

THE ROLE OF TURQUOISE MINE IN MIDDLE ASIA

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A B S T R A C T	K E Y W O R D S
This article talks about the turquoise mine located in the ancient Ilaq and its place in the civilization in the formation and gradual development of the Central Asian civilization. In addition, scientific research and views of many archaeologists and scientists on the study of the mining and mining industry in the regions are presented in order of importance.	mine, turquoise, society, mountain, Ilaq, Aqtoproq, Ungurlikon, archeology..

INTRODUCTION

Minerals play a major role in the economic and political history of society. All human production activities, from the creation of stone tools to the production of the most complex machines, are connected with their use. The use of ore minerals, according to F. Engels, was one of the revolutionary turns in the life of society. From this it becomes clear how important the study of the use of minerals is for the history of society. It allows to identify historical sources, as well as to study the production activity of miners by its material traces - mines, dumps, ore enrichment centers, smelters, slag, finished products, various tools and household items. The production objects and volumes of the country, the nature and direction of work, the level of technology and technology, the composition of the workforce and, in general, the level of productive forces and the economic role of certain regions, that is, the most important, allow us to get answers to questions that remain unknown (if based only on information from written sources).

It is known that the possibilities of mining and processing some minerals were not the same in different periods. In this article, we want to consider the origin and history of the ancient Ilak turquoise.

If we look at the archaeological research, it shows that the extraction of turquoise continued from the early centuries AD to the Middle Ages. In the past, excavation works in the mine were carried out in the volume of more than 300 thousand m³, which allows Ungurlikon to be included among the largest mines in Ilaq. In Chinese sources, information about the mining of the famous blue stone-se-se on a high mountain on the eastern side of the Choch capital is related to Ungurlikon. Feruza - "triumph stone" was one of the rarest products in ancient times. Choch is the largest supplier of this product on the Great Silk Road. It is assumed that Feruza's ancient Turkic name - chach (ses) gave its name to the estate and then to its capital in the first half of the 1st millennium AD (Yu.F. Buryakov). Beruni called it Ilaq turquoise and noted its high quality and high price. By this time, the mine finished its activity. Pure sky-blue turquoise is considered one of the precious stones, and the mineralogist Beruni of the 11th century gave very interesting information: "I saw Ilok turquoise, its weight was 200 dirhams, and

I valued it at that time at 50 dinars, but because the Ilok mine was dry and abandoned, now its price was two hundred dinars.

The last part of this phrase is not completely clear to this day - it is difficult to know whether the reserves of the Ilok mine were exhausted at the time when Beruni wrote his work, or whether this was an addition of later scholars, but one thing is clear that in the Middle Ages, the "stone of victory" - turquoise was mined in the Ilok mines. based on facts. On the western coast of Karamazar, there is even a place called Firuzakon - a "turquoise mine", but the size of the ancient works there is not very significant and has not attracted the attention of ancient researchers. In Ilaq region, unique large deposits of turquoise stone were found in Ungurlikon, Okpuproq, Konimansur, La'l stones in Badakhshan mountains. During the research, geologists and archaeologists paid attention to the strange structure of ore rocks in the large deposits of Aktoproq and Ungurlikon. They were found to be gold, but low quality turquoise was also found in their dumps.

Ancient Choch (Shosh), i.e. ancient Tashkent oasis, is one of the largest regions of Central Asia. Choch, which is surrounded on three sides by the Chotkal-Kurama mountain ranges, adjacent to the Karamozor hills of Snowy Tyon-Shon with sky-high snow, has a great potential for farming. Fertile lands of Chirchik and Okhangaron oasis, serot pastures consisting of mountain hills, regions with beautiful landscapes of foothills and steppes, as well as lowlands on the left bank of Syrdarya served as the main source of economic development of the oasis. In particular, the mineral deposits in the mountains, which are closer to the original and non-ferrous metals and precious stones, played an important role in strengthening the economic potential of Choch. Mining of these underground resources (gold in Koshbulok, silver in Lashkarak, turquoise in Ungurlikon) was actively started in ancient times.

Turquoise is a mineral. Chemical composition $\text{SiAl}_6[\text{RO}_4]_4(\text{OH})_8\text{N}_2\text{O}$. Triclin crystallizes in syngonia. Hidden crystalline solid masses, bud-like aggregates, pustules, veins are formed. Depending on the structure of mineral aggregates, it has a hard and soft appearance. The color of solid Turquoise is blue and sky blue, changing to green, brownish green and brown. Soft Turquoise is found wet, hardens when dried. The color is liquid, light purple, light green and light green. Hardness 5-6, density 2.6-2.8 g/cm³. Dull, dull, waxy. Turquoise is a hypogene mineral found in the oxidation zone of copper deposits and in quartz veins and weathered quartz porphyries. Turquoise is found in association with kaolin, gallusite, jarosite, alunite, opal, barite, chrysocols. It is used as a precious stone in jewelry. It has been known in Uzbekistan for a long time. It has been valued as a precious stone in Eastern countries. For a long time, Central Asia has supplied other countries with Feruza. The largest mine is Nishapur (Iran), F. in Uzbekistan. It is found in Central Kyzylkum and Kurama, Karatepa, Sultan Uvais mountains.

Located mostly on the right bank of the Nakpaysay, the entire area includes the Akjen Mountains, dotted with ancient monuments, as well as low terraces along the stream. They penetrate to a depth of more than 70 m and reach underground waters.

The total length of the Akdjen-Oktoprokh strip, which was developed in antiquity, is 2.5 km. As in other mines, the ancient miners of Aktoprokh selected the ore and went exactly along the hill, and their work exactly repeated the shape of the ore bodies.

In order not to install special fasteners, pillars of ore rocks were preserved in some places of the houses to hold the roof. Several broken stone hammers and potsherds were found on the hillsides and near the

rock piles. Among the dishes, bowls covered with white-green and blue glaze were found, which were identified as belonging to the 10th-12th centuries.

For many years, there has been a debate among geologists about what was mined in Aktoprokh, many of them argued that gold was mined. B.N. Nasledov, a great scholar of Karamazor, said that they may have even mined copper along with gold. A.B. Balatov and A.D. Kalenov emphasized that in the ancient works, not gold and copper, but turquoise was developed.

Archaeologists were also involved in this process, and according to the analysis of ore rocks and abandoned columns, it was determined that the main object of extraction is gold, which can be mined up to 3000 kg.

However, the debate cannot be considered completely concluded in favor of gold. According to some finds, they were found only in the vicinity of the mines where the turquoise mine was located. One such find is a 13 m long quarry, which was used as a porch. The outer surface was covered with turquoise, which was of very poor quality, and over time it was contaminated with iron oxide, but on the lower part there were samples of pieces of sky-colored turquoise.

This means that the ancient miners blew the "pockets" and dumped the low-quality minerals in the dumps and dug up the pure pearl. In terms of materials and appearance, such findings are considered to be younger than gold and are believed to belong to the 16th and 17th centuries. We can find out from random sources whether turquoise was mined by the rulers of Tashkent at that time, such sources can be found in the story of a Tajik writer of the 16th century. When Zayniddin Vasifi came to Tashkent in 1540, Sheikh Said Shamsiddin Muhammad came to Tashkent Khan Navroz. As a good calligrapher, Vasify suggests that the khan draw up a deed on giving all vacant lands and mines belonging to Tashkent to Said as the water manager, and the calligrapher cites such lines as "except for turquoise and iron mines", as it can be seen that in those days, turquoise and iron Excavated in the 16th century. In that period, turquoise was mined in Aktoprokh.

However, this information is confirmed to be the source of information about the existence of the mine 500 years after Beruni's announcement of the mine. So, Ilaq's turquoise mine should be looked for elsewhere. Here we are back to the mysterious Ungurlikon, located on the banks of the Pistalisoy tributaries, the left tributary of Ohangaron flowing into Abjaz. More than 30 ancient deposits are concentrated here on an area of 0.5 km², which are grouped into three clusters. The western and central deposits extend in the interradian direction, while the deposits located on the eastern side are scattered randomly. General analyzes show a high content of iron, aluminum and a number of non-metallic minerals.

Ungurlikon is the most important turquoise mine of Choch state. It is located on the northern slope of the Kurama Mountains, 3 km west of the village of Abzhoz, along the Ungurlioy and Pistalisoy reservoirs and the left tributary of the Okhangaron River, at an altitude of 1000 m above sea level. Cadmium deposit consists of quartz porphyrites with turquoise. It consists of two fields (Eastern and Western), which included mines of several years and maida.

Some geologists, for example, A.B. Batalov, assumed that turquoise could be mined here in ancient times. However, on the surface, this mineral was of such low quality that B.N. Nasledov emphasized the mysterious nature of the deposit and said: "It seems incredible that Ungurlikon rocks were mined in ancient times only to extract low-quality turquoise." And later, when traces of gold were found in the analysis, they believed that this noble metal was the main mining object of ancient people, and its mining was carried out centrally, and it was the main part of ore processing and enrichment. Since the

latter was not so reliable, geologists returned to the study of the mine. Archaeologists were also involved in the work, as they suspected the presence of waste rock typical of gold mines. Geologist S.V. Lopatin identified development rocks at a depth of 20 m, which is an area of 16,000 m². More than 300,000 m³ of turquoise zones 1-2 m thick, occupied by ancient mines, proved the existence of a source of large-scale ancient developments.

Fragments of vessels dating back to the X-XII centuries were found here. Exploration of this mine will continue. We cannot say that the Ilaq mines are fully explored today, although it is difficult to imagine that the Ilaq turquoise is known without the largest turquoise mine located in Karamazor.

There are also cited sources, from which we will quote one more piece of information. 3.5 km northeast of Konsoy, on the northern slope of Jidasoy, there are preserved turquoise mines, called Firuzakan by the people. The deposits are exhausted, but the remains are important. There are thin veins of poor quality turquoise on the abandoned remains and sides of the finished mine. In 1874, G. D. Romanovsky", studied by scouts since 1963; archeological research conducted by E.B. Pruger". Four developments are noted in this. The largest is a right-angled quarry measuring 110X15 m, the second is round with a diameter of up to 15 m, the third is oval -30X15 m, and the fourth is 12-15 m in diameter. The materials belong to the 9th-12th centuries. In general, the Konsoy site can be considered as a mining site not only for polymetallic ore (mainly silver), but also for iron and small-sized precious stones. Very interesting finds were found in Konsoy. In 1936, during the cleaning of the abandoned mines, ancient iron clamps and an ax with a double-edged blade were found. Its length is 12 cm, the width of the working part is 5 cm.

A.I. Demchuk found a hoe 100 meters away from an ancient mine, the upper part of the tool was a sharp-edged blade attached to a transverse wooden handle. The length of the tool is 16 cm, the maximum width is 11 cm.

In 1916, I.I. Bezdek found a glazed lamp in Kaysada and in the 1930s, which had traces of a bonfire. In conclusion, it can be said that in the olden days, Jan. in the part. Iloq, located in the Ohangaron river basin, is not only Qad. from farming and mining regions. Mil. 5-a. known as an independent state from Perhaps there were 17 cities that had a great economic and political status, and the rulers of Iloq were called "Peasants of Ilak". The inhabitants were engaged in farming, cattle breeding, large-scale mining and handicrafts. The inhabitants of Ilak were famous for their wariness and tyranny. Ilak was an ancient cultural center, whose statehood is a clear expression of its centuries-old roots. It was famous throughout the East for its rich mines. In addition, it is rich in various mineral and fossil resources, which we can cite as an example of the fact that turquoise deposits have been mined for a very long time based on the above information.

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