



ON THE MORPHOBIOLOGICAL CHARACTERISTICS OF SOME ENDEMIC PLANTS DISTRIBUTED IN THE FERGANA VALLEY

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ABSTRACT

The article presents information on revealing the morpho-biological characteristics of some endemic plants scattered in the Fergana Valley, signs of adaptation to environmental conditions, and preservation.

KEY WORDS: *endemic plant, plant protection, flora, rare, endemic, morpho-biological features, species, genus and family, life forms.*

INTRODUCTION

Over the next two decades, the global crisis of biological diversity continues, despite increasingly large-scale measures. Sustainable management of biological resources and their rational use require targeted rapid and decisive measures aimed at preserving specific species and ecosystems. For this, it is necessary to further strengthen the capacity to study and systematically monitor biological diversity at the national and international level, improve the functional activity of natural ecosystems, and develop a set of measures.

It is known that plants are effectively used in all spheres of the national economy. Examples include animal husbandry, medicine, food industry and other fields. But because of this, the use of plants more than the specified amount has a negative effect on the vegetation cover. In the continuation of such actions, the flora of plants is decreasing in number as a result of anthropogenic factors, some species are on the verge of extinction, a large number of plant species are included in the Red Book of Uzbekistan, protection of plants, their preservation, reproduction and expansion of their distribution area, and the identification of environmental factors affecting them. and confirms that the analysis is one of the current issues of the day.

Fergana Valley has been the object of geobotanical research. A number of scientists conducted their scientific research in this field, including M.M. As a result of Arifkhanova's many years of research, a monograph entitled "Rastitel'nost' Ferganskoy doliny" was published [1967]. The monograph is dedicated to the study of the vegetation cover of the Fergana Valley not only in Uzbekistan, but also in neighboring Kyrgyzstan and Tajikistan.

Fergana Valley, including its separate basins [Arifkhanova M.M., Pratorov O.P.], [Kholkoziev P.Kh., 1980], [Madumarov T.A., 2005], [Tojiboev K.Sh., 2006, 2010] et al. Despite the large number of conducted researches, there are not enough scientific works on the whole flora of the valley and the rare and disappearing endemic plant species and their analysis.

Our republic, in particular, has studied the flora of the Fergana Valley, but it cannot be said that it has been completed. Because many areas are studied in general. Therefore, according to the information based on new studies, some genera or species are newly observed or added.

In addition, depending on the level of exploitation of plants, some plant resources are endangered, while others are well preserved.

Based on this, in our article, we set ourselves the goal of identifying unique, endemic species in the flora of Uzbekistan, particularly the Fergana Valley, studying their morpho-biological characteristics, and clarifying the tasks of protection.

MATERIALS AND METHODS

The object dedicated to the composition of the rare and endemic plant species distributed in the Fergana Valley is the plant species alien to the local flora and introduced from other flora for various reasons. The information provided in the article was prepared on the basis of field research and literature data devoted to the study of the flora and vegetation cover of this Fergana valley. Information on the composition and distribution of rare and endemic plant species distributed in the regions of the Fergana Valley was used in brochures such as "Identifier of plants of Uzbekistan" (1987) [12], "Identifier of plants of Central Asia" (1963-1993).

Herbarium samples of rare and endemic plant species distributed in the Fergana Valley were used. The information provided on the sites vvv.ziyonet.uz, wikipedia.org was also used. M. in the formation of the composition of the species of the Karrak family. M. From Arifkhanova's monograph "Vegetation cover of the Fergana Valley" (1967), T. T. The results of



Rahimova's scientific research in Chortoq hills (1973-1974) and K. Sh. The results of Tajiboev's research on "Vegetation cover and meadows of the Chodaksoy Basin" were used.

Methods - the information given in various literature about the species that can be found in this area are widely used and generally accepted methods in floristry. Among the widely used methods was the route method, that is, organized field trips to different parts of the region.

RESULTS AND DISCUSSION

Below we present data on the study of morphological characters of plants endemic to the Fargona Valley.

LILIACEAE – Family

Gagea Salisb. – Genus

Gagea adylovii Levichev & F. Karim. ined.

Material: Namanganskaya obl. Namangansky district. Predgor. Chatkal ridge. 700 m. 15.04.2011, Karimov; Bibliography: ined!!; Life form: Perennial herb; Altitude region: highlands; District: Fergana; Region: Namangan; Area type: Ferganasky.

Gagea chorkessarica Levichev & Karimov, ined.

Material: Namanganskaya obl. Papsky district. predgor. Kuraminsky xr. Chorkesar 820-900 m., 04.05.2012, Karimov; Bibliography: ined!!; Life form: Perennial herb; Altitude region: mid-mountain; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

Gagea khassanovii Levichev & F. Karim., ined.

Material: Namanganskaya obl. Namangansky district. s/x Samarkand predgor. Chatkal ridge, 15.04.2011, Levichev, Karimov; Bibliography: ined!!; Life form: Perennial herb; Altitude region: highlands; District: Fergana; Region: Namangan; Area type: Ferganasky.

Gagea namanganica Levichev & Karimov, ined.

Material: Namanganskaya oblast, Namangansky district, Samarkand savkhoz, pred. Chatkalsky ridge, 15.04.2011, Karimov, son. Bibliography: ined!!; Life form: Perennial herb; Altitude region: highlands; District: Fergana; Region: Namangan; Area type: Ferganasky.

Gagea pallidula Levichev & Karimov, ined.

Material: Namanganskaya oblast, Papsky district, foothills of the Kuraminsky ridge, 10.04.2012, Karimov; Bibliography: ined!!; Life form: Perennial herb; Altitude region: highlands; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

Gagea uyguriensis Levichev & Karimov, ined.

Material: Namanganskaya oblast, Papsky district, foothills of the Kuraminsky ridge, 04.05.2012, Karimov; Bibliography: ined!!; Life form: Perennial herb; Altitude region: highlands; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

Tulipa intermedia Tojibaev et J.J. de Groot

Material: Uzbekistan. Ferghana Depression: Kurama Mt Range, Pap-Chust foothills, vicinity of Muruldi and Kandisai villages, Artemisia steppe, 30.03.2013, K. Tojibaev 156 STONE; Bibliography: Nordic Journal Botany 32(5): 546. (2014); Life form: Perennial herb; Altitude region: highlands; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

Tulipa scharipovii Tojibaev

Material: Tien-Shan Occidentalis, montes Kuramensis, propepagum Uygursay, N 40°54'54.7", E 71°03'28.1", h = 530 m.s.l., 20.03.2009, Tojibaev; Bibliography: Linzer Biologische Beiträge 41: 1063 (2009); Life form: Perennial herb; Altitude region: highlands; District: West Tien-shon; Region: Namangan; According to the Red Book: Krasnaya kniga Uzbekistana (2009), category 2; Area type: Chorkesarsky.

IRIDACEAE – Family

Iris L. – Genus

Iris austrotschatkalica Tojibaev, F. Karim. & Turgunov

Material: West Tian Shan. Southern Chatkal. Ungor-Tepa mountains. 3 km north of the Paramon village. Stony slopes, 1200 m a.s.l. 41°25'18.69" N, 71°43'44.39" E. 24.04.2010, Karimov, Turgunov; Bibliography: Turczaninowia 17(4): 12 (2014); Life form: Perennial herb; Altitude region: lower mountain; District: Fergana; Region: Namangan; Area type: Ferganasky.

AMARYLLIDACEAE – Family

Allium L.

Allium adylovii Tojibaev & R.M.Fritsch ined.

Bibliography: ined!!; Life form: Perennial herb; Altitude region: highlands; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

Allium chorkessaricum F.O. Khass. & Tojibaev



Material: Uzbekistan. Kuraminsky ridge, Parda-Tursun, Novbulak, 41°07'13.9" N, 70°48'24" E, 2900 m, 28.06.2009, Tojibaev; Bibliography: Stapfia 92: 27 (2010); Sennikov vo flora Uzbekistana Volume 1:95 (2017); Life form: Perennial herb; Altitude region: mid-mountain; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

***Allium haneltii* F. O. Khass. & R. M. Fritsch**

Material: Uzbekistan. Kuraminsky ridge, u k. Chorkesar, vys. 900 m, 30.05.1997, Khasanov, Fritsch 637; Bibliography: Linzer Biologische Beiträge 30: 285 (1998); Sennikov vo Flora Uzbekistana Volume 1:60 (2017); Life form: Perennial herb; Altitude region: highlands; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

***Allium kuramense* F. O. Khass. & N. Friesen**

Material: Uzbekistan. Montes Curamensis, in fissuris rupium prope pagum Charkesar, alt. 900 m, 30.05.1997, Khassanov, Fritsch 1636; Bibliography: Linzer Biologische Beiträge 30: 287 (1998); Sennikov vo Flora Uzbekistana Volume 1:85 (2017); Life form: Perennial herb; Altitude region: highlands, lower mountains; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

***Allium orunbailii* F. O. Khass. & R. M. Fritsch**

Material: Uzbekistan. Tian-Shan Occidentalis, Montes Kuramensis, prope pagum Chorkesar, 700 m, 25.05.1998, Fritsch, Khassanov 1676; Bibliography: Stapfia 80: 385 (2002); Sennikov vo Flora Uzbekistana Volume 1:82 (2017); Life form: Perennial herb; Altitude region: highlands, lower mountains; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

***Allium scharobitidini* F.O. Khass. & Tojibaev**

Material: Uzbekistan. Kuraminsky ridge, vozle kish. Chadak, 41°06'51.7" N, 70°36'57.4" E, vys. 2170 m, 28.06.2009, Tojibaev; Bibliography: Stapfia 92: 27 (2010); Sennikov vo Flora Uzbekistana Volume 1:72 (2017); Life form: Perennial herb; Altitude region: mid-mountain; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

***Allium tatyanae* F.O. Khass. & F. Karim.**

Material: Uzbekistan. Ferganskaya valley, Namangansky district, mountains of Yangikurgan and Ungur, 41°24'58.88" N, 71°43'49.9" E, vys. 1239 m, 28.04.2011, Karimov, Batoshev; Bibliography: Stapfia 99: 211 (2013); Sennikov vo Flora Uzbekistana Volume 1:76 (2017); Life form: Perennial herb; Altitude region: highlands, lower mountains; District: Fergana; Region: Namangan; Area type: Ferganasky.

***Astragalus austroferganicus* Kamelin & R. M. Vinogr.**

Material: Uzbekistan. Willis Ferganensis, districtus irrigationalis Jangi-aryk. 21.06.1928, Joffe 398; Bibliography: Vinogradova Opredelitel Rastenii Sredney Azii 6:203 (1981); Life form: Perennial herb; Altitude region: highlands, lower mountains; District: West Tien-shon; Region: Namangan; According to the Red Book: Krasnaya kniga Uzbekistana (2009), category 0; Area type: Zapadnotyanshansky.

***Astragalus rubellus* Gontsch.**

Material: Systema fl Syrdarja. District Fergana. In arenis mobilibus prope Karakalpak. 01.05.1913, Dolenko 314; Bibliography: Kovalevskaya Opredelitel Rastenii Sredney Azii 6:161 (1981); Goncharov and Borisova Flora SSSR 12:180 (1946); Goncharov Flora Uzbekistana 3:520 (1955); Life form: Perennial herb; Altitude region: plain; District: Central Fergana; Oblast: Fergana; According to the Red Book: Krasnaya kniga Uzbekistana (2009), category 1; Area type: Pritashkentky.

***Oxytropis schachimardanica* Filim.**

Material: Jugum Alaicum. In viciniis pagi Schachimardan montes Izbassarenses, 8.06.1948, Schafeev; Bibliography: Filimonova Opredelitel Rasteniy Sredney Azii 6:352 (1981); Life form: Perennial herb; Altitude region: mid-mountain; District: Fergana-Aloy; Oblast: Fergana; Area type: Ferganasky.

***Parrya saxifraga* Botsch. & Vved. (=Neuroloma saxifraga (Botsch. & Vved.) Botsch.)**

Material: Zapadnyy Tian-shan. Pool Rack Angren. Verkhovya reki Angren po doroge ot saya Orta-aylyk do perevala Kem-saz. kamenisto shchebenesto pochva, 30.07.1938, Pyataeva and Momotov 401; Bibliography: Parrya saxifraga Botsch. & Vved. Bochantsev and Vvedensky v Botanicheskie Materialy Herbaria Botanicheskogo Instituta Uzbekistanskogo filila Akademii Nauk Uzbekskoi SSR. 3:15 (1941); Bochantsev and Vvedensky vo Flora Uzbekistana 3:124 (1955); Nikitina vo Flora Kyrgyz SSR. 6:213 (1955); Neuroloma saxifraga (Botsch. & Vved.) Botsch. Pakhomova v Opredelitel Rastenii Sredney Azii 4:123 (1974); Life form: Perennial herb; Altitude region: middle mountain, high mountain; District: West Tien-shon; Region: Namangan; According to the Red Book: Krasnaya kniga Uzbekistana (2009), category 2; Area type: Arashansky.

Scutellaria L. – Genus

***Scutellaria angrenica* Juz. & Vved.**

Material: Tian-Shan occident in declivibus septentrionalibus jugi Kuramanski Lailak-saj 21.06.1940, Usmanov 663; Bibliography: Yuzepchuk vo Flora USSR. 20:175, 511 (1954); Vvedensky vo Flora Uzbekistana 5:286 (1961); Scutellaria pycnoclada Juz. Abdullaeva vo Opredelitel rastenyi Sredney Azii 9:29 (1987); Life form: shrub; Altitude region: mid-mountain; District: West Tien-shon; Region: Namangan; Area type: Arashansky.

**Kuramosciadum Pimenov, Kljukov et Tojibaev – Genus*****Kuramosciadum corydaliifolium* Pimenov, Kljukov & Tojibaev**

Material: Jugum Kurama, Parda Tursun, juxta fontem fluminis Novbulak, in detritis mobilibus, h = 2700–2900 m supra mare, 20.06.2009, Tojibaev; Bibliography: Khasanov v Opredelitel rastenyi Sredney Azii 11:404 (2015); Life form: Perennial herb; Altitude region: high mountain; District: West Tien-shon; Region: Namangan; Area type: Chorkesarsky.

Oenanthe L. – Genus***Oenanthe fedtschenkoana* Koso-Pol.**

Material: Turkestan, Kokan, O. Fedtschenko; Bibliography: Shishkin vo Flora SSSR 16:533 (1950); Korovin vo Flora Uzbekistana 4:378 (1959); Nikitin and Flora Kyrgyz USSR. 8:73 (1959); Pimenov v Opredelitel Rastenyi Sredney Azii 7:262 (1983); Pimenov Krasnaya kniga Uzbekistana 1:114 (2009); Life form: Perennial herb; Altitude region: plain; District: Central Fergana; Oblast: Fergana; According to the Red Book: Krasnaya kniga Uzbekistana (2009), category 0; Area type: Ferganasky.

CONCLUSIONS

According to the results of the study, 22 species of Fergana region, 9 species in Namangan region, and 1 species of plants distributed in the territories of Andijan region, out of total 39 species of plants included in the red book of Uzbekistan from Fergana valley endemic plant species. Of these, 3 types of plants are distributed in all regions of the valley. 4 types are found in Fergana and Namangan regions.

It is necessary to increase the research conducted in the field of preservation, reproduction and protection of rare plants to the level of today's demand. Otherwise, the number of species of rare plants will increase year by year in the valley.

As a result of the conducted research, the number of plant species, genera and families distributed in the Fergana Valley area, as well as their regional distribution and life forms were determined. Based on this, 488 genera belonging to 78 families and 1350 species are distributed in the valley area, of which 336 species grow in the desert, 437 species grow in the hills, 620 species grow in the mountains. According to the life form, 21 species of plants distributed in the region are trees, 124 species are shrubs, 26 species are shrubs, 790 species are perennial grass, 389 species were found to be annual and biennial grass plants.

Of course, among these plants, there are not a few species that are of great importance in the national economy. There is no doubt that their preservation, protection, and their use based on a scientifically based plan is the demand of the day. Their rational use requires comprehensive study of plant species.

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