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Ornaments Crafted from Precious Stones in Central Sogd: Evidence from The Kafirqala Archaeological Site

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ABSTRACT

This article examines the art of working precious and semi-precious stones in Central Sogd during the early medieval period, with particular emphasis on archaeological discoveries from the Kafirqala site near Samarkand. The study analyzes artifacts made from minerals and gemstones such as almandine, malachite, nephrite, agate, and rock crystal, concluding that these materials were used not only for personal adornment but also for protective, symbolic, and medicinal purposes. The article further highlights the high level of craftsmanship achieved by Central Sogdian artisans in stone working, demonstrating how their creations reflected the region's commercial activities, cultural interactions, and religious beliefs.

Keywords: Sogd, Kafirqala, stone working, precious minerals, almandine, malachite, nephrite, agate, rock crystal, craftsmanship.

INTRODUCTION

Historical sources and archaeological evidence indicate that trade, musical culture, fine and applied arts, and various crafts flourished in Sogd during the early medieval period. In particular, such branches of craftsmanship as pottery, blacksmithing, jewelry making, and textile production ranked among the leading industries, supplying not only local markets but also foreign regions through the Silk Road trade network. In recent years, archaeological investigations conducted at Sogdian urban sites, including the Kafirqala archaeological monument near Samarkand, have yielded important findings concerning the craft tradition of processing precious and semi-precious stones.

The Kafirqala (Rivdad) archaeological site, which served as the suburban residence of the rulers of Samarkand, is situated 18 km south of ancient Afrosiab on the right bank of the Dargom Canal (Berdimurodov & Indiaminova, 2017, p. 93). The monument consists of the three principal components characteristic of early medieval urban

centers—the citadel (ark), the inner city (shahristan), and the suburban quarter (rabad) (Berdimurodov, Mantellini, & Matbabaev, 2007, pp. 73–75).

Excavations carried out in the citadel of Kafirqala revealed ornaments made from precious and semi-precious minerals and stones, including almandine, malachite, nephrite, agate, and rock crystal, recovered from cultural layers dating to the seventh and eighth centuries.

METHODS

The study employs historical analysis, comparative classification, iconographic analysis, chronological periodization, and comparison with written sources.

DISCUSSION

The ornament crafted from malachite is characterized by a green surface marked with dark striped patterns. Its base is

flat, while the front surface is smooth and slightly convex. The object resembles a horned leaf in shape, with two lateral projections extending to either side and a central projection directed upward. Traces of breakage were observed along its lower portion. The ornament measures 7×6 mm and is 2 mm thick. It was most likely originally pentagonal in form and probably served as a gemstone inlay for a piece of jewelry, such as a pectoral ornament or a diadem (Fig. 1). Despite its small size, the artifact is visually striking because of its vivid color and lustrous appearance.

The term malachite is derived from the Greek word malache, meaning “green plant.” According to Al-Biruni, “dahnaj (malachite) is a bright green stone containing patches of zindjariya (copper-like green lustrous spots) and fine black veins” (Beruni, 2011, p. 228). Copper (Cu) constitutes its principal chemical component, and its hardness ranges from 3.5 to 4 on the Mohs scale (Shuman, 1986, p. 52). As a relatively soft mineral, malachite requires careful handling and use. It has been known since antiquity and was widely employed in ancient Greece and Egypt for decorating the interiors of buildings as well as for producing jewelry and amulets (Putolova, 1991, p. 118). Malachite typically occurs in association with oxidized copper deposits. Citing al-Kindi, Ibn Nasr, and Muhammad ibn Zakariya, Al-Biruni noted that “malachite is found among copper deposits in Kirman, Sijistan, Arabia, Egypt, and Khurasan” (Beruni, 2011, p. 229). At present, the principal malachite deposits are located in the Ural Mountains of Russia and in Hungary, while occurrences of the mineral are also found within the copper ore deposits of the Tashkent and Fergana Valley regions of Uzbekistan.



Fig. 1

The next artifact is an oval-shaped gemstone made of colorless, transparent rock crystal, which most likely served as the setting of a ring or another piece of jewelry. It was fashioned in the cabochon style, with a flat base and a convex upper surface. The stone measures 1.4×1.9 cm in diameter and has a thickness of 4 mm at its center and 2 mm along the edges (Fig. 2). According to L. S. Putolova in *Samotsvety i tsvetnye kamni*, the term rock crystal refers to colorless, transparent quartz crystals, and its name is derived from the Greek word *krystallos*, meaning “ice” (Putolova, 1991, pp. 50–51).



Fig. 2

The second artifact made from the same material is a bead of nearly spherical shape. A perforation was drilled through its center to allow it to be strung on a thread or cord. The bead measures 1.5×1.3 cm, while the diameter of the central perforation is 1 mm.

According to Al-Biruni, “bullur (rock crystal) possesses the lightness of air and the purity of water. Its deposits are found in Kashmir, Badakhshan, Armenia, and Byblos” (Beruni, 2011, p. 217). Rock crystal has a hardness of 7.0 on the Mohs scale. The specimen recovered from Kafirqala likewise exhibits considerable hardness and is capable of scratching or cutting ordinary glass. Since ancient times, this stone has been attributed with magical properties. Diodorus, the first-century BCE author of *Library of History*, wrote that “crystal is not ice formed by cold, but the purest water transformed into ice by the power of divine fire” (Putolova, 1991, p. 51). Al-Biruni expressed a similar view, stating: “I possessed a crystal sphere within which there was a single grain from an Indian plant. The crystal craftsmen of Basra testified that they had found ash, fragments of wood, and small stones enclosed within crystal. It is evident that such objects could only have become embedded in the crystal while it was still in a liquid state” (Beruni, 2011, p. 221). Rock crystal has long been regarded by various peoples as a symbol of purity and

modesty. It was widely used in the manufacture of vessels as well as ornamental objects and jewelry. Al-Biruni recounts that when Ya'qub ibn al-Layth captured Muhammad ibn Tahir after attacking the Khurasanian capital of Nishapur and demanded access to the treasury, they entered a chamber containing vessels, where Ya'qub ibn al-Layth observed polished and intricately carved crystal objects (Beruni, 2011, p. 220).

An amulet is an object associated with religious beliefs and is traditionally thought to protect its owner from the evil eye, misfortune, disasters, and malevolent supernatural forces. An amulet made of nephrite was discovered at the Kafirqala archaeological site. The artifact is in the form of

a circular disc with a perforation drilled through its center for suspension on a cord or string. Its surface is exceptionally well polished and exhibits a perfectly rounded shape, reflecting a high level of craftsmanship. Although predominantly white in color, it is not uniformly so, displaying subtle shades of gray, yellowish, and pale green, with certain areas being semi-transparent. The amulet appears to have been used over an extended period, as wear marks caused by friction from the suspension cord are visible on one side of the perforation. It measures 5.9 cm in overall diameter, while the central hole has a diameter of 0.6 cm. The thickness gradually increases from the edge toward the center, measuring 0.7 cm at the rim and 1 cm at the center (Fig. 3).

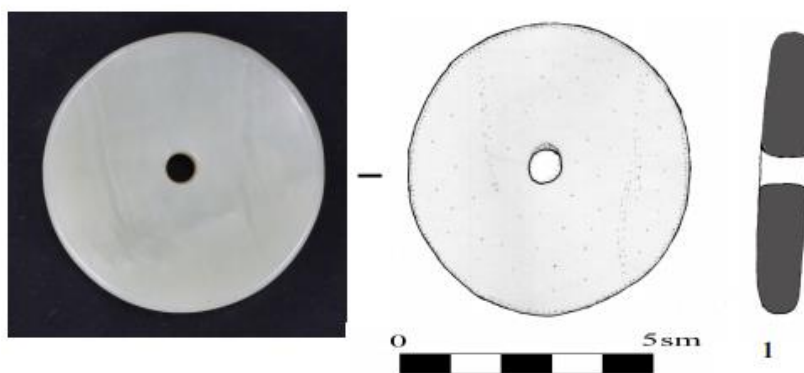


Fig. 3

The term nephrite is derived from the Latin expression *lapis nephriticus*, meaning “kidney stone,” and is referred to as *yasht* in the writings of Al-Biruni. In Central Asia, the manufacture of ornamental objects from nephrite dates back to the Bronze Age. The earliest known nephrite bead was discovered at Sarazm (Brunet, 2020, p. 29), while a nephrite pin was recovered from the royal tomb at Gonur Tepe (Dubova, 2020, p. 354).

Al-Biruni provides the following account of nephrite: “Nephrite is extracted from the valleys of two rivers in the region of Khotan. The highest-quality variety is white nephrite, and although its source is known, it is not accessible for ordinary people to use, as large pieces of nephrite belong to the ruler. According to tradition, nephrite is also known as the ‘stone of victory’; therefore, the Turks adorned their swords, belts, and saddles with this stone in the belief that it would bring success in wrestling and battle” (Beruni, 2011, p. 230).

Nephrite was held in exceptionally high esteem in ancient Chinese culture. It was used to produce a wide range of domestic and religious objects, ornaments, and amulets. At one time in China, nephrite was valued even more highly than gold. In particular, winners of competitions were awarded staffs made of nephrite for first place, gold for second place, and ivory for third place (Putolova, 1991, p. 23). During the Tang dynasty, diamond-tipped drills used for perforating nephrite were imported from Central Asia (Schafer, 1981, p. 292).

Nephrite was also believed to possess various mythological properties. It was thought to protect its wearer from evil spirits and the evil eye, as well as to provide protection against lightning strikes (Beruni, 2011, p. 231). In addition, the stone was credited with medicinal qualities. According to historical accounts, it was considered beneficial for ailments of the stomach (Beruni, 2011, p. 231) and kidneys (Putolova, 1991, p. 141), and it

was believed that simply wearing the stone close to the affected organ was sufficient to obtain its healing effects.

In its time, geometric forms also carried symbolic meanings. In particular, the circular shape of the nephrite amulet symbolized the sun, the cyclical succession of the seasons, life and death, and the perpetual alternation of day and night, while the central point represented the origin or beginning of life (Baeshko, Gordienko, & Gordienko, 2007, p. 246).

CONCLUSION

In conclusion, the craft of stone working reached a high level of development in the Sogdian region. Skilled artisans produced a variety of jewelry and utilitarian objects from precious, semi-precious, and common stones. These stone-crafted products were highly valued not only locally but also abroad. Historical sources indicate that, in 713 CE, bowls made of rock crystal and vessels crafted from agate were exported from Samarkand to China (Schafer, 1963, p. 259).

REFERENCES

1. Абу Райхон Беруний. Собрание сведений для познания драгоценностей (Минералогия) / пер. с араб. А. М. Беленицкого. СПб.: 2011. — 600 с.
2. Абдуллаев У.И. Ўрта Осиёда ибтидоий жамоа тузуми ва илк давлатчилик тарихи. Тарих фан. д-ри. ... дис. автореф. – Тошкент, 2019.
3. Avanesova N.A. The Zeravshan regional variant of the Bactria-Margiana Archaeological Complex: interaction between two cultural worlds // The World of the Oxus Civilization (1st ed.). – Routledge-London, 2020.
4. Баешко А.С., Гордиенко А.Н., Гордиенко А.Н. Энциклопедия символов. – Москва, 2007.
5. Бердимуратов А.Э, Индиаминова Ш. А. Буюк ипак йўли: қитғалар ва асрлар оша. – Самарканд, 2017.
6. Бердимуратов А.Э, Самибоев М.К. Храм Джартепа. - Тошкент, 1999.
7. Гаврилова А. С., Шанина С.А., Елисеева Е.Л., Климова М.В., Климкина О.В., Демин И.О., Пугвакин О.В. Драгоценные камни и минералы. Популярная энциклопедия. Ростов на Дону, Владис, 2011. 208 с.
8. Мешкерис В.А. Коропластика Согда. Душанбе, 1977.
9. Синкенкес Дж. Руководство по обработке драгоценных и поделочных камней. – М., 1989. 423 с.
10. Путолова Л. С. Самоцветы и цветные камни. – М., 1991.
11. Шуман В. Мир камня. Том 1. Горные породы и минералы. – М., 1986. 215 с.
12. Dubova N.A. The “Royal Necropolis” at Gonur Depe: an Attempt of Systematization (Plan, Constructions, Rituals) // Lyonnet, B., Dubova, N. A. (Eds.). The World of the Oxus Civilization (1st yed.). – Routledge, 2020.
13. Shafer E. H. The golden peaches of Samarcand. - Berk-ley and Los Angeles. 1963.
14. Ўзбек тилининг изоҳли луғати Т ҳарфи. – Тошкент., 2007.

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