sesquiterpene, and oxygen-containing compounds was carried out on Vyrukhrom and PAKhV-08 instruments.

The monoterpene hydrocarbons were identified from their relative retention times and by the addition of pure substances.

The sequiterpene hydrocarbons were isolated with the aid of PGLC and were identified from their spectral characteristics and physicochemical indices. The ragweed essential oil contained more than 60 individual compounds, among which we identified 18 components: α-pinene, sabinene, β-pinene, limonene, 1,8-cineole, γ-terpinene, p-cymene, terpinen-4-ol, cis- and trans-artemesia ketones, methylchavicol, borneol, camphor, bornyl acetate, artemsia alcohol, geraniol, β-caryophyllene, and α-humulene. The main components of the oil were the cis- and trans-artemisia ketones, which made up 33% of the total amount of the oil. It is apparently just these substances that are responsible for the characteristic odor of ragweed oil.

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TRITERPENES OF *Zizifora bungeana*

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On investigating ethanolic extracts of the herb *Zizifora bungeana* Juz. (Bunge's zizifora) [1], we detected the presence in it of three substances with R_f 0.35, 0.45, and 0.70 in the chloroform–methanol (5:1) system which were colored cherry-red by antimony trichloride (TLC on Silufol plates).

By adsorption chromatography on silica gel we isolated substances A and B. Substance A had the composition $C_{30}H_{48}O_3$, mp 271-273°C (from ethanol), $[\alpha]_D^{20}$ +100 ± 5° (c 0.65; (dimethyl sulfoxide), R_f 0.7 (chloroform–methanol (5:1)). When the UV spectrum was recorded in concentrated sulfuric acid, an absorption maximum appeared at 312 nm, which showed that the substance was a triterpene acid [3]. This was also shown by the mass spectrum which contained M^+ 456 and peaks with m/z 207 and 248 corresponding to the β-decomposition of ursane derivatives, and also ions with m/z 203 and 133 formed by decarboxylation and the splitting out of ring E [4]. ν_{max}^{KBr} (cm^{-1}): 3440-3460 (OH group), 1690 (C=O of an acid), 1270, 670 (cis-trisubstituted C=C bond).

The PMR spectrum of substance A (in Py-d_5, 80 MHz, BS-487-C Tesla NMR spectrometer, HMDS, δ, ppm): 5.32 (h/2 = 8 Hz, olefinic proton); 3.30 (J = 9 Hz, 1 H, proton at C_3); singlets at 1.18 (3 H), 1.10 (6 H), 0.90 and 0.88 (3 H each) — tertiary methyl groups; doublet at 0.80 ppm, J = 8 Hz (6 H) — secondary methyl groups; 2.48, doublet, J = 1 Hz (2 H) — proton at C_{18}. The facts given permit substance A to be assigned to the triterpene hydroxy acids of the ursane series. Its IR and PMR spectra were extremely close to those of ursolic acid but did not coincide with them: differences were observed in the melting points of the acids and of their acetates and methyl esters [2, 5-9]. It is most likely that substance A was one of the isomers of ursolic acid. Brieskorn [7] has shown that ursolic acid isolated from plants is a natural mixture of two isomers — ursolic acid proper (I) (C_{18}-Hα and C-COOHβ) with mp 285°C and an ursolic acid (II) (C_{18}-Hβ and C–COOHβ) with mp 276°C. The native compound is the acid (II), which is converted into the ursolic acid (I) during isolation under the action of alkalis. The discrepancies of the melting points

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TABLE 1

Compound	mp, °C	mp's of the derivatives, °C						
		3-β-O-acetate	methyl ester	3β-O-methyl ether	3β-O-acetate of the methyl ester	3β-benzoate of the methyl ester	3-keto derivative	12-bromo-3β-hydroxyursan-28,13-olide
Ursolic acid	273, 276, 282, 286, 292 [2; 5—9]	247 287 296	110—111	157, 163, 171	226, 247	213, 216, 217	270—275	—
Substance A	271—273	256—257	110—111	176—178	220—222	214—215	208—210	232—233

given in the literature for ursolic acid and its derivatives can be explained by the fact that the authors probably isolated mixtures of these acids in different proportions [2, 5, 6, 8, 9].

We isolated substance A in the absence of alkali. It consisted of the poorly characterized C_{18}-Hβ isomer of ursolic acid. Its melting point was close to that of the ursolic acid (II) [7], no derivatives of which have been described. The identification of substance (A) with the ursolic acid (II) was confirmed by its passage on heating with alkali for three hours into the ursolic acid (I). There were differences in the IR spectra of the substance A and ursolic acid appearing in the field of the intensities of the absorption at 1100-1200 at 800-950 cm^{-1}. Small differences were also observed in the PMR spectra of these substances and, in particular, in the signals of the methyl groups for ursolic acid represented in the form of singlets at 1.25, 1.08, and 1.02 ppm and doublets at 0.96 ppm, J = 7 Hz.

We obtained derivatives of substance A, and their constants are given in Table 1. We propose to call this isomer, which has been isolated for the first time from Bunge's zizifora, bungeolic acid.

The amount of substance A in the herb *Zizifora bungeana* in the free state was 0.45%, and 0.7% was present in the form of glycosides [substances with R_f 0.35 and 0.45; chloroform—methanol (5:1)], which on hydrolysis split into substance A, rhamnose, and glucuronic acid.

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