

UDC 582
AGRIS F70

https://doi.org/10.33619/2414-2948/78/05

REVIEW OF SPECIES OF THE *Linaria* Mill. GENUS (*Scrophulariaceae*) IN AZERBAIJAN

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СПИСОК ВИДОВ РОДА *Linaria* Mill. (*Scrophulariaceae*) В АЗЕРБАЙДЖАНЕ

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Abstract. This article includes a taxonomic review of representatives of the *Linaria* Mill. genus growing in Azerbaijan. As a result of a critical review of the composition of the *Linaria* genus, it was found that 18 species and one subspecies of this genus grow in the study area, of which 3 species: *L. hohenackeri*, *L. ordubadica*, *L. nachitschevanica* are new to the flora of Azerbaijan. Nomenclatural and taxonomic changes are taken into account. A new key has been compiled to identify these species.

Аннотация. Настоящая статья включает таксономический обзор представителей рода *Linaria* Mill., произрастающих в Азербайджане. В результате критического пересмотра состава рода *Linaria* установлено, что на исследуемой территории произрастает 18 видов и 1 подвид этого рода, из которых 3 вида: *L. hohenackeri*, *L. ordubadica*, *L. nachitschevanica* являются новыми для флоры Азербайджана. Учтены номенклатурные и таксономические изменения. Составлен новый ключ для определения этих видов.

Keywords: Azerbaijan, genus, species, *Linaria*.

Ключевые слова: Азербайджан, род, вид, *Linaria*.

Linaria Mill.¹ genus includes over 150 species growing in Europe, the Mediterranean and extratropical parts of Asia and America. This is an extremely complex and polymorphic genus,

¹ In the APG IV system (The Angiosperm Phylogeny Group, 2016), this genus is included in the *Plantaginaceae* family [16].

the taxonomy of which is based on variable, insufficiently consistent traits, which complicates the taxonomy of the genus.

In the second edition of “Flora of the Caucasus” [6], the genus *Linaria* is represented by 31 species, of which L. M. Kemularia-Natadze gives 16 species of the genus for Azerbaijan, and I. I. Karyagin 17 species of toadflax for “Flora of Azerbaijan” [5], in his revision. After that, the genus underwent critical revisioning in a number of neighboring regions, which led to many changes in the nomenclature and scope of species (<https://www.gbif.org>).

In the process of revision of the accumulated herbarium collections for the genus *Linaria* in the Herbarium of the Institute of Botany of the Azerbaijan NAS (BAK), it turned out that 18 species and 1 subspecies of toadflax grow in Azerbaijan. An analysis of herbarium materials on species of the genus *Linaria* also made it possible to clarify a number of taxonomic and nomenclature issues, data on the distribution of these species in Azerbaijan.

Specified by L. A. Kupriyanova [7, 8], from a very polymorphic *L. genistifolia* (L.) Mill. Caucasian specimens of this species into a separate species *L. pontica* Kuprian. differ, in her opinion, in somewhat smaller sizes of the corolla and capsule and narrower leaves. Since the morphological traits of these two species are very variable and overlap significantly, *L. pontica* is attributed to a synonym for *L. genistifolia*. Studying herbarium material, we found specimens belonging to *L. lineolata* Boiss., erroneously redefined as *L. araratica* Tzvel.

L. M. Kemularia-Natadze [6] also cites *L. lineolata* and includes *L. araratica* as a synonym, while the latter species belongs to the kinship *L. kurdica* Boiss. et Hohen. Sufficiently separated specimens of *L. araratica*, indeed closer to the latter species, were also assigned to *L. lineolata* by L. A. Kupriyanova [7, 8]. The belonging of these plants to different species is associated with significant morphological differences. *L. lineolata* differs from *L. kurdica* with narrow-linear leaves, thick woolly calyx, while the latter has elongated elliptical or oblong-lanceolate leaves and an almost naked calyx.

Davis [14] divides *L. kurdica* into 5 subspecies, taking *L. araratica* as one of its subspecies — *L. araratica* subsp. *araratica* (Tzvel.) P. Davis.

Tsvelev [12] described 2 new species from the kinship *L. kurdica*: *L. megrica* Tzvel. and *L. ordubadica* Tzvel. from the Meghri and Ordubad regions, living in completely different ecological conditions, which was well agreed with their morphological apartness. However, the plants found, both typical in appearance for these species, and samples intermediate between them, which vary greatly in the density of pubescence of the calyx and other features, served as the basis for recognizing *L. ordubadica* as a synonym for *L. megrica*.

In the revision of the genus *Linaria* in the Caucasus and Eastern Europe by I. M. Peskova [11], these species are attributed to synonyms of *L. kurdica*. As per N. N. Tsvelev [12] *L. megrica* differs from *L. ordubadica* in narrower leaves without wax coating, dense and several times shorter than the rest part of the stem, racemes of one-colored yellow flowers and stems without shortened axillary shoots.

Conclusion

As a result of the revision of herbarium materials on the species *L. lineolata*, it was found that this species is similar to *L. hohenackeri* Tzvel. described by N. N. Tsvelev in [12] in all the characteristic features given in its description. This allowed us to consider that *L. hohenackeri* is found in the flora of Azerbaijan, and not the *L. lineolata*, as it turned out, is found outside the Caucasus.

As a result, we came to the conclusion that out of 6 species of the kinship *L. kurdica* represented in the Transcaucasus and distinguished by N. N. Tsvelev from the subsection *Linaria* of the section *Linaria* into a special subsection *Kurdicae* Tzvel., within which 2 “aggregate species” are accepted, 4 species are distributed in Azerbaijan — *L. kurdica*, *L. ordubadica*, *L. nachitschevanica* Tzvel. и *L. hohenackeri*, species *L. grossheimii* Kuprian. et Rzazade subjected to nomenclature changes and classified as synonyms *L. schelkownikowii*.

Thus, as a result of a taxonomic revision of the herbarium specimens from the collection of Azerbaijan Herbarium of the Institute of Botany (BAK), taking into account the literature data, the composition of the genus *Linaria* was supplemented by the species *L. ordubadica*, *L. nachitschevanica* and is represented by 18 species and 1 subspecies belonging to 5 sections of this genus [2–4].

Below is a new key for the identification of Azerbaijani species of the *Linaria* genus and their brief overview. For each taxon, a nomenclatural citation, information about type specimens, the accepted name and main synonyms, as well as specified data on their distribution in the main botanical and geographical regions adopted in the “Flora of Azerbaijan”, and ecology are indicated. In the summary below the sources of obligatory citation for the species are accepted: “Flora of the USSR” [8], “Flora of Azerbaijan” [1, 5] and “Flora of the Caucasus” [6]. Other works are cited as needed.

In our review of Azerbaijani toadflax, we follow the genus system which was proposed by Sutton [15] and sufficiently substantiated, taking into account the changes made by Yu. L. Menitsky [9, 10] and N. N. Tsvelev [12].

- | | | |
|----|---|-----------------------|
| 1. | Perennial | 13 |
| - | Annual | 2 |
| 2. | The part of the calyx are scarious along the edges, often pubescent on the outside or inside, or glandular, differing in color and density from leaves and bracts | 3 |
| - | The part of the calyx are herbaceous, green above, similar to bracts, completely glabrous on both sides, smooth along the edges | 11 |
| 3. | Leaves lanceolate and oblong to ovate-lanceolate | 9. |
| | | <i>L. pyramidalis</i> |
| - | Leaves linear-lanceolate to filiform | 4 |
| 4. | Stems are branched, with papillose blade of seed | 5 |
| - | Stems are usually simple with smooth blade of seed | 9 |
| 5. | The part of the calyx without membranous edge, the stems apex and torus with glandular pubescence, a bright green plant | 1. |
| | | <i>L. vulgaris</i> |
| - | Part of the calyx with a developed edge | 6 |
| 6. | All leaves are narrow-linear, with wrapped to the underside edges | 8. |
| | | <i>L. hohenackeri</i> |
| - | All leaves are lanceolate, with flat edges | 7. |
| 7. | The part of the calyx are along the edges, and often with short glandular hairs on the inside or rarely few curled hairs at the base | 8 |
| - | The part of the calyx covered with longer curly glandular hairs on the outside, usually reaching the peduncle and sometimes the axis of the inflorescence | 7. |
| | | <i>L. ordubadica</i> |
| 8. | Stems are usually branched at the apex, with arcuately branches almost the same length and ending in short, relatively few-flowered, but very dense inflorescence | 5. |
| | | <i>L. kurdica</i> |
| - | Stems are usually branched in the upper part with short lateral upwards branches, with poorly | 6. |

- developed or loose long many-flowered inflorescence at the ends
- L. nachitschevanica*
9. The part of calyx ovate-lanceolate or broadly lanceolate with acuminate apex and white narrow pubescent on the outside 10
- The part of the calyx oblong, atrophy or rounded at the ends, often less shortly acuminate, glabrous above, pubescent on the inside with wide white cilia or glands along the edge 4.
- L. schelkownikowii*
10. Corolla is blue, purple or violet 3.
- L. schirvanica*
- Corolla is yellow 2.
- L. incopleta*
11. The part of the calyx ovate-lanceolate, expanded below and with capsula exceeding fruits 12
- The part of the calyx slightly expanded below and with shorter capsule in fruits 10.
- L. genistifolia*
12. Leaves lanceolate to ovate-lanceolate, part of calyx are strongly extended below and with auricles, stems unbranched 11.
- L. grandiflora*
- Leaves are narrow-lanceolate to lanceolate, part of calyx slightly widened at the bottom, without ears, stems are branched in the upper part 12.
- L. zangezura*
13. The excisions between the calyx parts are semicircular, brushy glandular the seeds are discoid, broadly bordered 14
- The excisions between the part of the calyx are acute, bare or ciliolate along the edge 15
14. Leaves are lanceolate, regular in upper, whorls of 3-4 in lower, peduncle and part of calyx with short glandular, capitate inflorescences flowers and blue corollas 13.
- L. micrantha*
- Leaves are linear-filamentous, lowers are whorled by 3-5, peduncle and calyx parts are long pedicellate- glandular, corollas are yellow with blue veins 14.
- L. simplex*
15. Leaves are obovate, elliptical or lanceolate 15.
- L. albifrons*
- Leaves are linear 16
16. The upper part of the calyx is 1.5–2 times shorter than the others, the spur is 1.5–3 times longer than the corolla tube 17
- The upper part of the calyx is equal or slightly longer than the others 18.
- L. corrugata*
17. The part of the calyx with equal capsule which are shorter than the corolla and long blue peduncle flowers 16.
- L. armeniaca*
- The part of the calyx with equal corolla and white short peduncle flowers, which exceeding capsule in fruits 17.
- L. chalepensis*

Sect. 1. *Linaria*

Subsect. 1. *Linaria*

1. *L. vulgaris* Mill. 1768, Gard. Dict. ed. 8: по 1; Куприян. 1955, Фл. СССР, 22: 201; Карягин, 1957, Фл. Азерб. 7: 451; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 477. — *Antirrhinum linaria* L. 1753, Sp. Pl.: 616.

Lectotypus: “In Europae ruderatis” (LINN — 767/46) — Valdes, 1970.

Perennial. Found in all mountain belts, at an altitude of 1400–2000 m a. s. l., on grassy slopes, subalpine meadows, forest edges, in bushes, along riverbanks — Greater Caucasus Guba, Samur-Devechi lowland, Caspian lowland. — Described from Europe.

2. *L. incompleta* Kuprian. 1936, in Sovetsk. Bot. 4: 114; Куприян. 1955, Фл. СССР, 22: 315; Карягин, 1957, Фл. Азерб. 7: 451; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 477; Меницкий, 1998, Бот. журн. 83, 12: 129. — *L. baxanensis* Galushko, 1970, Новости сист. высш. раст. 6: 218. — *L. macroura* auct. non (Vieb.) Vieb.: Капанадзе, 1988, Бот. журн. 73, 10: 1479; Пескова, 2004, Новости сист. высш. раст. 36: 191.

Perennial. It grows in the middle mountain belt, on clayey slopes among shrubs. — Greater Caucasus Guba. Described from Kazakhstan.

3. *L. schirvanica* Fomin, 1906, in Izv. Kavkazsk. Muz. 3: 283; Куприян. 1955, Фл. СССР, 22: 216; Карягин, 1957, Фл. Азерб. 7: 452; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 479.

Типус: Azerbaijan; in provincia Baku, distr. Geokcaı, jugum Daghna-dagh, 11 IV 1906, Schelkovnikov et Schmidt s. n. (syn. TGM); prope Alpaut districtus Dzavat, 22 IV 1907, Schelkov. et Kaznakov s. n. (syn. TGM).

Perennial. It is distributed from the lowland to the lower mountain belt, on dry clayey grassy slopes — Greater Caucasus Guba, Greater Caucasus East, Absheron, Gobustan, the Kura-Araz lowland (rarely), the steppe plateau — Described from Azerbaijan. Endemic of the Caucasus.

4. *L. schelkownikowii* Schischk. 1924, in Grossh. et Schischk., Sched. Herb. Pl. Or. Exsicc. 169: 42; Куприян. 1955, Фл. СССР, 22: 198; Карягин, 1957, Фл. Азерб. 7: 450; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 478. — *L. grossheimii* Kuprian. et Rzazade, 1947, Dokl. Akad. Nauk Azerbaidzhansk. SSR, 3: 452; Карягин, 1957, цит. соч.: 450; Кем.-Нат. 1967, цит. соч. 7: 478.

Типус: “Transcaucasia, pr. Erivan, distr. Novo-Bajazet, prope pag. Elenovka, Sevan, 6300, in herbosis, 11 VII 1923, A. Grossheim” (holo — TGM; iso — LE (!)).

Perennial. It is found in all mountain belts, at an altitude of 400-2800 m a. s. l., in subalpine meadows, grassy slopes, in shrubs. — Lesser Caucasus center, Lesser Caucasus north, Nakhchivan mountain — Described from South Transcaucasia. Endemic of the Caucasus.

The type specimen *L. grossheimii* Kuprian. et Rzazade, (“Kalbajar region, northern rocky slopes of mount. 1500 m. R. Rzazade, 25 VIII 1946” — LE!) differs from *L. schelkownikowii* only in narrow linear leaves.

Subsect. 2. *Kurdicae* Tzvel. 2006.

Новости сист. высш. раст. 38: 217. — *Linaria* ser. *Kurdicae* Kuprian. 1955, Фл. СССР, 22: 195.

Типус: *L. kurdica* Boiss. et Hohen.

5. *L. kurdica* Boiss. et Hohen. 1844, in Boiss. Diagn. Pl. Orient. Ser. 1,4: 73; Куприян. 1955, Фл. СССР, 22: 195; Карягин, 1957, Фл. Азерб. 7: 449; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 476.

Типус: “In declivibus calcaries montis Gara Kurdistaniae, 10 VIII 1841, Kotschy 391” (holo — G, iso — K, LE).

Perennial. It occurs in the middle and upper mountain belts, up to 2600 m a. s. l., on dry rocky, stony and rubbly slopes, in forest clearings, in mountain forb steppe, in brushwood — Nakhchivan mountain — Described from Iraqi Kurdistan.

6. *L. nachitschevanica* Tzvel. 2006, Новости сист. высш. раст. 38: 220.

Типус: “Transcaucasia, prov. Nachitschevanj, distr. Schachbuz, pag. Bitschenach, ca. 1600 m, declivitas lapidosa, 17 VI 1947, A. Grossheim, I. Iljinskaja, M. Kirpicznikov” (LE).

Perennial. It occurs in the middle mountain belt, at an altitude of 1600–1800 m a. s. l., on rocky slopes, limestone rocks. — Nakhchivan mountain.

7. *L. ordubadica* Tzvel. 1959, Бот. Мат. (Ленинград), 18: 14. — *L. megrica* auct. non Tzvel.: Капанадзе, 1988, Бот. журн. 73, 10: 1478, р. р.; Меницкий, 1998, Бот. журн. 83, 12: 129, р. р. — *L. kurdica* auct. non Boiss. et Hohen.: Пескова, 2004, Новости сист. высш. раст. 36: 188, р. р.

Турис: “Нахичеванская АССР, Ордубадский р-н, на каменистом склоне отрога Зангезурского хребта в 5–6 км к сев.-вост. от г. Ордубада, 18 VI 1956, №931, Т. Егорова, Н. Цвелев, С. Черепанов [13]” (LE).

Perennial. It occurs in the middle and upper mountain belts, at an altitude of 1000–2400 m a. s. l., on dry rocky slopes, among rocks, in mountain steppes, tragacanth, juniper woodlands — Nakhchivan mountain — Described from the vicinity of city Ordubad.

8. *L. hohenackeri* Tzvel. 2006, Новости сист. высш. раст. 38: 223. — *L. lineolata* auct. non Boiss.: Куприян. 1955, Фл. СССР, 22: 217, р. р.; Карягин, 1957, Фл. Азерб. 7: 449; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 483; Капанадзе, 1988, Бот. журн. 73, 10: 1478, р. р.; Меницкий, 1998, Бот. журн. 83, 12: 129; Пескова, 2004, Новости сист. высш. раст. 36: 189.

Турис: “In montibus Talusch pr. pag. Swant, leg. Hohenacker, 1834” (LE, cum isotypis 3).

Perennial. It grows in the middle mountain belt, on dry rocky slopes and scree — Zuvand — Endemic of the Talysh Mountains.

Subsect. 3. *Pyramidalis* Menits. 1998.

Бот. журн. 83, 12: 130. — *Linaria* ser. *Pyramidatae* Kuprian. 1950, Тр. Бот. инст. АН СССР, сер. 1, 9: 38.

Турис: *L. pyramidalis* (Vent.) F. G. Dietr.

9. *L. pyramidalis* (Vent.) F. G. Dietr. 1818, Nachtr. Vollst. Lexic. 4: 417; Меницкий, 1998, Бот. журн. 83, 12: 130; Пескова, 2004, Новости сист. высш. раст. 36: 189. — *Antirrhinum pyramidale* Vent. 1797, in Lam. Encycl. Meth. Bot. 4: 360. — *L. pyramidata* (Lam.) Spreng. 1825, Syst. Veg. ed. 16, 2: 796; Куприян. 1955, Фл. СССР, 22: 194; Карягин, 1957, Фл. Азерб. 7: 446; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 476; Капанадзе, 1988, Бот. журн. 73, 10: 1477. — *Antirrhinum pyramidatum* Lam. 1798, in Lam. et Poir., Encycl. 4: 360.

Турис: “*Linaria orientalis* lilii persici foliis, florum spica densissima et pyramidata. Tournefort” (P — Tourn. 967).

Perennial. It grows in the middle mountain belt, at an altitude of 1600 m a. s. l., on dry rocky slopes, on lava outcrops. — Zuvand — Described from Turkish Armenia.

a) *L. pyramidalis* subsp. *lenkoranica* (Kuprian.) D. A. Sutton, 1988, Revis. Antirrhin.: 297; Меницкий, 1998, Бот. журн. 83, 12: 131. — *Linaria lenkoranica* Kuprian. 1950, Тр. Бот. инст. АН СССР, сер. 1, 9: 67; она же, 1955, Фл. СССР, 22: 194.

Species *L. lenkoranica* is described from Talysh. Type: “Lankaran district, near the village Goydara, northern slope, 13 VII 1931, n572, E. Матвеева” (LE!).

Sect. 2. *Speciosae* (Benth.) Wettst. 1891

in Engl. u. Prantl. Naturl. Pflanzenfam. 4, 3: 59; Sutton, 1988, Revis. Antirrhin.: 312, р. р. *Lectotypus*: *L. genistifolia* (L.) Mill.

10. *L. genistifolia* (L.) Mill. 1768, Gard. Dict. ed. 8: no 14; Куприян. 1955, Фл. СССР, 22: 188; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 480; Капанадзе, 1988, Бот. журн. 73, 10: 1476, р. р.; Меницкий, 1999, Бот. журн. 84, 1: 126, р. р. — *Antirrhinum genistifolium* L. 1753, Sp. Pl.:

616. — *Linaria pontica* Kuprian. 1950, in Trudy Bot. Inst. Akad. Nauk SSSR, Ser.1, 9: 64; она же, 1955, цит. соч.: 189; Кем.-Нат. 1967, цит. соч.: 482; Карягин, 1957, Фл. Азерб. 7: 446.

Lectotypus: (Davis, 1978): Herb. Linn. N 767/40 “genistifolium (Siberia)” (LINN).

Perennial. It grows in all mountain belts, at an altitude of 700–2200 m a. s. l., in forests, shrubs, on scrap slopes, among rocks, in meadows, in gardens. — Greater Caucasus Guba, Greater Caucasus East, Lesser Caucasus Center. — Described from Siberia.

11. *L. grandiflora* Desf. 1808, in Ann. Mus. Hist. Nat. 11: 51; Куприян. 1955, Фл. СССР, 22: 167; Карягин, 1957, Фл. Азерб. 7: 445; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. — . 2, 7: 480. — *L. dalmatica* (L.) Mill. var. *grandiflora* (Desf.) Boiss. 1879, Fl. Or. 4: 376 *L. dalmatica* subsp. *grandiflora* (Desf.) Rech. f. 1950, Österr. Akad. Wiss. Math.-Nat. Denkschr. 87,4: 92.

Typus: “Armenia, *Linaria orientalis*, flore luteo maximo, Tournefort” (P-Tourn. 966).

Perennial. It occurs in the middle and upper mountain belts, up to 2300 m a. s. l., on stony, rocky and gravelly slopes, in gorges along riverbanks, among shrubs, on limestone, sandy places — Lesser Caucasus (the whole), Nakhchivan mountain, Lankaran mountain, Zuvand. — Described from Turkish Armenia.

12. *L. zangezura* Grossh. 1929-30, Журн. Русск. бот. общ. 14, 3: 313; Куприян. 1955, Фл. СССР, 22: 188; Карягин, 1957, Фл. Азерб. 7: 445; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 481; Капанадзе, 1988, Бот. журн. 73, 10: 1477; Меницкий, 1999, Бот. журн. 84, 1: 127.

Lectotypus: “Transcaucasia, Armenia, Zangezur, prope oppidum Gerjusy (Goris), ca. 1600 m. 24 VIII 1926, A. Grossheim et P. Jaroschenko” (ERE).

Perennial. Grows in the middle and upper mountain belts, at an altitude of 1300–2000 m a. s. l., in forb steppes, on forest edges, in bushes, shibliak, on rubbly slopes — Lesser Caucasus north, Lesser Caucasus center, Nakhchivan mountain, Lankaran mountain — Described from Nakhchivan (Bichenakh) and Armenia (Goris).

Sect. 3. *Supinae* (Benth.) Wettst. 1891.

in Engl. u. Prantl. Naturl. Pflanzenfam. 4,3: 59; Sutton, 1988, Revis Antirrhin.: 361.

Typus: *L. supina* (L.) Chaz.

13. *L. micrantha* (Cav.) Hoffmanns. et Link, 1813, Fl. Portug. 1: 258; Куприян. 1955, Фл. СССР, 22: 224; Карягин, 1957, Фл. Азерб. 7: 456; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 480. — *Antirrhinum micranthum* Cav. 1791, Icon. 1(69): 51.

Typus: [Madrid Тип: SPAIN]; “in Retiro et alibi, 1803 Cavanilles s. n.” (lecto. Valdes, 1970: 97,99).

Annual. It grows in the lowlands and foothills and vegetable gardens. — Absheron, Kura-Araz lowland. — Described from Spain.

14. *L. simplex* (Willd.) DC. 1805, in Lam. et DC. Fl. France, ed. 3,3: 588; Куприян. 1955, Фл. СССР, 22: 223; Карягин, 1957, Фл. Азерб. 7: 455; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 479. — *Antirrhinum simplex* Willd. 1753, in L. Sp. Pl. 3: 243.

Lectotypus: “Habitat in Europa australis” (UPS — Herb. Burser) — Valdes, 1970.

Annual. It occurs from the lowlands to the middle mountain belt, at an altitude of 400–1600 m a. s. l., on dry rocky slopes, sandy places, in bushes, in shibliaks, on fallow lands, sometimes in crops — Throughout Azerbaijan (usually). — Described from Southern Europe.

Sect. 4. *Diffusae* (Benth.) Wettst. 1891.

in Engl. u. Prantl. Naturl. Pflanzenfam. 4,3: 59; Sutton, 1988, Revis Antirrhin.: 335.

Lectotypus: *L. reflexa* (L.) Chaz.

Subsect. 1. *Diffusae* Benth.

15. *L. albifrons* (Sibth. et Smith.) Steud. 1821-1824, Nomencl. Bot. ed. 1: 482; Куприян. 1955, Фл. СССР, 22: 225; Карягин, 1957, Фл. Азерб. 7: 456; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 484. — *Antirrhinum albifrons* Sibth. et Smith. 1809, Fl. Graec. Prodr. 1: 432.

Annual. — Absheron — Described from the island of Rhodes.

Subsect. 2. *Macrocentrum* (D. A. Sutton) Menits. 1999.

Бот. журн. — *Linaria* sect. *Macrocentrum* D. A. Sutton, 1980, Journ. Linn. Soc. London (Bot.); id, 1988, Revis Antirrhin.: 452.

Typus: *L. armeniaca* Chav.

16. *L. armeniaca* Chav. 1833, Monogr. Antirrh.: 147; Куприян. 1955, Фл. СССР, 22: 218; Карягин, 1957, Фл. Азерб. 7: 452; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 484.

Lectotypus: (Sutton, 1988: 455): “*Linaria Armenia foliis Linariae vulgaris flore caeruleo palato carente, Tournefort*” (P-Tourn. 986).

Annual. It occurs in the lower, middle and upper mountain belts, at an altitude of 400–2100 m a. s. l., on dry clayey stony and rocky slopes, screes, along pebbly rivers — Absheron, Lesser Caucasus Center, Nakhchivan mountain, Zuvand — Described from Turkish Armenia.

17. *L. chalepensis* (L.) Mill. 1768, Gard. Dict. ed. 8: no 12; Куприян. 1955, Фл. СССР, 22: 217; Карягин, 1957, Фл. Азерб. 7: 452; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 484. — *Antirrhinum chalepense* L. 1753, Sp. Pl.: 617.

Lectotypus: (Sutton, 1980): Herb. Linn. N767/53 “23 chalepense” (LINN).

Annual. It occurs in the lower and middle mountain belts, at an altitude of 400–1800 m a. s. l., on dry rocky and rubbly slopes, limestone, scree, among the rock — Nakhchivan mountain, Lankaran mountain — Described from Italy.

Sect. 5. *Versicolores* (Benth.) Wettst. 1891.

in Engl. u. Prantl. Naturl. Pflanzenfam. 4,3: 59. — Sect. *Corrugatae* Karanadze, 1988, Бот. журн. 73,10: 1480.

18. *L. corrugata* Karjag. 1944, Изв. Аз. ФАН СССР, 10: 52; Карягин, 1957, Фл. Азерб. 7: 455; Кем.-Нат. 1967, в Гроссг. Фл. Кавк. 2, 7: 484; Каранадзе, 1988, Бот. журн. 73, 10: 1480; Меницкий, 1999, Бот. журн. 84, 1: 132. — *L. corifolia* auct. non Desf.: Куприян. 1955, Фл. СССР, 22: 219.

Typus: «Закавказье, Азерб. ССР, Апшеронский п-ов, около с. Мардакианы, в посеве, 12. V. 1930, И. Карягин» (ВАК).

Annual. Grows in crops of barley, on seaside sands — Absheron. — Described from Azerbaijan (Absheron — Mardakan). — Endemic of the Absheron Peninsula.

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Работа поступила
в редакцию 28.03.2022 г.

Принята к публикации
02.04.2022 г.

Ссылка для цитирования:

Gasimova T., Alieva Z., Huseynova A., Safkulieva T., Shahmaliyeva A. Review of Species of the *Linaria* Mill. Genus (Scrophulariaceae) in Azerbaijan // Бюллетень науки и практики. 2022. Т. 8. №5. С. 49-58. <https://doi.org/10.33619/2414-2948/78/05>

Cite as (APA):

Gasimova, T., Alieva, Z., Huseynova, A., Safkulieva, T., & Shahmaliyeva, A. (2022). Review of Species of the *Linaria* Mill. Genus (Scrophulariaceae) in Azerbaijan. *Bulletin of Science and Practice*, 8(5), 49-58. <https://doi.org/10.33619/2414-2948/78/05>