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FLAVONOIDS AND STEROLS OF *Physochlaina physaloides*

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The isolation of coumarins from the epigeal part of the *Physochlaina physaloides* has been reported previously. We have continued a study of the roots of this plant.

When the hexane fraction [1] was investigated by preparative chromatography on silica gel (in the hexane-acetone (95:5) by volume system), β -sitosterol (I), mp 134-136°C, M^+ 414, and β -sitosterol β -D-glucopyranoside (II), mp 265-267°C were isolated. They were identified by the methods of NMR and mass spectroscopy [2].

The column chromatography of chloroform and ethyl acetate extracts (chloroform-ethanol (97:3) system) yielded compounds (III) and (IV). On the basis of its PMR spectra, substance (III) was identified as liquiritigenin (7,4'-dihydroxyflavanone), and this was confirmed by the results of mass spectrometry and ^{13}C NMR.

Compounds (IV) proved to be a monoglycoside of quercetin. The PMR spectrum of its peracetate showed that the carbohydrate moiety was galactose (double resonance). The position of attachment of the sugar residue to the aglycon and the size of the oxide ring [3] were determined with the aid of ^{13}C NMR spectra, and in this way component (IV) was identified definitively as quercetin 3-O- β -D-galactopyranoside. Compound (III) had the formula $\text{C}_{15}\text{H}_{12}\text{O}_4$, mp 204-206°C (from ethanol), M^+ 256, and compound (IV) $\text{C}_{21}\text{H}_{20}\text{O}_{12}$, mp 230-234°C (from ethanol), $[\alpha]_{\text{D}}^{20} -94.4^\circ$ (c 0.36; pyridine).

It is interesting to note that flavonoids having no oxygen function in the C-5 position (as in liquiritigen) are found fairly rarely in plants. Such compounds may serve as a good "marker" in the chemosystematics of the genus *Solanaceae*.

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