The quantitative amounts of the essential oils were determined by Ginzberg's method, and their physicochemical constants by standard methods [4, 5]. The quantitative compositions of the essential oils were studied by gas-liquid chromatography (Vyrukhrom). The main components were identified by the introduction of known compounds into samples of the oils and from their relative retention times (Table 1).

It was found that the amounts of essential oils in the epigeal parts of the species of *Ziziphora* ranged between 0.23 and 1.15% (on the air-dry weight), depending on the species involved. The results of a study of the qualitative compositions of the essential oils of the *Ziziphora* species showed that they all contained as the main components menthone, isomenthone, pulegone, thymol, and carvacrol. The largest number of components (22), including unidentified compounds, was found in *Z. serpyllaceae*, and the smallest number (12) in *Z. persica*.

As can be seen from Table 1, the chemical compositions of the essential oils of these *Ziziphora* species have many similar components, but α-pinene, camphene, β-pinene, sabinene, α-terpinene, and limonene were not found in *Z. capitata* and *Z. denticulata*.

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COMPONENT COMPOSITIONS OF THE ESSENTIAL OILS OF SOME SPECIES OF THE GENUS *Thymus*

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The genus *Thymus* L. is represented in the flora of the USSR by 172 species, 38 of which grow in the Caucasus.

There is much information in the literature on the use of herbs of the *Thymus* species and their essential oils in folk medicine, perfumery, and the food industry [1-3]. The essential oil content of the *Thymus* species of the flora of Georgia have not been previously studied. We have investigated the essential oils of *Thymus coriifolius* Ronn., *Th. transcaucasicus* Ronn., *Th. marshallianus* Willd., *Th. tiflisensis* Klok. et Shost. gathered in eastern Georgia in the period of mass flowering.

The essential oils were obtained by the method of A. S. Ginzberg [3] from the epigeal parts of the plants. The physicochemical constants of the oils were determined by generally adopted methods [4]. The qualitative compositions of the oils and the amounts of the components were determined by the GLC method on a Chrom-5 chromatograph. The components were identified by the increase in the size of the corresponding peak on the addition of known substances and also from their retention times.

In order to determine more accurately the optimum time of collecting the species of thyme from their natural growth sites, we studied the dynamics of the accumulation of the essential oils. It was found that the maximum amounts of essential oils accumulated in the mass flowering phase.

As can be seen from Table 1, among the compounds identified in the essential oils of the thyme species, the main components were: in *Th. marshallianus*, geraniol (30.28%); in

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TABLE 1

Species of thyme and region of collecting the raw material	Amount of essential oils, % on the air-dry weight of the plant	Number of components	Physicochem. constants	Main components of the essential oil, %
Th. transcaucasicus (environs of the village of Kodzhori, 1200 m above sea level	0,18–0,22	43	n_D^{20} 1,4846 d_{20}^{20} 0,8327 A.no. 1,95 E.no. 28,18 E.no.a.a. 47,35	α-Pinene, 0.78; γ-terpinolene, 1.79; linalool, 3.79; caryophyllene, 14.30; geraniol acetate, 5.70; geraniol, 6.37; carvacrol, 4.15
Th. marshallianus (between the villages of Khidistavi and Ateni, 550-600 m above sea level)	0,17–0,23	39	n_D^{20} 1,4857 d_{20}^{20} 0,8327 A.no. 2,18 E.no. 27,65 E.no. a.a. 68,75	α-Pinene, 9.30; limonene, 10.09; γ-terpinene, 4.74; linalool, 2.11; caryophyllene, 6.85; α-terpineol, 8.60; geraniol acetate 1.23; geraniol, 30.28
Th. tiflisensis (environs of the village of Igosti and Asureti (500-550 m above sea level)	0,15–0,20	33	n_D^{20} 1,4954 d_{20}^{20} 0,8628 A.no. 1,85 E.no. 26,75 E.no.a.a. 38,75	α-Pinene, 3.04; limonene, 4.34; α-terpinolene, 3.73; linalool, 4.34; caryophyllene, 18.20; γ-terpinolene, 6.50; geraniol, 4.07; carvacrol 20.13
Th. corifolius (gorge of the R. Lyavtakhsvi, 450-500 m above sea level)	0,13–0,18	36	n_D^{20} 1,4836 d_{20}^{20} 0,8435 A.no. 1,67 E.no. 19,25 E.no.a.a. 48,75	α-Pinene, 11.14; limonene, 4.30; terpinene, 3.81; p-cymene, 1.76; linalool, 2.64

Th. tiflisensis, carvacrol (20.13%). in *Th. transcaucasicus*, caryophyllene (14.30%), and in *Th. corifolius*, α-pinene (11.14%).

On the basis of the results of the investigations performed it was established that the essential oils of these species of thyme can be used in perfumery, cosmetics, and the food industry.

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