phase was used, the rate of flow of carrier gas (helium) being 40 ml/min and the temperature of the column being raised according to a program from 120 to 260°C at the rate of 4°C/min. The packing of the column had previously been subjected to thermal modification [3]. The acids were identified from the setting points of standard substances – acids of the saturated series. The amounts of the components in a sample were determined by the method of absolute calibration. The results of the analysis, which are given in Table 1, indicate differences in the fractions of the acids from the various species. Myristic acid can serve as a chemical marker for crystal tea ledum in the chemosystematics of the Ledum genus.

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PHENOLIC COMPOUNDS OF Aruncus dioicus AND Adenocaulon adhaerescens

M. I. Kulesh, N. P. Krasovskaya, and O. B. Maksimov

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Continuing a search for new types of antioxidants in representatives of the flora of the Far East [1, 2], we have invsetigated the herbaceous plants Aruncus dioicus (Walt.) Fern. (Family Rosaceae) and Adenocaulon adhaerescens Maxim (family Asteraceae) the chemical compositions of which had not been studied. The plants were gathered in the flowering period in the suburbs of Vladivostok (Murav'ev-Amurskii peninsula).

The fresh roots and epigeal part were extracted separately with ethanol. The concentrated extracts were reextracted with hexane, ethyl acetate, and butanol.

The ethyl acetate fractions of the roots, containing phenolic compounds, which showed antioxidant activity in the TLC test [1] were studied in detail.

Four substances were isolated from the ethyl acetate extract of the roots of Aruncus dioicus by column chromatography:

Compound (I) – $C_9H_8O_3$, mp 212-214°C; UV spectrum $\lambda_{max}^{C_2H_5OH}$ 290 sh, 310 nm;

Compound (II) – $C_{10}H_{10}O_4$, mp 168°C; UV spectrum: $\lambda_{max}^{C_2H_5OH}$ 217, 233, 290 sh., 320 nm;

Compound (III) – $C_9H_8O_4$, mp 196-197°C, UV spectrum: $\lambda_{max}^{C_2H_5OH}$ 235, 299, 325 nm.

By a study of methyl and silyl derivatives using the GLC method, compound (I) was identified as p-loumaric, (II) as ferulic, and (III) as caffeic acids.

Compound (IV) – $C_{15}H_{18}O_9$, mp 176°C; UV spectrum: $\lambda_{max}^{C_2H_5OH}$ 218, 241, 301 sh., 333 nm.

When (IV) was subjected to acid hydrolysis, caffeic acid and D-glucose were detected. From the results of elementary analysis, PMR, and literature information [3], compound (IV) was identified as caffeoyl β-D-glucopyranoside.

Three compounds were isolated from the ethyl acetate fraction of the roots of Adenocaulon adhaerescens.

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Compound (I) – $C_{11}H_{12}O_4$, mp 144.5°C; UV spectrum: $\lambda_{max}^{C_2H_5OH}$ 218, 241, 312 sh., 330 nm; it was identified by mass spectrometry and PMR spectroscopy as ethyl caffeate.

Compound (II) – $C_9H_8O_4$, mp 196-197°C; UV spectrum: $\lambda_{max}^{C_2H_5OH}$ 217, 238, 290 sh., 328 nm: identified as caffeic acid.

Compound (III) – $C_{15}H_{18}O_9$, mp 176°C; UV spectrum: $\lambda_{max}^{C_2H_5OH}$ 218, 241, 301 sh., 333 nm.

In all its indices (mass and PMR spectrometry), compound (III) coincided with the caffeoyl β-D-glucopyranoside isolated from Aruncus dioicus.

The antioxidant activities referred to Ionol [4] were, respectively: caffeic acid – 1.02; caffeoyl β-D-glucopyranoside – 0.92; ethyl caffeate – 1.10.

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6-OXOOCTADECANOIC ACID FROM THE FRUITING BODIES OF Lactarius theiogalus

N. V. Belova, A M. Bekker, and L. S. Gurevich

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Higher basidial fungi of the genus Lactarius are widespread in the forests of our country. Many species of fungi of this genus are collected and consumed in salted form by the population [1]. Among the fatty acids detected in this genus, stearic (octadecanoic) and lactarinic (6-octadecanoic) have been identified most frequently [1, 2]. In the fruiting bodies of the fungi, these acids are present in the free state or in the form of esters with sesquiterpenoids [3, 4].

By extraction with ethanol followed by chromatography on silica gel, from the fruiting bodies of L. theiogalus (species determined according to Moser) that had been collected in the 1982-1984 seasons and had been stored at different times and by different methods,, a compound was isolated with mp 85.5°C (hexane) (0.3% on the absolutely dry weight) with the composition $C_{18}H_{34}O_3$. Found %: C 72.12; H 11.50. Calculated %: C 72.4; H 11.4; M^+ 298. UV spectrum: $\lambda_{max}^{C_2H_5OH}$ 207, 250, 274 nm.

The IR spectrum (paraffin oil) contained absorption bands at (λ_{max}, cm^{-1}) 730, 740, 1470 (CH_2), 880, 2800-3000 (O–H), 1380 (CH_3), 1690, 1700, and 1705 (C=O), well correlated with the spectra of ketostearic acids that have been described [5].

In the PMR spectrum ($CDCl_3$) signals were observed at (ppm) 0.97 (3H, $-CH_3$); 1.35 (18H, $9CH_2$); 1.68 (6H, $3CH_2$ in the β position to CO groups); 2.45 (6H, $3CH_2$ in the α position to CO groups); and 10.70 (1H, –COOH).

The mass spectrum contained the peaks of ions with m/z: 298 (M^+, 3%), 280 ($M^+ - H_2O$, 2%), 197 ($C_{12}H_{25}$–CO, 34%), 144 (CH_2–CO–C_4H_8–COOH + H, 75%), 129 (CO–C_4H_8–COOH, 28%), 126 (CH_3–CO–C_4H_8–COOH – H_2O, 100%), 111 (CO–C_4H_8–COOH – H_2O, 47%), 101 (C_4H_8–COOH), 14%), 98 (CH_3–C_6H_{12}, 28%), 71 (CH_3–C_4H_8, 25%), 57 (C_4H_9, 41%), 43 (C_3H_7, 43%).

A comparison of the characteristics obtained with available literature – the PMR and mass spectra of methyl 6-ketostearate [6] – permitted the compound isolated to be identified

V. L. Komarov Botanical Institute, Academy of Sciences of the USSR, Leningrad.

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