

The Importance of the Geographical Location of the Fergana Valley in the Study of Rare Plants

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Abstract: *Most of the rare plants in the Fergana Valley are endemic to this area, meaning they do not grow elsewhere. Therefore, the Fergana Valley is an area with units and environmental conditions that need to be studied. This article gives you a brief overview on rare species in the area.*

Key words: Fergana, flora, geographical location, mountain ranges.

Introduction. The Fergana Valley, the Fergana Valley, is a valley between the mountains of Central Asia, one of the largest mountain ranges in Central Asia. It is bounded on the north by the Tianshan Mountains and on the south by the Gissar Mountains. Mainly in Uzbekistan, partly in Kyrgyzstan and Tajikistan. It is triangular in shape, extending to the northern slopes of the Turkestan and Olay ridges, and is bounded on the northwest by the Qurama and Chatkal ridges, and on the northeast by the Fergana ridge. In the west, a narrow corridor (8–10 km wide) is connected to the Tashkent-Mirzachul basin through the Khojand Gate. Uz. 300 km, width 60–120 km, widest area 170 km, area 22 thousand km. Its height is 330 m in the west and 1000 m in the east. Its general structure is elliptical. It expands from west to east. The surface of the Fergana Valley is filled with Quaternary alluvial and proluvial-alluvial sediments. The valley was bent in the Coal Age, and covered with thick sandstone-clay sediments in the Middle Stone Age. During the Cretaceous, there was a shallow sea. By the end of the Paleogene, it was completely dry. The ridges around the valley began to rise sharply in the alpine fold, but were again eroded during denudation. The seabed at the bottom of the valley is covered by continental deposits (300–400 m thick).

Main part. Minerals such as oil, coal, natural gas, gypsum, iron, copper ores, mercury, limestone, pyx, sulfur, wax, salt, polymetallic ores, antimony, and mineral water have been formed in the Fergana Valley at various geological periods.

The surface structure of the Fergana Valley can be divided into several stages (zones). The first stage of the relief occupies the central part of the valley and the lands up to the present headwaters of the Syrdarya at an altitude of 300–400 m. The slope at a distance of 200 km in this area is 80 m to the east, southeast and southwest. Accumulative rocks, marine lake deposits, and wind-blown rocks are common on marine deposits. This step includes sand dunes, lakes, and sandy hills. The second stage of the valley consists of rocky areas (400–600 m) that cover a wide range of rivers and streams. Quaternary alluvial deposits are common, encircling the valley like a ring.

The third step of the relief is the hill zone with the height of 600–1200 m. The hills of Konibodom, Shorsuv, Rishtan, Chimgan, Avval, and Muyan, which surround the Fergana Valley in the south, are composed of rocky deposits, and the Navkat and eastern hills are composed of loess and loessized clay rocks; large rocky cliffs and falls are typical for the terrain. The southern slopes of the Namangan, Chuyet, and Pop hills in northern Fergana descend the stairs to the Syrdarya valley. The plains behind the hills are covered with alluvial rocks. The mountains surrounding the valley begin in these accumulative plains.

The climate of the Fergana Valley is continental. The average annual temperature decreases from west to east. Western winds play an important role in shaping the river climate. West winds blow quickly in the spring, sometimes wet and sometimes dry. The average temperature in January is -2.3° in Kokand and -4.8° in Kampirravot. The lowest temperature is -27.9° in Kokand and -32° in Kampirravot. In summer (July) the average temperature is Fergana, Andijan, Namangan 26.3° , Kokand 27.5° . The maximum temperature in these areas rises to $40-44^{\circ}$. Vegetation period is 270 days. Precipitation ranges from 80–100 mm in the west, 150–200 mm in the east, 74 mm in the southwest, and 200–300 mm in the north. Most of the rain falls in the spring, and almost no rain in the summer. There are strong winds (Kokand and Bekabad winds).

There is a lot of running water in the Fergana Valley. Rivers and streams flow from the mountains (Norin, Qoradarya, Sokh, Isfara, Shohimardonsoy, Akbura, Govasay, Chodaksay). Rivers are fed mainly by snow and rainwater. The Fergana Valley is also rich in groundwater. Groundwater levels in the rocky gravel deposits around the ravine rise in October–November and fall in May–June; Annual water surface vibration is 1–3 m. In the plains, groundwater rises to a depth of 2 m, sometimes at the surface. In addition to groundwater, there are three aquifers at a depth of 400 m. Water in these strata is obtained through artesian wells. In the Fergana Valley, Greater Fergana, Jan. Fergana, Big Andijan canals, Kayrakkum reservoir in Syrdarya were built. There are more than 100 lakes. The largest of them are Sarichelak, Kurbankol, Karasuvkol and others

The soil of the Fergana Valley is different. Meadows, meadows, and saline-saline soils of various levels are found on the terraces of the Syrdarya River (old-timbered) and up to 400 m high. Plains, streams, floodplains, gray and brown soils at altitudes of 400 m to 800 m, light gray soils at 800–1200 m, and dark and typical gray soils are common. They contain up to 4% humus. In the wet and swampy lowlands of the valley, willow, wild jiida, turangil, reed, kayak, cherkez, kandym, rabbit, saxaul, jiida, izen, wormwood, ephemeral and ephemerooids in the hills; Walnut, apple and cherry forests are located on the slopes of the Fergana and Chatkal mountain ranges. Wild animals include tiger, wolf, fox, and rabbit; birds such as pheasants, ducks, partridges, partridges, partridges; rodents, such as rats, mice, and various venomous snakes. Reservoirs, artificial lakes and rivers are rich in fish species. In recent years, muskrats have been breeding in collector ponds on irrigated lands.

The Fergana Valley is a major cotton, silk and vineyard area. The oasis is planted with cotton, rice in some places, orchards, vineyards and melons. The protected desert lands in the center of the Fergana Valley are being developed. Deserts are grazed throughout the year, and hills are grazed in spring. The Fergana Valley is one of the most densely populated areas in Central Asia, with the cities of Khojand, Kokand, Fergana, Andijan, Namangan, Osh, and Jalal-Abad.

In the Fergana Valley, rare plants are most common in the basins of these rivers:

Sokh is a wet river in the Fergana Valley. Pants of the Olay and Turkestan ridges. It starts from the glacier at the height of 5550 m from the slopes. Uz. 124 km, the area of the basin is 3510 km², the score of the water basin. 3480 m. The Dalbek,

Shudmon, and Khojaochkan rivers join near the village of Zardoli to form the S. River. In the upper part, it flows through a very deep and narrow gorge (4–10 m wide). Upon reaching the hillside zone, the river valley widens to 500 m. After that, the width of the river is 70 km. It is 50 km long and forms a spreading cone of stone and gravel. In some parts of the river there are second and third terraces. When it flows into the Fergana Valley, it divides into branches. The river is saturated with ice and snow, as 71% of the annual rainfall in the basin is snow and 29% is rain. The basin has 364 glaciers with an area of 244 km². The largest is Archaboshi (12 km²). The average flow modulus is 17.0 l / sec, km². The turbidity of S. water is moderate (0.99 kg / m³). Between the hills, the Sarikurgan hydroelectric power station and the Okhchi hydroelectric power station were built on the river, and the Kokand hydroelectric power station was built at the foot of the river. It supplies water to Uzbekistan, Dangara, Uchkuprik and Baghdad districts of Fergana region. In the river valley, Kokand located. There are "Chongora" and other resorts.

Shohimardonsay (Archaboshi, Aksuv, Margilansay) is a river in the Fergana region. It is formed by the confluence of the Aksu and Koksuv rivers (near the village of Shohimardon), which begin in the northern part of the Olay and Turkestan ridges. From the village of Vodil to the city of Fergana Margilansay, below it Sh. known as Uz. 112 km. The area of the basin is 1300 km². It partially flows through the territory of Kyrgyzstan. It is divided into several networks. 32 small ravines (total length 86 km) will be added to the city. It is fed by snow and rain water. The average long-term water flow is 10.1 m³ / s, 64 m³ / s during floods and 319 mln. m³. Average annual water consumption varies from 10.5 m³ / s (in high water years) to 7.86 m³ / s (low water years). Sh. The water is used to irrigate crops. There are Shohimardon, Aqqiya, Qumbulak, Langar and other villages in the river valley. Several small hydropower plants have been built in the city



Fig.1 Shohimardon River and its location.

The Tien Shan [1] or Tangritog [2] is the highest and longest mountain range in Central Asia. The western part is in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan, and the eastern part is in China. The Tien Shan consists of several mountain ranges, most of which are more than 2,550 km wide. The Tien Shan reaches the Moyinkum sands in the north, the Ili basin, the Jungariya Alatovi, the Fergana and Tarim basins in the south, the central part of the Syrdarya in the west, the Gobi deserts in the

east, and the Beishan Mountains. It is bounded on the north by the Borokhoro Range, part of the Eastern Tianshan, the Jungariya Alatovi, on the Central Tianshan by the Kakshaltov Range, and on the southwest by the Olay Range. Some geologists and geophysicists also include the Jungariya Alatovi and OlayHisor ridges in the Tien Shan. Most of the ridges in the Tien Shan run in latitude or near latitude, and some ridges (Karatag, Fergana, Nurata, etc.) run close to meridian. The highest point is Victory Peak (7439 m) on the Kyrgyz-Chinese border. Near it is the peak of Khantangri, 6995 m high. The mountain ranges branch westward and eastward from these peaks and descend.

Distribution of rare plants in Fergana region:

Knorring Isfaragi *Delphinium knorringianum* Districts Fergana: Shohimardon River Basin, Kyrgyzstan

White parpi *Aconitum Talassicum* Fergana, Tashkent, Jizzakh, Kahkadarya, Tajikistan, Kazakhstan and Kyrgyzstan

Olga incarvillea *Incarvillea olgae* Bignonians of Fergana: Sokh and Shohimardon river basins, Kyrgyzstan and Tajikistan

Boris astragali *Astragalus borissianus* Angles Fergana: Shohimardon river basin

Zarkhal astragal *Astragalus auratus* Peppers in the villages of Fergana: Shokhimardon, Koli Qubbon, Yordan, in the basins of the rivers Uvlardisay, Sokh and Parkent. Tajikistan and Kyrgyzstan

Astragalus dianthoides *Astragalus dianthoides* Chimgan Shohimardon, Sadoq, Vodil, Akbilol, Kadamjay and Sokh villages of Kyrgyzstan

Peeled astragalus *Astragalus rhacodes* Peppers in Fergana: in the villages of Shohimardon, Sadoq, Kyzyltag.

Kyrgyzstan

Red astragalus *Astragalus rubellus* Peppers in Fergana: Yazyovan desert, Kokand city, Karakalpak village

Astragalus austroferganicus *Astragalus austroferganicus* Southern Fergana *Astragalus austroferganicus*

Small-fruited dorema *Dorema microcarpum* Ziradoshlar between Kokandbi and Tergachi villages, Shohimardon. Kyrgyzstan

Korzinsky kovragi *Ferula korshinskyi* Ziradoshlar Fergana: Shohimardon. Kyrgyzstan

Substitute fragile *Ferula vicaria* Ziradoshlar foothills of Turkestan and Alay ridges

Fedchenko ivory *Oenanthe fedtschenkoana* Ziradoshlar met in the city of Kokand, Fergana. Unknown

Yellow pheasant *Fergania polyantha* Ziradoshlar Alay and Turkestan on the Fergana side

Physochlaina alaica in the basins of the Shohimardon and Sokh rivers in Fergana. Kyrgyzstan and Tajikistan

Holmon isirgaguli *Fritillaria eduardii* Loladoshlar Fergana: Sokh river basin. Surkhandarya: Bobotag and Gissar. Tajikistan, Afghanistan

Fergana tulip *Tulipa ferganica* Tulips in the lower part of the whole valley and in Kyrgyzstan

Yellow tulip *Tulipa dasystemon* Tulips in Piskom, Ugol, Chimgan, Chatkal, Qurama, Alay, Turkestan, Molguzar and Gissar ridges

Delicate sugar *Calligonum elegans* Torondoshlar in Fergana: Gumkhona, Akchol, Akbel, Supatog and Karakalpak deserts. In the Vakhsh Valley of Tajikistan

Calligonum calcereum Falcons in Fergana: Sokh and Isfara river basins and in Tajikistan

Acanthophilium albidum Carnations in the Fergana Valley at an altitude of 500-800 m above sea level

Strange bird *Lonicera paradox* Shilvidoshlar around the village of Shohimardon

Nor shirach (Hulka bola) *Eremurus robustus* Shirachdoshlar in all ridges of the Western Tien Shan and Pamir-Alay

Turkestan shotara *Fumariola turkestanica* Shotaradoshlar Fergana: in the basins of the rivers Shohimardon and Isfayram and in Kyrgyzstan

Anthochlamys tianshanica in the north-eastern and north-western parts of the Fergana Valley

Gamanthus ferganicus of Fergana The eastern part of the Fergana Valley

Margarita Marvara Salvia Margaritae Peppermint in the oasis of the river Shohimardon

Conclusion. The main geographical aspects were highlighted and the distribution of plants was studied in accordance with the Red Book.

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