
AYSULU ISKANDEROVA, MUNIRA SULTANOVA

FINE WARE POTTERY OF THE KHWARAZMSHAH PERIOD (12th - early 13th centuries)

The vigorous growth of the pottery industry during the Khwarazmshah period is evidenced by the remains of pottery kilns discovered in the towns and rural settlements in the region dating to the 12th-13th centuries. At the Khwarazm sites of the period under consideration, glazed pottery items are noted for their significant size, high quality craftsmanship, and significant number of imported pottery finds. The glazed pottery items are very diverse in their shape, size, purpose, decoration, and quality of glaze. They are distinguished by their compact typological categories with a consistent set of characteristic features. These glazed vessels were richly decorated. All the varieties of decorative motifs used in the various types of glazed pottery vessels are subdivided into the major groups: floral-geometric, epigraphic, zoomorphic, and anthropomorphic. These glazed vessels demonstrate that during the Khwarazmshah period, the school of pottery of the southern Cis-Aral Sea region was enjoying a boom, in effect, on the way to its most significant height. For the glazing of the earthenware and Kāshān ware products, transparent lead and potash-based glazing were predominately utilized along with an occasional thick, tin glazing. In addition to transparent glaze, colored glazes of green, yellow, and turquoise were used. The innovation of this period involved the introduction of turquoise-colored glaze. The principles of compositional art pattern constructs were mainly centric, radial, and concentric.

Key words: Middle Ages, Khwarazm, art pottery items, typology, ornamentation, glaze, Khwarazmshah period, medieval towns, pottery production, pottery industry, graffito

Citation: Aysulu Iskanderova and Munira Sultanova (2021). Fine Ware Pottery of the Khwarazmshah Period (12th - early 13th centuries), Bulletin of IICAS, 32, P. 62-76, DOI:

Article link:

DURING the 12th and early 13th centuries Khwarazm continued to be a major trade and economic center of its oasis. The Khwarazmshahs pursued a broad policy of conquest and by the early 13th century expanded their territory from the Syr Darya River (Jaxartes) in the north to the Persian Gulf in the south, from Azerbaijan in the west to the Indus River in the east. Huge tangible assets were brought to the capital of the empire, Gurganj (modern Köhne-Urgench), and monumental architectural structures were constructed. Medieval sources report that Gurganj and other towns were comfortable settlements connected by trade and craft centers via transit routes with various centers of eastern Russia, the Caucasus, Transoxiana, and the Middle East (Al-Kazvini Zakariya, Yakut al-Hamawi, An-Nasafi – see *Buniyatov* 1986: 101-104). Khwarazm itself played an important role as an intermediary in international trade. Along with luxury goods for the feudal elite, glazed pottery was imported that included celadon, luster ware, minai ware and «gran-de-ri». However, imported products were expensive, available only to

a few, which led to the establishment of high-grade glazed pottery production in certain urban pottery centers of Khwarazm. Additionally, the widespread development of urban culture contributed to the emergence of a new production technology. Often imitations of imported items were produced as more advanced and developed technology emerged. We know that the urban centers of Transoxiana (Bukhara, Samarkand) (*Mirzaakhmedov* 1999: 298-304) and Southern Turkmenistan (Merv) (*Pugachenkova* 1960: 84-86) produced luster ware pottery during this period. Products made using this technique, though having some visible flaws, were also found at the sites of western Khwarazm (*Kdyrniyazov* 1989: 75).

At the Khwarazm sites of this period, glazed pottery items are noted for their mass quantities, high quality of craftsmanship, along with the presence of frequently imported pottery vessels.

The intensive development of pottery production in the Khwarazmshah era is evidenced by the remains of pottery kilns found in the urban (*Vakturskaya* 1959: 264, 267) and rural settlements of the 12th-13th cen-

turies (*Nerazik* 1976: 73). During the excavation of pottery kilns and handicraft shops, furnace refractories were found containing tripods for pottery firing, pins, polishes, and molds. Among the pottery finds' collection from the "southern settlement" of Mizdahkan, is a vessel in which the outer side of a semi-disc-shaped base from a red clay bowl has imprints of the firing tripod and the sintered brown glaze obtained from touching another bowl during production.¹ The glaze stains may have been smeared while drying the pottery vessels as the bowls were stacked one atop the other. Here, in the "southern settlement" of Mizdahkan, several specimens of gray-clay pottery and many fragments of glazed pottery were found in the transitional phase from the disc-shaped to the ring shaped base. A researcher on this area of Mizdahkan, Sh. Kdyrniyazov believes that this quarter of the city belonged to the last stage of the life of the Gyaur-kala settlement, that is, the pre-Mongol period at the end of the 12th-early 13th centuries (*Kdyrniyazov* 2003: 32-36).

During the course of the excavations performed on the sites of Janpyk-kala, Shasenem, Mizdahkan, Toprak-kala Kungradskaya, Bograkhkan, Greater Guldursun and the surrounding rural settlements, numerous pottery fragments were found that characterized the glazed pottery of this period. The glazed pottery vessels are very diverse in shape, size, purpose, ornamentation, and quality of glaze with which the items were covered. The pottery vessels inside and along the outer edge were coated with transparent, yellowish, or greenish glaze on top of a light or cream-colored slip. The inner side of the glazed pottery vessels was decorated with a fine underglaze engraving ("graffito") and painting, consisting of combinations of geometric foliage and abstract ornamental curls and drips (*Vakturskaya* 1959: 316). At the same time, it was during this period that kāshān ware pottery appeared with new ornamental compositions that were much different in design from the decor of glazed earthenware pottery. Kāshān ware pottery appeared in Central Asian in the 12th century and was made from high silica content materials (SiO_3) with various types and ingredients. N. S. Grazhdankina, who studied the chemical composition and production properties of the Khwarazm glazes, noted that the Khwarazm kāshān pottery had "high silica content, containing 89 to 93% silica" This type of chemical composition was steadily upheld in subsequent years, as late as in the 14th century, and was transferred to those regions of Transoxiana where similar raw materials were available as those of Khwarazm" (*Grazhdankina* 1989: 72).

The emergence of kāshān ware pottery constituted a great advancement for the pottery industry. It differed from the group of clay products by means of its manufacturing technology and by the variety and elegance of shapes and ornamentation.

In the 12th-13th centuries, penetration into Khwarazm of glazed products from countries of the Middle East went even further. The vessels from Iran stand out among such items with their golden luster paints. High-grade imported pottery had a constant and active influence on the formation of artistic tastes among medieval craftsmen. Khwarazm potters adopted the art of luster production from the potters of Transoxiana and Iran. Celadon also arrived from China. As a result, the Khwarazm pottery school, interacting with the neighboring historical and cultural regions, adopted some varieties of deocorative paintings that found numerous comparisons to the pottery of Transoxiana (Bukhara, Samarkand), and Southern Turkmenistan (Dekhistan/Misrian). Yet, given certain common features, the Khwarazm pottery school always had its unique peculiarities. By that time, a well-established local production tradition of glazed pottery had been formed. The Khwarazm craftsmen perceived and creatively modified the shapes and glazes brought from outside. Based on the achievements of previous times, they used a new system of technological and artistic decorative techniques. As a result, during the Khwarazmshah era, this special, local style was developed, which, by general appearances was close to the whole of Central Asia but with its individual characteristics. According to N. N. Vakturskaya, a researcher of pottery production of medieval Khwarazm, the glazed products of this period were "technically the most advanced of all medieval glazed pottery; they were much more diverse than the commonly glazed items both previously made and those produced later (in the 15th-17th centuries)" (*Vakturskaya* 1959: 315).

Technology and Typology

Glazed pottery of Khwarazm during this period was distinguished by its compact typological categories with a consistent set of characteristic features. The products were made of a high quality, well-mixed clay. The excavated sherds are reddish to cream in their color. The pottery along its inner and outer edges was coated with transparent, yellowish, or greenish shades by glazing over a light-colored or cream-colored slip. Colored glazes were also used. On the inside of a vessel, glazed pottery items were decorated with fine engraving ("graffito"). Polychrome underglaze painting was utilized. As in the previous eras, the leading forms of open vessel pottery items had a disc-shaped base, but vessels also appeared that transitioned from the disc-shaped base to the ring-shaped

¹ Kazakhstan State University collection. MO-2002, YuP, p. 12/9.

base. Along with the rich design of the inner surface, the outer surface, for the most part, was covered only with a slip.

Samples of glazed pottery dating from this period were found during archaeological excavations at Kavat-kala, Daudan-kala, Zamakhshar, the Shasenem settlement, Greater Guldursun, Janpyk-kala, Kerder (Khaivan-kala) and Mizdahkan. The glazed pottery from Khwarazm found at these sites are united by their stylistic proximity between these sites' decorative features and their production attributes. Although they were found in different towns, they date from the same period of the 12th to early 13th centuries.

Glazed pottery from this period can be subdivided into the following groups: bowls, platters, small plates, jugs, lamps, and infant chamber pots (*tuvaks*). One of the points that attracts attention is the absence of glazed plates during the period under review. Often only gray-clay and black-slipped plates were produced. For example, at the settlements of Janpyk-kala and Kavat-kala, these type of plates are discovered in mass quantities. Particular attention should be paid to the decorative style and production process used for these plates. Approximately 75 to 80% of these gray-clay plates with black-burnished ornamentation portraying a smooth object on a flat surface have disc-shaped bottoms with three low protruding pod bases. The absence of glazed plates during this period occurred for a variety of reasons. It may have been a transitional period in the structure of pottery production; a modification in the nature and typology of pottery; the economic situation; or the influence of other neighboring cultures that had ties with Khwarazm in the 12th-13th centuries. However, it should be noted that during this period the large *lyagan* type pottery vessels appeared.

Bowls. These vessels are the most numerous of the pottery groups. They vary by the shapes of their rims and bodies and the bowls are divided into the following types:

Type 1: This type designates a bowl with a large disc-shaped base and hemispherical sidewalls with a diameter of 7.5 cm and 0.5 to 1.1 cm thick. They are coated with a light-colored slip and transparent glaze (Fig. 1:1). They are decorated with an overglaze and painted with a brush in red and dark brown colors. At the base, in the center, is a round design framed by a parallel white and brown strip. The resulting fields are decorated with clear red dots. In turn, brown dots, along with smaller white dots, are inscribed in each of the cells. As a result, a grid is formed in the center of the vessel and in each cell there are red, brown, or white spots. The bowl's body is divided into four sections by a thin, red vertical line. Each section contains a stylized floral design depicted in brown paint.²

For example, in the ornamentation of a bowl from the Mizdahkan, floral-geometric motifs and a radial-centric composition were used. This lattice design with drawn lines was previously found in the glazed pottery from Khwarazm, but in this instance the lattice-work was formed with the help of multi-colored dot-like spots. These unearthed bowl samples with the latticework design allow us to determine the rich color palette and observe variations of this type of pattern. Such examples are found at the Shasenem settlement. One of these bowls (Fig. 1:2) with a disc-shaped base is coated with a light slip and a thin layer of transparent glaze. It is decorated with underglaze painting with a dark brown lattice and dark green spots within the intersecting stripes and red-brown spots in the center of the cells (*Rapoport* 1958, Figs. 13, 12).

Type 2. Many of this type of glazed vessel were found at the Guldursun settlement (*Dospanov* 1993: 22-23). These included glazed bowls characterized by hemispherical sidewalls which transition into a straight rim with the abovementioned ring-shaped base. They have a yellow glaze and are decorated with overglaze engraving and green and light brown paint. A painted floral design adorns the base and the center of the bowl. Typically, the size of the base's diameter varies between 8 to 8.5 cm and the vessel's mouth measures between 20 to 22 cm with a height between 9 to 9.5 cm.³ (Fig. 1:3). This bowl's shape is an intermediate phase between the pottery vessels of the Khwarazmshah and subsequent Khwarazm-Jochid cultures. Later, bowls and platters appeared with their characteristic sidewalls and high circular bases.

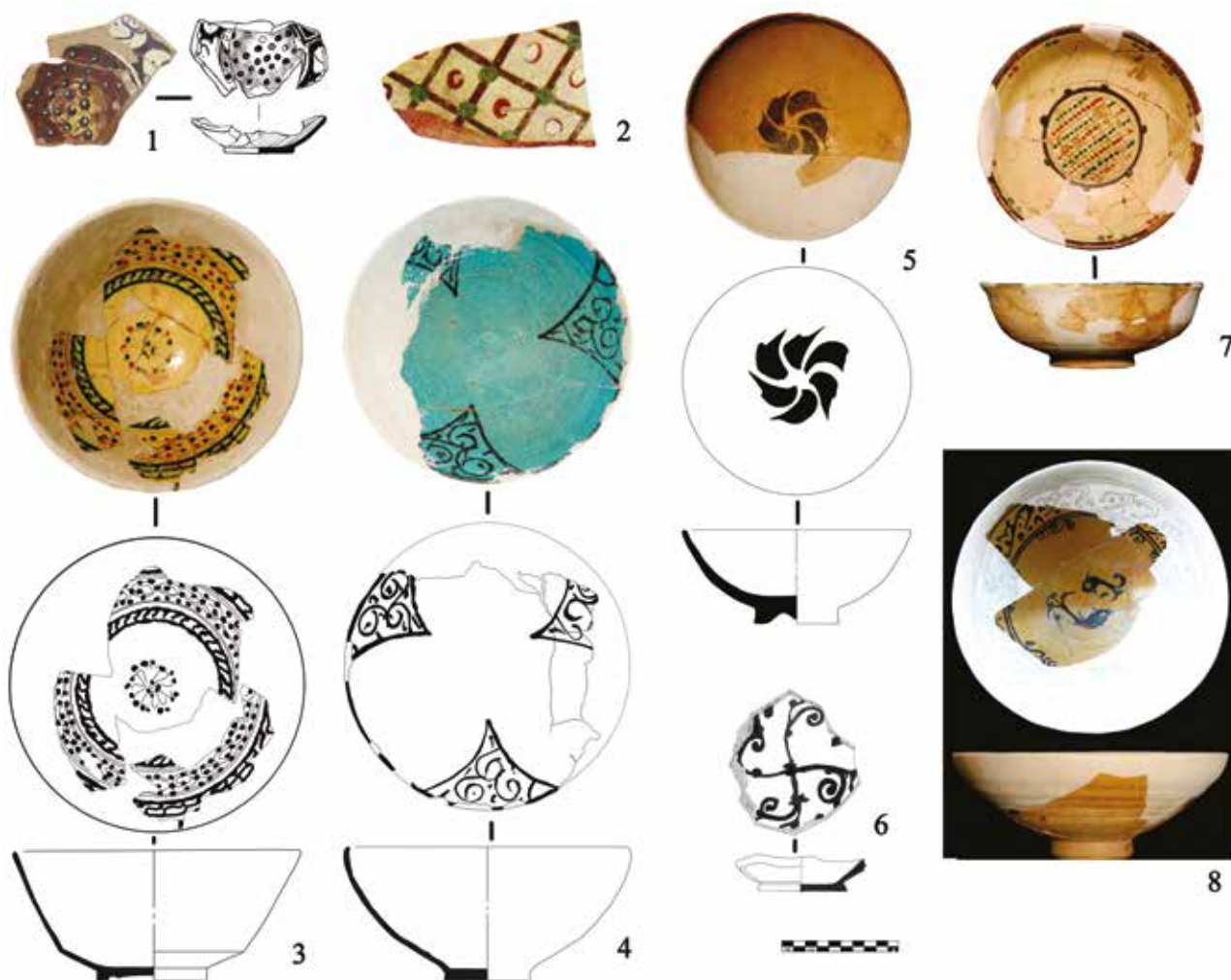
By the middle of the 12th century bowls with turquoise-colored glaze on a high transitional ring-shaped base penetrated Khwarazm. Bowls from Kavat-kala, Zamakhshar, and Daudan-kala have a similar glaze and shapes.

From the collections in the State Museum of Arts of the Republic of Karakalpakstan named after I. V. Savitsky a bowl discovered in the western part of Janpyk-kala is coated with a double-sided blue (turquoise) glaze.⁴ It is hemispherical in shape with a straight rim and ring-shaped transitional base. Engraved triangles surrounded by a dark turquoise outline surrounds the edge of the bowl that is filled with stylized floral designs. These triangles divide the bowl's surface into three equal elliptical sectors which results in a concentric composition of partitioned walls into independent ornamental stripes. In

² Karakalpakstan State University collection. MO-2002, YuP, p. 8/12.

³ The State Museum of Arts of the Republic of Karakalpakstan named after I. V. Savitsky collection, kp. No. 36711, inv.No. 661.

⁴ The State Museum of Arts of the Republic of Karakalpakstan named after I. V. Savitsky collection. DZh-K-88, R-7. Inv. No. 1012, KP 41081.



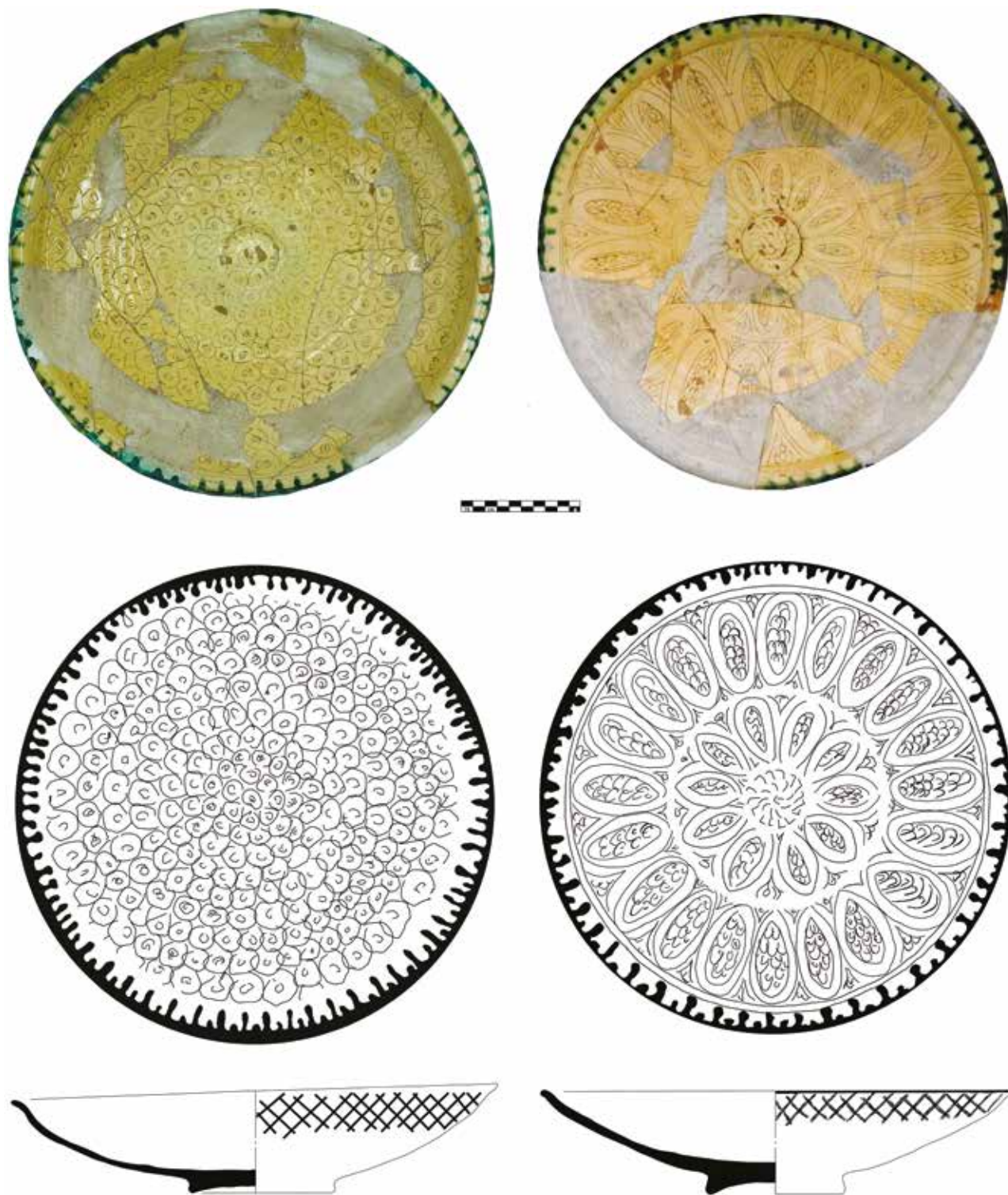
Ил. 1. Чашы. 1-2, 6 – Фонд Каракалпакского государственного университета им. Бердаха; 3-5, 7-8 – Фонд Государственного музея искусств им. И. Савицкого

this case, the inner surface is free of ornamentation, but the boldly underlined ovoid lines of the triangle visually create a silhouette of a three-petaled rosette (Fig. 1:4). An analysis of these abstract, yet consistent, geometric designs in the applied art of the peoples of Central Asia demonstrates that these triangles (known as *tumarcha* in Uzbek, *dogajik* in Turkmen and *aishik* in Karakalpak) had a common attribute—the protection from evil spirits—and served as talismans. Thus, these designs probably had a cultic role (Zhdanko 1958: 383, 395 Fig. 16; Atagarryev, Byashimova 1977: 142).

Type 3. At the beginning of this period, there was a continuation of vessels coated with a transparent, yellowish, or greenish glaze and applied over a light-colored (white or cream-colored) slip. However, vessels with yellow glaze became brighter. This predominated among the artifacts of the 12th to early 13th centuries. Many such vessels of this type were discovered at Kavat-kala which are now stored in the

GKM Museum and the State Museum of Arts of the Republic of Karakalpakstan named after I.V. Savitsky. One bowl, found at Kavat-kala, is coated with a double-sided transparent yellow glaze. This bowl with hemispherical sidewalls extending from the base has a rim that flows from a curve into a straight line. It has a sub-triangular, slightly everted rim. In the center, at the base, is a nine-petal flower within a circle. The contours of the petals are highlighted with engraved lines in reserve, and the petals themselves are made with green brush strokes. The upper part of the sidewall, below an everted rim, is decorated with an underglaze green line border with a bulbous rosette on top. On the outer sidewall, closer to the rim, are vertical lines drawn obliquely with an inclination to the right.⁵ Another variation of this type of bowl has a

⁵ Karakalpakstan State Museum of Local History (GKM) collection. KVK-71, Inv. No. 55-34/1, Inv. No. 54-30/4.



Ил. 2. Блюда. Гульдурсин. Фонд Государственного музея искусств им. И. Савицкого

green glaze. Another has a design in the form of vertical lines with a right-leaning inclination on sides of the bowl and the field has a transparent underglaze, engraved geometrical design. The geometric pattern consists of grids, semi-ovals, circles, and wavy “dash-es.” The potter additionally adorned the ornamental

composition by using a stylized floral design with bi-foil and trefoil leaves.⁶ An example of one such bowl,

⁶ Karakalpakstan State Museum of Local History (GKM) collection. Inv. No. 63-37/1., Inv. No. 53-29/IV; Inv. No. 53-29/1.

stored in the collection of the State Museum of Arts of the Republic of Karakalpakstan named after I.V. Savitsky, is coated with a transparent, yellowish glaze on top of a white-cream-colored slip. The concentric composition, built around the principle of dividing the side and base with independent circular geometric designs, is decorated along the side and base with a circular green border made with concentric and intersecting oblique lines. On the base and the body itself is a pattern of large dots in red, brown, and green. Similar bowls, except for bowls from Narynjan and Zamakhshara (*Vakturskaya* 1959: Fig. 27:2, 27:7), were found during excavations at Shah-Sanem in 1952 (*Rapport* 1958: 415. Fig. 13:8, 13:12).

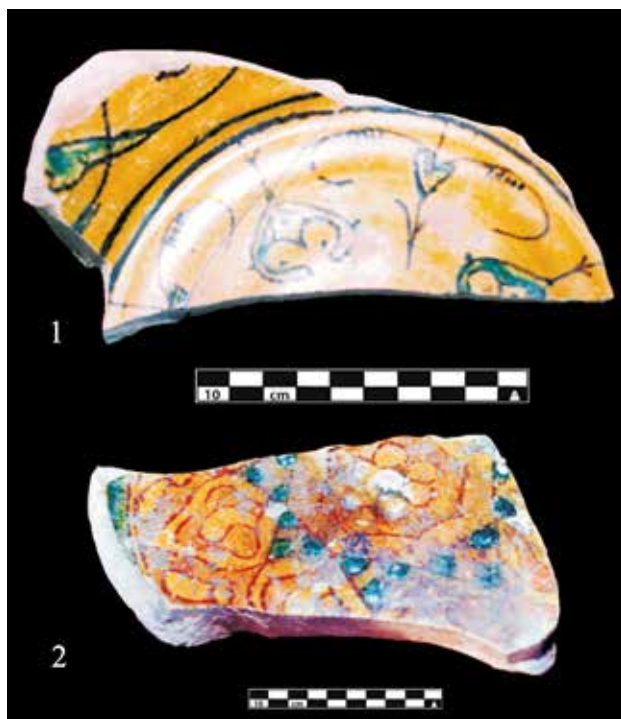
Platters. One of the most common forms in the pottery collections from the 12th to early 13th centuries were platters. They differed from the bowls because the platters had a larger mouth diameter, a stout body, and truncated-conical diverging walls. The rest of the morphological attributes were like those of the bowls. These products are classified into three types.

Type 1. This type of platter is characterized by a truncated-conical body with a low sidewall. The rim is straight and raised along the sidewalls. The design has a continuous compositional motif and a floral and geometric design with a dynamic and continuous character. The predominant floral motif consists of shoots, leaves, and branches that cover the entire surface of the pottery. Painting was done with brown and green pigments over a white background under a transparent, yet slightly yellowish glaze. On the platters of this type, usually in the center of a circle, parallel arched lines are combined with brown speckled dots.⁷

Type 2. The shape of this platter type is quite close to the Type 1 standard. The platter has a high, transitional base and the body and the lip expands extensively upward with an everted edge. These platters, found in Guldursun, are coated with a dull, yellow glaze, and are decorated with floral-geometric patterns (Fig. 2:1-2).⁸

Type 3. This type is represented by a large, flat body, whose side extends into an inverted rim. The vessel sits on a ring base. The edge is decorated with a wide, red stripe (0.8 cm wide). The platter has a centric composition at the base, in the form of a five-petal flower made in red paint with a 3 mm wide concentric circle, or "graffito," surrounding it.

The vessels of this type were found in Mizdahkan's southern settlement dating to the 13th century. Such



Ил. 3. Миски. Миздахкан. Фонд Каракалпакского государственного университета им. Бердаха

bowls have diameters between 29-30 cm at the mouth of the rim; 12-12.5 cm at the base; 1.2 cm height; and with sidewalls 0.5 to 1 cm thick.⁹

Bowls. In the 12th to early 13th centuries these types of bowls were made in small quantities and are rarely found. A small number were discovered in the vicinity of Kuhna-Was, Kavat-kala, Zamakhshar, and Mizdahkan. These flat-bottomed conical bowls were characterized by an everted, horizontal rim. The rare manufacture of these glazed bowls is explained due to the widespread use of non-glazed, gray-clay vessels whose production was extensive starting from the 12th century..

This type of flat-bottomed conical bowl was found in the vicinity of Kuhna-Was. It had an everted rim with external thickening that formed a shoulder-like rim and was coated with glaze on both sides of the body. On the inner side along the base were floral and zoomorphic patterns surrounded by a white stripe with brown outlines. Along the sides, against the brown background of the bowl, a brown plant shoot with large leaves adorned in green dots were filled with small brown dots. Along the edge is an inscription made in italics that reads *naskh*. The outside of the bowl has a floral pattern made with brown paint and enhanced with large green dots (*Vakturskaya* 1959: 318). This bowl differs from the one described

⁹ Karakalpakstan State University Collection. MO-2002, YuP, p. 10/30-38.

⁷ Karakalpakstan State Museum of Local History (GKM) collection. AK-79, KVK-11/21; Inv. No. 59-33/XVI.

⁸ The State Museum of Arts of the Republic of Karakalpakstan named after I.V. Savitsky collection. Guldursun-90, p.1, KP 42840, Inv. No. 1186; kp 42841 inv 1189.



Ил. 4. Кувшины. Фонд Государственного музея искусств им. И. Савицкого



Ил. 5. Сосуды специального назначения. 1-2 – Святильники; 3-4 – Туваки.
Фонд Государственного музея искусств им. И. Савицкого

above due to its abundant ornamental motifs; the drawings are not interrupted; and they show a continuous compositional character.

During excavations at Mizdahkan, fragments of red clay bowls with one-sided yellow glaze were found (Fig. 3:1-2). In the center of one of them is a floral design of stems and leaves. Between them are 4 bulb-shaped designs inside of which is a three-lobed palmette. Floral designs in the form of intertwining bulbs are located along the side of the bowl (Fig. 3:1).¹⁰

Jugs. Along with the manufacture of open vessels, new processes were mastered as part of the glazing technique for tall, more closed vessels during this period. This category of vessels is less common than open-type vessels (i.e. bowls, platters). Most jugs that have been found are fragmented forms (potsherds), with the total number of whole forms being few and insignificant. This may be because many non-glazed, closed-type vessels were in everyday use.

During excavations at the sites of Greater Guldursun and Mizdahkan, new glazed jug specimens were found. A single specimen of a wide-necked jug found at the site of Greater Guldursun has a blown truncated-conical body with thick walls and a semi-circular base (Fig. 4:1). The jug has a low neck and its shoulders are placed at an angle to the sidewall. The flat, vertical handle's lower part is attached to the jug's body, and the upper part to the rim. It is coated with a double-sided transparent yellow glaze and has an overglazed ornamentation. The floral painting is made with green and light brown pigments. It is decorated with an underglaze engraved pattern. Rows of horizontal lines are under the rim and wavy patterns found along the shoulders underneath the lines. (Dospaev 1993: 37 Fig. 1). Excavators discovered a hoard of copper coins wrapped up in heavy muslin cloth in a jug of this type. The coins were identified as minted by Sultan Ala-ad-Din Muhammad (1200-1220) (Dospaev 1993, 27). In terms of its shape, this jug has analogies among the jugs of Sogd (Shishkina 1979: Table LXIII, 4) and southern Turkmenistan (Atagarryev 1974: 85-86) dating to the 12th-13th centuries.

Another jug from Kavat-kala is of interest. Found in 1970 in a peasant's room of the pre-Mongol period in estate No. 4 (Fig. 4:2), the body of the jug has a horizontal carination created when the lower half of the jug was connected to the upper half. The cylindrical neck has three rows of horizontal bead appliques under the rim, a characteristic rarely found in wide-necked jugs. The body is ovoid-shaped and on its surface are corrugated, vertically-ribbed lines that narrow towards the base of the vessel. This jug has a ring base and is coated with a dull, opaque light

glaze with an admixture of mother-of-pearl. The vessel, judging from its preserved part, had a flat, vertical handle. It is 19 cm high and its mouth has a diameter of 8 cm. Its base is 7 cm in diameter and 1.5 cm high. The sidewall ranged from 0.4 to 0.8 cm thick.¹¹

Another example, judging by its fragments, had an ovoid shape with an inexpressive neck and a flat, disc-shaped base coated with a turquoise-colored glaze (Fig. 4, 3).¹² As noted above, during this period in Central Asia (specifically, Southern Turkmenistan, Chach, and Khwarazm), glazed pottery coated with green, yellow, and dark brown glaze were predominant. Additionally, as researchers have correctly noted, during the 12th century, pottery with turquoise-colored glaze first appeared (Atagarryev 1974: 82; Shishkina 1979: 33; Brusenko: 1986, 61). Apparently, in Khwarazm, pottery with turquoise-colored glaze became widespread during this 12th-13th century period. Archaeological excavations at Mizdahkan have yielded significant pottery material dating to the 12th-13th centuries including several fragments of turquoise-colored glazed pottery. Of special note is kashan ware pottery which is coated with turquoise-colored glaze. One example is the specimen of a kashan ware jug housed in the State Museum of Arts of the Republic of Karakalpakstan named after I.V. Savitsky collection. The jug differs from the previous types due to its high, narrow neck and swollen, spherical body. It is coated on both sides with a turquoise-colored glaze, but has no decoration. This jug has a ring base and the sub-cylindrical rim is everted. The rim's junction with its high neck is decorated with a disc-shaped applique. The jug measures 26 cm high. Its mouth's diameter is 6.5 cm, its base is 8.5 cm in diameter and 1.3 cm high. (Fig. 4:4).¹³

Lamps. Along with tableware, during excavations of the 12th-13th century medieval strata, lamps (known in Russian as a *chirag*) have been found. Their shapes vary markedly and are characterized with a high oil reservoir with an open mouth and a vertically-placed rim on a flat base. It usually possesses a long spout with facets. Opposite the spout, a small leaf-shaped thumb-guard is attached which is often decorated on the outside with embossed floral designs.

A group of lamps in conjunction with fine ware pottery was discovered in domestic space in the suburbs (*ribats*) of Kavat-kala, Zamakhshar, and Daudan-kala (Vakturskaya 1959: 319), as well as Shase-

¹⁰ Karakalpakstan State University Collection. MO-87, KV-I. p. 39.

¹¹ The State Museum of Arts of the Republic of Karakalpakstan named after I.V. Savitsky collection. Kp. 3772/1, Inv. No. 204.

¹² The State Museum of Arts of the Republic of Karakalpakstan named after I.V. Savitsky collection. Kp. 2996, Inv. No. 733.

¹³ The State Museum of Arts of the Republic of Karakalpakstan named after I.V. Savitsky collection. Kp. No.2993/36, Inv. No. 635.

nem (*Rapoport* 1958: 413), which date to the 12th-13th centuries. In general, the shape of the lamps changed during this period through the acquisition of above-described characteristics: a faceted spout and a high reservoir with a handle with the attachment of a leaf-shaped thumb-guard. Similar *chirag*-lamps are often found on the sites of medieval settlements in southern Turkmenistan (*Atagarryev* 1974: 84–85), Shash-Ilak (*Buryakov* 1961: Table V, 1, 5), and in the Chu Valley (Chuy Valley 1950, Table LXXXII, 7–8, 10).

Infant chamber pot (tuvaks). In the 12th-13th centuries, *tuvak* pots¹⁴ appeared with a tall cylindrical body, a flat base, and a widely everted rim (*Vakturskaya* 1959: Fig. 31:17). The shape of these vessels is consistent and its profile is the same and because they were heavy, only a flat base was used (Fig. 5:3–4). Ethnographic literature records that the name of this vessel evolved into being called a *tubek* and was part of a baby cradle (*besik*) (*Zadykhina* 1952: 171. Fig. 16:6). Until the 14th century, *sumaks* were often made of glass (*Vakturskaya* 1952: 181. Fig. 6; *Rapoport* 1958: 426. Fig. 2).¹⁵ However, the fragility of glass items eventually led these to be manufactured from clay and wood. The limited practical use of the *tubek* pots was, perhaps, the reason why they began to be coated with a green monochromatic glaze without ornamentation. Up to the present day, *tubeks* and *sumaks* are an integral characteristic of children's cradles for many of the peoples of Central Asia.

Ornamentation

Glazed products were richly decorated. All the variety of ornamental motifs used in decorating various types of glazed pottery can be subdivided into the following main groups:

Floral-geometric patterns. The bowls with these designs are characterized by several compositional variations. When making open-type vessels, the primary focus was on the central decoration, therefore, this centric composition was the most widespread in Khwarazm starting from the 12th–13th centuries. Typical of this group was a circle decorated with a lattice design and framed by parallel white and brown stripes forming a rounded space. Dots of red, brown, and white were painted inside this circle after which the vessel was coated with transparent glaze. A similar ornamental latticework is known from Afrasiab (*Shishkina* 1979: Table XLI, 2–3), Eski-Akhsi (*Ilyasova* 1986: Fig. 3) and Shash-Ilak (*Buryakov* 1961: Table

IV, 9; *Brusenko* 1986: Table 34:15). Researchers attribute the origin of this lattice motif as early as the middle of the 11th century in Shash and the 12th–13th centuries in Sogd. Another variation of this design is applied as an engraved grid with a combination of simple lines and curls. The edge of a bowl, found in a 12th century house in Narynjan, is decorated with double parallel engraved lines with descending shaded triangles (*Vakturskaya* 1959: Fig. 27:6). A framing green stripe extends along the rim and is colored with large dark green dots. A lattice engraved design for a bowl from Zamakhshar is no less characteristic (*Vakturskaya* 1959: Fig. 27:3). On the sidewall of the pot are engraved ornamental lines that create a concentric pattern. Reticulated diamonds are engraved on the first decorative thin line which is divided into sectors by vertical brush strokes. The second line located along the rim's border, has thin vertical engraved lines which are also colored with green and red dots (*Vakturskaya* 1959: Fig. 27:3, 6). The most common patterns included strokes, jagged triangles, and braided ribbons. These are often found on monochrome engraved items. One of the vessels is decorated along with an engraving of paired horizontal lines and zig-zag-like closed triangles. It creates a “sliding” effect. Oblique, thinly incised lines were drawn between the jagged triangles. The other lower line is divided into squares by a vertically incised line. Each cell has alternating patterns of green and yellow. The vessel is coated with a double-sided lemon-yellow glaze and the clear engraved designs stand out glamorously under a transparent glaze.¹⁶

The decor of this bowl also fits nicely in its stylized floral design with shoots painted white. At the end of each shoot is a three-petal palmette, made with brown and green dots, or specks located in between the palmettes.¹⁷ Prototypes of this motif with a branch and a multi-petal palmette on a straight oval trunk are found in the ornamentation of Khwarazm pottery from the 9th–10th centuries, specifically in Zamakhshar (*Vakturskaya* 1959: Fig. 12: 3, 5). In contrast, however, the predominance of petals are not observed in the latter example and the silhouette patterns with palmettes are simplified with the creation of only a schematized floral ornamentation.

One interesting find included a platter fragment with an engraved “braided” band or ribbon pattern complemented by oblique strokes on a white background. A Kufic inscription is on the outside of the platter's edge. It is clearly and exquisitely applied in dark brown (black) on a white background, yet, nev-

¹⁴ **Ed. note:** These pots were used under a hole in a traditional cradle (*besik*) to gather human excrement.

¹⁵ **Ed. note:** This was a pipe that channeled urine into the chamber pot.

¹⁶ Karakalpakstan State University Collection, MO-2002, YuP. p. 12/34.

¹⁷ Karakalpakstan State University Collection. MO-2002, YuP. p. 12/11.

ertheless, has a stylized, pseudo-epigraphic character in that the double alefs are formed into two-leafed buds between the capital letters of the Arabic script. This transformation of vertical alefs and other letters is based on materials from Sogd (*Shishkina* 1979: 54-55) and Chach (*Brusenko* 1986: 54) and was prevalent from the 11th century. O. G. Bolshakov, a researcher of Arabic inscriptions on Central Asian glazed pottery, notes that “in the 10th-12th centuries the trunks of parallel characters turn into an epigraphic design, or, perhaps, are already a design” (*Bolshakov* 1963: 82 Fig. 10).

Thin line engraving, called “graffito,” belongs to the earliest technique in this method of ornamentation. On bowls and platters from the 9th-12th centuries, floral geometric patterns were applied with a very thin cursory line most often with a concentric pattern. By the 12th-13th centuries, drawings on pottery with “graffito” designs had thick lines. Fragments of bowls and platters decorated with this type of decoration have come from recent excavations in Mizdahkan.¹⁸ Made with a thickly engraved line, this practice was most widespread between the 13th-14th centuries. Analysis of some long-standing geometric patterns shows that among them the most common were triangles, rhombuses, concentric circles, dots, oblique lines, grid squares, and radial stripes. All types of geometric patterns are, to a certain extent, united by their motifs with the decorative and applied arts of Central Asia, the Transcaucasus, and the Far East. Some scholars are prone to argue that the appearance of “graffito” is associated with the imitation of metal engraving, transmitted with a painting technique that obscures the main drawing applied by a linear outline (*Kverfeldt* 1947: 49; *Shishkina* 1979: 56; *Atagarryev* 1986: 124-125).

One of the most frequently encountered elements of ornamental decor found on glazed pottery from 12th-13th century Khwarazm is a variety of floral designs. In the center, a multi-lobed rosette is widely used to decorate a bowl, which occupies almost the entire central part of the vessel. A specific bowl with a peculiar ornamental pattern was found in the southern settlement of Mizdahkan (item no. 12), that contained a circular, swastika-shaped ornamental rosette formed with brown stems whose ends are twisted in a swirling movement of curls (Fig. 1:6). The free space between the stems is filled with deliberately applied large green dots. The main drawing is centered with one side elongated and twisted to the right in a quatrefoil pattern. This design appears to symbolize an effect of perpetual motion. As an independent design in glazed pottery, this feature appeared as early as the

9th century. (*Zhuraev* 1997: 162-167). Similar motifs were widespread throughout Central Asia during the 9th-11th centuries. (*Lunina* 1962, 270; *Shishkina* 1979: 58; *Brusenko* 1986: 56-57). This same central composition also appeared in Khwarazm pottery during the 10th-11th centuries (*Vakturskaya* 1959: 289. Fig. 11:2, 11:3). Eventually, highly artistic versions of a vortex rosette appeared. The rosette was depicted against a light-colored background in the form of a blooming, multi-petal flower. It created a visual effect of perpetual motion within a circle. By the 12th to early 13th centuries this vortex rosette, according to our research, had a floral design that gradually evolved and lost its previous shape. It was presented in a stylized manner with the petals and stems carefully applied and their ends curved in the form of palmetto-like curls. Elements of *islami*-type (i.e. arabesque) floral designs, shoots, and leaves are no less stylized.

The floral design of this version includes a pattern in the form of thin shoots from which curls of narrow stems extend in different directions from the center. They are connected in the center by a rosette resembling the shape of a heart. Between these is a pattern with a bulbous medallion, which retains its internal symmetry. The style of this painting creates the pattern a top-to-bottom orientation. The inner surface is also decorated with plant shoots. An example comes from a flat-bottomed bowl found at Mizdahkan which has a design made on an underglaze, dark yellow background (Fig. 3:1).¹⁹

Among the ornamental motifs of glazed pottery, decor with a concentric belts is very common. The center contains a rosette design within an oval or rectangular shape. A concentric belt applied with dark brown paint over a light-colored slip under a transparent lemon-yellow glaze covers the field of the vessel. Medium-sized bowls from Mizdahkan (mouth diameter: 18–22 cm) with a straight or everted rim, are decorated with a concentric belt along with parallel lines on the walls and crossed by vertical and horizontal lines with brown specks. A jagged stripe with large dots is also painted in brown. On the sides of an example from another hemispherical bowl from Mizdahkan is an ornamental belt painted in dark brown and red. This wide stripe is decorated with a pattern of rarely intersecting radial stripes and singular curls or checkmarks. The rim of the bowl and the sides were painted red on the outside with semi-oval festoons drawn on them.

Epigraphic ornaments. 12th-13th century glazed pottery from Khwarazm with epigraphic inscriptions are not common. In addition to the above-described fragment from Mizdahkan, exam-

¹⁸ Karakalpakstan State University Collection, MO-2002, YuP. p.10/30-38.

¹⁹ Karakalpakstan State University Collection. MO-87, VK-I, p.39.

ples are known from several other published fragments (*Mambetullaev, Kdyrniyazov* 1982: 92; *Vishnevskaya* 1958: 264; *Dospanov* 1993: 41 Fig. 29). Based on these materials, one discerns that by the 12th century a consistent form of writing Arabic well-wishes had developed in which extremely stylized rows of a continuously repeating, incomplete word (as noted from the counted letters with *mim*, or *alef* types) are transformed and made using the italic *naskh* technique of calligraphy (*Vakturskaya* 1959: 316-318). This consistent method of decoration was adopted by potters throughout Central Asia beginning in the 12th century (*Shishkina* 1979: Tab. LII, 2). There are several reasons for this. In the 12th-13th centuries luster ware pottery based on *kāshān* ware was becoming widespread. Vessels from this group—along with floral, zoomorphic, anthropomorphic patterns—contain Arabic and Persian inscriptions, which were widespread among imports. During the Khwarazmshah period, Khwarazm became a location of vigorously developed trade between East and West. Visiting merchants brought mainly luxury goods for the feudal elite of their societies. Imported glazed vessels were among these items. Numerous samples of imported pottery items with epigraphic patterns are known from the cultural material of Shemakha-kala, Zamakhshar, Kavāt-kala (*Vakturskaya* 1959: 324, 326; *Iskanderova* 2002), Kyzyl-kala (*Khozhaniiyazov, Kdyrniyazov* 1989: 91-112; *Iskanderova*: 2015, 25-47; *Iskanderova* 2016: 24-43) and the rural settlements of the western Khwarazm (*Nerazik* 1976: 99, 190; *Kdyrniyazov* 1989: 75-76). Inscriptions and epigraphic designs in calligraphic handwriting were made legibly on these vessels and mainly consisted of sayings or verses. This required a high level of skill. However, this kind of pottery was not available to the general public. It was designed for the upper strata of the feudal society. Perhaps the mass consumer, or commoner, was satisfied with clay vessels decorated with an inscriptional imitation. In the 12th-13th centuries large, inexpensive stamped earthenware appeared with short lines or with the repeated Arabic letters of *mim* and *alef*. Another possible reason could be that during this period stylized decoration was characterized by filling the maximum amount of a vessel's surface with all kinds of abstract plant motifs and patterns.

Zoomorphic and anthropomorphic designs. These designs are more commonly known from imported items. They contain images of peacocks and fantastical creatures such as sphinxes, half-griffins with wings, riders on horses, women, etc. In local Khwarazm pottery from the 12th-13th centuries, zoomorphic images of various birds and fish are frequent. This is typical on vessels from Janpyk-kala, Kavāt-kala, and Mizdahkan. Ethnographic studies of oral folk art re-

cord a number of preserved legends which associate names of towns and states with the certain species of birds and fish. The fish theme stands apart. For the inhabitants of the lower delta of the Amu Darya (Oxus) River, fishing was one of the main means for making a living. During archaeological excavations in the cultural strata of medieval settlements, bones and fish scales from various species have been discovered which were processed by specialists-ichthyologists. This has made it possible to establish the types of preferred fish used for consumption (*Tsepkin* 1986: 117-121; *Pavlovskaya* 1982: 122-125; *Yagodin* 1986: 73-109).

Anthropomorphic images during this period are completely absent from Khwarazm pottery. This was due to the Islamic orthodoxy of the local population.

Thus, glazed pottery finds during the 12th-13th centuries at the sites of Khwarazm testify to the area's expansion along with the distribution, mass production, and large quantity of glazed products. Glazed pottery finds from the pre-Mongol period, apart from the central towns and capitals, appear concentrated in the southern (Kavāt-kala, Zamakhshar) and northwestern (Kerder, Mizdahkan) sections. However, finding glazed pottery production centers is a very difficult task. Only in Zamakhshar was the production of such pottery established (*Vakturskaya* 1959: 263, 267). Possibly, Mizdahkan had its own independent pottery production (*Kdyrniyazov, Torebekov* 1994: 13, 18; *Kdyrniyazov, Bauetdinov* 2001: 52-56; *Torebekov* 2003, 68-72). Another center for glazed pottery production is Kavāt-kala since hundreds of fragments from glazed pottery vessels were found at this location. Pottery items with a variety of shapes and sizes were reconstructed from these fragments. They constitute a fine ware and tableware collection from the 12th-13th centuries.²⁰ The Kavāt-kala pottery vessels were coated with a transparent lead glaze, but also contained vessels with green and turquoise-colored glaze.

In general, these glazed pottery items demonstrate that during the Khwarazmshah period, the school of potters from the southern Aral Sea region flourished and experienced illustrious prosperity. For the glazing of earthenware and *kāshān* ware products, transparent lead and potash glaze was used predominantly with the occasional use of a thick, tin glaze. Along with transparent glaze, colored glaze was used in green, yellow, and turquoise colored palettes. An innovation of this period was the emergence of the turquoise-colored glaze. Most of the vessels were coated with a light-colored slip making it possible to

²⁰ Karakalpakstan State Museum of Local History (GKM) collection. The Kavāt-kala sub-collection.

have an even coating of glaze and a variety of backgrounds for painting on the vessels.

A great achievement for the 12th pottery industry was the appearance of *kāshān* ware, which differed little in their profile with its variety and graceful shapes. However, during the 12th-13th centuries while the quality of earthenware items remained high, they also became diverse in both shape and thickness of the vessel walls. During this period, pottery was most often coated with bright yellow and green glaze.

As previously mentioned, decorative engraving with a “graffito” type pattern was widely used during this period. The emergence of engraved pottery came about from the need to replace more expensive vessels made of precious metals. This engraving process was often done with green and bright lemon-yellow glaze. It created a brilliant transparent color when placed on a white slip. The vessel was glazed on both sides down to its base or tray. Researchers of such vessels surmise that these forms imitate hammered metal vessels with a yellow and cold dark-green tint. The most common designs were engraved “curls,” “spirals,” and “latticework.” In pottery decor, latticework is found in various forms in centric and concentric compositions. Sometimes the craftsman placed a green spot with a rosette to enhance its decorative effect.²¹ The multi-petal rosette occupied the central feature of the bowl and was the main composition which subordinated the rest of the decorative elements to itself. On the side of the bowl, a plant design created a narrow border utilizing stem shoots with a bold line. The composition was completed with a wavy line border containing dots, specks, or triangles applied using a single color. Flower petals on Khwarazm pottery from this period had an oval shape.

In general, one of the favorite motifs in 12th-13th century pottery involved the portrayal of buds and shoots from a stem. These buds, interconnected by thin threads of the stems, personified blooming youth and spring. In Islamic art and in the gathering of the Muslim faithful, green is associated with paradise (Qur’an 76:21).

Medieval potters skillfully used a combination of not only realistic colors, but also stylized, realistic designs. Among the Mizdahkan finds, the lower portion of a bowl on a red clay base is of interest, as it sits on a transitional base with a hemispherical body.²² It has one-sided yellow glaze with dark brown paint on top of the slip and the well of the bowl has no central pattern. From the center upwards, four narrow branches extend radially with stylized brown shoots. Brown,

elongated rhombuses with raised white speckled dots were placed between them. A similar design – relief dots – is most typical for pottery from of the 13th-14th centuries, however, similar design elements based on new materials from Mizdahkan also appeared as coming from the 13th century.

The pottery collection under our consideration obtained from various sites allows us to draw some conclusions regarding glazed pottery decoration types in Khwarazm. In the 12th-13th centuries there is a variety of glazed pottery ornamentation which includes geometric, floral, epigraphic, and abstract motifs. Zoomorphic and anthropomorphic motifs are not abundant, but rather, are more often known from imports. *Kāshān* ware vessels with luster painting are distinguishable by their brilliant use of clear patterns. Compositions with images of birds and people are often found in these luster ware vessels (*Khozhaniyazov, Kdyrniyazov* 1989: 91; *Iskanderova* 2002: 87–89).

The compositional principles that the artisans followed were mainly centric, radial, and concentric patterns. There was also a vortex composition comprised of various curls and spirals. Vessels were mainly coated with yellow, green, and occasionally brown glaze on top of a white slip. *Kāshān* ware pottery with turquoise-colored glaze began to spread; however, finds having turquoise-colored or light blue glaze on potsherds from this period are rare. In general, the pottery vessels were coated with high quality glaze while vague contrasting stains and streaks almost disappeared.

A comparative analysis of the design motifs from Khwarazm with the material from neighboring regions demonstrates much commonality. The same decorative elements in the various compositions, in particular, the multi-sided star, a jagged strip along the edge, triangles, rhombuses, squares, braided ribbons, a wavy dash and others are examples. These same elements are found in the glazed pottery of Dekhistan, Samarkand, Bukhara, and Tashkent (Chach). Yet, Khwarazm pottery differed from the pottery produced at other centers in their decorative techniques, design motifs, composition, and color selection. Specifically, engraving elements such as zigzags, oblique strokes, spirals, and latticework on a background are embossed and shaded. In other varieties, the “graffito” decor, made in white or red over a light-colored slip, is enhanced with small dots. Most of the above designs were perceived by the population of Khwarazm as having the protective features of an amulet, and each with their own meanings.

Along with previously known designs, the pottery of the 12th-13th centuries introduced the use of stamped designs. Usually, these designs are found on bowls with a loessal-clay sherd. They were often coated with light and dark green glazes. It should be

²¹ Karakalpakstan State University Collection, MO-2001, YuP, p. 12/41.

²² The State Museum of Arts of the Republic of Karakalpakstan named after I. V. Savitsky Collection, MO-2002, YuP, p. 4/33.

noted that with the appearance of turquoise-colored glaze in Khwarazm, there were also design motifs in which individual parts were colored in turquoise or pale blue, in addition to cobalt glaze. Researchers have rightly noted that this type of pottery was most widespread in Khwarazm and the Lower Volga region during the 13th-14th centuries (*Fedorov-Davydov* 1994: 146; *Kdyrniyazov* 1989: 82).

In summary, when describing the main forms of glazed pottery from the 12th to early 13th century Khwarazm, they are characterized by a standard-

ization of shapes, sizes, and decor which indicates a high-level pottery industry for the production of glazed ware during the era of the great Khwarazmshahs. Another significant feature of the period involved innovative technological methods used for the manufacture of glazed tableware; the development of colorless transparent glaze; making use of dyes; the appearance of *kāshān* ware pottery; the importation of pottery from other lands (celadon, luster, *minai*, *gran-de-ri*); and the development of new principles of pattern (centric, radial, vortex, concentric, etc.).

REFERENCES

Atagarryev, Ye. (1973). *Material'naya kul'tura Shehr-Islama*. [The Material Culture of Shehr-Islam] // Ashabat Ylym, Publ. (In Russian).

Atagarryev, Ye. (1974). Srednevekovoe keramicheskoe proizvodstvo Turkmenistana IX-XIV vv. [Medieval Pottery Production of Turkmenistan in the 9th-14th Centuries], *Material'naya kul'tura Turkmenistana* [Material Culture of Turkmenistan.]. Issue 2. Ashgabat: Ylym Publ. P. 56-108 (in Russian).

Atagarryev, Ye. (1986). *Srednevekovyj Dehistan* [Medieval Dekhistan]. Leningrad: Nauka Publ. (In Russian).

Atagarryev, Ye., Byashimova, N. (1977). Srednevekovye arhitekturnye ornamenty i ih etnograficheskie paralleli [Medieval Architectural Ornaments and Their Ethnographic Parallels], *Karakumskie drevnostu* [Karakum's Antiquities]. Issue V. Ashgabat: Ylym Publ. P. 140-144 (in Russian).

Bolshakov O. V. (1963). Arabskie nadpisi na polivnoj keramike Srednej Azii IX-XII vv. ["Arabic Inscriptions on Glazed Pottery of Central Asia in the 9th-12th Centuries."] // *EV. Vyp. No. XV. L. 73-87*, (in Russian).

Buniyatov, Z. M. (1986). *Gosudarstvo Horezmshahov-Anushteginidov (1097-1231)*. [The State of Khwarazmshahs-Anushteginids (1097-1231)]. Moscow: Nauka Publ. (in Russian).

Brusenko, L. G. (1986). *Glazurovannaya keramika Chacha IX-XII vv.* [Glazed Pottery of Chach of the 9th-12th Centuries]. Tashkent: Fan Publ. (in Russian).

Buryakov, Yu. F. (1961). Hudozhestvennaya keramika gorodishcha Tunket [Fine ware Pottery of the Tunket Settlement], *Nauchnye soobshcheniya AN UzSSR. Otdelenie obshchestvennyh nauk. Kniga 2*. Tashkent, p. 269-279, (in Russian).

The Chuy Valley (1950). Trudy Semirechenskoj arheologicheskoy ekspedicii [Proceedings of the Semirechensk Archaeological Expedition]. Materials and Research on Archaeology. No 14. Moscow - Leningrad: Academy of Sciences of USSR Publ. (In Russian).

Dospanov, O. T. (1993). *jemgi G ldirsin alasy* [Ajemgi Guldursun Castle]. Nukus: Karakalpakstan Publ. (In Uzbek).

Fyodorov-Davydov, G. A. (1994). *Zolotoordynskie goroda Povolzh'ya*. [Golden Horde Cities of the Volga Re-

gion]. Moscow: MGU Publ. (In Russian).

Grazhdankina, N. S. (1989). *Arhitekturno-stroitel'nye materialy Srednej Azii* [Architectural and Building Materials of Central Asia]. Tashkent: Uzbekistan Publ. (In Russian).

Ilyasova, S. (1986). Glazurovannaya keramika iz verhnih sloev gorodishcha Eski-Ahsi [Glazed Pottery from the Upper Layers of the Eski-Akhsi Settlement], *IMKU*. No 20. Tashkent: Fan Publ. P. 146-153 (in Russian).

Iskanderova, A. D. (2002). Dva lyustrovyyh blyuda iz Kavata-kaly [Two Luster Ware Dishes from Kavata-kala] // *Vestnik Karakalpakskogo otdeleniya AN RUz*. No 4. Nukus. P. 87-89 (in Russian).

Iskanderova, A. D. (2015). Importnaya keramika i ee vliyanie na remeslennuyu produkciju srednevekovogo Horezma [Imported Pottery and Its Influence on Handicraft Products of Medieval Khwarazm], *Materialy konferencii «Fol'klor, muzyka i iskusstvo na Shelkovom puti i Central'noj Azii»*. Tegu. P. 25-47 (in Russian).

Iskanderova, A. D. (2016). Privoznaya keramika kak svidetel'stvo kul'turnyh svyazey srednevekovogo Horezma s Blizhnim Vostokom i Kitaem. [Imported Pottery as Evidence of Cultural Ties of Medieval Khwarazm with the Middle East and China]. *Bulletin of IICAS*. No 23. P. 24-43 (in Russian).

Kverfeldt, E. K. (1947). *Keramika Blizhnego Vostoka* [Pottery of the Middle East]. Leningrad (in Russian).

Kdyrniyazov, M-Sh. (1989). *Material'naya kul'tura gorodov Horezma v XIII-XIV vv.* [Material Culture of the Cities of Khwarazm in the 13th-14th Centuries]. Nukus: Karakalpakstan Publ. (In Russian).

Kdyrniyazov, M-Sh. (2003). *Urbanizacionnyye processy v srednevekovom Horezme. Nauchnyj otchet. 2003*. [Urbanization Processes in Medieval Khwarazm. Research Report. 2003]. Nukus. [Kept at the research dept. of the State Museum of Arts of the Republic of Karakalpakstan named after I. V. Savitsky] (in Russian).

Kdyrniyazov, M-Sh., R. Bauatdinov (2001). Novye arheologicheskie dannye o srednevekovom Mizdahkane [New Archaeological Data on Medieval Mizdahkan]. *ONU*. No 3. Tashkent, Fan Publ. P. 52-55 (in Russian).

Kdyrniyazov, M-Sh., M. Torbekov (1994). *Mizdahkan - gorod zolotoordynskogo vremeni Hodzhejli drevnejshij gorod respubliki Karakalpakstan*. [Mizdahkan - the city of the Golden Horde Period]. Khojeyli (in Russian).

Khodzhaniyazov, G., M-Sh. Kdyrniyazov (1989).

- Kollekciya polivnoj posudy iz Kzyl-kaly // *Kul'tura Srednego Vostoka*. ["Collection of Glazed Vessels from Kzyl-Kala" // *Culture of the Middle East*] // Tashkent: Fan. 91-101, (in Russian).
- Lunina, S. B. (1962). Goncharnoe proizvodstvo v Merve X - nachala XIII vv. [Pottery Production in Merv: 10th through Early 13th Centuries], *Trudy YuTAKE* [Transactions of YuTAKE]. Vol. XI. Ashgabat. P. 217-417 (in Russian).
- Mambetullayev, M. M., M-Sh., Kdyrniyazov (1982). Gorodishche Voengan [The Settlement Voyengan], *Arheologiya Priaral'ya* [Archaeology of the Aral Sea Region]. No 1. Tashkent: Fan Publ. P. 86-93 (in Russian).
- Mirzaakhmedov, D. K. (1999). Novye nahodki lyustrovoj keramiki iz Buhary [New Finds of Luster Ware Pottery from Bukhara], *IMKU*. Issue 30. Samarkand. P. 298-304 (in Russian).
- Nerazik, Ye. Ye. (1976). Sel'skoe zhilishche v Horezme (I-XIV vv.) [Rural Lodging of Khwarazm (1st-14th centuries)], *Trudy HAEE* [Transactions of KhAEE]. Vol. IX. Moscow: Nauka Publ. (in Russian).
- Pavlovskaya, L. P. (1982). K voprosu o vidovoj prindlezhnosti skulpturnogo izobrazheniya ryby iz Amudar'inskogo klada [On the Question of the Species Belonging of the Sculptural Image of Fish from the Amu Darya Hoard], *Arheologiya Priaral'ya* [Archaeology of the Aral Sea Region]. Issue I. Tashkent: Fan Publ. P. 122-125 (in Russian).
- Pugachenkova, G. A. (1960). K otkrytiyu lyustrovoj keramiki Merva XII v. [On the Discovery of Merv's Luster Ware Pottery of the 12th Century], *Izvestiya AN TSSR. Seriya obschestvennyh nauk* [Proceedings of the Academy of Sciences of Turkmenistan. Social Science Series]. No 4. P. 84-86 (in Russian).
- Rapopot, Yu. A. (1958). Raskopki gorodishcha Shah-Sanem v 1952 g. [Excavations of the Shasnem Settlement in 1952], *Trudy HAEE* [Transactions of KhAEE]. Vol. II. Moscow: Academy of Sciences of USSR Publ. P. 397-420 (in Russian).
- Shishkina, G. V. (1979). *Glazurovannaya keramika Sogda (vtoraya polovina VIII - nachala XIII vv.)* [Glazed Pottery of Sogd (Second-half of the 8th - early 13th Centuries)]. Tashkent: Fan Publ. (In Russian).
- Torbekov, M. T. (2003). Raskopki zhilogo massiva goncharov srednevekovogo Mizdahkan [Excavations of a Residential Area of Potters in Medieval Mizdahkan], *Arheologiya Priaral'ya* [Archaeology of the Aral Sea Region]. Issue VI. Nukus, p. 67-79 (in Russian).
- Tsepkin, Ye. A. (1986). Novye materialy k istorii rybnogo promysla v nizov'yah Amudar'i i na Aral'skom more [New Material on the History of Fishing in the Lower Reaches of the Amu Darya and on the Aral Sea], *Arheologiya Priaral'ya* [Archaeology of the Aral Sea Region]. Issue III. Tashkent: Fan Publ. S. 117-121 (in Russian).
- Vakturskaya, N. N. (1952). O raskopkah 1948 g. na srednevekovom gorodishche Shemaha-kala [Concerning Excavations in 1948 at the Medieval Settlement of Shemakh-kala], *Trudy HAEE* [Transactions of KhAEE]. Vol. I. Moscow: Academy of Sciences of USSR Publ. P. 173-192 (in Russian).
- Vakturskaya, N. N. (1959). Hronologicheskaya klassifikatsiya srednevekovoj keramiki Horezma (IX -XVII vv.) [Chronological Classification of Medieval Pottery of Khwarazm (9th-17th centuries)], *Trudy HAEE* [Transactions of KhAEE]. Vol. IV. Moscow: Academy of Sciences of USSR Publ. P. 261-342 (in Russian).
- Vishnevskaya, O. A. (1958). Raskopki karavan-saraev Ak-Yaila i Talaihan-Ata [Excavations of the Ak-Yaila and Talaykhan-Ata Caravanserais], *Trudy HAEE* [Transactions of KhAEE]. Vol. II. Moscow: Academy of Sciences of USSR Publ. P. 431-466 (in Russian).
- Yagodin, V. N. (1986). Nekotorye voprosy istoricheskoy geografii Priaral'skoj del'ty Amudar'i v VII-XIV vv. [Some Questions on the Historical Geography of the Aral Delta of the Amu Darya in the 7th-14th Centuries], *Arheologiya Priaral'ya* [Archeology of the Aral Sea Region]. Issue III. Tashkent: Fan Publ. P. 73-109 (in Russian).
- Zadykhina, K. L. (1952). Uzbeki del'ty Amu-Dar'i [The Uzbeks of the Amu Darya (Oxus) Delta"], *Trudy HAEE* [Transactions of KhAEE]. Vol. I. Moscow: Academy of Sciences of USSR Publ. P. 319-426 (in Russian).
- Zhdanko, T. A. (1958). Narodnoe ornamental'noe iskusstvo karakalpakov [Folk Decorative Art of the Karakalpaks], *Trudy HAEE* [Transactions of KhAEE] Vol. III. Moscow: Academy of Sciences of USSR Publ. P. 373-410 (in Russian).
- Zhurayev, Sh. (1997). Buhoro vo asi IX-XI asrlar kulolchiligi «Chambarak» na shlari ha ida [Concerning «Chambarak» Patterns of Pottery of 9th-11th Centuries of the Bukharan Oasis], *IMKU*. No 28. Samarkand: Su diyon Publ. P. 162-167 (in Uzbek).