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COUMARINS OF THE ROOTS OF HERACLEUM SOMMIERI AND THE FRUIT OF H. ASPERUM

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In the roots of Heracleum sommierii Manden., collected in the Mestia region of the Georgian SSR, by chromatography on paper in the petroleum ether-formamide system [1] we have found eight compounds of a coumarin nature from which, by means of column chromatography on acidic alumina, we have isolated pimpinellin $C_{13}H_{10}O_5$ with mp 117-119° C, isopimpinellin $C_{13}H_{10}O_5$ with mp 148-149° C, bergapten $C_{12}H_8O_4$ with mp 188-189° C, and sphondin $C_{12}H_8O_4$ with mp 189-192° C.

In the fruit of H. asperum M. B. prepared in the Kazbek region of the Georgian SSR using the system given above we have found six coumarin substances. From them, on a column of alumina, we have obtained bergapten and a furocoumarin fluorescing brownish yellow in UV light with mp 148-151° C, $[\alpha]_D^{25} +24.5^\circ$ (chloroform), which is readily acetylated (mp 105-108° C) and oxidized and forms a number of derivatives under the action of acids. It has not yet been possible to identify this substance. A third substance was eluted from the column together with the bergapten. It was possible to isolate this compound only by means of column partition chromatography on silica gel (stationary phase formamide, mobile phase a 1:1 mixture of petroleum ether and benzene). This substance, $C_{17}H_{16}O_5$, with mp 100-102° C, proved to be phellopterin [2].

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FLAVONOIDS OF SERRATULA INERMIS

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We have studied the flowers of S. inermis Gilib. [1, 2] and S. tinctoria (dyers sawwort) ssp. eu-tinctoria Br.-Bl. By chromatography on Kapron [3] of a methanolic extract, we have isolated two substances of a flavonoid nature.

Substance (I), $C_{15}H_{10}O_5$, forms bright yellow acicular crystals with mp 348-350° C. Its acetyl derivative $C_{21}H_{16}O_8$ with mp 186-187° C has three acetyl groups.

Substance (II), $C_{15}H_{10}O_6$, forms yellow acicular crystals with mp 330-331° C (from 50% ethanol). Its acetyl derivative $C_{23}H_{18}O_{10}$ with mp 226-227° C has four acetyl groups.