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Metal Bowls from a Medieval Cemetery at Rusenikha

Unusual metal bowls, one intact and three fragmented, from a medieval Mari cemetery at Rusenikha, in the Nizhny Novgorod Region, are described. Coins indicate that the cemetery dates to the 11th century. The results of the chemical analysis of the metal are presented. The bowls are made of “white bronze”, and are decorated with geometric patterns on the inside. Similar items are rather frequent in medieval (9th–11th century) Mari cemeteries (Veselovo, Dubovsky, Nizhnyaya Strelka), and isolated finds are known on the Oka and Middle Volga. Numerous parallels relate to Western Siberia, most notably to the Ob Basin, among works of the 10th–11th century toreutic art of Eastern Iran and western Central Asia. Certain features of the Rusenikha bowls offer a deeper view of the technology, decoration, and features of individual artistic style. It has also become possible to specify the date of those vessels and the places of their manufacture. The routes whereby they were imported to the Middle Volga might have varied, but the principal one, passing across Volga Bulgaria, had been taken by Ibn Fadlan in the early 10th century. This stretch of the Great Silk Road connecting East and West was especially important from the 9th to the mid-11th century, when the Kipchak-Cuman tribes established hegemony in the Eastern European steppes.

Keywords: *Middle Ages, Mari, cultural contacts, technology, dating.*

Introduction

A considerably large series of metal bowls was found at the medieval Mari cemeteries of Veselovo, Dubovsky, and Nizhnyaya Strelka in the 1950s–1980s. Similar objects are known from a vast territory from the Oka River in the west to the Ob River in the east (Rudenko, 2000a: 87–90). The bowls date to the 10th–11th century (Nikitina, Rudenko, 1992; Rudenko, 2000b, 2010). Noteworthy are the bowls from the cemetery of Nizhnyaya Strelka (Nikitina, Rudenko, 1992), exhibiting

original decorative motifs, whose exact analogs have not been recorded so far.

In the recent years, the collection of bowls has been supplemented by unique items from the medieval Mari cemetery at Rusenikha, located on the right bank of the Vetluga River in the Nizhny Novgorod Region. The site was discovered by T.B. Nikitina in 2009, and was studied in 2010–2013 by the archaeological expedition team of the Mari Research Institute of Language, Literature and History, headed by Nikitina and supported by the Russian Foundation for the Humanities, projects

No. 10-01-18045e, 11-01-18023e, and 13-01-18052. The study area totaled over 1500 m², including a continuous archaeological survey area of 948 m² and a geophysical survey area of ca 1000 m². The excavated section of the cemetery revealed 18 burials, and 15 sacrificial assemblages located in the space between burials.

In accordance with the burial rite and grave goods, the site is attributed to the Mari culture of the 10th–11th century. This age estimate was proposed by D.G. Mukhametshin, senior researcher of the Bulgarian State Historical and Architectural Museum-Reserve, on the basis of dirham coins recovered from some burials. These coins are mostly imitations, the earliest of which date to the reign of Jafar ibn Abdallah (9th century to early 20s of the 10th century), while the younger coins were manufactured during the reign of At-Tai Billah (late 10th century).

The Rusenikha grave goods include a great number of typologically diverse artifacts: adornments, labor tools, weapons, and household utensils. Metal bowls are of especial interest with respect to the burial rite, esthetics, and cultural and trade contacts. During excavations, one almost intact bowl and isolated fragments of a few other bowls were found. Two bowls were associated with sacrificial assemblages; other fragments were embedded in the ploughed field between graves.

Description of bowls

Bowl 1. The fragments were associated with sacrificial assemblage 1 (Fig. 1, 4–6). It represents a set of adornments wrapped in cloth and fur, and buried in a shallow pit between graves 1 and 2. The outlines of a rounded pit, 40 cm in diameter, were noted at a depth of 28 cm from the present daylight surface. The goods were placed on wooden bedding. They included two spectacle-shaped pendants and two large umbo-shaped pendants with rattling suspensions, fragments of an iron knife, ten large metal beads, small metal pieces of bowl, and birch-bark fragments. Judging by the composition of the finds, the assemblage contained shoe-ornaments.

There were seven fragments of a bowl: three rim-fragments and four wall-fragments. The bowl had a hemispherical, flattened shape; the approximate diameter was 14 cm, the height might have been in the range of 5–7 cm. The color of the metal was dark green, nearly black. The bowl was decorated on both interior and (what is especially remarkable) exterior surfaces. Its walls were very thin (0.01–0.10 cm), brittle, and fragile. Some fragments demonstrated uneven surface; convexities were formed because of metal corrosion, as demonstrated by exfoliation of the metal at bulging areas.

1.1. Fragment of a rim, consisting of three pieces stuck together (Fig. 1, 4), $3.60 \times 2.90 \times 0.01$ cm in size. The

inside shows an ornamental band spaced 1.7 cm from the rim's edge, and consisting of small circles 0.2 cm in diameter with a dot in the center of each. Traces of marking remained preserved: a thin line serving as a guide-mark for installing a circular burin (Fig. 1, 5, 6). The exterior surface bears a motif of overlapping circles 0.5 cm in diameter with dots in their centers, the motif representing a continuous chain of circles spaced 0.7 cm from the rim's edge. The artisan must have been very skilled in engraving for the ornamentation on either side not to show through the extremely thin walls of the vessel. Apparently, he used a special support-plate or a small wooden anvil with soft coating to secure engraving on the inner bowl surface. The exterior decoration motif is noteworthy because the edges of the image are smoothed. Possibly, it was made during the preparation of the template, and was applied on it.

1.2. Fragment of a rim, consisting of two irregular triangular pieces stuck together ($2.80 \times 1.30 \times 0.01$ cm), with a straight cut, without decoration.

1.3. Fragment of a rim ($1.70 \times 1.60 \times 0.01$ cm) of an irregular rectangular shape, with a straight cut, without decoration.

1.4. Wall-fragment ($3.10 \times 1.70 \times 0.01$ cm) of an irregular triangular shape, with decorative motif of small circles (0.15–0.20 cm in diameter), with dots in their centers, the circles being executed with thin lines (0.01 cm thick).

1.5. Wall-fragment ($1.70 \times 2.0 \times 0.01$ cm) of irregular square shape, with the same decoration as described above.

1.6. Wall-fragment of two irregular rectangular pieces ($1.80 \times 0.75 \times 0.01$ cm) stuck together. Decoration similar to the above, partially preserved.

1.7. Fragment of bowl's bottom ($4.00 \times 2.45 \times 0.01$ cm) of irregular sub-rectangular shape with decoration in the form of a ring, 4 cm in diameter, composed of small circles, 0.15 to 0.20 cm in diameter, with dots in their centers. On the reverse side, vague circles are seen, ca 0.4 cm in diameter, with dots in their centers.

Bowl 2. This bowl is represented by four fragments from surface finds.

2.1. The fragment $7.60 \times 6.10 \times 0.15$ cm is well preserved, but has some contaminated areas and a fissure over 1/3 of its surface (Fig. 1, 1). The bowl had a hemispherical shape, was 13.6 cm in diameter and ca 7–9 cm high. It was manufactured of a sheet blank made by casting with a subsequent mandrel forging, for shaping. At first, the bottom was forged, and then the walls were drawn down. The external undecorated surface of the bowl shows the traces of processing of the template's wooden blank in the form of wide cuts intended for the template's fashioning (similar traces are also noted on the inside of the rim). The interior surface of the fragment has linear signs obtained by polishing the surface with

sand. All signs are parallel to one another, suggesting that polishing was unidirectional.

The interior surface of the bowl was polished, and decoration was only applied after that, as evidenced by the rough edges of the engraved lines (which would otherwise be smoothed by polishing). This complicated the artisan's work: the burin was unstable and slid over the smooth surface, despite the marking made with a punch. Binocular microscopic examination has shown the uneven depth and width of the engraved ornamental lines. When making the external ring, the artisan engraved a double line.

The decorative composition is simple and fits the bowl's shape. It includes an ornamental band immediately (1.1 cm) below the edge of the rim, and large circles on the curved walls. The band consists of three stripes 0.4, 0.5, and 0.3 cm wide, delimited by four parallel lines. The middle stripe is filled with adjoining or overlapping circles 0.4 cm in diameter with dots in their centers. The two outer stripes are empty.

The main ornamental motif consists of concentric circles 3.4–3.5 and 1.5 cm in diameter, delimited by a double line (where lines are spaced by 0.2 cm), with the smaller circle containing three adjoining circles 0.5 cm in diameter with dots in their centers. There are also displaced circles, which are, possibly, due to the sliding of the tool over the smooth surface. The space between large circles, apparently, should have been filled with small circles 0.4–0.5 cm in diameter; but this task was only partially completed by the artisan: in one space, he made three small circles, and in another space, two. An attempt to select other variants of decoration failed: there is only a series of punched dots left (made for a pair of compasses), which are connected by small cut marks.

2.2. Fragment of a rim (1.60 × 1.80 × 0.15 cm) of sub-rectangular shape, gold color, polished inner surface, and smooth exterior surface; undecorated.

2.3. Wall-fragment (2.30 × 1.30 × 0.15 cm) of sub-rectangular shape and gold color (Fig. 1, 2). The inner surface shows the lower lateral parts of two large circles (3.4 cm in diameter) of the main ornamental motif, a section of an arch from the ring band of the central roundel, and one small circle with a dot in its center from the background decoration (i.e. from free space between large circles).

2.4. Bottom fragment (Fig. 1, 3). Its polished inner surface preserved a part of a large circle 3.2 cm in diameter, with a double outline (where the lines are spaced 0.2 cm apart). Another large circle, also with a double outline, is situated 0.6 cm from the first, and separates the image on the wall from the bottom decoration. In the central roundel, judging by two overlapping arches, a multi-petalled rosette was represented; and between its petals, there were small circles (at least one circle) with dots in their centers.

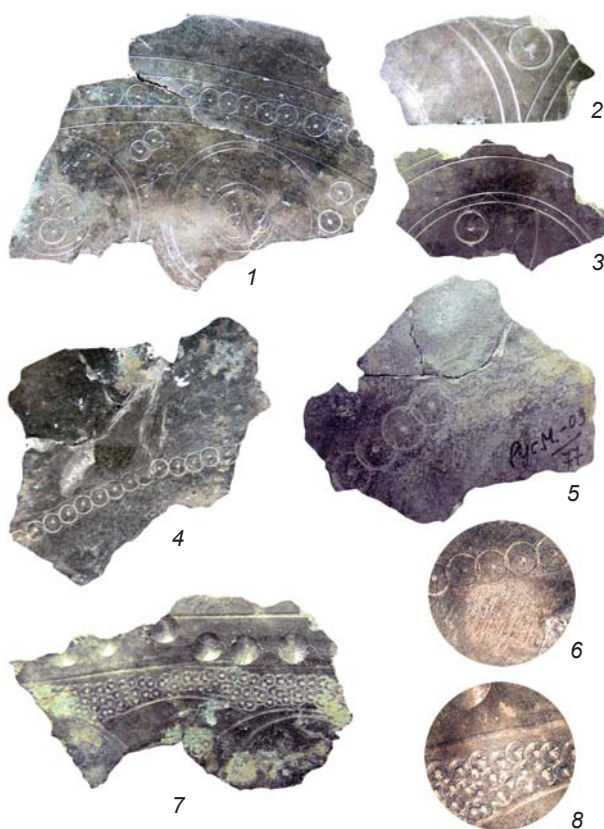


Fig. 1. Fragments of metal bowls.
1–3, 7, 8 – surface finds; 4–6 – sacrificial assemblage 1.

Bowl 3. This bowl is represented by a wall-fragment (Fig. 1, 7, 8) 4.00 × 2.50 × 0.05 cm in size, decorated with circular ornament on the inside. The exterior surface of this fragment shows no decoration. Both surfaces demonstrate traces of polishing. Furthermore, the exterior surface shows signs of soldered seams, which suggests that the bowl was made of several plates.

The ornament includes concentric circles 1.6 and 0.8 cm in diameter, where the large circles are connected with one another by half-arches in their upper parts. The space up to the above ornamental stripe is densely filled with small circles (0.1 cm in diameter) with dots in their centers. The lines, 0.01 cm thick, were carved with a very thin burin. The ornamental stripe, formed by two parallel lines, is decorated with shallow halfway-drilled notches 0.3 cm in diameter. The drilling of these notches was preceded by the attempts to fill the stripe with small circles 0.3 cm in diameter; however, the burin slid over the smooth surface, and these attempts failed.

Bowl 4. This was found in the southern birch-bark box of sacrificial assemblage 5. The bowl, laid upside down, covered the following objects, wrapped in fur and cloth and placed into the birch-bark box: four fragments of a round-wire bronze bracelet, two horse pendants with rattling suspensions, two silver temple rings with

upturned ends, silver “mustached” finger-rings, fragments of two laminar bracelets made of nonferrous metal, a bronze bead, fragments of a pectoral adornment in the form of a plate with rattling bottle-shaped suspensions, woolen threads (with spiral metal winding, clips, and small metal beads from a plait decoration piece), bronze bell and beads, an iron knife, remains of an adornment (which included a bone horse and two heavily damaged ear-picks, as well as bronze pipe-shaped and round beads), textile pieces with embroidery made with metal thread, bronze pipe-shaped beads, leather fragments, umbo-shaped pendants, shoe-straps and metal shoe-decorating beads, shoe-laces plaited of two-colored thread, a small pretzel-shaped steel and a small piece of flint, a sandstone bar (probably a casting mold) wrapped in birch bark and placed over three evenly cut wooden planks, a copper chainlet, a buckle with rattling suspensions made of non-ferrous metal, and one more silver finger-ring. The bowl was covered with birch bark. Thereupon, charcoal pieces were noted. At the bottom of the pit containing the sacrificial assemblage, traces of bast and twigs were found.

The bowl had a hemispherical shape (Fig. 2, 1), and was 13.0–13.6 cm in rim diameter and 5.7 cm high. The inner surface was golden yellow; the exterior surface was gray with a greenish shade. The bowl was made of several cast plates connected through forged welding. First the

bottom was forged, and then the walls were drawn down. The bowl shows clear forged sections. The bottom is very thin, brittle, and fragile. The bowl is decorated on both surfaces, with the inner surface being decorated after polishing.

The ornamentation of the exterior surface is simple: there are two concentric circles 6.0 and 4.5 cm in diameter on the slightly flattened bottom, and seven engraved representations, made of intersecting incisions (5×5 ; 5×7 ; 4×5 cm in various combinations) arranged in compact compositions, in the free space (Fig. 2, 2). These are rhomboid motifs formed primarily by pairs of intersecting segments (1 cm long on average) in the upper part of the motif, and by one segment in the lower part. Into the rhomboid central part, a diagonal cross is inscribed, forming four small rhomboids inside. This combination of lines is similar in all compositions, which were executed with varying degrees of care and precision. Sometimes, all segments forming the rhomboid motif are paired, with an additional segment in the upper part. Such combinations are primarily incidental, because the artisan made the incisions rather arbitrarily, and the rhomboids were formed through intersection of lines without any evaluation of the distance between them. Between these ornamental features, paired incisions are situated, ca 1 cm long and spaced 1 cm apart. They have an inclination from the right to the left, as if showing clockwise movement.

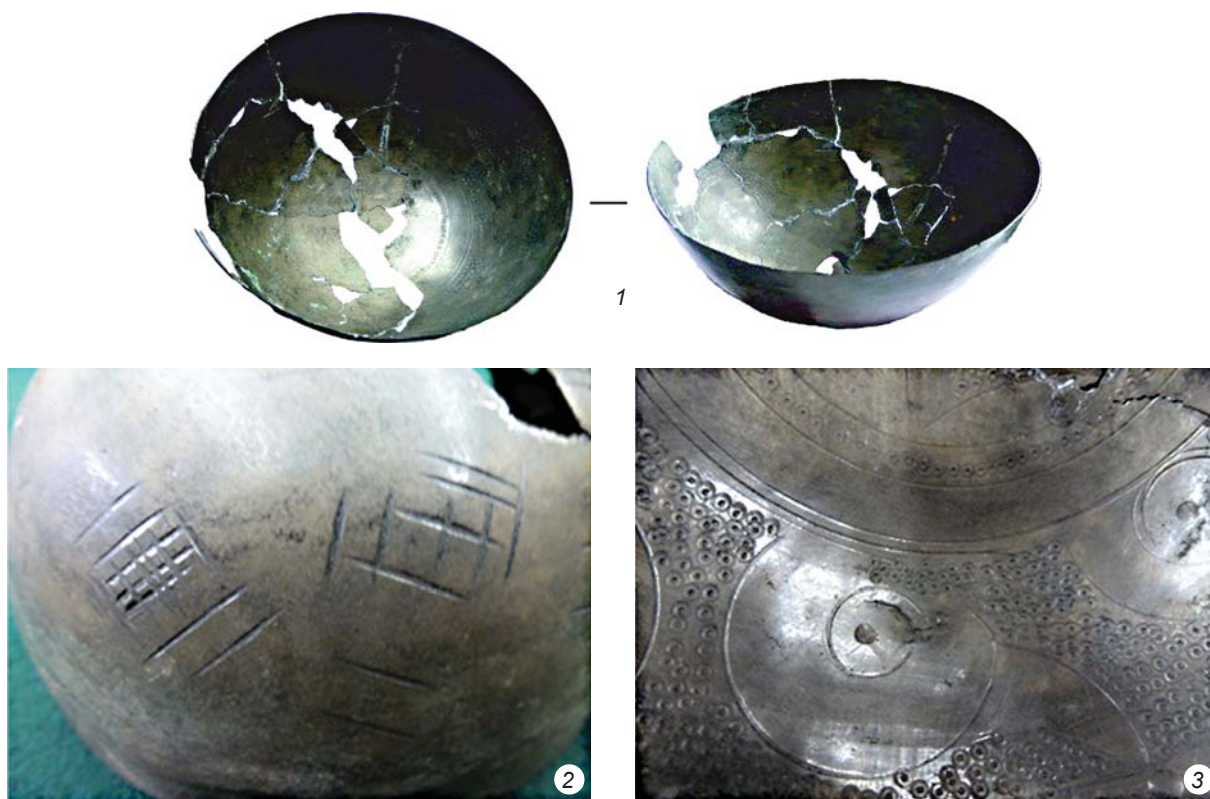


Fig. 2. Metal bowl from sacrificial assemblage 5.

The decoration of the inner surface of the bowl is more complicated. It consists of a central roundel and three ornamental stripes. In the center, there is a six-petalled rosette inscribed into a circle 6 cm in diameter (Fig. 2, 3). The petal-tips are connected with one another by arches adjoining the roundel's outline. The background of the motif is filled with small circles 0.2 cm in diameter with dots in their centers. They are rather randomly scattered over the free spaces between the petals.

The first ornamental band, with a chain of small circles 0.2 cm in diameter with dots in their centers, is formed by an external outline of the central roundel, and by a large circle incised 0.5 cm apart from it; the second band is spaced 0.8 cm apart from the first. The artisan seems to have had problems in precisely establishing the pair of compasses, which slid over the polished surface and left erroneous lines. The main outline is situated at a distance of 4.5 cm from the central point, while the erroneous ones are at 4.3 and 4.6 cm. The second edge of the ornamental stripe was defined by a large circle 7.2 cm in radius. Decoration of this stripe 3.2 cm wide consisted of seven stylized images of vegetative shoots of similar shape, while the free space was filled with small circles 0.2 cm in diameter, with dots in their centers.

The shoots are represented rather simply. At a distance of 0.7 cm from the lower edge of the stripe, according to preliminary marking, small circles 0.7 cm in radius were incised. In two cases, the burin slid off, which resulted in one "blurred" circle, and one having an "additional" outline. Then, from the center of each circle, another circle 1.6 cm in radius was incised, forming the external curve of the shoot. The latter ended up quite originally: in its left part, it ended with another small circle (0.7 cm

in diameter). A spring coming out from the curve was formed by the arches 1.8 and 1.7 cm in radius. In this case, the compass leg was installed on the external outline of the ornamental stripe or slightly above it. The central part of this shoot, in the place of installing the compass leg, is additionally halfway-drilled.

The third ornamental band, 0.7 cm wide, consisted of halfway-drilled notches 0.4 cm in diameter. The artisan seems to have attempted to make a preliminary marking, which is preserved in the form of thin outlined circles, but he failed to do this and began to use the drill instead. The drill slid over the polished surface, and the marked sequence of notches was broken; they are located quite irregularly.

Thus, during the excavations at Rusenikha cemetery in 2009–2011, four hemispherical metal bowls showing decoration with geometric patterns were found (one almost intact, and three in a fragmented state). According to the results of the quantitative spectral analysis (see *Table*), the bowls were made from high-tin bronze, which is typical of such objects from the Mari region of the Volga basin (Nikitina, Rudenko, 1992).

Bowls' attribution and place of manufacture

The bowls from the Rusenikha cemetery are mostly thin-walled, unlike similar finds from other ancient Mari burial grounds. Only one of them is comparatively thick, and thus similar to the bowls from the Veselovo and Dubovsky cemeteries. Another similar feature is the technology of ornamentation with thin lines. Sometimes, small circles with dots in their centers, a motif common

Chemical composition of metal of the Rusenikha bowls (X-ray fluorescence analysis)

No. of fragment in the description	Place of discovery	Fe	Co	Ni	Zn	Pd	Pb	Sn	Cu	As	Bi	Ag
1.1	Sacrificial assemblage 1	0.52	0.11	0.23	0.07	0.62	0.53	45.35	52.16	0.41	–	–
1.6	"	0.93	0.07	0.21	–	0.65	0.31	40.07	57.79	–	–	–
2.1 (rim)	Ploughed field	0.49	0.13	0.23	0.07	0.58	0.17	27.96	70.37	–	–	–
2.3 (wall)	"	0.62	0.21	0.27	0.13	0.56	0.40	28.71	68.80	–	–	–
2.2 (wall)	"	0.91	0.18	0.29	0.09	0.61	0.27	38.76	58.89	–	–	–
2.4 (bottom)	"	0.71	0.16	0.25	0.09	0.62	0.34	35.91	61.93	–	–	–
3	"	0.64	0.13	0.24	0.07	0.62	0.91	31.28	66.10	–	–	–
4 (wall)	Sacrificial assemblage 5	0.53	0.11	0.22	–	0.64	0.94	34.68	62.76	–	0.03	0.08
4.1 (bottom)	"	0.44	0.08	0.23	0.06	0.67	0.73	35.45	62.21	–	–	0.12
4.2 (wall)	"	0.47	0.10	0.27	–	0.59	0.42	28.40	69.58	–	–	0.17

for almost all decorative compositions on such vessels, overlap one another.

The rest of the bowls show considerable similarity in their ornamental features (combinations of engraved motifs with halfway-drilled notches) to the vessels from the Nizhnyaya Strelka cemetery. However, the Nizhnaya Strelka bowls are larger, with thicker walls. Furthermore, they have a rather different primary ornamentation style, based on zoomorphic motifs.

The closest analogs to the Rusenikha motif of multi-petalled rosette can be seen on the bowls from Malyshevo cemetery of the medieval Muroma tribes and from the Semenovskoye I settlement in Tatarstan, both of which are dated to the 10th century. The Semenovskoye I bowl has a hemispherical shape; its inner surface is polished and decorated. The central roundel shows a geometric rosette with thin petals, between which the pyramids of small circles 0.3 cm in diameter with dots in their centers are located. The ring ornamental stripe, bordered on top and bottom by plain stripes 0.2 and 0.4 cm wide, is composed of eight elements, each representing a circle 4 cm in diameter with a rosette of circles in the center framed by a decorative band. The background between them is filled with small circles with dots in their centers (Rudenko, 1990).

Judging by its decoration and size (14 cm in diameter and 4.9 cm high), bowl 4 from Rusenikha is very close to that from the Yamal Peninsula (Sokrovishcha..., 2003: 34, No. 4). Notably, the same Yamal site yielded a bowl* bearing decoration very similar to that on the vessel from Nizhnyaya Strelka. Of great interest also is the presence of a bowl with circular ornament on its inner surface in cremation burial 18 at Nad Polyanoi cemetery on the Yenisei River. A.A. Gavrilova, the researcher of this site, has dated the bowl to the 9th–10th century on the basis of B.I. Marshak's data on the Oriental Muslim antiques (Gavrilova, 1974: Fig. 5, 6, 7).

In Western Siberia, cast Iranian bowls decorated with small circles with dots in their centers have been found (Baulo, 2011: 249–250, cat. No. 382, 383; Fedorova, 1981). They are quite numerous (Fedorova, 1985: 130, tab. I). Spherical bowls with circular ornament or undecorated are dated to the 8th–10th century. Two such bowls, from the collection of artifacts donated to the Yamal-Nenets Regional Museum Complex by the physician B.I. Vasilenko, were found in the Yamal Peninsula, at the destroyed burial ground of Kheto-se (personal communication of A.G. Brusnitsyna); one more bowl was recovered in 2002 during excavations at the archaeological site in vicinity to Zeleny Yar on the Polui River, 46 km east of Salekhard (Fedorova, 2009).

Bowls of this type are most frequently attributed as Iranian ones of the 9th–11th century (Ettinghausen, 1957).

However, it has been traditionally assumed that in the 10th century metal ware was imported into the Upper and Middle Volga from Volga Bulgaria, where manufacturing centers for metal artworks were located. The discovery of such a bowl at the Bulgarian trade settlement of Semenovskoye, close to the Kama River mouth, seems to have supported this hypothesis. However, there is no evidence that this item was necessarily manufactured by Bulgarian artisans. Moreover, such bowls have been discovered not only in the Middle Volga, but also in Western Siberia.

Bulgarian items of the 10th–11th century that were identified by Marshak, including bowls (Sokrovishcha..., 2003: 58–66, No. 23–290), differ from the bowls under study in material, technology, and decoration patterns. The decoration of the Bulgarian bowls included neither compositions with circles nor a characteristic ornamental feature—small circles with dots in their centers. The same traits also do not allow us to correlate these items with the Khazarian toreutics (Ibid.: 52, No. 18).

The closest analogs to the bowls from Rusenikha cemetery, as from the whole Mari region of the Volga, can be established in the metal art from the states that existed in the territory of Eastern Iran and western Central Asia in the 10th–11th century: the Kara-Khanid Khanate (Ghaznavids) and the Samanid Empire (Litvinsky, Soloviev, 1985: 166, fig. 47, 3). However, apart from the general appearance and coincidence of multiple ornamental motifs (composition of circles, decoration with small circles with dots in their centers, etc.), there are also considerable differences: all Iranian bowls are cast, and decorated primarily on both sides; furthermore, they show inscriptions (Ivanov, 1985a: 198–201). They also have no zoomorphic motifs typical of the Mari Volga bowls. However, some Iranian bowls still show animal and bird images (“animal rut”) and animal figurines in the form of zodiac signs (Ivanov, 1985b: Fig. 1, 2). Exactly the indicated region is the possible place of manufacture of the items under discussion. This hypothesis is partially supported by the fact that in Volga Bulgaria itself, many pieces of art were manufactured by the examples elaborated in trade centers of western Central Asia (Rudenko, 2010). In addition, felt rugs from the sacrificial assemblages of the Rusenikha cemetery are also associated with the culture of Turkic tribes populating western Central Asia and Southern Siberia (Nikitina, 2013).

The routes of delivery of the bowls to the Middle Volga might have varied, but the principal route was the way through Volga Bulgaria, which had been taken by Ibn Fadlan's envoys in the early 10th century. This route, which was part of the Great Silk Road connecting countries of East and West, was frequently used from the 9th to the mid-11th century, the onset of Kipchak-Cuman hegemony in the Eastern European steppes.

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