

From the History of Mining Industry in the Zarafshan Valley

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Abstract: The article, based on the materials studied, provides information about the untold wealth of the Zarafshan valley and the development of the mining industry, which dates back to the Middle Paleolithic period. On the basis of these source materials, the activity of the Navoi Mining and Metallurgical Combine, which is a sport in the mining industry, its current state, place and role in the economy of the Republic, has been analyzed.

Key words: mountain, rocks, tools, silicon, copper, tin, lead, Paleolithic, Mesolithic, stone, valley, oasis, desert, Zarafshan.

Introduction. Introduction. The territory of Uzbekistan is rich in its unique historical sites, historical and cultural attractions, among which a unique place is occupied by the Zarafshan Valley - the blessed ancient granary of our country, rich in amazing gorges, tracts that border the valley on both sides, as well as the endless steppes of Kyzylkum.

Thousands of years ago, the Kyzylkum desert was a vast savanna, rich in vegetation, plains, overgrown with shrubs, individual groups of trees and groves. There were also many large lakes and small reservoirs. According to scientists, in the Stone Age, the territory was inhabited by tribes of ancient hunters and fishermen, as evidenced by the large number of discovered sites of primitive people, their flint tools and tools of labor.(1,20) The climate here was favorable for hunting and fishing. In addition, numerous wild herbivores, objects of ancient hunting - primitive bulls, horses, camels, deer and others-lived in Kyzylkum. Found on the territory of the oasis, workshops for processing silicon wafers, indicate the development of the mining industry during the Stone Age.

Materials and methods. One of the oldest cultural monuments of the Navoi region is the Uchtuta silicon deposit. The Uchtut flint deposits are considered raw materials for the manufacture of stone tools of the Acheulean, Mustaeon and Upper Paleolithic. This monument was discovered in 1958 in the village of Uchtut in Navbakhor district and subsequently studied by scientists of the Uzbek Institute of Archaeology in 1966-73. A Middle Paleolithic settlement and a workshop for the production of stone tools in Uchtut were discovered in 1958 by the archaeologist X. Mukhammedov. The deposit was used as a source of raw materials not only during the Mustier period, but also during the Upper Paleolithic, Mesolithic and Neolithic periods. Up to a hundred Neolithic workshops have been discovered in Uchtut.(2,8)

In 1959, near the village of Ijand, the famous scientist and historian A. P. Okladnikov discovered a workshop for making products from local silicon. It was revealed that the workshop had existed for ten thousand years. Later, up to hundreds of ancient mines and workshops for processing silicon wafers were discovered near the villages of Uchtut and Ijand.

Later, in the very middle of the desert, in the lot of Lyavkan, in one of the ancient lake basins,

archaeologists in different years discovered up to four hundred sites, including the sites of hunters and fishermen. Here the most ancient dwelling of the person from reeds, branches, skins was opened. These dwellings also belong mainly to the Stone Age. It shows that the ancient man in these places has already made a major step forward in comparison with the cave location.(3.64) Copper deposits and up to ten mines were also discovered on the territory of Lake Lavlyakan, where copper was melted down and then transported to Beshbulak.

Geological studies of Central Asia in the 30s of the last century showed the presence of a tin-bearing ore belt, and in the early 1950s, traces of ancient workings were found in the Ziatdino-Zerabulak mountains, which fall mainly on the Karnab, Changalli, Lapas deposits. The points of ancient tin mining were studied by B. A. Litvinsky.(4.11)

In the 50-s of the last century, a group of archaeologists led by Ya. Gulyamov with the participation of A. Askarov and U. Islamov began to study the ancient human dwellings of the Neolithic era, the largest of which is Zaman Baba. Objects made of copper were found on the discovered risers like Lavlakan and Beshbulak. Arrows, knife weapons, stone beads from women's graves, gold necklaces, mirrors, copper needles and beads were found on the northern shore of Lake Zamanbaba(5.25).By the 4th millennium BC, they had discovered the extremely valuable properties of the metal, that is, that copper liquefies under high heat and retains its shape after cooling.

A comprehensive study of the Kyzylkum steppes, in particular the lower reaches of Zaravshan, led by A.V. Vinogradov in the 70-80s of the last century, led to the discovery of the Mesolithic sites of Chokbakty, Ayakagitma, Daryasai, Echkiliksai, rich in silicon deposits.

In the course of archaeological work under the leadership of Oleg Obelchenko in Kiziltepinsky district, Navoi region 1952-53, burial grounds with various household utensils were discovered. Military armor in the form of arrowheads, daggers, knives, as well as mirrors made of bronze, spinning tools, beads made of various stones, etc. attract attention(6,15)Not far from Samarkand, on the heights of Chulpan-ata, which is formed from red clay and slate, known in the Middle Ages as Kuhak, ceramic dishes were made, and Chulpanatinsky slate was widely used in construction.

At the beginning of the XX century, interest in the golden sands of Kyzylkum increased. In 1912, the geologist Andreev found gold deposits in the "sandy hell", in the center of Kyzylkum.(7.57) The historical luck that befell the Kyzylkum people and the discovery in 1952 of a uranium deposit near the three wells of the ancient caravan route from which the city of Uchkuduk was named, which means "Three Wells", and in 1958 of a gold deposit in Muruntau became a decisive link in the future fate of the entire region. By order of the Ministry of Medium-sized Machine-building of March 11, 1958, the Council of Ministers of the USSR adopted Resolution No. 206-99 on the construction of a mining and metallurgical plant within the Ministry of Medium-sized machine-building within 7 years.(8,25)

The largest investment project of Western capital in the mining industry of Uzbekistan was the creation in May 1995 of the joint Uzbek-American enterprise "Zarafshan-Newmont", which uses the latest technology for processing gold-containing ores by heap leaching from previously deposited poor ores of the Muruntau deposit. During its existence, the joint venture has produced more than 150 tons of gold.(9.86). In 2006, due to large debts, Zarafshan-Newmont ceased to exist as a joint venture and became part of GMZ-2 as a heap leaching plant. American investors withdrew from the company.

Since 1995, the plant has become the main supplier of uranium to the American market, and now it is one of the largest producers of uranium and gold on the planet. Its products of the highest class are

world-famous and have been awarded many international awards and prizes. The highest quality of Muruntau gold was noted by the Tokyo Mercantile Exchange, which in April 1998 awarded the status of "optimal supply" to the gold of Uzbekistan produced at GMZ-2. (10.) In 2019, the London Association of the Precious Metals Market awarded it a certificate for full compliance with market requirements.

Up to 2012 Navoi Mining and Metallurgical Combine has up to 15 large gold deposits and 30 deposits of uranium ore reserves on its balance sheet. (11,19). Within the Nuratau-Kyzylkum region, gold deposits are located in three gold mining areas: Muruntau (in the central part of the Kyzylkum desert), Bukantau (in the northern part of the Kyzylkum desert) and Samarkand (in the Nuratinsky and Zirakbulak-Ziaetdin Mountains). Most of the gold-bearing ores are extracted on the basis of the Muruntau and Muntebay deposits.

In 2017-2019, 8 new facilities were put into operation, which allowed to increase the volume of gold production by 2.5%, silver-by 37 %. In January 2019, the Decree of the President of the Republic of Uzbekistan No. 4124 provided for the reorganization of the plant into an open joint-stock company.(12) The reorganization provided for the creation of the state enterprise for the extraction of uranium "Navoiuran", the open joint stock company for the extraction and processing of precious metals "Navoi MMC", and the state institution "NMMC Fund".14 geological objects were allowed to be transferred to the right to use its subsoil for mining, without holding public auctions, and charging fees for issuing licenses. As well as 43 plots for the right to use the subsoil for geological study.(13)

Acknowledgement. There were legends about the inexhaustible mineral resources of the Kyzylkum mountains in ancient times, which may have caused the great kings of Ancient Persia, and then Alexander the Great, to make conquests in these regions. More than 2.5 thousand years ago, the Greek historian Herodotus wrote in the pages of "History in nine Books" that the Massaget tribes living on the territory of the Kyzylkum "do not use iron and silver at all, because there are no metals in their country, while gold and copper are abundant."(14,12)

The farmers who live on the shores of Zarafshan have preserved an old belief similar to the legend of the golden rune of Colchis. According to this belief, it was enough to hold in the fast water of Zarafshan, which takes its source from the mountains, a sheep's skin crushed by a stone, as the smallest golden grains, driven by the current, would settle on the wool. History has also preserved the extraordinary finds displayed in the Hermitage and in other famous museums around the world. These finds from the Scythian mounds go back to the oldest civilizations in the Amu Darya, Zarafshan, and Panj. Since time immemorial, the Sogdians have possessed the secrets of metal smelting and jewelry making.

In the late 50-s of the XX century, as a result of the discovery of a deposit of uranium and gold, in the heart of one of the greatest deserts of the planet, the Navoi Mining and Metallurgical Combine was built in Central Kyzylkum. By the 80s, it included the Northern, Eastern, Central, and Southern mining departments; factories, dozens of experimental workshops, factory laboratories; a Central research laboratory; and new rotary complexes and underground mines. New deposits of gold and uranium were developed: Sugraly, Sabyrsay, Muruntau, Kokpatas, Daugyztau, Northern and Southern Bukinai. Exploration expeditions in Central Kyzylkum discovered deposits of silver, tungsten, marble, manganese, turquoise, phosphorites, table salt, quartz sand for the production of glass, faience, ceramics. In difficult natural and climatic conditions, the cities of Uchkuduk, Zarafshan, Nurabad,

Zafarabad with social infrastructure, main roads and railways, rest homes, dispensaries, and children's camps were built.

Conclusion. Thus, the beginnings of the development of mining industry in the Zaravshan valley, scientists refer to the period of the Middle Paleolithic, when our ancient ancestors began to extract and use flint plates in the economy. In the Zarafshan valley, one of the oldest civilizations on earth - the Sogdian civilization-emerged. Since ancient times, this valley served as a corridor along the Great Silk Road, along which there was a great dialogue of cultures, communication, and trade between the peoples of the East and West. Intensive trade along the Bukhara Sughd went through the cities of Paykend, Varakhsha, Ramish during the rule of Parthia, and then Sasanian Iran in the IV-II centuries. And in the Middle Ages, during the reign of Amir Temur, it reached its highest peak.

Archaeological expeditions on the territory of the Zarafshan oasis in the 50s of the XX century led to the discovery of sites and workshops for the production of silicon, copper, dating back to the early periods of the Stone and Copper Ages. But especially great attention is drawn to research related to gold mining, which became the "Discovery of the Century" in 1958, and the construction of the Navoi Mining and Metallurgical Combine on the basis of the uranium and gold deposit. Over the years of independence, the plant has taken a strong third place in gold production and the fifth place in uranium production among world producers, and supplies 80% of the total volume of gold in Uzbekistan. We have established mutually beneficial partnerships with more than 90 major foreign companies. As a result of detailed contracts, the plant carries out not only the supply of natural resources, but also machinery, equipment, their assembly and installation. New equipment and, accordingly, new technologies appeared in almost all divisions of NMMC, first of all, it affected the gold mining complex. In the course of the reform of the mining industry system, structural divisions are being created on the basis of the plant, with the activities of which it will be possible to increase the book value of the enterprise from \$ 1.3 billion several times.

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