

2.1. A. P. FEDCHENKO. THE "DISCOVERY" OF THE PAMIRS, THE OPENING AND CONDUCT OF PRELIMINARY STUDIES

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Abstract

This article analyzes the process of the formation of A. P. Fedchenko's personality as a scientist. It is shown that childhood and adolescence in Irkutsk, public library, natural history collections, lectures on chemistry and medicine had a strong influence on his scientific interests. The period after moving to Moscow was a new stage in the development of Fedchenko's research skills, and his education at Moscow University, initial research in entomology and the creation of a herbarium were crucial in his formation as a professional scientist. It also sheds light on the role played by the A. P. Bogdanov circle and the Moscow University environment in the development

Keywords

Alexey Fedchenko; Irkutsk; Moscow University; natural history; entomology; herbarium; 19th-century Russia; scientific formation; A. P. Bogdanov circle.

Аннотация

Ушбу мақолада А. П. Федченко шахсининг олим сифатида шаклланиш жараёни таҳлил қилинади. Иркутскдаги болалик ва ёшлик йиллари, оммавий китобхона, табиатшунослик коллекциялари, кимё ва тиббиёт бўйича маърузалар унинг илмий қизиқишларига кучли таъсир кўрсатгани кўрсатилади. Москвага кўчиб ўтганидан кейинги давр Федченко учун тадқиқотчилик қобилияти ривожланган янги босқич бўлиб, Москва университетидаги таълим, энтомология ва гербарий тузиш бўйича дастлабки изланишлари унинг профессионал олим сифатида шаклланишида ҳал қилувчи аҳамият касб этган. Шунингдек, А. П. Богданов кружоги ҳамда Москва университети муҳити XIX аср Россиясида табиатшунослик фанининг ривожланишида қандай роль ўйнагани ёритилади.

Калит сўзлар

Алексей Федченко; Иркутск; Москва университети; табиатшунослик; энтомология; гербарий; XIX аср Россияси; илмий шаклланиш; А. П. Богданов кружоги

Inrtodaction

Alexander Pavlovich Fedchenko (1844–1873) was a researcher born in Siberia and spent his childhood in Irkutsk, where his formation took place in an environment where labor and natural science were closely intertwined. His father, the owner of gold mines, directly introduced his son to the understanding of the laws of natural processes, which later became the basis for the development of Fedchenko's interest in natural sciences. By the end of the 1850s, as a result of his father's death, the family found itself in a very difficult financial situation. Pavel Ivanovich's widow was left with two sons - Alexander, a gymnasium student, and his brother Grigory Fedchenko, who was ten years older than him - in conditions of almost complete poverty. The situation was further complicated by the fact that three more children in the family died in infancy.⁵⁰ Due to financial difficulties, the mother was forced to give up the opportunity to continue Alexei's education at the gymnasium. She planned to place her son, who had finished the sixth grade, as an apprentice in a pharmacy. During his stay in Irkutsk, young Alexei began to collect insect collections and collect herbariums; these activities gave him practical skills in the process of collecting medicinal plants. Thus, the future scientist's path to scientific activity, or rather, to the field of botany, was opened precisely through the practice of collecting plants and medicinal herbs. However, thanks to the intervention of his older brother Grigory, who had graduated from Moscow University during his father's lifetime and was then working as a teacher at a technical school in Moscow, Alexei was able to continue his studies.⁵¹ Alexander Fedchenko's brother was a naturalist. Alexander graduated from the gymnasium in Irkutsk, and at the same time, in the mid-1850s, after the S. D. Pronopopov public library was founded in Irkutsk in 1858, he had the opportunity to visit the library as a researcher and see the natural history collections collected by Gustav Ivanovich Radde, which were exhibited in the city. He also listened to public lectures on the basics of chemistry, which served to broaden his scientific outlook and develop his interest in natural history. Visits to the library, demonstrations, viewing natural history collections, and listening to lectures on chemistry, anatomy, and medicine aroused in young Fedchenko a serious desire for scientific activity. Fedchenko's mother was forced to sell all her valuable property so that the family could move to

⁵⁰ Валькова О. А. *Ольга Александровна Федченко, 1845–1921* / О. А. Валькова; отв. ред. Б. А. Старостин. — М.: Наука, 2006. — 32 с.

⁵¹ Леонов Н. И. *Алексей Павлович Федченко (1844–1873)*. — М. : Наука, 1972. — 6 с.

Moscow. In Moscow, Alexander received a systematic education and in a short time showed high abilities for research. Thus, Fedchenko's Irkutsk period was a key stage in the formation of his personality as a scientist - an example of the transformation from a provincial inquisitive young man into a new type of Russian scientist, for whom the study of nature was associated with a patriotic and enlightening task.

Method

methodological framework of this study is based on a комплексный historical approach that combines biographical, history-of-science, historical-geographical, and comparative-historical methods. This integrated approach makes it possible to examine the activities of A. P. Fedchenko not merely as a sequence of expedition routes, but as a process of the formation of a researcher whose scientific practice developed in close connection with the institutional environment, university training, and the broader objectives of studying Central Asia.

The study employs the biographical method to analyze the formation of A. P. Fedchenko as a scholar. Particular attention is paid to the influence of his childhood in Irkutsk, his early exposure to natural history collections, the intellectual environment of libraries and public lectures, as well as his education at Moscow University and participation in scientific circles. This method allows us to demonstrate that Fedchenko's expeditionary activity was shaped by earlier stages of his intellectual and professional development.

In addition, the history-of-science approach is applied to examine Fedchenko as a representative of Russian science in the second half of the nineteenth century. The analysis focuses on his participation in the activities of the Moscow Society of Naturalists, Anthropology and Ethnography, his connections with the university scientific milieu, and his contribution to the production of new knowledge about Turkestan, the Alai region, and the northern margins of the Pamirs. This perspective makes it possible to interpret his travels not as an individual initiative, but as part of a broader process of institutionalized exploration of the region.

A significant role is played by the historical-geographical method, since the subject of analysis includes the expedition routes, as well as the data collected by Fedchenko on mountain passes, valleys, glaciers, ethnographic environments, and the orographic structure of the region. The application of this method enables us to trace how knowledge about the Pamirs, the Trans-Alai Range, the Kyzyl-Art Pass, and adjacent territories was formed through expeditionary practice. It also demonstrates that Fedchenko's observations contributed substantially to refining geographical knowledge of the northern approaches to the Pamirs.

The study also employs the comparative-historical method, which is used to compare earlier conceptions of the Pamirs with the data obtained by Fedchenko during his travels and reflected in his map of the Kokand Khanate and the Amu Darya basin. This comparison allows us to identify the novelty of his findings and to assess how his observations revised and corrected previous geographical understandings.

Result

In 1860, 16-year-old Alexei was admitted to the first year of the Natural History Department of the Physics and Mathematics Faculty. A. P. Fedchenko's student years coincided with major changes taking place in the socio-economic life of the country. The abolition of serfdom and the strengthening of capitalism in the economy could not but directly affect the culture of the country.

A. P. Fedchenko's work as a scientist under the leadership of a professor at Moscow University played a particularly important role. In 1861–1862, Fedchenko created a large herbarium collection in the Moscow region. From 1863, Alexey began to study entomology and created wonderful collections of dipterans and silver-winged insects. In 1867, he presented his first published scientific work, “Moscow Educational District List of Dipterans.” During these years, when Fedchenko was a student, G. E. Shurovsky was the head of the Department of Geognosy and Paleontology at Moscow University. Anatoly Petrovich Bogdanov, a professor of zoology who united young people interested in science, organized the “Bogdanov Circle” in 1863; later this circle was transformed into the “Society of Lovers of Natural History, Anthropology and Ethnography”.

This further expanded the influence of the organization and allowed it to attract talented young people to its field. A.P. Fedchenko took an active part in the activities of the society. Under his leadership, an entomological society was created in the society. The purpose of the society was to disseminate materialistic ideas among the broad scientific community and ensure the natural and historical study of Central Asia.

In 1868–1871, Fedchenko traveled to various regions of Central Asia, collecting material on the flora, fauna, geography and ethnography of the region. On behalf of the Moscow Society of Lovers of Natural History, he made several expeditions throughout the Turkestan region: the Zarafshan expedition (1868–1869), the Iskanderkul expedition (June 1870), the trip to Magiyan (September 1870), the Kyzylkum expedition (1871) and, finally, In 1872, he made an expedition to the Kokand Khanate. He first published his short notes about his Kokand trip in the Turkistan Vedomosti, and then on December 10, 1871, he gave a very interesting lecture at the Geographical Society, in which he first described the Kokand

Khanate.⁵² and presented a map of the Pamirs. This map attracted great attention with the novelty of the information provided and the changes introduced in the previous maps.

According to N.A. Severtsov, the map of the area south of the Aloy Mountains compiled by Fedchenko provided valuable information. This map is an important work resulting from A.P. Fedchenko's recent travels and clearly demonstrates his extensive acquaintance with the literature on the Pamirs. This is also closely confirmed by his comments on the article by Henry Yule, translated by O.A. Fedchenko, which was about the history and geography of the Amu Darya Bashkirs.⁵³ Materials about A.P. Fedchenko's journey to the Kokand Khanate were published in Russian and foreign scientific periodicals, for example, "Russian Herald"⁵⁴, "Materialy dlya statistiki Turkestanskogo kraya"⁵⁵, also German⁵⁶ and in French magazines. N. Khanykov published an article about the trip in a French magazine and called it "Mr. Fedchenko's Pamirs"⁵⁷. After the death of A.P. Fedchenko, in 1875, with the help of his wife O.A. Fedchenko, his work "Journey to Turkestan" was published, which described the order of the journey to the Kokand Khanate; this book was later republished in 1950.

Alexey Pavlovich Fedchenko is considered the first explorer of Fergana and Alai, who became one of the greatest explorers of Central Asia, discovering the Zaalai Mountains - the northern border of the "Roof of the World".⁵⁸ On June 2, 1871, A.P. Fedchenko set off from Tashkent to Kokand, armed with a letter from the Governor-General of Turkestan, K.P. Kaufman, to the ruler of Kokand, Khudoyarkhan. The expedition also included his wife Olga Alexandrovna Fedchenko, who was responsible for collecting and preparing plants, describing the types, characteristics of local areas, and ancient monuments. The preparator Ya.S. Savelyev selected animals (birds, snakes, and fish, insects, etc.), prepared birds, and

⁵² Карта Коканского ханства и верховьев Амударьи // Известия ИРГО, 1873. - Т. IX. - СПб.: Типография В. Безобразова, 1873.

⁵⁴ Федченко А.П. Поездка в Кокан [Текст] / А.П. Федченко // Русский вестник. Журнал литературный и политический. Т.98. №4, Апрель. М.: Университетская типография 121 DOI:10.26104/NNTIK.2019.45.557 НАУКА, НОВЫЕ ТЕХНОЛОГИИ И ИННОВАЦИИ КЫРГЫЗСТАНА, № 1, 2020 Катков и Ко, 1872. - С. 729-736.

⁵⁵ Федченко А.П. Из Кокана [Текст] / А.П. Федченко // Материалы для статистики Туркестанского края. Ежегодник. - Вып. II. - СПб.: Типография К.В. Трубинова, 1873. - С. 387-404.

⁵⁶ Fedchenko A.P. Das Gebiet des obern Amu und die Orographie Centralasiens [Text] / A.P. Fedchenko // Mittheilungen des Vereins für Erdkunde zu Leipzig, 1872, pp. 7-8.

⁵⁷ e Khanikoff, N. Le Pamir, par M. Fedchenko [Text] / N. Khanikoff // Bulletin de la Société de Géographie. – Sixième série. - Т. III, année 1872 Janvier-Juin. – Paris: Librairie de ch. Delagrave et Cie. Éditeurs de la Société de Géographie de Paris, 1872. - P. 60-64

⁵⁸ Андреев Д.Л. и Матвеев, С.П. Замечательные исследователи горной Средней Азии [Текст] / Д.Л. Андреев, С.П. Матвеев / Под ред. Н.Г. Фрадкина. - М.: Госу дарственное издательство географической литературы, 1946. - С. 57

prepared other animals for the collection. The translator, ensign G. Nurekin, performed the task of translating into the local population's affairs and needs.

The support of the expedition, the translation of letters to the Kokand government and the receipt of their replies were carried out by six young men of the Kyrgyz (Argyn tribe): Baitursun, Galibek, Bukanbay, Arslan, Bekboo and Sadyk. The young men were assigned the task of accompanying each member of the expedition and carrying the necessary equipment for the observations; one of them followed the cargo. As the most reliable, Baitursun was given the most important instrument - a barometer; Galibek A.P. Fedchenko, Arslan Olga Alexandrovna walked with him, Bukanbai with the preparator, Bekboo with the translator, and Sadyk with the luggage.⁵⁹

On June 6, the expedition crossed the border of the Kokand Khanate in the village of Mahram, where A.P. Fedchenko and O.A. Fedchenko held their first meeting with the Kokand people. On June 12, A.P. Fedchenko, as the leader of the expedition, was introduced to the khan and received by the khan at his palace. The audience did not last long, and only the letter of the governor-general was received, his health was asked, and the letter was read out and said "good"

Young men were appointed to accompany the expedition, and also gave an open order to the khan Fedchenko to ensure unhindered passage through each region: "Let it be known to the khokims, amins and other leading figures of the Margilan, Andijan, Shakhrikhan, Aravan and Bulakbashi districts and the cities of Osh, Uch-Kurgan, Sokh, Isfara, Charzhuy and others: six Russians, including one woman and seven servants, are traveling to see the mountainous regions. In each region and place, they are to be received as guests, refugees and Sarts do not harm them, and their journey is to be peaceful and pleasant. This order must be fully carried out." The open order was signed with the seal of Said-Muhammad-Khudoyar Khan..⁶⁰

After a brief tour of Kokand, Fedchenko, who had been there for several days, reported the following about the population of the khanate: "The population of the Kokand Khanate is Sarts and Kyrgyz. Sarts live permanently in villages and are therefore considered a peaceful population. Kyrgyz are nomadic, more restless people. Due to these two formations, there were always two parties in Kokand;

⁵⁹ . Федченко А.П. Путешествие в Туркестан. - Т.1. - Ч.2. В Кокандском ханстве [Текст] / А.П. Федченко. - СПб.; М.: Типография М. Стасюлевича, 1875. - [6], II, 160, [2] с., 2 карт, 6 л. ил.: ил. (Известия ИОЛЕАЭ. - Т. XI. - Вып. 7). На фронтисписе портрет А.П. Федченко.

⁶⁰ Федченко А.П. Извлечение из сведений о путешествии по Коканскому ханству в 1871 году [Текст] / А.П. Федченко // Известия ИРГО, 1872. - Т. VIII. - №1. - СПб.: Типография В. Безобразова и Ко, 1873. - С. 7-16

whichever party prevailed, the government in Kokand was either peaceful or more warlike."⁶¹

On the long journey, he was led by the guard-beg Abdu-Karim, appointed by the Kokand Khan, and accompanied by seven young men. A.P. Fedchenko followed the flow of the Isfara River to its large glacier on the Dzhiptyk bank, which is the source of the Isfara River. He writes about this glacier: "I have given permission to call the glacier I discovered and visited the Shurovsky Glacier, in honor of the famous geologist, traveler and Russian explorer G.E. Shurovsky, who was the president of the Society of Nature Lovers, attracted many young people to scientific activity, and on his instructions I made a trip to Turkestan."⁶²

At the headwaters of the Isfara River, in the Chichikty meadow, A.P. Fedchenko first met the Kyrgyz. He describes this meeting as follows: "For the first time I saw real Kyrgyz before me, that is, that part of the nomadic tribe that calls itself Kyrgyz, different from the neighboring Kazakhs and those who are usually called Kyrgyz by us. We have names for these real Kyrgyz: black-kyrgyz, tash-kyrgyz, or, as Nazarov wrote, petrified Kyrgyz. In appearance, they did not differ much from the Kyrgyz who came with us from Tashkent; only their facial features were somewhat harsher, which was similar to the difference between the Argyns from Tashkent and other Kazakhs. Their language is also slightly different, they understand each other perfectly."

After that, he visited the Kyrgyz-Kipchaks in the Katta-Aitmamat pasture and received information from them about the pastures in the surrounding mountains and various Kyrgyz tribes. At the headwaters of the Isfara River, along its tributaries, the Kyrgyz-Kipchaks migrated; they occupied the Dzhyptyk, Chichikty, Bersu and Kshemish pastures.

Karakul, Manatay, Mamak, Sukh-Surlyuk, Kallya-vaz, Chaartash. Their main leader was the traveler himself. In Kishemish, the Tokmak Kyrgyz also migrated; they were led by Abdurakhman-Ishik-aga. To the east of the Sokh, in the Ak-Seirlik, Raut, Polal, Kyzyl-Shimkent, Seirlik, Kyzyl-Orda and Gishtit pastures, the Noigut Kyrgyz migrated; their leaders were Ak-Kulu-Biy and Kasym-Biy. (in the Seirlik pasture); the third - Madali-Yuz-Bashi, taken to Kokon, because the Noiguts participated in the uprising. Further east, the Boston tribe migrates (pastures: Gabian and Kurotu), bii: Janal-Bii and Zhiau-Kesyak (bii: mullah Shamirza).

⁶¹ Федченко А.П. Об экспедиции в Кокан [Текст] / А.П. Федченко // Известия ИРГО, 1872. – Т. VIII. № 1. - СПб.: Типография В. Безобразова и Ко, 1873. - С. 5-20.

⁶² Федченко А.П. Путешествие в Туркестан. - Т.1. - Ч.2. В Кокандском ханстве [Текст] / А.П. Федченко. - СПб.; М.: Типография М. Стасюлевича, 1875. - [6], II, 160, [2] с., 2 карт, 6 л. ил.: ил. (Известия ИОЛЕАЭ. - Т. XI. - Вып. 7). На фронтисписе портрет А.П. Федченко.

A.P. Fedchenko provides information about the settlements of the Kyrgyz near the glacier and their appearance. The Kyrgyz practice agriculture in the village of Kara-Bulak. He talks about the fierce struggle between the rural population and nomads in the Kokand Khanate, including the uprising in Sokh. The Kyrgyz hunt using arrows.

In the village of Uch-Kurgan, he meets the former governor of Karategin, Muzafar-sha. In the conversation, he learns that the Pamirs are divided into two parts: Pamir-Kalyan (Large) and Pamir-Khurd (Small), almost twice as large as the first. The area of the Pamirs is described only in general terms: it is located in the mountains of Bam-i-Dunya (i.e. "Roof of the World"). This vast area extends from Tibet to Alai. Although we know from English travelers the exact locations of the Big and Small Pamirs, there are differences of opinion regarding the boundaries of the Big Pamir and its connections with neighboring regions. The author Henry Yule counts four more Pamirs in addition to the two named Pamirs: Pamir-Alichur, Pamir-Khargoshi (Sheep Pamir), Pamir-Sares and Pamir-Rang-Kul, not counting Pamir-Tagdumbash, because he has doubts about his own Pamir.

On July 17, the expedition set off south from Uch-Kurgan. On July 20, they climbed the Tengiz-Bai pass, which was a point in the mountains where the Tengiz mountain pass was located.

Having descended, the travelers reached Alai. They reached the village of Daraut-Kurgan, located in the western part of the Alai valley. He came to the Alai valley with Sultan Murad and Nur-Mahomed-Mirakhur, who were appointed by Margilan Beg. In front and behind them now rose the mighty mountain ranges of the Alai mountain country (Alaisky in the north, and the even more powerful Zaalaisky in the south). There was a kurkan here, which was built during the time of Alimkhan to control the nomadic Kyrgyz; during the time of Khudoyarkhan it was expanded due to bad relations with the Karantegins, and now a guard of 60 Kokand zhigits is stationed here. The border point with Karategin is 25 versts west of the kurkan, Karamok: the big Karamok belongs to the Kokands, the small Karamok to the Karantegins. They are separated by a ridge along the river - Karaul-Tyube. The head of the constantly nomadic Kyrgyz of Daraut-Kurgan and Alai Kyrgyz Ismail-Toksoba.

A.P. Fedchenko, while in Alay, provided detailed information about the geographical boundaries, climate, population, fauna and flora of this region. The population of Alay is "the Tayit (Teyit - Zh.N.) and Kipchak tribes of Kyrgyz; previously, the Kadyrcha (K(g)ydyrsha - Zh.N.) tribes of Alay also migrated, now they have moved to the Shugnan mountains. Alay Kyrgyz rarely go to Muksu; only the Karategin Kyrgyz, belonging to the Chook tribe, migrate there. The Chook

tribe is a branch of the K(g)ydyrsha tribe of Kyrgyz. Along with the above-mentioned tribes, Kyrgyz belonging to the Naiman tribe also live in Alay. In addition, A.P. Fedchenko, through surveys, establishes that Kyrgyz tribes live in neighboring Karantegin. He writes that Kyrgyz live only where the Muksu River joins the Surkhab. Tajik villages start from the village of Pildan, below the mouth of the Zanku River; this village consists of two parts: the upper part is occupied by Kyrgyz, and the lower part is occupied by Tajiks. The Kyrgyz also occupy the rest of the upper reaches of Surkhob⁶³.

During his travels, A.P. Fedchenko tried to collect as much information as possible about the area between the Southern Kokand Mountains and the Hindu Kush, that is, the Pamirs. From the Alai Kyrgyz, he learned that Shugnan borders Alai. These Kyrgyz told Fedchenko that from Alai, one can go down to Muksu through the Terz-Agar passes. After that, there is the Tafta-Korum pass, after which they cross the Kudara River, walk along the Kudara for a day and reach Tash-Kurgan (Shugnan Tash-Kurgan - J.N.). Shugnan belongs to the Tagarma region, where the Tajiks live and there is a kurgan of the same name. The most convenient route from Kokand to Shugnan runs through Tagarma. To the east of the Shugnan territories is the Sarykal region belonging to Kashgar. The Kyzyl-Art pass also serves to connect Shugnan (through Tagarma) and Sarykal. This name was mentioned by Hayward, but it was given to the entire mountain range, in fact this name was given only to the pass due to the presence of red mud. The interesting thing about Kyzyl-Art is that it is possible to pass through it to Kashgar, Sary-Kol and Tagarma. According to the Kyrgyz, if you start from Kyzyl-Art, you can reach the Great Kara-Kul in one day, which is seven days for a nomad traveler to circumnavigate.

If you go from Kyzyl-Art, you can reach the Great Kara-Kul - a large lake - in one day, which is seven days for a nomad traveler to circumnavigate. On Montgomery's map, the river flowing out of the Kara-Kul flows into the Yarkand River, and not into the Kashgar River as previously indicated; Fedchenko considers this to be very likely⁶⁴. The details of the passage through the Kyzyl-Art pass, given by many locals, gave Fedchenko reason to assume that in the western part of this mountain range there are at least saddles below the snow line; when passing through Kyzyl-Art, the road passes through this mountain.

In addition, let us dwell on the name of this mountain range; since there is no local name, I designated it as the Zaalaisky Range. Henry Yule in his monograph

⁶³ Федченко А.П. Объяснительная заметка к карте Кокандского ханства и прилежащих стран [Текст] / А.П. Федченко // Известия ИРГО, 1872. - Т. VIII. №6. - СПб.: Типография В. Безобразова и Ко, 1873. - С. 230-244

⁶⁴ . Федченко А.П. Об экспедиции в Кокан [Текст] / А.П. Федченко // Известия ИРГО, 1872. - Т. VIII. № 1. - СПб.: Типография В. Безобразова и Ко, 1873. - С. 5-20.

on the Oxus suggests calling it Kyzyl-Art. A.P. Fedchenko found this very unclear and inappropriate. It is only the pass that is called Kyzyl-Art, and the word "art" also means "pass" in Uzbek (kyzyl - red). In addition to the Kyzyl-Art, many passes in the Tien Shan mountains are named with various additions to the word "art", for example: Agart, Gezart, Kukart, and therefore it is difficult to apply this name to the entire mountain range. Therefore, until the structure, distribution and relationships of the mountain mass I saw are clarified, I propose to call it Zaalaisky.

Among the high, rugged mountains of the Zaalaisky range, A.P. Fedchenko singled out a peak and named it after the Governor-General of Turkestan K.P. Kaufman, who helped Fedchenko in all his research.

The stories of the locals convinced A.P. Fedchenko that the Pamirs really exist, although he once doubted their existence. In any case, the locals know the Pamirs by the name "Pamil" and distinguish them into Pamil-kalyan (big) and Pamil-khurd (small). The latter name is given to a high point on the road from Badakhshan to Yarkand; it is probably located west of the lake visited by Wood.

Information about the Great Pamir (Pamil-kalyan) varies. According to various indications, it can be sought in Badakhshan, Shugnan, or even Kashgar. But there is no doubt that in the summer only nomads live in the Pamirs; the altitude is so great that only those who have adapted to these conditions from a young age can live there. "Our Alai people could not breathe," says Kipchak bey Nur-Mahomed.⁶⁵

Based on the stories of the Kyrgyz, A.P. Fedchenko comes to the following conclusion about the Pamirs: "The locals call the Pamirs, the Big and the Small; there are two relatively equal areas, on the edges of which there are high mountains; from this area begins the southern, main branch of the Amu Darya. As I have already noted, the name Pamir is the name of a small area, and when mentioned by the locals it always means one of these two areas. In the system of geographical names, there have been attempts to apply the name Pamir or the Pamir Highlands to the entire area between the Pamir Khor (Small) and the Alai. I do not know whether the time has come for this, because the confirmation of this name depends on the structure and physical characteristics of the entire area, and at present there is not enough information to determine this."

A.P. Fedchenko recorded observations and information received from the Kyrgyz as "Danny". This information, obtained from the Kyrgyz in Alay, was a major contribution to the geography of this region, especially the northern edge of the Pamirs. He discovered the Zaalai Range and named its highest peak Kaufman

⁶⁵ Fedtschenko O. A. Fedtschenko's Reisen in Turkestan, 1868-1871 [Text] / O. Fedtschenko // Mitteilungen aus Justus Perthes' Geographischer anstalt über wichtige neue erforschungen auf dem gesamtgebiete der Geographie von Dr. A. Petermann. - 20 Band. - Gotha: Justus Perthes, 1874. - P. 201-206.

Hill. Fedchenko collected information about the passes leading to the Pamirs, especially the Kyzyl-Art Pass, which Russian military researchers and travelers used to travel to the Pamirs. He also collected information about the areas south of the Zaalai Range by means of surveys, and in his time he studied the geographical location of Karategin, Vakhsh, Darvaza, Shugnan and other places with great accuracy. He reflected this information on the map "The Kokand Khanate and the Amu Darya Rule".

Through the passes of the Little Alai, along the fast-flowing Ak-Bura River, he returned to the city of Osh. Having examined the surroundings of Gulchi, he went to the cities of Uzgen, Andijan and Namangan, and arrived in Tashkent on August 27, 1871. Thus, Fedchenko's expedition ended at the northern edge of the Kokand Khanate and the "Roof of the World".

Discussion

A.P. Fedchenko did not give up the idea of \ exploring the unknown territories of the Pamirs: "My sincere dream - to be in the Pamirs, which I had dreamed of since my trip to Turkestan in 1868 - did not give the expected result. I managed to reach only the northern edge and, most importantly, determine the orography of the parts neighboring the Pamirs from the north. As I noted above, my path stopped at the foot of the great heights called the "Roof of the World" - Bam-i-Dunya. I considered the Zaalaisky Range, which I saw, as the limits of this roof "It was clear that the Pamirs and the upper Oxus would not remain unexplored for a long time: either the Russians or the English would discover these secrets. I believe more (at least I would like to) that the Russians would do it and once again add their names to the geographical chronicle. I believe this because the Pamirs are much more convenient to enter from the north. It is very difficult to enter the mountains from the Indian side, and to reach the Amu Darya basin they would have to cross a vast mountainous region, where very wild and unfriendly peoples live. The conditions on the Russian side are much more favorable, and if only the Pamirs were required to be crossed (that is, not to say explored), then in a month it would be possible to reach Lake Serikul from Tashkent through the Pamirs and return."

A.P. Fedchenko's dream of crossing the Zaalai ridge and crossing the Pamirs did not come true. He writes about this with regret: "... My eyes... stared hard to the south, the grandeur and vagueness of the panorama fascinated me. But the heavy my snowy ridge breaks off like a wall at a distance of 30 versts. I had not yet dreamed that these mountains would become a real wall for me; I dreamed of quickly reaching the mountains and reaching the area where the "Roof of the World" (Bam-i-Dunya) is located in the imagination of the locals. Unfortunately, by

order of the Kyrgyz colonel, I was forced to limit myself to seeing only the border of the "Roof of the World". I still cannot speak of it without slander...".

When I recall these distrusts and despairs that I experienced in Aloy, I still feel pain. But what is to be done? It remains, if I do not see myself, to wait to hear from others, to find out what is hidden among these mountains" [15, p. 356]. A.P. Fedchenko did not know what was hidden beyond the Zaalaisky ridge: two years later, at the age of 29, he died tragically in the Swiss Alps

A.P. Fedchenko's work was successfully continued by his wife and son. Olga Alekseevna Fedchenko (1845-1921) was one of the first Russian naturalists. She was the daughter of Moscow University professor A.O. Armfeld. In 1867 she married the young naturalist A.P. Fedchenko and went with him on an expedition to Central Asia.

In 1871, O.A. Fedchenko, together with her husband, reached the village of Daraut-Kurgan in the Alai Valley, described the Zaalaisky ridge and marked the second highest peak of the Pamirs (7134 m) within it. This peak was named Kaufman's Peak by the Fedchenkos in honor of the Governor-General of Turkestan K.P. Kaufman, who made a great contribution to the scientific study of Central Asia.

After her husband's death, in 1873, O.A. Fedchenko headed the Turkestan Scientific Expedition considered it his duty to publish the materials of the Turkestan, attracted many scientists to this work and supervised the prepared works in his editorial office. Thanks to his high professionalism and energy, in two and a half years the materials were not only processed, but also printed. Among them was the lithographic album "Views of Russian Turkestan" based on illustrations drawn from nature by O.A. Fedchenko.

With the participation of the zoologist V.N. Ulyanin and other scientists, O.A. Fedchenko published several books on the flora and fauna of Turkestan at the expense of K.P. Kaufman, prepared for publication 24 volumes of "Works of the Turkestan Expedition" and attributed the authorship to A.P. Fedchenko. With his help, the albums "Journey to Kokand, Views of the Turkestan Locals and Anthropological Information" were also published.

Conclusion

he study demonstrates that the scientific activity of A. P. Fedchenko played a decisive role in the early exploration of the Pamir-Alai region and the formation of systematic geographical knowledge about Central Asia in the second half of the nineteenth century. His expeditions were not isolated journeys, but part of a broader process of institutionalized scientific research supported by academic and administrative structures of the Russian Empire.

Fedchenko's work significantly contributed to the development of historical and geographical understanding of the region. His collection of empirical data, mapping efforts, and descriptions of mountain systems, passes, and local populations refined previous conceptions of the Pamirs and adjacent territories. In particular, his identification of the Trans-Alai Range and his work on regional cartography marked an important step in transforming fragmented knowledge into a more coherent scientific representation of the area.

At the same time, the research shows that Fedchenko's scientific practice was closely connected with the intellectual environment in which he was formed. His education, participation in scientific societies, and engagement with contemporary scholarly networks shaped both the methods and objectives of his work.

Thus, Fedchenko's expeditions should be understood not only as geographical achievements but also as a key stage in the institutional and epistemological development of Russian science in Central Asia, contributing to the expansion of knowledge and laying the groundwork for further exploration of the Pamir region.

REFERENCES:

1. Валькова О. А. *Ольга Александровна Федченко, 1845–1921* / О. А. Валькова; отв. ред. Б. А. Старостин. — М.: Наука, 2006. — 32 с.
2. Леонов Н. И. *Алексей Павлович Федченко (1844–1873)*. — М.: Наука, 1972. — 6 с
3. Карта Коканского ханства и верховьев Амударьи // Известия ИРГО, 1873. - Т. IX. - СПб.: Типография В. Безобразова, 1873.
4. Федченко А.П. Поездка в Кокан [Текст] / А.П. Федченко // Русский вестник. Журнал литературный и политический. Т.98. №4, Апрель. М.: Университетская типография 121 DOI:10.26104/NNTIK.2019.45.557 НАУКА, НОВЫЕ ТЕХНОЛОГИИ И ИННОВАЦИИ КЫРГЫЗСТАНА, № 1, 2020 Катков и Ко, 1872. - С. 729-736.
5. Федченко А.П. Из Кокана [Текст] / А.П. Федченко // Материалы для статистики Туркестанского края. Ежегодник. - Вып. II. - СПб.: Типография К.В. Трубникова, 1873. - С. 387-404.
6. Fedchenko A.P. Das Gebiet des obern Amu und die Orographie Centralasiens [Text] / A.P. Fedchenko // Mittheilungen des Vereins für Erdkunde zu Leipzig, 1872, pp. 7-8.
7. e Khanikoff, N. Le Pamir, par M. Fedchenko [Text] / N. Khanikoff // Bulletin de la Société de Géographie. - Sixième série. - T. III, année 1872 Janvier-

Juin. - Paris: Librairie de ch. Delagrave et Cie. Éditeurs de la Société de Géographie de Paris, 1872. - P. 60-64

8. Андреев Д.Л. и Матвеев, С.П. Замечательные исследователи горной Средней Азии [Текст] / Д.Л. Андреев, С.П. Матвеев / Под ред. Н.Г. Фрадкина. - М.: Государственное издательство географической литературы, 1946. - С. 57

9. Федченко А.П. Путешествие в Туркестан. - Т.1. - Ч.2. В Кокандском ханстве [Текст] / А.П. Федченко. - СПб.; М.: Типография М. Стасюлевича, 1875. - [6], II, 160, [2] с., 2 карт, 6 л. ил.: ил. (Известия ИОЛЕАЭ. - Т. XI. - Вып. 7). На фронтисписе портрет А.П. Федченко.

10. Федченко А.П. Извлечение из сведений о путешествии по Коканскому ханству в 1871 году / А.П. Федченко // Известия ИРГО, 1872. - Т. VIII. - №1. - СПб.: Типография В. Безобразова и Ко, 1873. - С. 7-16

11. Федченко А.П. Об экспедиции в Кокан [Текст] / А.П. Федченко // Известия ИРГО, 1872. - Т. VIII. № 1. - СПб.: Типография В. Безобразова и Ко, 1873. - С. 5-20.

12. Федченко А.П. Путешествие в Туркестан. - Т.1. - Ч.2. В Кокандском ханстве [Текст] / А.П. Федченко. - СПб.; М.: Типография М. Стасюлевича, 1875. - [6], II, 160, [2] с., 2 карт, 6 л. ил.: ил. (Известия ИОЛЕАЭ. - Т. XI. - Вып. 7). На фронтисписе портрет А.П. Федченко

14. Федченко А.П. Объяснительная заметка к карте Кокандского ханства и прилежащих стран / А.П. Федченко // Известия ИРГО, 1872. - Т. VIII. №6. - СПб.: Типография В. Безобразова и Ко, 1873. - С. 230-244¹

15. Fedtschenko O. A. Fedtschenko's Reisen in Turkestan, 1868-1871 [Text] / O. Fedtschenko // Mitteilungen aus Justus Perthes' Geographischer anstalt über wichtige neue erforschungen auf dem gesamtgebiete der Geographie von Dr. A. Petermann. - 20 Band. - Gotha: Justus Perthes, 1874. - P. 201-206.