The fatty acids of the lecithins were split out as described in [11], and the position distribution of the FA radicals in the molecule was determined by enzymatic hydrolysis using kufi venom in 0.1 M Tris buffer, pH 9.4, as the source of phospholipase A_2. The FAs were analyzed by GLC [12] (Table 1).

As can be seen, a more specific distribution of the FAs is observed in the molecule of the sunflower lecithin.

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COUMARINS OF THE INFLORESCENCES OF *Calendula officinalis* AND *Helichrysum arenarium*

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UDC 577.15/17:582.89

In a study of the inflorescences of *Calendula officinalis* L. (pot marigold calendula) and *Helichrysum arenarium* (L.) Moench, family *Asteraceae*, a number of substances were detected by paper chromatography in the chloroform–formamide system (R_f 0.12, 0.38, 0.66) which fluoresced blue in UV light. To determine their nature, a purified combination of these substances was subjected to degradation as described in [1]. Analysis of the reaction products by paper chromatography in the petroleum ether–formamide system revealed the presence of coumarin (α-benzopyrone). This shows that these substances are coumarin derivatives.

To isolate the substances that had been detected, the comminuted raw material was extracted with 80% ethanol, the extracts so obtained were evaporated in vacuum to an aqueous residue, the precipitate that had deposited was filtered off, and the filtrate was treated with chloroform. The chloroform extract was evaporated and the residue was deposited on a column of silica gel which was washed first with chloroform–benzene (1:1), chloroform, and then with chloroform with the addition of up to 5% of ethanol by volume. This yielded three substances.

Substance (I) (R_f 0.66), $C_{10}H_8O_4$, mp 204-205°C, formed an acetyl derivative with mp 142-143°C. The UV spectrum of the compound isolated had a number of absorption maxima in the 230, 256, 298, and 343 nm regions.

On the basis of the physicochemical properties of the substance under investigation and of its acetyl derivatives, and also of a mixed melting point, the substance isolated was identified as scopoletin [2].

The other two coumarins were isolated in very small amount. From mixed melting points and parallel chromatography with authentic samples they were identified as umbelliferone (R_f 0.38), $C_9H_6O_3$, mp 233-234°C, and esculetin (R_f 0.12), $C_9H_6O_4$, mp 268-271°C.

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Translated from Khimiya Prirodnykh Soedinenii, No. 6, p. 777, November-December, 1986. Original article submitted July 8, 1986.

0009-3130/86/2206- 0722$12.60

The hydroxycoumarins of the inflorescences of *H. arenarium* were investigated similarly, and scopoletin and umbelliferone were isolated from them.

On comparing the results of a study of the hydroxycoumarins of the inflorescences of *C. officinalis*, *H. arenarium*, and *Taraxacum officinale* [3], it must be mentioned that all the species studied are similar with respect to their coumarin composition, and scopoletin is the main component of the total hydroxycoumarins.

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COUMARINS OF *Vicia sativa*

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UDC 547.992:582.738

The vetch genus (*Vicia* L., family *Fabaceae*) is represented in the Ukraine by 30 species, some of which have been introduced into cultivation as protein-rich fodder herbage [1, 2].

Plants of the genus have found use in Tibetan and Far Eastern folk medicine and in modern dietetics and hematology [3, 4].

We have investigated common vetch (*Vicia sativa* L.) — one of the most widespread fodder crops. In a study of the chemical composition of the epigeal part of the vetch (variety Vinnitskaya-30), up to 30 substances of phenolic nature were revealed, which were assigned to coumarin derivatives, phenoliccarboxylic acids, and flavonoids.

The comminuted air-dry raw material (4 kg) collected in the period of fruit bearing after the threshing out of the seeds was exhaustively extracted with 80% ethanol. The extracts were evaporated in vacuum, the residue was treated with water (1;1), and the precipitate was filtered off and subjected to fractionation with solvents having increasing polarity according to a known procedure [4]. Separation of the chloroform extract on a silica gel column (with increasing concentrations of ethyl acetate in benzene as eluents) followed by thin-layer chromatography (in alumina and silica gel) yielded substances (I-V).

Substance (I) — $C_{12}H_8O_4$, mp 148-152°C, λ_{max} 298, 248 nm, was identified as xanthotoxin.

Substance (II) — $C_{12}H_8O_4$, mp 188-191°C, λ_{max} 298, 247 nm — was characterized as bergapten.

Substance (III) — $C_9H_6O_3$, mp 233-234°C, λ_{max} 325, 216 nm — was identical with umbelliferone.

Substance (IV) — $C_9H_6O_4$, mp 272-273, λ_{max} 357, 232 nm — was esculetin.

Substance (V) — $C_{10}H_8O_4$, mp 204-205°C, λ_{max} 347, 230 nm — consisted of scopoletin.

The structure of substances (I-V) were shown on the basis of their physicochemical constants and UV and PMR spectra. This is the first time that substances (I-IV) have been isolated from the genus *Vicia*.

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Translated from Khimiya Prirodnykh Soedinenii, No. 6, p. 778, November-December, 1986.

0009-3130/86/2206-0723$12.50