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Crafting Technology of the Bracelets Found at Usvinskaya site Group of the South East Variant of Lomovatovo-Rodanovo Community

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The article presents an analysis of the crafting technology of the bracelets found at Usvinskaya site group and a classification based on the research. For the sake of completeness, chemical composition analysis of the metal bracelets was conducted; as a result, a link between the alloy and the crafting technology was found. For each type of bracelets some analogies and approximate age-dating are presented. The results of the study can initiate a comprehensive research of medieval jewellery crafted in the Perm Cis-Urals.

Keywords: bracelets, technology, the Middle Ages, the Perm Cis-Urals.

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Research area: history.

The Medieval findings located in the basin of the Chusovaya River and its confluents are customarily united into the South Eastern variant of Lomovatovo-Rodanovo community. Such findings are located close together, being in a certain way isolated from the other Medieval sites of the Perm Cis-Urals (Ostrovskiy, 2003: 118-122). The best studied group of the archaeological sites found in the territory is Usvinskaya, including such findings as ancient town sites Salamatovskoe I, II, the ancient settlement and barrow site Telyachiy Brod, Antybarsky barrow, Lisyi Nory ancient town site. Regular archaeological works were carried out on the ancient town site Salamatovskoe I in 1986 under

the supervision of A.M. Belavin, in 2011-2013 leaded by S.I. Abdulova¹; on Antybarsky barrow, works were carried out in 1983 and 1986-1988 leaded by G.N. Lents²; on the ancient settlement and barrow site Telyachiy Brod research was carried out in 1986, 1987, and 2013 under the supervision of N.B. Krylasova³.

Despite the large scale field researches carried out at the sites, the findings have not been thoroughly studied, and many of them remain unpublished. One of the unstudied finding categories is bracelets. At Usvinskaya site group, 13 bracelets were found.

In a jewellery research an important role is played by the crafting technology analysis,

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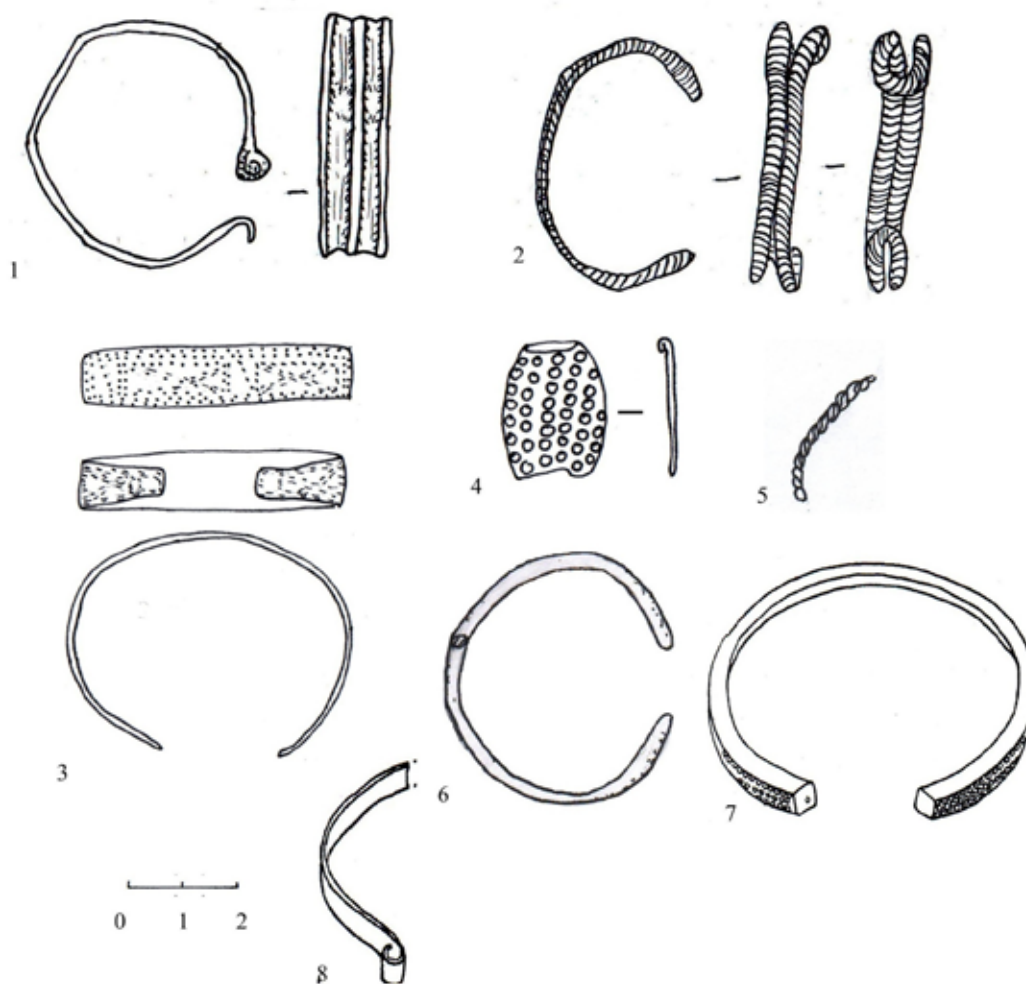


Fig. 1. Bracelets of Usvinskaya site group of the South East variant of Lomovotovo-Rodanovo community: 1–4, 6–8 – Salamatovskoe ancient town site; 5 – Antybarsky barrow; 6 – Telyachiy Brod barrow

which is conducted to reveal the evolution of the shape and the crafting technology. In the present work the types are determined on the basis of the item shape, and the subtypes are outlined according to the shape-forming technology. Variant classification is based on the type of the item decoration.

The chemical composition of the findings was determined with the X-ray fluorescence analyser BRUKER S1 SORTER.

Type 1 – Rod bracelets (3 pieces; Fig. 1/6-7). Rod bracelets look like an open-ended hoop, round or quadrilateral in section. All presented

bracelets belong to the same subtype. The bracelets were cast in one-piece moulds, which is proven by the absence of a casting seam and the high quality of the pieces. After casting, the bracelets were bent to form a hoop. Two of the bracelets were adjusted with some finalizing hammer work in order to stretch and sharpen the ends of the bracelet (Saracheva, Zaytseva, 2011: 234-237). The ends of the quadrilateral bracelet from Salamatovo I ancient town site are decorated with three rows of circle ornament. The piece was cast with the ornament, for this reason the shape of some circles is vague.

Material: multicomponent brass with inclusions of tin and lead.

Rod bracelets with sharpened ends are broadly dated as VII-XIV centuries. In the territory of the Perm Cis-Urals they are frequently found at Schukinsky barrow (Goldina, 1985: 37), Boyanovskoe, Stepanovo log storage areas, Ogurdinskoe and Rozhdensvenskoe. In the neighbouring territories they are well-known from the Bulgar sites of the IX-XI centuries, the South Ural burial mounds of the IX-X centuries (Belavin, Krylasova, 2008:71), and Novgorod, the archaeological levels of the mid.X – early XIV centuries (Sedova, 1981:94). The quadrilateral bracelets with a circle ornament were wide-spread in the IX-XI centuries; at the same time, they are found at Polom and early Bulgar barrows, the South Ural burial mounds (Krylasova, 2011, 88-89).

Type 2 – Laminar (8 pieces). *Subtype a – Cast* (1 piece; Fig. 1/3). The thickness of the bracelet is plucked. The ornament is a simple pattern of longitudinal, lateral and zigzag lines. The ornament is applied with small punch stamping technique. The technique became wide-spread in the IX-X centuries in the Ancient Rus' (Rybakov, 1948: 281-283), in the Udmurt and Pert Cis-Urals.

Material: lead-tin bronze.

In the Perm Cis-Urals, the similar bracelets were found in the Plesensky barrow (Goldina, 1985: 37).

Subtype b – Cut out of a plate (7 pieces). The bracelet is cut out of a thin metal plate and trimmed to eliminate the burs (on some bracelets the aesthetic correction was poorly done).

Variant 1 – with spirally bent ends (1 piece; Fig. 1/8). The ends of the bracelets were pre-heated and bent into spirals. Similar bracelets were common for the Slavs (Viatichi, Krivichi, Novgorodians), for the Muroms starting from the X century; they were found at Tsaritsinsky

burial mounds of the XII century, at the barrows of the Vetluga-Vyatka interfluvium of the XII-XIII centuries (Krylasova, 2011: 89).

Variant 2 – with longitudinal bolsters (4 pieces; Fig. 1/1). To make the bolsters, the bracelet was treated with a round metallic shaft against a soft anvil. The shaft was placed longitudinally along the bracelet and then impressed with a hammer. The bracelet was pre-heated (Sedova, 1981: 114). On the face surface of the bracelet the sliding lines are vividly seen, proving some treatment of the piece after the impression. In this case, polishing was not well made. The ends of the bracelets are rolled both inwards and outwards.

Material: lead-tin bronze.

Such bracelets were known to be left by the Viatichi at the sites of the XI-XIII centuries (Zaytseva, Saracheva, 2011: 244) and in Novgorod, from the archaeological levels of the 70-s of the XIII and until the mid-XIV centuries (Sedova, 1981: 114).

Variant 3 – with wide ends and a circular pattern (2 pieces; Fig. 1/4). Bracelet fragments were found. The pattern was impressed with a hatchet hammer. One of the bracelets (for the other one, only one end was found) has longitudinal grooves on its main part, which were also made with a hatchet hammer.

Material: multicomponent brass with inclusions of tin and lead.

Similar bracelets were found at Rozhdensvensky, Agafonovskiy II burial mounds and dated as of the XI century, at Mryasimovskiy burial mounds in the South Urals dated as of the XI-XII centuries, at the Chezhtyagsky barrow dated as of the late XI-XII centuries (Belavin, Krylasova, 2008, p. 370), at Kuprosky ancient town site (Belavin, Oborin, Sarapulov, 2012: 39).

Type 3: Twisted (1 piece; Fig. 1/5). The bracelet is made of two twisted silver wires. The wires were produced with the drawing method.

Evidently, the wires were twisted without prebaking, which finally lead to lamination which is easy to notice on the broken end of the bracelet. The ends of the bracelets were left untreated.

Material: silver.

Woven bracelets were also found at Boyanovsky barrow (Goldina, 1985, p.37), in Novgorod at the archaeological levels of the XII – mid. XIII centuries (Sedova, 1981: 97).

Type 4 – Bracelets made of a wire-wound rod (1 piece; Fig. 1/5). The round base rod is laid in two rows with their ends connected. The wire was tightly wound around the whole length of the rod. Both the rod and the wire were produced with the drawing method.

Material: lead-tin bronze.

Bracelets made with a similar technology were found in Novgorod (Sedova, 1981, p. 100) and Tver (Lapshin, 2009: 104) and dated as of the XI-XIII centuries.

Research of the bracelets found at Usvinskaya site group of Lomovatovo-Rodanovo community demonstrated that the bracelets were manufactured with several basic technologies: casting, forging, plate cutting, drawing and twisting. All pieces underwent some aesthetic treatment either for the shape formation or for elimination of defects. The laminar bracelets were decorated (no decorations were found of the bracelets of other types) with the method of impression.

The bracelets of the Usvinskaya site group of Lomovatovo-Rodanovo community are mostly age-dated as of the X-XIII centuries.

The main materials for bracelet manufacture were lead-tin bronze and multicomponent brass. In the Ancient Rus', bracelets of the same materials were found in the same chronological period (Tsvetnye i dragotsennye metally, 2008: 37). However, unlike in the Ancient Rus', in the Usvinskaya site group of Lomovatovo-Rodanovo community the lead-tin bronze bracelets are more frequent than those of multicomponent brass.

Lead-tin bronze is an alloy suitable for making cast, forged and drawn pieces (Zaytseva, Saracheva, 2011: 120). At the researched sites the bracelets of the same alloy manufactured with forging and drawing were found.

Multicomponent brass is a good material for forging and drawing, as well as for cast piece production (Zaytseva, Saracheva, 2011: 123). The studied bracelets of multicomponent brass were initially cast or cut out of a plate, after which they were numerously exposed to various kinds of mechanic treatment. The presence of zinc in the alloy allowed the deformation of the piece without causing any additional defects.

In the current sampling, one bracelet was produced of “pure” silver. Silver is a highly plastic and ductile material; it can be used for making thin metal sheets and wire (Flerov, 1981: 63). This bracelet is the one made of the two drawn twisted wires.

It may be suggested, that back in the Medieval period the Perm jewellers had extensive knowledge of metal properties, which they used for producing their jewellery.

¹ Abdulova S.I. *Otchiot o raskopkakh Salamatovskogo I gorodischa v 2012 godu* [Report on the Salamatovskoe I Ancient Town Site Excavation in the Year 2012]. Perm, 2012 // Archive of AEM of PSHPU

² Lents G.T. *Otchiot o polevykh issledovaniyakh Antybarskogo mogil'nika v Chusovskom rayone Permskoy oblasti v 1988 godu* [Report on the Field Study of Antybarsky Barrow in Chusovsky District of Perm Oblast in 1988]. Perm, 1989 // Archive of AEM of PSHPU

³ Krylasova N.B. *Otchiot o raskopkakh selischa i mogil'nika Telyachiy Brod v Chusovskom rayone Permskoy oblasti v 2003 godu* [Report on Excavations of the Ancient Settlement and Barrow Site Telyachiy Brod in Chusovsky District of Perm Oblast in 2003]. Perm, 2004 // Archive of AEM of PSHPU

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Abbreviations

AEM of PSHPU – Archaeology and Ethnography Museum of Perm State Humanitarian Pedagogical University.

**Технология изготовления браслетов
Усьвинской группы памятников
юго-восточного варианта
ломоватово-родановской общности**

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В статье представлен анализ технологии изготовления браслетов с памятников Усьвинской группы и на основе этого разработана их классификация. Для более полной картины проведен химический анализ состава металла браслетов, в результате выявлена связь между сплавом и технологией изготовления. По каждому типу браслетов представлены аналогии и датировки. Результаты данного исследования могут положить начало комплексному изучению средневековых украшений рук Пермского Предуралья.

Ключевые слова: браслеты, технология, Средневековье, Пермское Предуралье.

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