

Threatened higher plants in Shusha and the surrounding areas

Asgarov Aydin Musa

Institute of Botany, Ministry of Science and Education of the Republic of Azerbaijan, 40 Badamdar Highway, Baku AZ1073, Azerbaijan

For correspondence: *askerov1@mail.ru*

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The paper provides information about the threatened plants in Shusha and the surrounding areas. According to obtained data, 233 rare species of higher plants of various groups found in the Karabakh and Eastern Zangezur economic regions can be included in the future "Red Book of Karabakh". 59 species of them are (28 families and 49 genera) endemic, sub endemic and rare plants found in Shusha and the surrounding areas. 33 of these species (15 families, 27 genera) were first described in Shusha and its surroundings (12 species were first described directly from Shusha (10 families, 11 genera). The article describes the features (priority name, morphological features, nomenclature type, distribution, ecological features and importance) of 12 species, described directly from the surrounding areas of Shusha.

Keywords: *Azerbaijan, Karabakh, Shusha, flora, protection*

INTRODUCTION

Karabakh, as well as Shusha and its surroundings, is considered the richest phytogeographical region of the Republic of Azerbaijan and the Caucasus as a whole. More than 2000 species of higher plants (*Pteridophyta*, *Pinophyta*, *Angiospermae*) are found in these areas, and this is more than 42 percent of the species of higher plants of the flora of Azerbaijan. First of all, this diversity is due to the extreme complexity of natural conditions, and geological and geomorphological structures here. There are many types of medicinal, food, vitamin, tinctorial, fodder and other useful plants among the species here.

The following plant groups are common in Karabakh, Shusha and surrounding areas: forest plants, mixed shrubland, phryganoid and steppe vegetation, rock plants, wetland plants, subalpine and alpine meadows, including restored plant communities in place of forest and steppe vegetation.

The districts around Shusha mean the districts directly bordering Shusha. At the same time, the board territories of Khankendi, Lachin, and Khojavend (Hadrut) districts with Shusha

were taken into account.

Unfortunately, the flora of Karabakh and Shusha and surrounding areas were not specially studied. Some data about the flora of the region was obtained from expeditions organized by us to the region before the occupation, multivolume "Flora of Azerbaijan" (Flora of Azerbaijan, 1950-1961), V.Hajiyev et al. "Altitude vegetation of the Less Caucasus" (Hajiyev et al., 1990), "About the nature of Ganjabasar and Karabakh" (Asgarov et al., 2016) from the journal published by ANAS in 3 languages (here the vegetation of Karabakh was written by us), and also from "Plants of Azerbaijan" (Asgarov, 2016). The valuable information on the nature of Karabakh was also given in the materials of the online conference "Biodiversity, land and water resources of Karabakh: past, present and future" (Asgarov, 2021), special issues of the journal "Science of life and biomedicine" (Asgarov, 2021).

MATERIALS AND METHODS

Information on the flora, plant cover and plant resources of the territory was based on

monitoring data conducted during numerous floristic expeditions to Karabakh under the authority of the author in the pre-occupation years, analysis of collected herbarium and seed materials and published data of obtained results (Asgarov, 2005, 2006, 2008, 2011, 2016, 2019; Asgarov et al., 2016). Furthermore, the materials of the Herbarium Foundation of the Institute of Botany of ANAS were studied in the Herbarium Fund of Botanical Institute of the Russian Academy of Sciences. The books and monographs published on this topic were used (Flora of Azerbaijan, 1950-1961; Прилипко, 1970; Hajiyev et al., 1990).

RESULTS AND DISCUSSION

Among the 266 names listed in both editions of the Red Book of the Azerbaijan Republic (Red Book of the Azerbaijan SSR, 1989; Red Book of the Republic of Azerbaijan, 2013), the majority of rare and endangered higher plants are found in Shusha and adjacent districts: Shusha Gevani,

Shusha Khashasi, Kharibulbul and other species of stone orchid, hip, etc.

The number of rare, disappearing, endemic, and sub-endemic plants known to us in the territories liberated from occupation was more than nowadays. Currently, most of them were destroyed during the Armenian occupation. Since more than 54 thousand hectares of forest land were destroyed during the occupation period, valuable species in 2 reserves and 4 reserve zones with a total area of 43 thousand hectares were severely damaged.

223 rare species of higher plants (59 families, 140 genera) from various categories of the Karabakh and East-Zangezur economic regions can be included in the "Red Book of Karabakh".

The number of endemic, sub endemic and rare plant species (28 families and 49 genera) found in Shusha and adjacent districts is 59. 33 species (15 genera, 27 genera) were first described from Shusha and surrounding areas (12 species were first described directly from the Shusha region (10 genera, 11 genera) (Table 1, 2).

Table 1. Endemic, sub endemic, and endangered species found in Shusha and surrounding areas

| Family 1 | Genus 2 | Species' name 3 |
|-----------------|--------------------|--|
| Alliaceae | Allium | <i>A. kunthianum</i> Vved. |
| | | <i>A. szovitsii</i> Regel |
| Amarillidaceae | <i>Sternbergia</i> | <i>S. vernalis</i> (Miller) Gorner & J.H.Harvey (<i>S. fischerana</i> (Herb.) M. Roem.) |
| Apiaceae | <i>Astrantia</i> | <i>A. maxima</i> Pall. |
| | <i>Centaurea</i> | <i>C. reflexa</i> subsp. <i>sosnovskyi</i> (Grossh.) Mikheev (<i>C. sosnovskyi</i> Grossh.) |
| Asteraceae | <i>Cousinia</i> | <i>C. cynaroides</i> (Bieb.) C.A.Mey. |
| | <i>Helichrysum</i> | <i>H. armenium</i> DC. |
| | <i>Podospermum</i> | <i>P. canum</i> C.A.Mey. |
| | <i>Psephellus</i> | <i>P. karabaghensis</i> Sosn. in Grossh. |
| | <i>Tragopogon</i> | <i>T. coloratus</i> C. A. Mey. |
| | <i>Scorzonera</i> | <i>S. pulchra</i> Lomak. |
| Aquifoliaceae | <i>Ilex</i> | <i>I. spinigera</i> Loes (<i>I. hyrcana</i> Pojark.) |
| Brassicaceae | <i>Cardamine</i> | <i>C. tenera</i> S. G. Gmel. ex C.A.Mey |
| | <i>Asyneuma</i> | <i>A. campanuloides</i> (Bieb. ex Sims.) Bornm. |
| Campanulaceae | <i>Campanula</i> | <i>C. karabaghensis</i> Mikheev. |
| | <i>Cerastium</i> | <i>C. szowitsii</i> Boiss. |
| Caryophyllaceae | <i>Dianthus</i> | <i>D. capitatus</i> J.ST-Hil. |
| | | <i>D. raddeanus</i> Vierh. |
| Celtidaceae | <i>Celtis</i> | <i>C. caucasica</i> Willd. |
| Cupressaceae | <i>Juniperus</i> | <i>J. foetidissima</i> Willd. |
| Dryopteridaceae | <i>Dryopteris</i> | <i>D. caucasica</i> (A.Br.) Fr. – Jenk. et Corley |
| | | <i>E. iberica</i> Boiss. |
| Euphorbiaceae | <i>Euphorbia</i> | <i>E. ledebourii</i> Boiss. |
| | | <i>A. dzhebraillicus</i> Grossh. |
| Fabaceae | <i>Astragalus</i> | <i>A. karabaghensis</i> Bunge |
| | | <i>A. schuschaensis</i> Grossh. |
| | | <i>O. schuschajensis</i> Agaeva |

Table 1 continued

| 1 | 2 | 3 |
|------------------|---------------------|--|
| | <i>Trifolium</i> | <i>T. bobrovii</i> Chalilov |
| Hyacinthaceae | <i>Scilla</i> | <i>S. siberica</i> subsp. <i>caucasica</i> (Miszcz.) Mordak (<i>S. caucasica</i> Miszcz.) |
| Iridaceae | <i>Iris</i> | <i>I. caucasica</i> Hoffm. |
| Liliaceae | <i>Tulipa</i> | <i>T. armena</i> Boiss. (<i>T. karabachensis</i> Grossh.) <i>T. schmidtii</i> Fomin |
| Malvaceae | <i>Alcea</i> | <i>A. sachsachanica</i> Iljin |
| Moraceae | <i>Ficus</i> | <i>F. carica</i> L. |
| Orchidaceae | <i>Limodorum</i> | <i>L. abortivum</i> (L.) Sw. |
| | <i>Ophrys</i> | <i>O. caucasica</i> Woronow ex Grossh. <i>O. oestrifera</i> Bieb. |
| | <i>Platanthera</i> | <i>P. chlorantha</i> (Custer.) Reichenb. |
| Pinaceae | <i>Pinus</i> | <i>P. sylvestris</i> var. <i>hamata</i> Steven (<i>P. kochiana</i> Klotzch ex C.Koch) |
| Punicaceae | <i>Punica</i> | <i>P. granatum</i> L. |
| Poaceae | <i>Colpodium</i> | <i>C. versicolor</i> (Stev.) Schmalh. |
| | <i>Triticum</i> | <i>T. monococcum</i> L. |
| Ranunculaceae | <i>Aconitum</i> | <i>A. nasutum</i> Fisch.ex Reichenb. <i>D. brunonianum</i> Royle (<i>D. foetidum</i> Lomak.) <i>D. sowitsianum</i> Boiss. |
| | <i>Delphinium</i> | |
| | <i>Pulsatilla</i> | <i>P. violacea</i> Rupr. |
| Rosaceae | <i>Amygdalus</i> | <i>Prunus fenzliana</i> Fritsch (<i>A. fenzliana</i> (Fritsch) Lipsky) |
| | <i>Crataegus</i> | <i>C. orientalis</i> subsp. <i>szovitsii</i> (Pojarkova) K.I.Chr. (<i>C. szovitsii</i> Pojark.) |
| | <i>Rosa</i> | <i>R. komarovii</i> Sosn. <i>R. sachokiana</i> P.Jarosch. |
| | <i>Padus</i> | <i>Prunus padus</i> L. (<i>P. avium</i> Mill.) |
| Rubiaceae | <i>Galium</i> | <i>G. hyrcanicum</i> C.A.Mey. |
| Rutaceae | <i>Haplophyllum</i> | <i>H. villosum</i> (Bieb.) G. Don fil. |
| Scrophulariaceae | <i>Digitalis</i> | <i>D. nervosa</i> Steud. et Hochst. ex Benth. |
| | <i>Scrophularia</i> | <i>S. versicolor</i> Boiss. (<i>S. grosseimii</i> Schischk.) |
| | <i>Verbascum</i> | <i>V. szovitsianum</i> Boiss. <i>V. telephifolia</i> Vahl (<i>V. minuta</i> C.A.Mey.) |
| | <i>Veronica</i> | <i>V. amoena</i> Stew. |
| Taxaceae | <i>Taxus</i> | <i>T. cuspidata</i> Siebold & Zucc. (<i>T. baccata</i> L.) |
| Total: 28 | 49 | 59 |

Table 2. Higher plant species described from Shusha and surrounding areas
(Species described in surrounding areas of the city of Shusha are highlighted in black font).

| Family | Genus | Species' name |
|----------------|--------------------|---|
| 1 | 2 | 3 |
| Alliaceae | <i>Allium</i> | <i>Allium kunthianum</i> Vved. |
| | | <i>A. szovitsii</i> Regel |
| Amaryllidaceae | <i>Sternbergia</i> | <i>S. vernalis</i> (Miller) Gorer & J.H.Harvey (<i>S. fischerana</i> (Herb.) M. Roem.) |
| Apiaceae | <i>Ferulago</i> | <i>F. setifolia</i> C. Koch |
| | <i>Pastinaca</i> | <i>P. armena</i> Fisch. et C.A.Mey. |
| | <i>Pimpinella</i> | <i>P. peucedanifolia</i> Fisch. ex Ledeb. |
| | <i>Szovitsia</i> | <i>S. callicarpa</i> Fisch. et C.A.Mey. |
| Asteraceae | <i>Cirsium</i> | <i>C. aduncum</i> Fich. et C.A.Mey. ex DC. <i>C. szovitsii</i> (C. Koch) Boiss. |
| | | <i>Echinops</i> |
| | <i>Hieracium</i> | <i>H. camkorijense</i> subsp. <i>sericicaule</i> (Schelk.et Zahn) Juxip (<i>H. sericicaule</i> (Schelk.et Zahn) Juxip) |
| | | <i>Renealmia cincinnata</i> (K.Schum.) T. Durand & Schinz (<i>H. cincinnatum</i> Fries) |
| | <i>Jurinea</i> | <i>J. spectabilis</i> Fisch. et C.A.Mey. (<i>J.grossheimii</i> Sosn.) |
| Brassicaceae | <i>Erysimum</i> | <i>E. strictisiliquum</i> N. Busch |

Table 2 continued

| 1 | 2 | 3 |
|------------------|-------------------|---|
| Caryophyllaceae | <i>Cerastium</i> | <i>C. szovitsii</i> Boiss. |
| | <i>Gypsophila</i> | <i>G. szovitsii</i> Fisch. et C.A.Mey. ex Fenzl |
| Corylaceae | <i>Carpinus</i> | <i>C. schuschaensis</i> H.Winkl. |
| | <i>Corylus</i> | <i>C. colurna</i> L. |
| Crassulaceae | <i>Rosularia</i> | <i>R. sempervivum</i> subsp. <i>persica</i> (Boiss.) Eggl(<i>R. radicyflora</i> Steud. ex Boriss.) |
| Euphorbiaceae | <i>Euphorbia</i> | <i>E. ledebourii</i> Boiss. |
| Fabaceae | <i>Astragalus</i> | <i>A. brachypetalus</i> Trautv. |
| | | <i>A. karabaghensis</i> Bunge |
| | | <i>A. schuschensis</i> Grossh. |
| | | <i>A. dzhebrailicus</i> Grossh. |
| | <i>Onobrychis</i> | <i>O. schuschajensis</i> Agaeva |
| Lamiaceae | <i>Nepeta</i> | <i>N. racemosa</i> Lam. (<i>N. transcaucasica</i> Grossh.) |
| Malvaceae | <i>Alcea</i> | <i>A. sachsanica</i> Iljin |
| Ranunculaceae | <i>Delphinium</i> | <i>D. brunonianum</i> Royle (<i>D. foetidum</i> Lomak.) |
| Rosaceae | <i>Amygdalus</i> | <i>Prunus fenzliana</i> Fritsch (<i>A. fenzliana</i> (Fritsch) Lipsky) |
| | <i>Crataegus</i> | <i>C. orientalis</i> subsp. <i>szovitsii</i> (Pojarkova) K.I.Chr. (<i>C. szovitsii</i> Pojark.) |
| Scrophulariaceae | <i>Euphrasia</i> | <i>E. kurdica</i> Kem.-Nath. |
| | <i>Linaria</i> | <i>L. kurdica</i> Boiss & Hohen. |
| | <i>Veronica</i> | <i>V. intercedens</i> |
| Total: 15 | 27 | 33 |

The analyzed endemic, sub-endemic and endangered species described directly from these areas are among the rare species listed in the table and include 15 families, 27 genera, and 33 species. 12 species belonging to 10 families and 11 genera were described from the surrounding areas of Shusha. They were studied in more detail.

The botanical data about these 12 species are limited. Some of them were published in foreign sources in 1837-1860. Their scientific names have been transferred into synonyms of other species several times. The nomenclature types of some species are unknown. This does not allow them to determine their status. We studied their fund and herbarium data and tried to specify their botanical descriptions, species, and places of distribution.

New information about the parameters of the occurrence of these species in nature does exist, which does not allow for regional estimating of the degree of their rarity (status). Their occurrence in nature is unknown. The categories (EX, CR, VU, EN, NT, LC, DD), criteria (A, B, C, D, E) and subcriteria (a, b, c, d), features (i, ii, iii, iv, v) of these crops should be specified with additional studies.

After obtaining this information, their position in natural conditions will be clarified, and measures for their protection will be developed. According to the requirements of the International Union for Conservation of Nature (IUCN, 2011),

rare plants found in Shusha and surrounding areas are mainly classified as **CR-Critically endangered (CR-Critically endangered)**, **EN-Endangered and susceptible to environmental factors (VU-vulnerable)** categories.

Data about 12 species described in Shusha are followings:

Alliaceae J. Agardh

1. Kunt soğanı - *Allium kunthianum* Vved.

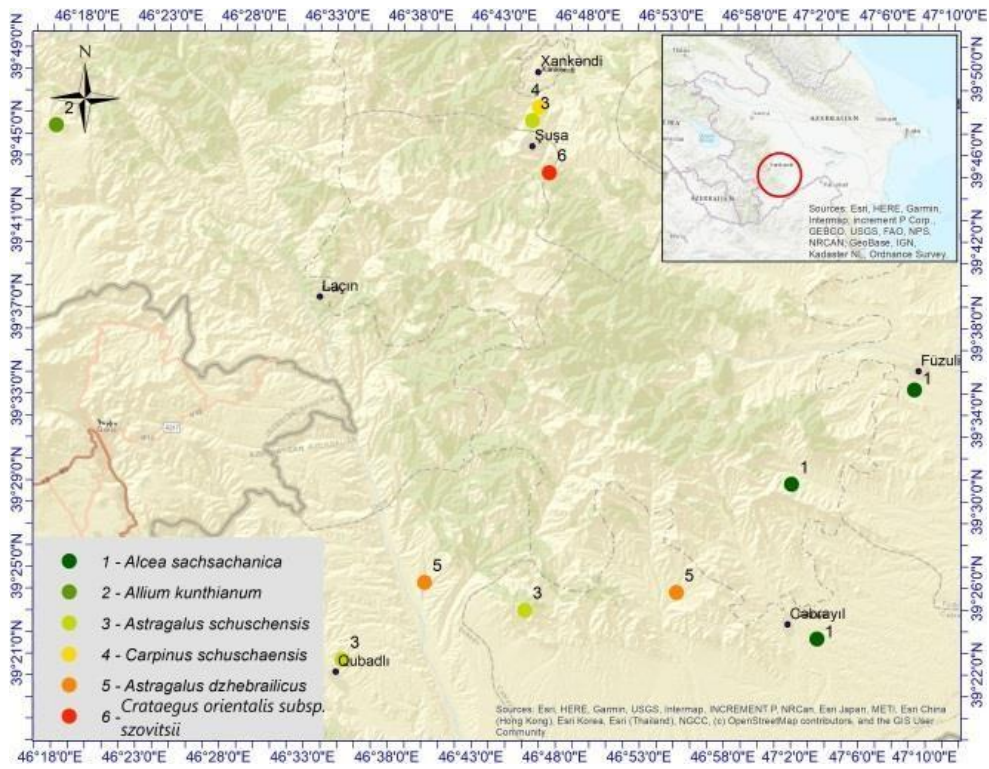
Bulb ovoid, 0.75-1.5 (2) cm thick. The stem is 5(10)-20(25) cm high, 1/2-1/3 is covered with leaves. Leaves 0.5-1 mm wide, semi-cylindrical in shape. The peduncle is unequal, shorter or 2-3 times longer than the flower.

The herbarium specimen, on which basis the described species was collected in 1843 from the Sakhsaghan mountain near Shusha city. Lectotypus (Kudrjaschova, hoc loco, Кудряшова, 2001:128: «тип»): «Caucasus. Dipsui Schusch. Hohenacker» (LE! Cum 3 isolectotypi).

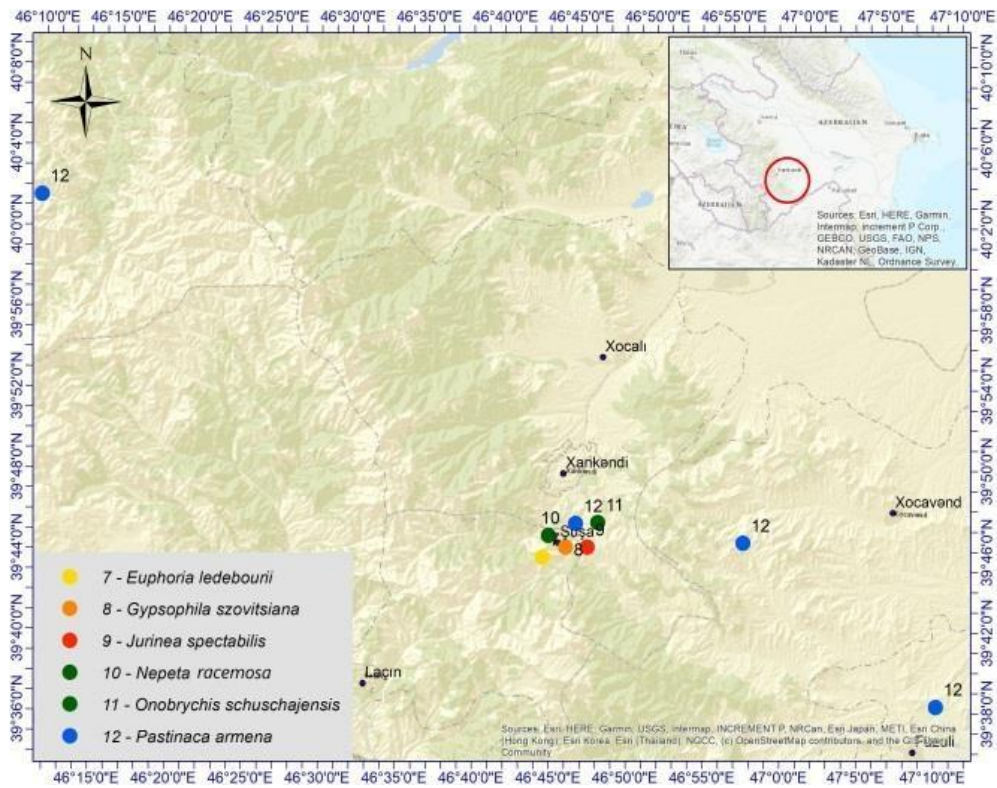
Herbarium specimens collected from Shusha and Kalbajar also exist (BAK). The local populations are known from some regions of the Caucasus and Turkiye, Iran (<https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:528267-1>), it is a rare species.

It is found in subalpine and alpine zones, mountain meadows and rocks. The blooming period is in August, and the bearing period is in September.

Threatened higher plants in Shusha and the surrounding areas



Map 1. Areas where endangered species are found in Shusha and surrounding areas



Map 2. Areas where endangered species are found in Shusha and surrounding areas

It is a sub-endemic plant in Azerbaijan. It is considered one of the wild ancestors of cultivated onions (Fig. 1, Map 1).

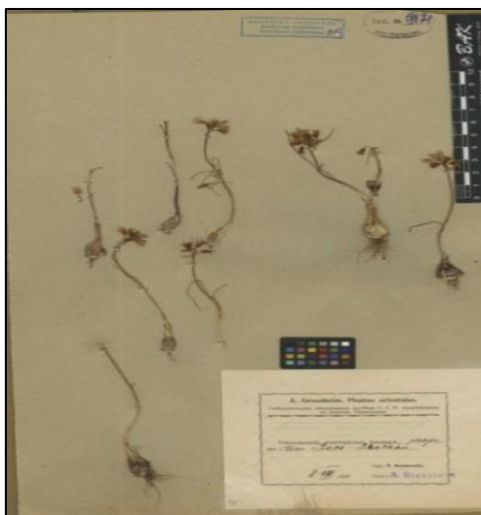


Fig. 1. *Allium kunthianum* Vved.

Apiaceae Lindl.

2. Cənubi Qafqaz xımısı - *Pastinaca armena* Fisch. et C.A.Mey. ex Hohen.

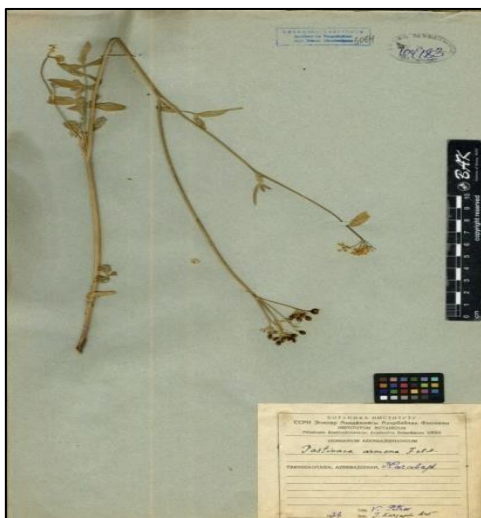


Fig. 2. *Pastinaca armena* Fisch. et C.A.Mey.

It is a perennial herb. The stem is erect, soft-hairy, branching, and culms (14) 30-50 (70) cm high. Root and lower stem leaves are petiolate, with 4-7 pairs of lateral segments; upper leaves are sessile. Petals are yellow, fruits are glabrous or slightly hairy, wide oval, (4)5-6 mm long, 4-5

mm wide.

Described from Shusha. (Sarial mountain) ("in pratis subalpinis montis Sarial"). It is found in subalpine and alpine meadows. Its isolated and small populations are found in Khojavand, Kalbajar and Fuzuli regions.

It is a valuable wild vegetable, spice, and medicinal sub-endemic plant of Azerbaijan (Fig. 2, Map 2). Also its found in Turkiye.

It is a perennial plant with a height of 20-40 cm. The leaves are toothed, and oval-shaped and have petioles. The inflorescence is a type of calathium, large, globular. The flowers are pink.

Described from Azerbaijan on the basis of Shusha and Ganja herbarium specimens. Lectotypus (Tscherneva, hoc loco): "In locis saxosis provinciae Karabagh, circa munimentum Schuscha, R. Hohenacker" (LE).

Asteraceae Dumort

3. Gözəl yastıbaş - *Jurinea spectabilis* Fisch. et C.A.Mey. (*J.grossheimii* Sosn. 1934, in schedis)

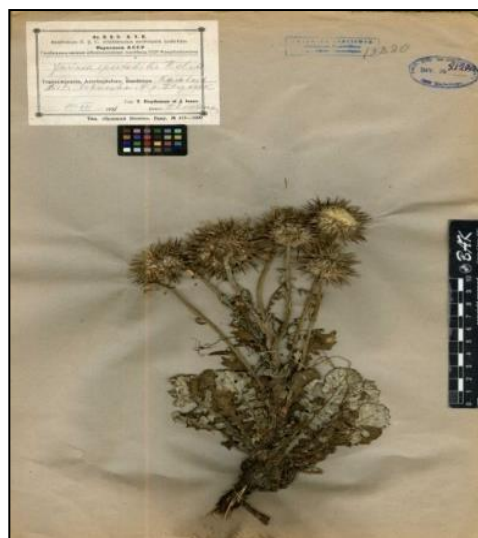


Fig. 3. *Jurinea spectabilis* Fisch. et C.A.Mey.

The data about the existence of small populations of this species in other areas of the Lesser Caucasus, Asia, Iran (<https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:845654-1>) and in Nakhchivan were recorded.

It grows on rocky slopes in the middle mountain zone, blooms in July-August, bearing

occurs in August.

It is a subendemic ornamental plant (Fig. 3, Map 2).

Caryophyllaceae Juss.

4. Şovis çoğanı - *Gypsophila szovitsii* Fisch. et C.A.Mey. ex Fenzl, 1842, nom. illeg.

It is a perennial herb. The leaves are linear; the tip is needle-shaped. Petals are pink, oblong, and 1-2 times longer than the calyx. The pod is egg-shaped.

Lectotypus (Barkoudah, 1962:132): "In prov. Karabagh legit... Hohenacker (LE)."

The main areas of distribution are in Shusha and Ganja, there are also some small populations in Kura plain and Nakhchivan (Asgarov, 2016).

It grows on sandy, clayey slopes and rocks in plains and lower mountain belts.

It is a subendemic ornamental plant of Azerbaijan. (Fig. 4, Map 2).

It is not a short tree. Winged fruits are 5 cm long, sharp.

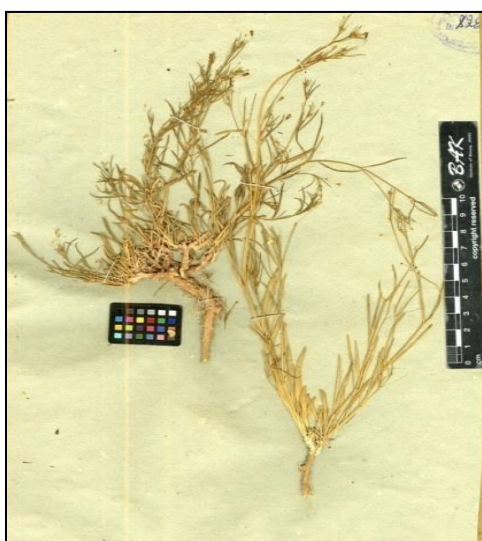


Fig. 4. *Gypsophila szovitsii* Fisch. et C.A.Mey. ex Fenzl

Corylaceae Mirb.

5. Şuşa vələsi – *Carpinus schuschaensis* (C. oxycarpa H.J.P.Winkl.; *C. geokcaica* Radde-Fom.)

Lectotypus (Menitsky, hoc loco): "Prope castellum Schuscha, № 3462, Herb. K.Fr.Hohenacker" (LE; syntpi: B, LE (№№3443, 3455), G-BOIS, W).

In addition to Karabakh, the presence of small populations of the plant in the Greater Caucasus and the Lankaran district is recorded (Конспект флоры Кавказа, 2012).

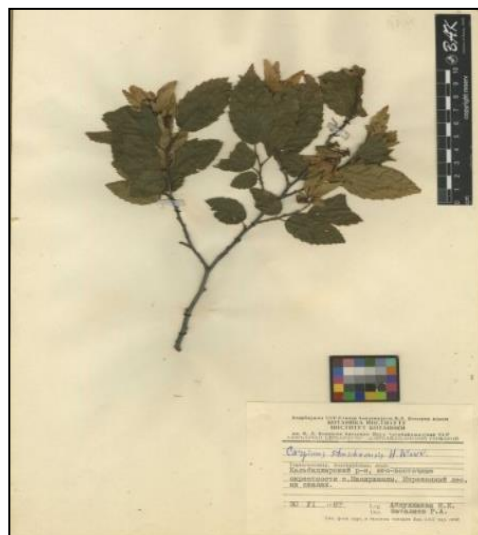


Fig. 5. *Carpinus schuschaensis* H. Winkl.

It is found in the forests of the lower-middle mountain belt.

This is an endemic and main forest-forming tree genus of Azerbaijan. (Figure 5, Map 1).

Euphorbiaceae Juss.

6. Ledebur südləyən - *Euphorbia ledebourii* Boiss.

The plant is annual, glabrous, the leaf is linear, 2-4 cm long. The pod is ovoid, the seed is flat and eggshaped.

Described from Shusha. However, since there are no samples of this plant in the Azerbaijan herbarium, its lectotype was selected from samples of Ganja. Lectotypus (Гельтман, 2000:104): «In planitie territorii Elisabethopoleos, Flora Transcauc., 21 V 1844, No. 1445, Kolenati» (LE).

It grows on stony slopes of the lower mountain belt.

It is found around Shusha and Ganja.

This is a subendemic plant of Azerbaijan. It is rich in biologically active substances. There is little information about the state of its natural population (map 2). It is also found in Crimea and Turkey (Конспект флоры Кавказа (2012)).

Fabaceae Lindl.

7. Şuşa gəvəni - *Astragalus schuschaensis* Grossh.

It is a perennial grey hairy plant. The stem is 8-20 cm tall, the stalk is gray, sometimes with black hairs. Calyx toothed. The corolla is light yellow, and the upper part of the vexillum is slightly concave. Beans are white or black hairy (Grossheim, 1952).

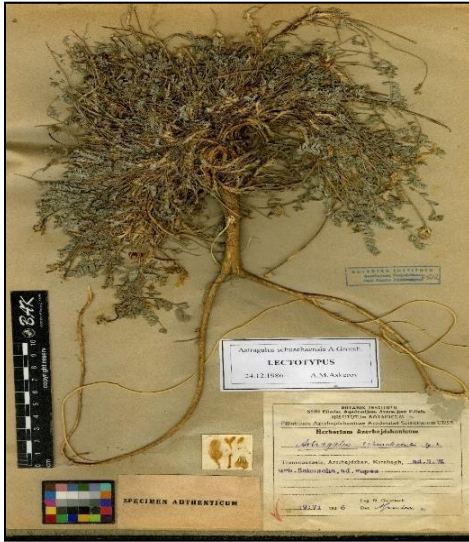


Fig. 6. *Astragalus schuschaensis* Grossh.

Typus: "Karabagh, ad N. W.urb. Schuscha, ad rupes, 19 VI 1936, N. Curvitsh" (BAK)

It was collected in the vicinity of Shusha - Sary-baba and Saksagan mountains.

It is found in the lower and middle belts of the mountains, on stony and gravelly slopes. Information about the places of natural distribution and the dynamics of the number of plants is limited. It is endemic to Azerbaijan. Its significance has been poorly studied. Close species have many biologically active substances, they are valuable fodder plants (Fig. 6, map 1).

8. Cəbrayıl gəvəni - *Astragalus dzhebrailicus* Grossh.

This is a perennial densely soft-hairy plant 10-20 cm high. The leaves consist of 12-16 leaflets. The corolla is light violet, and the upper part of the vexillum is round (Grossheim, 1952).

Typus: АзССР, «Южный Карабах, г. Тумаслу, 31 V 1935, Я. Исаев» (BAK).

In addition to Tumaslu mountain, it was also collected from the territory of Gubadli district

("promontorio m-tis Top - Agatsh").

It is found on gravel slopes of the lower belt of mountains, among xerophytic bushes. It is subendemic to Azerbaijan.

It is also found in East Turkiye and N.W.Iran (<https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:477241-1>). Its significance has been poorly studied. Close species have many biologically active substances, they are valuable fodder plants (Fig. 7, map 1).

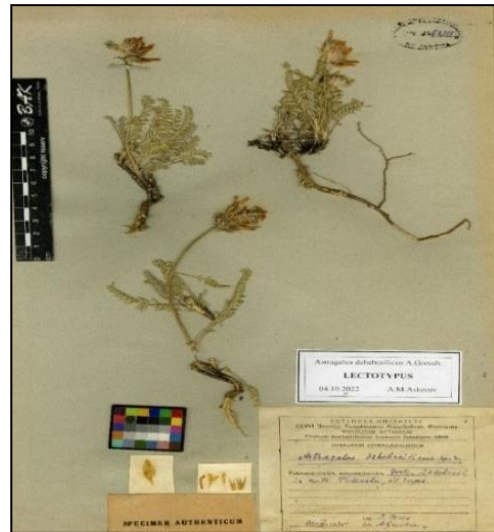


Fig. 7. *Astragalus dzhebrailicus* Grossh.

9. Şuşa xaşası - *Onobrychis schuschajensis* Agaeva 1967.

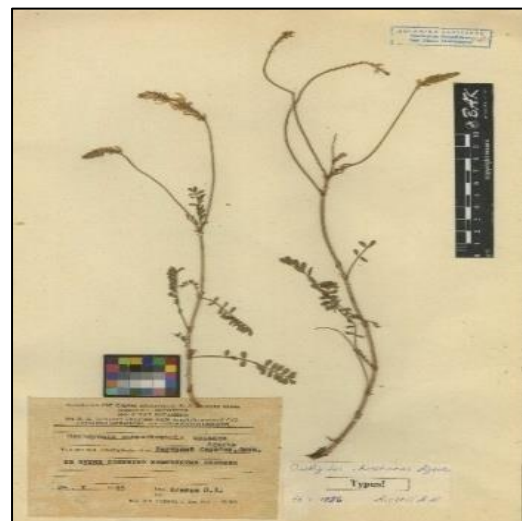


Fig. 8. *Onobrychis schuschajensis* Agaeva

Perennial 20-50 cm tall, corollas white, densely hairy.

Described from the surroundings of Shusha Type: (A.M.Аскеров). Karabakh, Shusha, on dry clayey and stony slopes. 24.05.1965 Leg. Агаева О.Д. (BAK!); Isotypus (A.M.Аскеров, 16.12.1986). Karabakh, Shusha, on dry clayey and stony slopes. 24.05.1965 Leg. Агаева О.Д. (BAK!).

It has not been collected since 1965, when the plant was described. The type was collected by the author only from one place; Shusha, suburb of Karabakh (2 samples).

It is found on dry gravel slopes.

It is endemic to Azerbaijan and is considered the ancestor of cultivated varieties of sainfoin (Fig. 8, map 2).

Lamiaceae Lindl.

10. Cənubi Qafqaz pişiknanəsi - *Nepeta racemosa* Lam. (*N. mussinii* Spreng.; *N. transcaucasica* Grossh.)

Described from the surroundings of Shusha, the type is unknown.

Small populations are available in Khojavend, Kelbajar, Lachin and Zangilan districts.

It is found on arid slopes and arid, stony and gravelly slopes from the subalpine belt to the mountain belt.



Fig. 9. *Nepeta racemosa* Lam.

This is a subendemic and valuable medicinal plant of Azerbaijan. This species was also found

in Turkiye and N.W.Iran (<https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:452683-1>).

The status of this species needs clarification. This species is considered a synonym of *N. racemosa* Lam. species in some sources (WFO). the Caucasian researcher of this genus Yu.L. Menitsky recognized this species as independent (1992) (Fig. 9, Map 2).

Malvaceae Juss.

11. Saxsağan gülxətmissi – *Alcea sachsachanica* Iljin.

This is a perennial herbal plant. The stems are 50-70 cm high. The leaves are star-shaped and short-hairy. The leaf blade is similar to the leaf blade of a fig, heart-shaped at the base. The flowers are densely hairy; the epicalyx is shorter than the calyx by almost twice. The corolla is yellow.

Typus: Transcaucasia, Azerbajdzhan, Karabach, propemontem Sach-Sachan. 8 VIII 1929, legit A.Kolakovsky (LE).

Distribution areas are Shusha surroundings - Sakhsgagan mountain, Cidir plain, Khankendi, it is uncommon in Domu village of Khojavand district and East Zangezur.

It is found on dry stony slopes, in various grass and cereal, and mountain-xerophyte groups of the middle mountain belt. It is a drought-resistant heliophyte plant.

It is endemic to Azerbaijan, a valuable medicinal and ornamental plant (Fig. 10, Map 1).

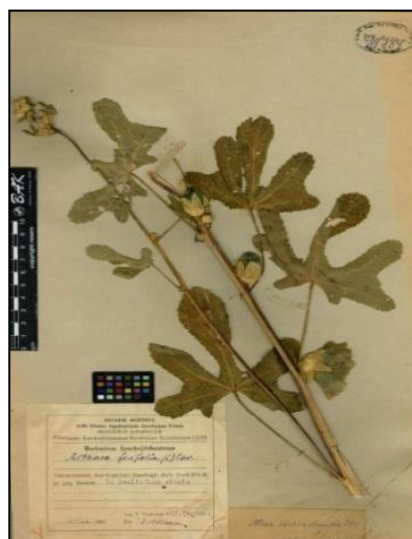


Fig. 10. *Alcea sachsachanica* Iljin.

Rosaceae Juss.

12. Şovits yemişanı – *Crataegus orientalis* subsp. *szovitsii* (Pojarkova) K.I.Chr. (*Crataegus szovitsii* Pojark.)

It is a small tree or shrub. The cortex is brown-grey. The leaves are five-lobed, and the petiole is short. The corolla is white; the fruit is 12-15 mm in diameter.

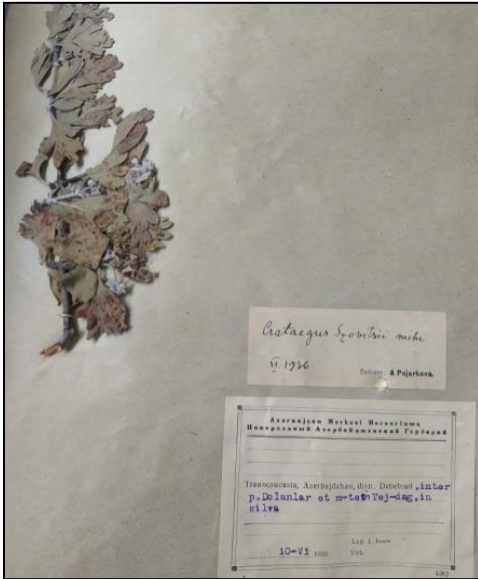


Fig.11. *Crataegus orientalis* subsp. *szovitsii* (Pojarkova) K.I.Chr.

Lectotypus: Karabagh orientalis, in collibus prope Schuscha, Hohenacker, n^o 3423, fl.; (LE).

It is also found in Khojavend, Hadrut, Shusha, Jabrail and Turkiye, Iran (<https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:967723-1>).

It is found in the mid-mountain zone, rocky slopes, and bushes. This is a subendemic, valuable medicinal and food plant of Azerbaijan (Fig. 11, map 1).

At present, large-scale restoration and construction work is conducted in Shusha and its surroundings. We hope that in the near future, along with these works, security measures will be completed, we will be able to organize long-term floristic expeditions to Karabakh, and will study in detail the rare plants in this area and start compiling the Red Book of Karabakh.

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ni.org:names:967723-1

<https://powo.science.kew.org/taxon/urn:lsid:ip>

Şuşa və Şuşaətrafı ərazilərdə itmək təhlükəsində olan ali bitkilər

Əsgərov Aydın Musa oğlu

Azərbaycan Respublikası Elm və Təhsil Nazirliyinin Botanika İnstitutu, Bakı, Azərbaycan

Məqalədə Şuşa və Şuşaətrafı ərazilərdə itmək təhlükəsində olan ali bitkilər haqqında məlumat verilir. Müəyyən edilir ki, Qarabağ və Şərqi Zəngəzur iqtisadi rayonlarında müxtəlif kateqoriyalardan olan 233 nadir ali bitki növünə rast gəlinir, bunlar da yaxın gələcəkdə yazılacaq "Qarabağın Qırmızı kitabı"na daxil edilə bilər. Bunlardan Şuşa və Şuşaətrafı ərazilərdə rast gəlinən endem, subendem və nadir bitkilər 59 növdür (28 fəsilə və 49 cins). Bu növlərdən də 33-ü (15 fəsilə, 27 cins) Şuşa və Şuşa ətrafından təsvir olunmuşdur (bilavasitə Şuşa şəhəri ərazisindən təsvir olunanlar 12 növdür (10 fəsilə, 11 cins)). Məqalədə həmin 12 növün xarakteristikası (prioritet adı, morfoloji səciyyəsi, nomenklatur tipi, yayılması, ekoloji xüsusiyyətləri və əhəmiyyəti) verilir.

Açar sözlər: Azərbaycan, Qarabağ, Şuşa, flora, mühafizə

Высшие растения Шуши и ее окрестностей, находящиеся под угрозой исчезновения

Аскеров Айдын Муса оглу

Институт ботаники Министерства науки и образования Азербайджанской Республики, Баку, Азербайджан

В статье сообщается о видах высших растений города Шуша и ее окрестностей, находящихся на грани исчезновения. Было установлено, что на территории Карабахского и Восточно-Зангезурского экономических районов встречаются 233 редких вида высших растений различной категории редкости. Рекомендуется включить их в «Красную книгу Карабаха», составление которой намечается в ближайшее время. Из указанных 233 видов 56 (28 семейств и 49 родов) находятся на территории Шуши и ее окрестностях. Они также являются эндемиками, субэндемиками и редкими видами. Из числа этих же видов 33 вида (15 семейств из 27 родов) были описаны, как новые для науки. 12 из этих видов (10 семейств и 11 родов) произрастают непосредственно в Шуше. В статье приведены данные по морфологии, экологических особенностях, номенклатурному типу и значению этих видов.

Ключевые слова: Азербайджан, Карабах, Шуша, флора, охрана