other species of *Ungernia* showed that they all contain O-Ac groups. Thus, a native acetylated mannan has been obtained from plant material for the first time.

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QUINONES OF *Salvia drobovii*, *S. karabachensis*, AND *S. trautvetteri*

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In a qualitative examination of plants of the family Labiatae of the flora of the USSR, quinones of the type of tanshinone have been detected in 31 species of sage [1-3]. The roots of three species of sage from Central Asia and Transcaucasia have been studied: Drobov's sage (*Salvia drobovii* Botsch.), Karabagh sage (*S. karabachensis* Pobed.), and Trautvetter's sage (*S. trautvetteri* Regel). The quantitative compositions of the quinones of these species were different, but some spots on the thin-layer chromatograms coincided.

To obtain the tanshinones, the ground roots were covered with petroleum ether (1 : 6), and the mixture was stirred for 15 min and steeped for 12 h. The operation was repeated three times. The combined extracts were evaporated in vacuum, giving a resinous residue. Approximately 10 mg of this residue was dissolved in 0.5 ml of chloroform and deposited on a plate coated with silica gel in the form of a number of spots. After chromatography in column, the corresponding bands were removed, the substances were eluted with chloroform, and after the solvent had been distilled off in vacuum red and orange residues were obtained which were crystallized from chloroform or benzene.

The roots of Drobov's sage yielded four substances, of which the two main ones were identified as miltirhone cryptotanshinone. From Karabagh sage we obtained tanshinone I and cryptotanshinone, and from the roots of Trautvetter's sage cryptotanshinone. The other substances were isolated in very small amounts.

Miltirhone, $C_{19}H_{22}O_2$, red crystals with mp 98-100°C, R_f 0.54 (chloroform, orange spot). IR spectrum (paraffin oil): 1680 (inflection), 1660, 1635 cm^{-1}. UV spectrum (ethanol): 260, 360-362, 436 nm.

Cryptotanshinone, $C_{19}H_{20}O_3$, orange crystals with mp 175-180°C, R_f 0.20 (chloroform, pinkish-orange spot). IR spectrum (paraffin oil): 1680, 1648, 1620 cm^{-1}. UV spectrum (ethanol): 221, 263, 272, 290, 355, 447 nm.

Tanshinone I, $C_{18}H_{12}O_3$, brownish red crystals, mp 231-233°C, R_f 0.50 (chloroform: cinnamon-brown spot). IR spectrum (paraffin oil): 1688 (inflection), 1660, 1593 cm^{-1}. UV spectrum (ethanol): 244, 266 (inflection), 325, 417 nm.

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All the substances mentioned have been isolated previously by Japanese workers from the roots of S. miltiorrhiza Bunge [4], but this is the first time they have been isolated from plants of the domestic flora.

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FLAVONOIDS OF Trifolium montanum

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In the epigeal part of Trifolium montanum L. (mountain clover), collected in the northern Caucasus in the region of Podkumok Station, we have detected nine substances of flavonoid nature by paper chromatography.

The combined flavonoids were obtained by extraction with ethyl acetate from a concentrated ethanol purified with chloroform. Chromatography on a column of polyamide sorbent followed by fractional crystallization and preparative chromatography on paper yielded four individual substances – A, B, C, and D.

Substance A, $C_{15}H_{10}O_7$, with mp 310-312°C (melting point of the acetate 199-200°C), λ_{max} 256, 264 sh., 372 nm, was identified as quercetin.

Substance B, $C_{21}H_{20}O_{11}$, mp 270-272OC, λ_{max} 265, 364 nm, was characterized as kaempferol 7-O-β-D-glucopyranoside (populnin).

Substance C, $C_{21}H_{20}O_{12}$, mp 232-234°C, λ_{max} 256, 361 nm, was identified as quercetin 3-O-β-D-galactopyranoside (hyperoside).

Substance D, $C_{22}H_{22}O_9$, mp 210-212°C, $[\alpha]^{20}_{D}$ 25.3° (c 0.4; methanol), λ_{max} 260 nm consisted of 7-β-D-glucopyranosyloxy-4'-methoxyisoflavone (ononin).

The substances obtained were identified on the basis of the physicochemical properties of the initial compounds and of their transformation products, and UV and IR spectra [1], and also by comparison with authentic samples.

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