The OSCAR PUBLISHING Services
International Journal Of History And Political Sciences

VOLUME Vol.05 Issue09 2025
PAGE NO. 9-15
DOI 10.37547/ijhps/Volume05Issue09-03

Description of agricultural products in the bukhara emirate: based on the observations of a.k. Butenev's expedition (first half of the 19th century)

A. Nurov
PhD Candidate, National University of Uzbekistan named after Mirza Ulugbek, Tashkent, Uzbekistan

Received: 13 July 2025; **Accepted:** 09 August 2025; **Published:** 14 September 2025

Abstract: This article analyzes the agrarian system of the Bukhara Emirate based on A.K. Butenev's expedition, N.V. Khanykov's "Description of the Bukhara Khanate", and A. Lehmann's "Journey to Bukhara and Samarkand, 1841–1842". The study provides a detailed account of land tenure, irrigation obligations, and taxation practices. Irrigation works were imposed on the population, with particular emphasis on the role of officials such as the mirab (water master) and juyban (canal overseer). Furthermore, branches of horticulture and agriculture — including figs, peaches, apricots, apples, pears, grapes, melons, rice, cotton, and tobacco — are examined in terms of their cultivation and market value. The findings demonstrate that the agrarian economy of the Bukhara Emirate was highly diversified.

Keywords: Emirate of Bukhara, land tenure, irrigation system, agriculture, horticulture, cotton, N.V. Khanykov, A. Lehmann, Butenev expedition.

Introduction: In the first half of the 19th century, the Bukhara Emirate began to be studied in considerable depth by Russian and British envoys. This development was closely connected to the intensifying Anglo-Russian rivalry over influence in Central Asia. Between 1820 and 1850, researchers such as Budrin (1820), E.K. Meyendorff (1820), A.F. Negri (1820–1821), E. Eversmann (1823), P.S. Savelyev (1835), K.F. Butenev (1841), Alexander Lehmann (1841–1842), P.I. Demaison, I.V. Vitkevich, N.V. Khanykov (1843), I. Wolf (1845), and A. Burnes (1848) visited the region and left valuable descriptions.

In 1841, a Russian mission was dispatched to the Emirate of Bukhara. The missions of K.F. Butenev and Nikiforov were organized at a time when the activities of British explorers and agents in Central Asia had intensified. Archival materials relating to Butenev's expedition, preserved in the Foreign Policy Archive of the Russian Empire, contain information about his contacts with British officers Stoddart and Conolly (Postnikov, A.V. 2012).

The primary aim of this expedition was to search for precious metals and to organize their extraction and processing. Additionally, diplomatic objectives were pursued, which necessitated studying various aspects of the emirate. The expedition, which formally functioned under the pretext of a diplomatic mission, was led by Major of the Corps of Mining Engineers, Lieutenant General K.F. Butenev (1805–1863) (Malikov, A.M. 2010).

Between 1841 and 1842, the expedition under Butenev's leadership to Bukhara included geologists, specialists in mining and metallurgy, and an orientalist-philologist. Materials related to this expedition are preserved in the Russian State Historical Archive (St. Petersburg), within Fond 44 of the Corps of Mining Engineers' Headquarters, established in 1834.

In 1841, the Butenev-led expedition arrived in Bukhara. By August, the so-called "mining party"—comprising A. Lehmann (naturalist), N.V. Khanykov, Yakovlev, and G. Bogoslovsky (topographer) — had reached Samarkand (Malikov, A.M. 2019).

MATERIALS AND METHODS

This study employs a historical source-critical approach. The primary sources employed include materials from A.K. Butenev's expedition, N.V. Khanykov's Description of the Bukhara Khanate, and A.

Lehmann's Journey to Bukhara and Samarkand, 1841–1842. The information contained in these sources has been examined through a comparative-analytical method to identify the main features of land tenure, irrigation systems, and agrarian relations in the Bukhara Emirate.

Furthermore, by applying the methodology of economic history, the cultivation and market valuation of agricultural products (fruits and vegetables, cereals, cotton, and tobacco) were systematically analyzed. An ethnographic approach was also used to describe aspects of everyday life and subsistence patterns of the population. The research integrates historical-comparative and source-critical methods, thereby contextualizing the available details within the broader economic and social processes of the emirate.

RESULTS

A.K. Butenev's expedition sought to examine the natural resources, political system, social life, economy, and cultural environment of the Bukhara Emirate comprehensively. In his Description of the Bukhara Khanate, Nikolay Khanykov provided detailed accounts of land tenure, the fiscal system, and agricultural practices within the khanate. Likewise, A. Lehmann's Travel Account: Journey to Bukhara and Samarkand, 1841–1842, contains valuable information regarding patterns of land ownership. According to Lehmann, nearly all arable land in the emirate was artificially irrigated. Obligations connected to irrigation were structured as follows: rather than being subject to direct taxation, every landholder, serf, or peasant was required to send one laborer to work on the Kohik River (modern Zarafshan) or other major canals. These workers were responsible for cleaning canals, repairing dams, and constructing bridges. If a landholder was unable to send a laborer, a monetary payment of one to two tangas was made instead. Such payments were directed to the mirab, the official in charge of water management. The workforce engaged in canal maintenance operated under the authority of the emirate, and the repair of bridges also fell under state responsibility. However, when a road passed through a village, its upkeep, including bridges, was entrusted to the local inhabitants. Each canal was supervised by its head official, referred to as a juybon (Lehmann, A. 1969).

The foremost sector of agricultural production in the Bukhara Emirate was horticulture, which was widely developed across the entire territory of the state. Based on the comparative analysis of the works of A. Lehmann and N.V. Khanykov, the following observations can be made.

Figs (Anjir). Figs were cultivated throughout the Bukhara Emirate, though they required careful maintenance. The fruit ripened between late August and early September, and fig trees were irrigated once a week during the summer months. Well-maintained trees typically yielded 3–5 puds (approximately 49–82 kg), while the average yield was closer to 2 puds. Market prices for figs varied according to the harvest and overall fertility of the year, ranging between 15 and 30 tangas per batman (approx. 20 kg). The fruit generally reached maturity from late July to early August. In Qarshi, a particular variety known as the "blue fig" (zangori anjir) was cultivated; this type was larger and considered more palatable compared to the standard varieties usually sold in Bukhara's markets.

Peach (Prunus persica) was regarded as one of the most popular fruits in Bukhara. During the autumn season, bazaars were filled with this produce, where a batman (approximately 20 kilograms) sold for 10 –12 tangas. Peaches were classified into three main varieties: red, yellow, and white, typically ripening in early August. They were not confined to irrigated lands alone but were also cultivated extensively on the hillsides and semi-arid zones surrounding Samarkand and Qarshi. Remarkably, they required little specialized care. In naturally irrigated areas—such as the eastern foothills of Samarkand or the slopes of Kattakurgan—peaches grew under conditions similar to those of melons and figs. The finest quality peaches, however, were produced in Samarkand (Khanykov, N.V. 1845, 128). On average, one tanap (≈0.11 hectares) accommodated 100–150 trees, with a well-maintained tree yielding up to 10 batmans annually. In local markets, prices typically ranged from 8 to 12 tangas.

Colonel Stoddart, during his stay in Bukhara, reported observing a special variety of peach. This cultivar, characterized by its small size and smooth skin, was locally known as Ischalli. Later, it was introduced into English horticulture, where it came to be recognized as the nectarine (Khanykov, N.V. 1845, 225).

Apricots (Prunus armeniaca) were also widely cultivated across Bukhara, as well as in Qarshi, Balkh, and other regions. A single tanap typically held 50–60 trees. The flowering period resembled that of peaches, lasting 5–7 days, though the blossoms often remained on the trees for up to a month. Irrigation practices began approximately one month after Nowruz, followed by two to three additional waterings until the fruit reached maturity. During the ripening season, orchards required watering every ten days, with irrigation during the flowering period having a decisive impact on crop abundance. A healthy apricot tree produced roughly half a batman (10–12 kilograms) of fruit. Two main varieties were recorded, red and yellow, comparable in size to European apricots.

Market prices averaged 6–8 tangas per batman. Apricots were sold fresh from late May through mid-June, while dried apricots were priced at approximately 15 tangas or one tilla per batman. Later-ripening varieties cost between 6 and 10 tangas per batman.

Plums (Prunus domestica) bloomed like peaches, with their blossoms falling within fifteen days. Unlike peaches, however, plum trees were highly productive: on average, 80–90 trees were planted per tanap (≈0.11 hectares), with fruits ripening in August or September. A well-maintained tree yielded between 3 and 5 puds (≈50–80 kg), although some trees were capable of producing as much as one batman (≈20 kg) of fruit. Plums were commonly grafted onto apricot or peach stocks. Two main varieties were distinguished: yellow and red. Both were praised for their taste, with the red variety producing larger fruits, sometimes described as being "as thick as a wall." Fresh plums sold for 16 tangas per batman, while dried plums were valued at 1½ tangas according to Lehmann (1969) and between 2 and 4½ tangas according to Khanykov (1845). Although plum orchards were relatively scarce in the vicinity of Bukhara, the trees that did exist were highly esteemed. Some dried plums were exported to Persian markets, where they sold for as much as three tillas. In China, however, Bukhara plums were regarded as sour in flavor. Around Pandjikent, smaller but exceptionally flavorful varieties were cultivated.

Apples (Malus domestica) were among the most extensively cultivated fruits in Bukhara. East of Samarkand, entire orchards were devoted solely to apple trees, which were valued both in terms of quantity and quality. Virtually no land was deemed unsuitable for apple cultivation, and in many cases, the trees thrived even without regular tillage. In Bukhara, irrigation was carried out once per week, although in upland, spring-fed regions, this practice was not always necessary. Khanykov (1845) recorded eight distinct varieties of apples grown in the Emirate.

In addition to these eight, another variety appeared in Bukhara's markets that was notable for its exceptional storability, remaining fresh throughout the winter and well into spring. While this variety was not given a specific local name, its size, shape, and flavor were said to resemble Chinese apples and were comparable to the renowned apples of Crimea. These were typically harvested in late September and could be preserved until the following spring. Lehmann also reported that during January, he and his colleagues encountered "pear-apples" in Bukhara, fruits strikingly similar to those cultivated in Livonia (modern-day Latvia and Estonia), though noted as being superior in ripeness and flavor.

Pears (Pyrus communis), referred to as nashvati in Khiva, required little special care and were irrigated in the same fashion as apricots. A tanap usually accommodated 60–70 trees, with stronger specimens yielding between 5 and 6 puds of fruit. Market prices in Bukhara reflected the distinction between two principal varieties: a summer variety (nanaj) and a winter variety (tirmagi). The former typically sold for 16–17 tangas per batman, while the latter, prized for its longevity in storage, commanded higher prices, initially at 21 tangas and later rising to 30 tangas or more (Khanykov, N.V. 1845, 131).

Quinces (Cydonia oblonga) were cultivated throughout the orchards of Bukhara, extending as far as the Karatag Mountains. They required comparatively little water and were represented by two varieties: one larger and the other smaller. Flowering co-occurred with pears, and the fruits ripened by mid-autumn. A mature tree typically yielded 5–6 puds (≈80–96 kg). High-quality quinces were valued at no less than one tilla per batman (≈20 kg), while ordinary varieties were sold for 10–12 tangas. Quinces were rarely consumed raw but were instead used in soups and preserves. Their seeds had recognized medicinal value, commonly prepared as an infusion against diarrhea.

Cherries (Prunus avium) appeared early in the season. The first harvest sold for 32 tangas per batman, though prices later fell to 14–16 tangas. For winter storage and caravan provisions, cherries were dried, though production for trade remained modest. Dried cherries were sold at 3–4 tangas per funt (≈400 g).

Pomegranates (Punica granatum) enjoyed great popularity in the region stretching from the lower Zarafshan to Pandjikent, particularly in the Qarshi orchards (Lehmann, A. 1969, 231). Within the Emirate, however, cultivation was not widespread. Pomegranates were often imported from Shahrisabz and sold in Bukhara's markets (Khanykov, N.V. 1845, 125). The crop required intensive labor and irrigation: trees were watered twice in April, twice in June, and weekly from July onwards. A well-maintained tree produced 5–6 puds, whereas the average yield was closer to 2 puds. Early harvests fetched 25–30 tangas per batman, but prices dropped to 10 tangas later in the season. Two varieties were distinguished: sweet and sour, with the former being rare. The largest specimens were said to reach the size of a child's head. Because of their scarcity and labor-intensive cultivation, pomegranates were highly valued in Bukhara. Fresh fruits were consumed directly, while dried rinds were employed both as dyeing agents and medicinal substances.

Mulberry trees (Morus alba) were central to sericulture

in the Emirate. Typically planted along irrigation canals, they grew tall and wide without requiring special care. Lehmann noted that wild mulberries grew near Karatag, beyond Urmitan (present-day Navai Province), and extended further into the southern valleys of the Zarafshan.

Almonds (Prunus dulcis) were relatively rare in Bukhara and therefore not especially esteemed. They were more extensively cultivated in Samarkand and Shahrisabz, where yields were higher, as well as in some areas of Persia. Almonds thrived in lighter soils and with sufficient water. Prices fluctuated between 32 tangas and 2–3 tillas per batman.

Grapes (Vitis vinifera) represented one of the most significant branches of horticulture. Bukhara, Samarqand, and Qarshi were famed across Turkestan for their vineyards, which encompassed numerous varieties, often so diverse that travelers found it challenging to distinguish between them. Vineyards spread across all irrigated lands of the Emirate, from the upper Zarafshan Valley to Pandjikent and Urgut, with Lehmann even observing wild grapevines in the distant Karatau Mountains.

Viticulture was not only widespread but also profitable: even individuals of modest means could purchase small plots, plant fruit trees or vines, and generate substantial income. As a result, orchards expanded annually, increasing overall agricultural output. Vineyards were generally established on the best lands and irrigated twice yearly: once in winter (10–12 days after the lunar Navruz) and once at the end of May. In years of heavy April rainfall, the second irrigation was often omitted, as overwatering diminished sweetness and reduced the storability of grapes. On average, a tanap produced 20–30 batmans of grapes per year. Lehmann documented 11 varieties, while Khanykov listed 12 (Khanykov, N.V. 1845, 121–122). Grapes served three principal purposes: the production of wine, vinegar, and raisins.

The second branch of agriculture in the Bukhara Emirate was vegetable cultivation, which was widespread throughout the region. Unlike in some other parts of the world, no greenhouses were used; instead, level fields were manured, irrigated, and left to grow under open conditions. Vegetable gardening was particularly well developed in the city of Bukhara, where a wide range of crops were cultivated, including cabbage, radish, turnip, carrot, onion, cucumber, chickpea, mung bean, beans, pumpkin, watermelon, and melon. Since these products were also everyday elsewhere in the world during this period, they were not described in detail by observers. However, melons stood out as a distinctive product, valued for their remarkable diversity in form and taste.

Poppy cultivation (Papaver somniferum) was extensive throughout the Emirate, especially in the Miyankal region. Poppy was marketed in the bazaars of Bukhara and Samarqand in dried form. A single tanap (≈approximately 0.11 hectares) typically produced 14–15 batmans (≈approximately 280–300 kg) of poppy, with each batman selling for approximately two tillas. The crop emerged as early as February, flowered in May, and ripened by June or July. Although poppy seeds were pressed for oil, the production volume remained modest.

Melons (Cucumis melo), however, occupied a unique place in Bukhara's agrarian economy and cultural identity. For centuries, they were celebrated across the Islamic East, praised in Arabic, Persian, and Indian poetry for their sweetness and fragrance. According to Lehmann (1969), nowhere in Europe could melons match the delicate aroma and refined taste of those from Bukhara. Despite claims in other regions that melons were indigestible, in Bukhara, they were consumed in large quantities throughout nearly every season without adverse health effects. As such, melons became one of the staple foods of the population.

Local physicians classified melons according to their "temperament," dividing them into cooling (prescribed for fevers) and heating varieties (believed to raise body temperature). Lehmann documented three principal groups of melons:

1. Very early-ripening melons, which matured from late May to early June;

2. Early melons, flowering in early June and ripening by July, are consumed until late August. Their market price was typically 16 tangas per hundred fruits in midsummer, falling later to as low as four tangas.

3. Late-ripening melons, the famed winter melons of Turkestan. These flowered in late July, ripened in late August or September, and could remain in the fields until December, supplying bazaars throughout the winter.

Cultivation was labor- and cost-intensive: 500–600 seeds were sown per tanap, producing between 4,000 and 6,000 melons; in some cases, yields reached 1,000–2,000 fruits per tanap. Khanykov (1845, p. 140) distinguished two categories: (1) early melons with ten sub-varieties, and (2) late melons with six sub-varieties. Prices ranged from 16 tangas per hundred fruits (sometimes dropping to five) for early varieties, to between nine tangas and one tilla (occasionally 2½ tillas) for late melons.

Pumpkins (Cucurbita spp.) were also ubiquitous, grown in numerous forms and varieties. They were consumed

boiled, baked, or stewed, particularly during the winter months when they served as an important food source for peasants. Two main types were distinguished: edible pumpkins and gourd-like varieties used for utensils. Among the edible forms, five were recorded, including the "turban pumpkin" (dastar pumpkin), named for its resemblance to a traditional turban. Seeds of this type were even introduced into Orenburg, where the crop became known as the "Bukhara pumpkin." In total, nine varieties were cultivated (Khanykov, N.V.1845, 141–142; Lehmann, A. 1969, 240–241). Market prices varied seasonally: in spring, 100 pumpkins cost two tangas; in autumn, 4–5 tangas; in winter, the best varieties reached one tilla. Specific varieties such as dastar pumpkin sold for 12–13 tangas, chilam pumpkin for 12–15 tangas, and 100 chup pumpkin for 25–30 tangas.

Wheat (Triticum spp.) was the principal grain crop of the Emirate and was cultivated across almost the entire territory, including unirrigated lands. Even around Samarqand, vast dry fields of wheat could be seen. Local farmers distinguished three main types: red wheat, white wheat, and a huskless variety, the latter being more sensitive to cold and therefore sown in smaller quantities. Wheat was usually planted in September, with a tanap requiring approximately two batmans of seed. Average yields ranged from 5–8 batmans, though under favorable conditions, yields could reach 9–12 batmans (≈450–500 lbs). The winter wheat typically germinates by late March or mid-April and often requires supplemental irrigation after spring rains.

Rice (Oryza sativa) was cultivated under permanent irrigation, as the crop demanded abundant water. It was particularly common between Bukhara and Samarqand, especially in the Karmina district. Although less widespread near Bukhara itself, the yields were nonetheless significant. Prices in Miyankal placed rice seed at 15–17 tangas, with two batmans of rice retailing at 9–10 tangas. A tanap typically produced 36–40 botmans of rice, with maximum yields reaching 80–100 botmans.

Maize (Zea mays) was also widely cultivated, particularly around Qarshi and in the southern districts of Qashqadarya province, where climatic conditions favored its growth.

Onion (Allium cepa) — In Bukhara, onions were abundantly cultivated, with one pud priced at 10–12 tenga and one batman at 1.5–2 tenga. Among the local varieties, the so-called Chagani-Onion, originating from Chaganiyan, was particularly renowned for its large size.

Sugarcane (Saccharum officinarum) — By 1841, sugarcane was being cultivated around Qarshi, which led to a sharp increase in the price of locally produced sugar, rising from 3–4 tillas to as much as 13 tillas.

Cotton (Gossypium spp.) — Cotton was widely grown in Bukhara and played a central role in the emirate's economy. It was comparable in quality to the cotton produced in India and Turkmenistan. Planting typically began after August, and on average, one tanap yielded 5–6 batman of cotton (Lehmann, A. 1969). Market prices varied according to demand: 100 batman of cotton ranged between 25 and 30 tillas. Even in years of abundant harvest, prices remained high because cotton was a key export commodity transported by caravans to India and other regions. The so-called "red cotton" was the most commonly grown variety and was extensively used in local spinning. While most cotton was processed domestically into yarn, textiles, and other woven goods, raw cotton prices remained relatively stable, rising only slightly in winter when large volumes were purchased for export to Russia. On average, one batman of raw cotton costs about four tillas. Cottonseed (chigit) was sold for 32–40 tenga per batman, while one pud of cottonseed oil was priced at 12 tenga (Khanykov, N.V. 1845, 142).

Four varieties of cotton were distinguished in Bukhara: white cotton, with pure white fibers; and red cotton, whose seeds bore a reddish hue. The average price for one batman (≈ 20 kg) ranged between 25 and 30 tenga. Annual production was estimated at around 90,000 pud, though in poor years this figure could fall to 30,000 pud. The bulk of this production was exported to Russia, primarily via Orenburg.

Tobacco (Nicotiana tabacum) — Tobacco cultivation was also widespread and socially significant in the emirate, as it was commonly consumed in tea-houses and social gatherings. Production was particularly concentrated in Southern Bukhara, Samarkand, Qarshi, and Hisar (Lehmann, A. 1969). Large-scale plantations were noted around Kattaqurgan and Qarshi (Khanykov, N.V. 1845, 144), and even near Kitab, where Lehmann recorded extensive tobacco fields (1969, p. 251). Tobacco grew successfully in almost all parts of the emirate, with yields averaging 3–5 pud (≈ 50–80 kg) per tanap (≈ 0.11 hectares).

Agricultural Income — When agricultural land was cultivated half as orchards and half as grain fields, the estimated gross annual income amounted to 90,000,000 tillas. After deducting expenses for irrigation infrastructure, including canal construction, hiring canal workers, water-lifting devices, and maintenance, the net income was approximately 13,000,000 tillas. The total gross revenue from cultivated lands in the emirate reached 103,000,000

tillas, while irrigation expenditures accounted for 20,000,000 tillas. Consequently, the net agricultural surplus stood at 83,000,000 tillas. Overall, production costs consumed nearly 59 percent of gross output (Khanykov, N.V. 1845, 152–153).

DISCUSSION. This study demonstrates the complexity and multifaceted nature of agriculture, irrigation infrastructure, and economic activity in the Emirate of Bukhara during the first half of the nineteenth century. The data provided by A.K. Butenev's expedition, as well as the observations of N.V. Khanykov and A. Lehmann, serve as critical sources for examining the agricultural processes of this period. Their works confirm that the economic foundation of the Emirate was a land tenure system sustained by irrigation.

The advanced state of horticulture, particularly the quality and high market value of figs, peaches, apricots, apples, pears, quinces, pomegranates, and grapes, highlights the central role of this sector in the Emirate's economy. Furthermore, the large-scale cultivation of cotton, tobacco, rice, and poppy, and their significance not only for domestic consumption but also as commodities for external trade, illustrate the Emirate's integration into regional and international markets. This indicates that both internal demands and external commercial relations shaped the economic activity of the Emirate.

At the same time, the examined sources exhibit some aspects of subjectivity. Specifically, the accounts of Russian and European authors were often influenced by imperial interests and diplomatic agendas, resulting in a partial representation of Bukhara's agrarian system. Consequently, comparing these historical sources with contemporary archival documents and indigenous written materials remains essential for achieving a more comprehensive and balanced understanding.

Overall, agriculture in the Emirate of Bukhara was highly developed, diversified, and sustainable for its time. Nevertheless, issues such as social inequality, compulsory labor, and external economic pressures constituted its underlying vulnerabilities. These aspects underscore the need for future research to explore these dynamics in greater depth and within a broader historiographical framework.

CONCLUSION

The observations of A.K. Butenev's expedition, together with the works of N.V. Khanykov and A. Lehmann, provide invaluable insights into the agrarian system, irrigation practices, and agricultural production of the Emirate of Bukhara. Their accounts demonstrate that land tenure and irrigation labor obligations constituted the economic backbone of both the state and society, where compulsory labor—such as canal digging and the repair of dams and bridges—functioned as a substitute for direct taxation. The wide development of horticulture, particularly the cultivation of figs, peaches, apricots, plums, apples, pears, quinces, pomegranates, and grapes, illustrates the central role of fruit-growing in the economy. Likewise, the production of cotton, tobacco, rice, and poppy crops was significant not only for domestic consumption but also for external trade. Collectively, these findings indicate that the Bukhara Emirate possessed a highly diversified agricultural system.

REFERENCES

1. Meindorf, E.K. Voyage d'Orenbourg à Boukhara. Paris, (1826): 508.
2. Meyendorf, E.K. Puteshestvie iz Orenburga v Buxaru. Moskva, (1975): 180.
3. Meyendorf, E.K. A Journey from Orenburg to Bokhara in 1820. Trans. Capt. E.F. Chapman. Calcutta: The Foreign Department Press, (1870): 90.
4. Budrin. "Russkie v Buxare v 1820 godu (Zapiski ochevidtsa)." Spravochnaya knizhka Orenburgskogo kraya na 1871 god. Orenburg, (1871): 45.
5. Butenev, K.F. "Ob uvelichenii sbyta izdeley russkix gornyx zavodov v Buxariyu." Gornyy zhurnal, Ch.IV, Kn. XI. Sankt-Peterburg, (1842): 168–175.
6. Butenev, K.F. "Monetnoe delo v Buxarii." Gornyy zhurnal, Ch.IV, Kn. XI. Sankt-Peterburg, (1842): 154–156.
7. Butenev, K.F. "Zavodskoe delo v Buxarii." Gornyy zhurnal, Ch.IV, Kn. XI. Sankt-Peterburg, (1842): 148–154.
8. Eversmann, E. Reise von Orenburg nach Buchara. Berlin, (1823): 150.
9. Eversman, E.A. Puteshestvie iz Orenburga v Buxaru. Per. s nem. I.V. Xramova. Orenburg: Orenburgskoe knizhnoe izdatel'stvo im. G.P. Donkovtseva, (2023): 288.
10. Savel'ev, P.S. Buxara v 1835 godu: s prisoedineniem izvestiy obo vsex evropeyskix puteshestvennikax. Sankt-Peterburg, (1836): 26, tip. N. Grecha.
11. Burns, A. Puteshestvie v Buxaru. Ch. 2. Moskva, (1848): 514.
12. Lehmann, A. Reise nach Buchara und Samarkand in den Jahren 1841 und 1842. Osnabrück, (1969): 364, Biblio Verlag.

13. Leman, A. Reise nach Buchara und Samarkand in den Jahren 1841 und 1842. Sankt-Peterburg, (1852), Tip. Imperatorskoy Akademii nauk.

14. Zapiski o Buxarskom xanstve (Otchety P.I. Demezona i I.V. Vitkevicha). Moskva: Nauka, (1983): 154.

15. Xanykov, N.V. Opisanie Buxarskogo xanstva. Sankt-Peterburg, (1843): 284.

16. Solov'ev, M.M. Uchyonaya ekspeditsiya v Buxaru v 1841-1842 gg. pri uchastii naturalista Aleksandra Lemana. Moskva–Leningrad, (1936): 208.

17. Rossiyskiy Gosudarstvennyy istoricheskiy arxiv. F. 44, op. 2, d. 704.

18. Postnikov, A.V. "O tselyax i zadachax rossiyskoy missii 1841-1842 gg. v Buxaru." Problemy vostokovedeniya, 3(57), (2012): 82–87.

19. Djurabaev, D.X. "Issledovanie istorii Buxarskogo emirata russkimi i evropeyskimi avtorami XVIII–XIX vv." Istoriya, (2015): 212–219.

20. Malikov, A.M. "Nekotorye aspekty istorii Buxarskogo emirata v predstavleniyax chlenov missii K. Buteneva (1841-1842 gg.)." In: O'zbek davlatchiligi tizimida dargoh va devonlar faoliyati. Tashkent, (2019): 168–180, Akademnashr,

21. Malikov, A.M. "Samarkand v nachale XIX veka." Moziydan sado, (2010): 1–5.

22. Xolov, M.Sh., Kamomova, X.A. Metrologiya i xronologiya Vostochnoy Buxari i Zapadnogo Pamira (XVIII–XX vv.). Dushanbe, (2013): 212, Donish.