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THE CHARACTERISTIC SPECIES OF THE *Brassicaceae* Burnett. FAMILY FOR THE FLORA OF NAKHCHIVAN, AZERBAIJAN

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ХАРАКТЕРНЫЕ ВИДЫ СЕМЕЙСТВА *Brassicaceae* Burnett. ДЛЯ ФЛОРЫ НАХЧЫВАНА, АЗЕРБАЙДЖАН

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Abstract. The species of the *Brassicaceae* family of the flora of the Nakhchivan Autonomous Republic of Azerbaijan are considered. The flora of the region is characterized by 28 species belonging to 16 genera of this family. There are monotypic genera that are found only in the flora of Nakhchivan, Azerbaijan: *Aethionema* R.Br., *Alyssum* L., *Arabidopsis* (DC.) Heynh., *Arabis* L., *Atropatenia* F.K. Mey., *Asperuginoides* Rauschert, *Coluteocarpus* Boiss., *Cymatocarpus* O.E. Schultz, *Drabopsis* C. Koch, *Diptychocarpus* Trautv., *Erysimum* L., *Fibigia* Medik., *Isatis* L., *Peltariopsis* N. Busch, *Litwinowia* Woronow and *Sterigmostemum* Bieb. Bioecological characteristics of these species are given.

Аннотация. Рассматриваются виды семейства *Brassicaceae* флоры Нахчыванской Автономной Республики Азербайджана. Для флоры региона характерны 28 видов, принадлежащих к 16 родам этого семейства. Имеются монотипические роды, которые встречаются только во флоре Нахчывана, Азербайджан: *Aethionema* R.Br., *Alyssum* L., *Arabidopsis* (DC.) Heynh., *Arabis* L., *Atropatenia* F.K. Mey., *Asperuginoides* Rauschert, *Coluteocarpus* Boiss., *Cymatocarpus* O.E. Schultz, *Drabopsis* C. Koch, *Diptychocarpus* Trautv., *Erysimum* L., *Fibigia* Medik., *Isatis* L., *Peltariopsis* N. Busch, *Litwinowia* Woronow и *Sterigmostemum* Bieb. Приводятся биоэкологические характеристики этих видов.

Keywords: *Brassicaceae*, genus, species, plant.

Ключевые слова: *Brassicaceae*, род, вид, растение.

The *Brassicaceae* Burnett. family is an important family for nature due to its species diversity. The *Brassicaceae* are an important family for three primary reasons [4].

The unique climate and geographical location of the region create favorable conditions for the distribution of various species of the family. The harsh climate and mountainous areas of the Nakhchivan Autonomous Republic further enhance the adaptability of the *Brassicaceae* family. The mustard family (*Brassicaceae* or *Cruciferae*) belongs to the order *Brassicales* and is readily distinguished from other flowering plant families by a cruciform (crossshaped) corolla, six stamens (the outer two shorter than the inner four), a capsule often with a septum and a pungent watery sap [1].

The *Brassicaceae* (*Cruciferae* or mustard family) is a large plant family with approximately 338 genera and 3709 species distributed worldwide, most are distributed in the temperate areas of the Northern Hemisphere [3].

The *Brassicaceae* Burnett. family is represented in the flora of the Republic of Azerbaijan by 74 species from 248 genera. According to scientific literature sources, 28 species (16.96%) from 16 genera of the family, out of 67 genera and 165 species found in the Nakhchivan Autonomous Republic, are characteristic of the region's flora [2, 5-8].

The species of the *Brassicaceae* family characteristic of the flora of Nakhchivan, Azerbaijan, are listed below in the following systematic composition:

Genus: *Aethionema* R.Br.

Aethionema cardiophyllum Boiss. & Heldr.

Aethionema cordatum (Desf.) Boiss.

Aethionema diastrophis Bunge

Aethionema edentulum N.Busch

Aethionema fimbriatum Boiss.

Genus: *Alyssum* L.

Alyssum dasycarpum Steph.

Alyssum persicum Boiss. (*A. Muelleri* Boiss. & Buhse)

Genus: *Arabidopsis* (DC.) Heynh.

Arabidopsis parvula (Schrenk) O.E. Schulz

Genus: *Arabis* L.

Arabis carduchorum Boiss. (*A. armena* N.Busch)

Genus: *Atropatenia* F.K. Mey

Atropatenia rosrtata (N.Busch) F.K. Mey. (*Thlaspi rostratum* N.Busch)

Atropatenia zangezura (Tzvel.) F.K. Mey. (*Thlaspi zangezura* Tzvel.)

Genus: *Asperuginoides* Rauschert (*Buchingera* Boiss. & Hohen.)

Asperuginoides axillaris (Boiss. & Hohen.) Rauschert (*Buchingera axillaris* Boiss. & Hohen.)

Genus: *Coluteocarpus* Boiss.

Coluteocarpus vesicaria (L.) Holmboe

Genus: *Cymatocarpus* O.E. Schultz

Cymatocarpus Grossheimii N.Busch

Genus: *Drabopsis* C.Koch

Drabopsis nuda (Belanger) Stapf (*D. verna* C. Koch)

Genus: *Diptychocarpus* Trautv.

Diptychocarpus strictus (Fisch. ex Bieb.) Trautv.

Genus: *Erysimum* L.

Erysimum brachycarpum Boiss.

Erysimum sisymbrioides C.A. Mey.

Erysimum subulatum J. Gay (*E. persicum* Boiss.)

Genus: *Fibigia* Medik.

Fibigia macrocarpa (Boiss.) Boiss.

Fibigia suffruticosa (Vent.) Sweet

Genus: *Isatis* L.

Isatis brachycarpa C.A. Mey.

Isatis Bungeana Seidl.

Isatis Karjaginii Schischk.

Isatis ornithorhynchus N. Busch

Genus: *Peltariopsis* N. Busch

Peltariopsis Grossheimii N. Busch

Genus: *Litwinowia* Woronow

Litwinowia tenuissima (Pall.) Woronow ex Pavl.

Genus: *Sterigmostemum* Bieb.

Sterigmostemum acanthocarpum Fisch. & C.A. Mey.

These plants are distributed in the regional flora in accordance with laws, at various elevations and ecological environments:

Aethionema cardiophyllum Boiss. & Heldr. is a semi-shrub species with a stem height of 15-25 cm. The plant's phenophase occurs in the months of may-june and june-july. It belongs to the xerophyte ecological group and is distributed in the dry, gravelly, and rocky slopes of the middle mountain belt of the Nakhchivan AR.

Aethionema cordatum (Desf.) Boiss. is a semi-shrub life-form species with a height of 10-30 cm. The plant's phenophase occurs in the months of may-june and june-july. It belongs to the xerophyte ecological group and is distributed in the dry and gravelly slopes of the middle mountain belt of the Nakhchivan AR.

Aethionema diastrophis Bunge is a semi-shrub life-form species with a height of 15-25 cm. The plant's phenophase occurs in the months of may-june and july-August. It belongs to the xerophyte ecological group and is distributed in the rocky and gravelly slopes of the middle mountain belt of the Nakhchivan AR.

Aethionema edentulum N. Busch is a semi-shrub life-form species with a height of 25-35 cm. The plant's phenophase occurs in the months of may and july-august. It belongs to the xerophyte ecological group and is distributed in the dry, stony, and rocky slopes of the middle mountain belt of the Nakhchivan AR.

Aethionema fimbriatum Boiss. is a semi-shrub life-form species with a height of 25-40 cm. The plant's phenophase occurs in the month of august. It belongs to the xeromesophyte ecological group and is distributed in the rocky slopes and fields of the middle mountain belt of the Nakhchivan AR.

Alyssum dasycarpum Steph. is an annual life-form species with a height of 10-25 cm. The plant's phenophase occurs in the months of march-june. It belongs to the xerophyte ecological group and is distributed in the dry clayey and rocky slopes, riverbanks, sandy areas, fields, and orchards of the lower and middle mountain belts of the Nakhchivan A R.

Alyssum persicum Boiss. is a perennial life-form species with a height of 5-15 (25) cm. The plant's phenophase occurs in the months of (april) may-june and (may) june-august. It belongs to the xerophyte ecological group and is distributed in the dry, rocky, clayey slopes and limestone areas of the middle mountain belt of the Nakhchivan AR (rarely in subalpine elevations).

Arabidopsis parvula (Schrenk) O. E. Schulz is an annual life-form species with a height of 3-15 cm. The plant's phenophase occurs in the months of april-may and may-june. It belongs to the xerophyte ecological group and is distributed in the dry, clayey slopes and saline areas of the lower mountain belt of the Nakhchivan AR.

Arabis carduchorum Boiss. is a perennial life-form species with a height of 2-5 cm. The plant's phenophase occurs in the months of may-june and june-july. It belongs to the mesophyte ecological group and is distributed in the meadows of the alpine elevations of the Nakhchivan AR.

Asperuginoides axillaris (Boiss. & Hohen.) Rauschert is an annual life-form species with a height of 10-70 cm. The plant's phenophase occurs in the months of april-may and june-july. It

belongs to the mesoxerophyte ecological group and is distributed in the broad-leaved forests and rocky soils of the middle mountain belt of the Nakhchivan AR.

Atropatenia rostrata (N. Busch) F. K. Mey. is a semi-shrub life-form species with a height of 4-15 cm. The plant's phenophase occurs in the months of april and may-june. It belongs to the xerophyte ecological group and is distributed in the rocky areas of the middle mountain belt of the Nakhchivan AR.

Atropatenia zangezura (Tzvel.) F. K. Mey. is a perennial life-form species with a height of 3-10 cm. The plant's phenophase occurs in the months of june-july. It belongs to the xerophyte ecological group and is distributed in the rock crevices of the subalpine elevations of the Nakhchivan AR.

Coluteocarpus vesicaria (L.) Holmboe is a perennial life-form species with a height of 8-20 cm. The plant's phenophase occurs in the months of may-june and june-august. It belongs to the xerophyte ecological group and is distributed in the dry and rocky slopes of the middle to upper mountain belt of the Nakhchivan AR.

Cymatocarpus Grossheimii N. Busch is an annual life-form species with a height of 20-40 cm. The plant's phenophase occurs in the months of may-july. It belongs to the xerophyte ecological group and is distributed in the dry and rocky slopes of the foothills of the Nakhchivan AR.

Drabopsis nuda (Belanger) Stapf is an annual life-form species with a height of 5-10 cm. The plant's phenophase occurs in the months of may and may-june. It belongs to the xerophyte ecological group and is distributed in the dry and rocky slopes of the middle mountain belt of the Nakhchivan AR.

Diptychocarpus strictus (Fisch. ex Bieb.) Trautv is an annual life-form species with a height of 10-50 cm. The plant's phenophase occurs in the months of (march) april and april-may. It belongs to the xerophyte ecological group and is distributed in the clayey, weakly saline slopes and weedy areas of the plains and lower mountain belt of the Nakhchivan AR.

Erysimum brachycarpum Boiss. is a biennial life-form species with a height of 45 cm. The plant's phenophase occurs in the month of june. It belongs to the xerophyte ecological group and is distributed in the rocky and stony areas of the high mountain belt of the Nakhchivan AR.

Erysimum sisymbrioides C.A. Mey. is an annual life-form species with a height of 10-20 cm. The plant's phenophase occurs in the months of may and june. It belongs to the xerophyte ecological group and is distributed in the clayey semi-deserts of the lower and middle mountain belts of the Nakhchivan AR.

Erysimum subulatum J. Gay is a biennial life-form species with a height of 20-50 cm. The plant's phenophase occurs in the months of may and june. It belongs to the xerophyte ecological group and is distributed in the dry, stony, and clayey areas of the lower and middle mountain belts of the Nakhchivan AR.

Fibigia macrocarpa (Boiss.) Boiss. is a perennial life-form species with a height of 15-35 (40) cm. The plant's phenophase occurs in the months of may-june and june-july. It belongs to the xerophyte ecological group and is distributed in the dry and rocky slopes of the middle mountain belt of the Nakhchivan AR.

Fibigia suffruticosa (Vent.) Sweet is a perennial life-form species with a height of 15-55 cm. The plant's phenophase occurs in the months of may-june and june-july. It belongs to the xerophyte ecological group and is distributed in the dry, gravelly, and rocky slopes of the lower and middle mountain belts of the Nakhchivan AR.

Isatis brachycarpa C.A. Mey. is a biennial life-form species with a height of 40-80 cm. The plant's phenophase occurs in the month of june. It belongs to the xerophyte ecological group and is

distributed in the stony and dry areas of the middle and upper mountain belts of the Nakhchivan AR.

Isatis Bungeana Seidl. is a biennial life-form species with a height of 40-60 cm. The plant's phenophase occurs in the months of July-August. It belongs to the xerophyte ecological group and is distributed in the stony and dry areas of the middle and upper mountain belts of the Nakhchivan AR.

Isatis Karjaginii Schischk. is a perennial life-form species with a height of 40 cm. The plant's phenophase occurs in the months of May-June. It belongs to the xerophyte ecological group and is distributed in the rocky slopes and stony areas of the middle mountain belt of the Nakhchivan AR.

Isatis ornithorhynchus N. Busch is an annual life-form species with a height of 15-40 cm. The plant's phenophase occurs in the month of May. It belongs to the mezoxerophyte ecological group and is distributed in the sandy areas and fields of the lower mountain belt of the Nakhchivan AR.

Litwinowia tenuissima (Pall.) Woronow ex Pavl. is an annual life-form species with a height of 35 cm. The plant's phenophase occurs in the months of April and May. It belongs to the xerophyte ecological group and is distributed in the dry slopes and weedy areas of the territories extending to the lower and middle mountain belts of the Nakhchivan AR.

Peltariopsis Grossheimii N. Busch is a biennial life-form species with a height of 20 cm. The plant's phenophase occurs in the months of April-May and May-June. It belongs to the xerophyte ecological group and is distributed in the limestone slopes of the lower mountain belt of the Nakhchivan AR.

Sterigmostemum acanthocarpum Fisch. & C.A. Mey. is an annual life-form species with a height of 10-40 cm. The plant's phenophase occurs in the months of April-June and May-July. It belongs to the xerophyte ecological group and is distributed in the dry, clayey, stony, gravelly slopes and xerophilous shrublands of the areas extending to the lower mountain belt of the Nakhchivan AR.

As seen from the above information, the species characteristic of the region's flora, according to their life forms, are as follows: 10 species are annual (35.71%), 7 species are perennial (25%), 6 species are semi-shrub (21.42%), and 5 species are biennial (17.85%). Annual life-form plants dominate in terms of abundance. In relation to humidity, the majority of species belong to the xerophyte ecological group.

Conclusion: In the flora of the Nakhchivan Autonomous Republic, 10 genera (14.92%) out of 67 genera of the *Brassicaceae* Burnett. family are monotypic, and 2 of these genera are characteristic of the region's flora: *Coluteocarpus* Boiss. and *Litwinowia* Woronow. Additionally, in the flora of Azerbaijan, genera such as *Peltariopsis* N. Busch and *Cymatocarpus* O. E. Schultz include one species each, which are also characteristic of the Nakhchivan flora (Asgarov A., 2016).

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