AND *A. pictum*

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We have previously [1] reported the isolation of neoisorutin from *A. lancifolium* Russan and of quercetin 3-α-glucofuranoside from *A. pictum* Schrenk.

On further investigation, another two flavonoid compounds have been isolated. Substance (I) from *A. pictum* Schrenk has mp 308-310°C. On the basis of the products of alkaline fusion (phloroglucinol and protocatechuic acid), qualitative reactions, and the absence of a depression of the melting point with an authentic sample, this has been identified as 3,3',4',5,7-pentahydroxyflavonol (quercetin). Substance (II), from *A. lancifolium* Russan with mp 218-220°C, $[\alpha]_D$ −81° (c 0.1; methanol), $\lambda_{max}^{CH_3OH}$ 360, 255 nm, is a glucoside. It is hydrolyzed by β-glucosidase. The aglycone, obtained by hydrolysis with 2% sulfuric acid, has mp 308-310°C. The products of alkaline degradation include phloroglucinol and protocatechuic acid. The carbohydrate moiety is D-glucose. The results obtained give grounds for considering the glycoside to be quercetin 3-β-D-glucopyranoside.

When an ethereal fraction obtained from the roots of *A. lancifolium* Russan and *A. pictum* Schrenk was concentrated, a crystalline substance precipitated with mp 113-115°C (from methanol). On the basis of qualitative reactions and also its 2,4-dinitrophenylhydrazone (mp 240-242°C) it was identified as apocynin, isolated previously from the roots of *A. cannabinum* L. [2, 3] and *A. androsaemifolium* L. [4]. A mixture with crystalline apocynin gave no depression of the melting point.

A sample of crystalline apocynin was kindly provided by R. Sh. Yamatova.

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