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## TAXONOMIC COMPOSITION OF THE *Orobanche* L. GENUS IN THE NAKHCHIVAN AND PROSPECTS FOR USING SPECIES

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## ТАКСОНОМИЧЕСКИЙ СОСТАВ РОДА *Orobanche* L. В НАХИЧЕВАНИ И ПЕРСПЕКТИВЫ ИСПОЛЬЗОВАНИЯ ВИДОВ

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*Abstract.* The article presents information on the taxonomic composition of the genus *Orobanche* L. The article provides information on the distribution of the genus species in the flora of Nakhchivan. A brief overview of practical use is given. Sixteen species of this genus have been found in the flora of Nakhchivan, including *Orobanche sintenisii* Beck is present in the cultivated flora. The species of the genus are used as ornamental, fodder and food plants, as well as in medicine.

*Аннотация.* Представлены сведения о таксономическом составе рода заразиха (*Orobanche* L.). Приведены сведения о распространении во флоре Нахичевани видов рода. Дан краткий обзор практического использования. Во флоре Нахичевани обнаружено 16 видов этого рода, среди которых *Orobanche sintenisii* Beck присутствует в культурной флоре. Виды рода используются как декоративные, кормовые и пищевые растения, а также в медицине.

*Keywords:* *Orobanche*, taxonomic composition, biotope.

*Ключевые слова:* заразиха, таксономический состав, биотоп.

The flora of the Nakhchivan Autonomous Republic is distinguished by its unique and rich vegetation. The flora includes samples of all types of habitat: ancient forest, boreal, steppe, xerophilous, desert, Caucasian and adventive plant types.

Orobanchaceae (Orobanchaceae Vent.) is one of the families included in the flora of the Nakhchivan Autonomous Republic. The chapter is represented by 7 genera and 55 species. The section includes the genus *Orobanche* L., which has rich species diversity.

In Azerbaijan, there are 31 species of the genus, and in the Nakhchivan region — 16 species.

*Orobanche* L. — *Orobanche* species are found in different areas from meadows to the upper mountain belt. The species included in the genus are not only ornamental plants, but are also used in medicine, feed and food in the wild.

Taking all this into account, the study of the taxonomic composition and directions of use of *Orobanche* L. — the genus *Orobanbash* was considered a relevant topic.

#### *Material and methodology of the study*

The studies were conducted in various areas of the Nakhchivan MR in 2023-2024. The object of the study was the shrubby rocky slopes of the middle alpine and subalpine belt of the region, and the material was the species of the genus *Orobanche* L.

The definition and names of the species belonging to the genus *Orobanche* L. are given on the basis of the books by A. Aserov "Plants of Azerbaijan" [2], "Flora of Azerbaijan" [11] and other works. Recent taxonomic changes were verified using World Flora Online (<https://www.worldfloraonline.org/>).

#### *Discussion and research conclusions*

*Orobanche* L. is one of the genera with a rich species composition in the flora of the Nakhchivan Autonomous Republic. There are 31 genera in Azerbaijan, and 16 genera in Nakhchivan region. The systematic composition of species included in the genus, ecological groups, habitat, phases of flowering and fruiting are shown in the table below (Table).

Table  
TAXONOMIC COMPOSITION OF SPECIES OF GENUS *Orobanche* L

<i>Species name</i>	<i>Environmental groups</i>	<i>Area class</i>	<i>Flowering and fruiting phase</i>
<i>Orobanche alba</i> Steph.	Mesoxerophyte	Eastern Europe	V, VI-VII, VIII
<i>O. alsatica</i> Kirschl.	Xerophyte	Adventive	VI, VI: I-VII, XI
<i>O. caryophyllacea</i> Smith.	Xerophyte	Adventive	V, VII-VI, VIII
<i>O. connata</i> C.Koch.	Xerophyte	Asia Minor	V, VI-VII, VIII
<i>O. crenata</i> Forssk.	Mesoxerophyte	Asia Minor	V, VII-VI, VIII
<i>O. cumana</i> Wallr.	Xerophyte	The Caucasus	V, VII-VI, VIII
<i>O. elatior</i> Sutt.	Xerophyte	Adventive	VI, VII-VII, VIII
<i>O. glabricaulis</i> Tzvel.	Xerophyte	The Caucasus	VI, VII-VII, VIII
<i>O. grossheimii</i> Novop.	Xerophyte	The Caucasus	VI, VII-VII, XI
<i>O. kurdica</i> Hausskn.	Mesoxerophyte	The Mediterranean Sea	VI, VII-VII, VIII
<i>O. lutea</i> Baumg.	Xeromesophyte	Adventive	V, VII-VI, VIII
<i>O. minor</i> Smith.	Xerophyte	The Mediterranean Sea	V, VI, VII-VIII, IX
<i>O. raddeana</i> G. Beck.	Mesoxerophyte	Asia Minor	VI, VIII-VI, IX
<i>O. rosea</i> Tzvel.	Xerophyte	The Caucasus	VI, VII-VII, VIII
<i>O. sintenisii</i> G. Beck.	Mesoxerophyte	Adventive	VI, VII-VII, XI
<i>O. vitellina</i> Novopokr.	Mesoxerophyte	Eastern Europe	V, VII-VI, VIII



These are annual, biennial and perennial plants with dense, simple or branching stems covered with alternate scales. Flowers are collected in a spike-shaped or racemose floral group, 2 flowers with or without an apex near the calyx. The calyx is bell-shaped, with 4-5 sharp teeth, often deeply dissected in the direction of the axis of the floral group or divided towards the base. The crown is tubular or bell-shaped, with two lips, the upper lip is two-lobed, the lower lip is three-lobed.

When analyzing the ecological groups of species included in the genus, it was found that the species *Orobanch alba*, *O. crenata*, *O. kurdica*, *O. raddeana*, *O. sintenisii*, *O. vitellina* are mesoxerophytic, *O. alsatica*, *O. caryophyllacea*, *O. connate*, *O. cumana*, *O. elatior*, *O. glabrichaulis*, *O. Grossheimii*, *O. minor*, *O. rosea* species are xerophytes, and *O. lutea* species are xeromesophytes.

Based on available literary sources and our own field studies, the species of the genus were assigned to different range classes, which make it possible to determine the migration routes of the species to the territory.

The species of the genus *Orobanche* L. common in the study area were analyzed in 5 areal classes according to zonal and regional principles. It is known that the species is widespread in such areas as the Caucasus, Asia Minor, the Mediterranean, and Eastern Europe.

The species *Orobanch alba* is an annual plant of reddish color. It is usually distributed on dry sunny slopes, in steppes, subalpine and alpine meadows, on calcareous, solonetzic, sandy or clay soils. It parasitizes on the species *Salvia*, *Thymus*, *Galium*. It parasitizes on ornamental and spicy plants and reduces crop yields.

The species *Orobanch alsatica* is common on grassy and rocky slopes of the mid-mountain and subalpine belt. It parasitizes on the species *Hieracium* L. the plant parasitizes on agricultural crops and reduces crop yields.

The *Orobanch caryophyllacea* species is common on shrubby and rocky slopes of the mid-alpine and subalpine belt. It parasitizes on *Galium* L. species. The plant is used in folk medicine to treat various diseases.

The *Orobanch connata* species is common in rocky, stony areas of the mid-mountain belt. It is used as an ornamental plant in gardens and parks.

The *Orobanch crenata* species is common in forests and thickets of the mid-mountain belt. It parasitizes on legumes. The plant is used in folk medicine due to its anti-inflammatory, antimicrobial and wound-healing properties.

The species *Orobanch cumana* is distributed on stony, rocky slopes of the middle mountain zone. The plant is mainly parasitic on *Artemisia* L., *Xanthium* L., *Helianthus* L. genera from asteraceae. It grows on the roots of agricultural plants — sunflower, tomato and tobacco, and becomes a parasite, reducing the level of productivity.

The species *Orobanch elatior* is distributed on the stony slopes of the middle mountain belt. Parasitic on *Centaurea* L. and *Echinops* L. species. By parasitizing plants, which are a source of food for insects, pollination decreases.

The species *Orobanch glabrichaulis* is a perennial plant, distributed in stony and rocky areas of the middle mountain zone. The plant is used as an important herb in the treatment of headache, stomach ache and skin diseases.

The species *Orobanch grossheimii* is common on grassy and rocky slopes of the middle alpine and subalpine belt. *Cephalaria* schrad. ex Rem and Schult. is parasitic on species. The plant is used as an important medicinal plant in the treatment of a number of human diseases, such as anthrax and dermatological problems.

*Orobanch kurdica* is common on rocky slopes of the middle mountain belt. It is parasitic on species *Tanacetum* L., *Carduus* L., *Phlomis* L.. It is used as a medicinal and food plant in many parts of the world.

*Orobanch lutea* is found in meadows, pastures and areas with sandy-gravel soil. It is parasitic on species *Medicago* L.. The plant is used as an ornamental plant in gardens and parks. In traditional medicine, it is also used in the treatment of various diseases, such as fever, headache and stomach problems.

The *Orobanch raddeana* species is common on grassy and rocky slopes of the subalpine belt. It is a parasite on *Campanula* L. species. It is collected in the wild and used as food in traditional medicine.



Figure 1. *Orobanche alba* (<https://lyl.su/eKID>)



Figure 2. *Orobanche elatior* (<https://lyl.su/eKID>)

The *Orobanch rosea* species is common in stony, rocky areas of the middle mountain belt. *Prangos ferulacea* (L.) is a parasite on species. The plant is used in phytochemistry and pharmaceuticals.

The *Orobanch sintenisii* species is an annual plant species found in dry and sandy soils. The plant has been used as a medicine to treat various ailments, including headaches, stomach aches and skin diseases. In addition to being used as an ornamental plant in gardens, the plant is also considered an important type of feed in animal husbandry.

*Orobanch minor* grows in wet, light (sandy), medium (clayey) and heavy (clayey) soils. It is a parasite on *Trifolium*. Parasitizing the root system of food plants, it negatively affects the vital activity of the plant, reduces the quality of productivity.

Species of *Orobanch vitellineum* are annual or perennial herbs. It is found on dry sandy soils, in areas with sparse vegetation. It is used in folk medicine for the treatment of various diseases.

The flora and vegetation of the Nakhchivan MR, which is the territory of the studies, was formed due to the migration of species with different habitats to the region along with the xerophytic type of territory and the preservation of ancient relics to the present day [12, 21].



Figure 3. *Orobanche kurdica* (<https://lyl.su/eKID>)



Figure 4. *Orobanche minor* (<https://lyl.su/eKID>)

Thus, in the studied territories, species belonging to the genus form different levels of formations with plants of other families. The territory of the region forms natural groups of natural herbaceous plants with various trees and shrubs, covering a number of areas of the region and forming zonality [1, 8, 20, 22, 23].

Grasses in all territories, regardless of their location, contact with species belonging to a number of families and form different groups [9, 10, 14].

In a typical forest environment of the region with a forest-shrub complex, multifaceted geographic and ecological groups of shrubs and grasses are formed. In the formation of such phytocenoses, the dominant species are plants belonging to the families *Fabaceae*, *Malvaceae*, *Rosaceae* and others [3-7, 13, 15-18].

Thus, it does not fully reflect the directions of use of the above-mentioned species of the genus *Orobanche* L. In our further research, we consider it appropriate to comprehensively study all the features of the studied breed.

### Conclusion

1. The conducted research showed that 16 species of the genus *Orobanche* L. were found in the flora of the Nakhchivan Autonomous Republic. It was found that 9 species belonging to the genus are medicinal, 3 are ornamental, 4 are fodder and some of them are parasitic.

2. The analysis of ecological groups of species included in the genus showed that 9 species of the genus are xerophytic, 6 species are mesoxerophytic and 1 species is xeromesophytic. According to the analysis of geographic range classes, 5 species of the genus are adventitious, 4 species are Caucasian, 3 species are Asia Minor, the Mediterranean and East European classes are represented by 2 species each.

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