

Olga Orfinskaya and Asia Engavatova

Medieval textiles from the necropolis of Dmitrov Kremlin, Russia

Fragments of garments with gold thread have been found in kurgan burials and cemeteries of the 11-14th centuries in many regions of Russia (Samokvasov 1916; Sheliapina 1973; Fechner 1993; Darkevich and Borisov 1995; Sedova 1997). The collection of the State Historical Museum in Moscow, which includes 63 such finds, is among the best investigated (Fechner 1993). As a rule, archaeological investigation of gold thread has concentrated on the questions of dating and provenance of gold textiles found in the territory of Rus. However, only very few publications include analyses of gold threads and metal composition investigations (e.g. Pogodin 1996). During archaeological excavations in the territory of the Dmitrov Kremlin, which were undertaken in connection with building works, several burials were discovered near the Dormition Cathedral. Based on the typology of finds and stratigraphy, the burials are dated to the 12-16th centuries. Of great interest are 5 burials, which contained fragments of garments made of silk and gold threads. Table 1 summarises the finds.

Gold and silk bands from burials No. 36, 56, 17 and 18

All of the investigated fragments of bands were woven with silk and gold threads. The widths of the bands are

1.3-3.0 cm. The patterns are generally geometrical (braid, herringbone, diamond) and small, except in the first find, which has a complex pattern with a warp repeat of 7 cm (Fig. 1). Two types of binding were used in the ground weave: warp-faced rep (Fig. 2) and 2/1 warp-faced twill (Fig. 3). In every case, silk warp threads almost completely cover the silk weft threads and create a ground weave on which gold thread weft forms the pattern. The gold threads are connected to the ground weave by the warp threads in twill or tabby, depending on the pattern. In all cases, warp threads are made of thick S2z-ply yarn. The ground weave has the same yarn type in three cases (Nos. 1, 3, 4), but in band No. 2 the weft is formed by a single-spun yarn, albeit of the same thickness as the plied warp. In all cases, the thread count of the ground weave weft is equal to the gold-thread count. The gold thread is of the filè type, with silk core. The analysis of the metal shows that the metal strip in find No. 1 is two-layered. In the remaining finds, gilded silver thread was used (Orfinskaya et al. 2002). In all samples, the gold strip is s-twisted around the core. The core was made of silk of possibly red colour (Engavatova et al. 2005).

Table 1. Objects of investigation.

Burial No.	Sex	Age (in years)	Description	Band No.
36	M	undeterminable	Fragment of a trimming, possibly from a sleeve. Consists of wide and narrow gold-woven silk bands.	1
56	M	25-30	Collar made of a silk ribbon with gold embroidery.	2
17	F	9-12	Collar with buttons. Consists of a gold-woven silk band, decorative cord and base textile.	3
18	F (?)	undeterminable	Collar sewn from a gold-woven silk band.	4
61	F	20-25	Headgear of silk textile and metal appliqués (type 2). Remains of a collar on a bark base, with metal appliqués (type 1) and beads.	-

Table 2. Technical characteristics of gold-woven bands.

Band no.	Band width (cm)	Pattern	Repeat pattern length/width (cm)	Binding	Warp (silk) twist	Ground weft (silk) twist	Thread count (+ gold thread)	Gold thread type
1	3	diamonds, crosses	7.0/3.0	warp-faced tabby	S2z	S2z	83/28 + 28	Filé (metal and silk), s-twisted Double metal layer
2	1.3	braid	0.3/1.0	2/1 twill	S2z	z	46/28 + 28	Filé (metal and silk), s-twisted Gilded silver
3	2.5	braid	0.8 /0.7	warp-faced tabby	S2z	S2z	66/ 28 + 28	Filé (metal and silk), s-twisted Gilded silver
4	1.5	herringbone	0.5/2.5	2/1 twill	S2z	S2z	40/40 + 40	Filé (metal and silk), s-twisted Gilded silver

One of the most important but least investigated questions is the origin of production of gold-woven bands. Analysis of the investigation results permits several observations. All finds are made of silk, and silk objects were imported to Rus. Gold threads of the filé type with a silk core are typical of western textiles of the 10th century, while in the East, technologically different types of gold threads were used during this period (Lantratova 2002). Mariya Fechner (1982; 1993) proposed two production areas: Byzantium and Spain. The investigated material appears to fit into the group of the Byzantine imports; however, in order to get a definitive answer regarding the production location of gold-woven textiles, a much more substantial work on the surviving material must be carried out, based on specific technological criteria.

The patterns of the bands are characteristic of the Byzantine area. Braid pattern (Fig. 4) is among the most common motifs. This may be explained by the relatively simple repeat pattern. Herringbone pattern, like the braid, is also common and relatively simple in execution. More complex is the diamond pattern, which has a repeat pattern consisting of three elements (Fig. 5). We were unable to find direct comparisons to this pattern, however its style is similar to the diamond patterns in other examples in the collections of the Moscow State Historical Museum (Fechner 1993). The binding type also does not give an answer to the question of origin. The ground weaves used in the bands are tabby and



Fig. 1. Band 1.

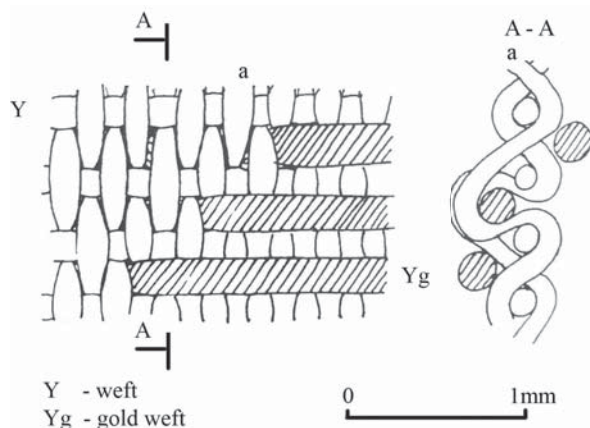


Fig. 2. Band 1. Schematic drawing of the warp-faced tabby: a – warp; b – weft; c – gold weft.

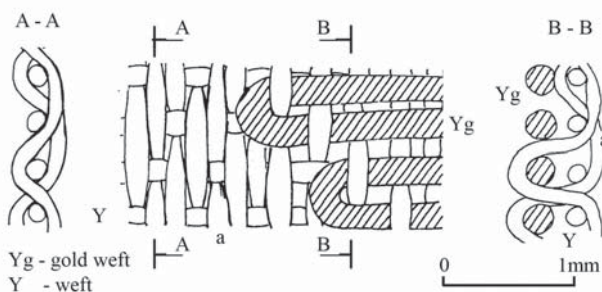


Fig. 3. Band 2. Schematic drawing of 2/1 twill.

2/1 twill and this choice is probably connected to the width of the band. The twill binding is more complex; the narrow twill band is prevented from twisting due to the changing direction of twill lines at the borders and in the centre (Fig. 6). The widest band No. 1 has a high warp density, which probably prevents it from deformation during stress. This combination of tabby and twill is particularly useful for the production of bands. The choice of ground weave hence is unlikely to be connected with the production centre; rather, it is connected to the function of the item. The combination of gold with red colour was regarded as prestigious and was common in many areas, including Byzantium and Rus. Based on this information, we would attribute all four finds to Byzantine production.

In our opinion, an interesting element of these bands is the division of the sleeve trimming (burial 36) and collar (burial 17) into two unequal parts along the band. In the first case, the division is obtained by the use of two different bands with different widths. In the second case, a cord was sewn onto the wide band, dividing it into two unequal parts with a ratio 1:2. Such asymmetrical division of collars and sleeve trimmings may be due to the influence of contemporary fashion or, alternatively, has a symbolic meaning.

In addition to the bands, the silk fabric used as base for

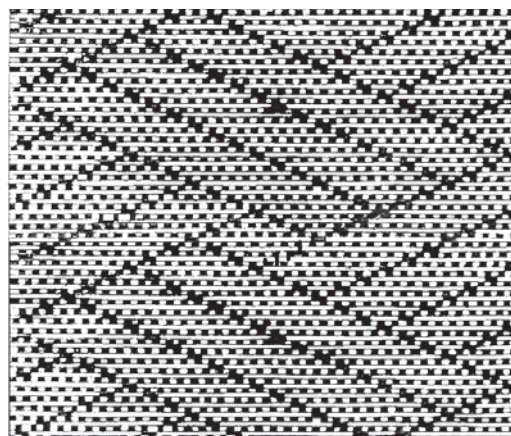


Fig. 4. Band 3. Pattern imitating a braided band.

the collar band (No. 3) was investigated. The textile is a tabby, woven of untwisted flat silk yarn with a thread count of 22/30 thread per cm (Fig. 7). While such simple tabby textiles could have been produced anywhere, the absence of twist in the yarn indicates an eastern origin, e.g. Central Asia or the Far East (China).

Burial 56 also contained a collar made of silk fabric with gold thread embroidery. The textile is a samite (Fig. 8) and its binding, thread thickness and twist direction correspond to the numerous well investigated finds of Mediterranean origin (Fechner 1993). The embroidery is made with a gold thread of filé type with an undyed silk core, although the gold has almost completely disappeared. Another thread used for the embroidery was made of dark-brown silk. Both silk and gold threads

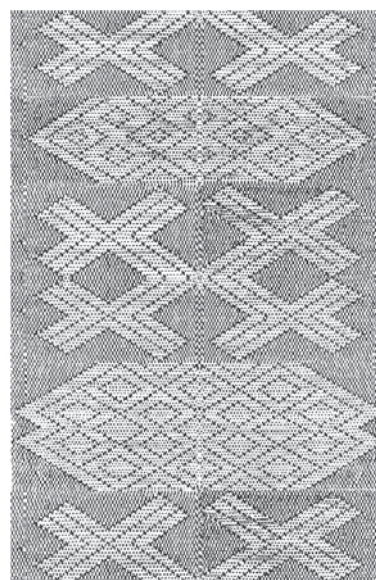


Fig. 5. Band 1. Drawing of pattern of band 1, consisting of three elements.

were used in embroidery in ancient Rus. Historical sources tell us that the sister of Grand Prince Vladimir Monomachos (1053-1125), Anna Vsevolodovna, in 1086 opened a school in the St. Andrew's monastery in Kiev to teach girls gold and silver embroidery. Furthermore, embroideries from Rus are mentioned in

monastic records of the 12th century on Mount Athos (Novitskaya 1956; Fechner 1993). The embroideries in

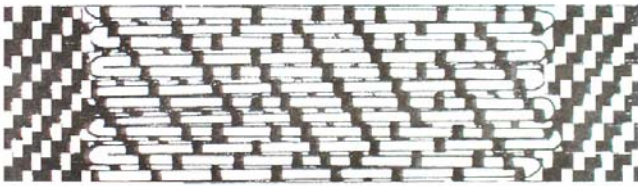


Fig. 6. Band 2. Schematic drawing of band 2. At the edges, twill has Z direction, while in the centre it has S direction.

the monasteries were made with silk and gold threads brought from the west. In burial No. 17, silk threads were used to attach the buttons to the various collar parts, which were just like gold threads brought from the west.

It is known from finds in other medieval necropoleis that gold-woven bands were usually used as trimming on sleeves or collars, as well as decorations on garment

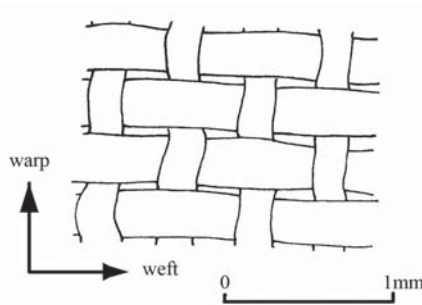


Fig. 7. Textile of collar lining (band 3), tabby weave.

edges (Fechner 1974). Despite the survival of collars and sleeve trimming the garments could not be reconstructed. The collars could have been independent elements, worn like necklaces (Fechner 1974; Samburova 1976). This is the most likely interpretation for the collar found in the girl's burial No. 17. The length of the collar is 35 cm, which corresponds to a medium size of a neck opening of a shirt of a (modern) adult woman. For a child of 10-15 years, such a collar would have been loose. The preserved textile fragments indicate that in two burials (Nos. 17 and 18) there were garments with standing collars sewn of gold-woven bands, while in one burial (No. 56) the collar was made of embroidered fabric. One of the burials (No. 36) contained a fragment of a sleeve trimming made with two types of silk band.

Female headdress from burial 61

Female burial No. 61 provided a unique opportunity for a detailed investigation of a medieval female headdress. The investigation of this find followed the stratigraphy of the burial (Fig. 9). The first layer consisted of very dark hair and small skin fragments of the deceased, which were covered with dark soil particles. The hair

was covered by a thin dark layer "X", which was best preserved under the appliqués. At first, it seemed that these were humified organic remains. However, microscopic examination showed that the layer also contained silk fibres and threads. This discovery allowed us to conclude that the headdress consisted of a silk textile, although the silk thread remains were too decayed to allow an identification of the weave.

Metal ornamental appliqués (type 2) were preserved on the skull on top of layer "X", positioned in a line across the forehead. The appliqués have a rectangular shape and measure 1 x 0.6 cm, with a thickness of 0.1 cm. Their surface is patterned with parallel lines running along the short side at an angle of 30 degrees. All four corners of the appliqués have small holes, through which they were attached to the fabric. Microscopic analysis allowed for identification of gilding in the grooves, while it is absent

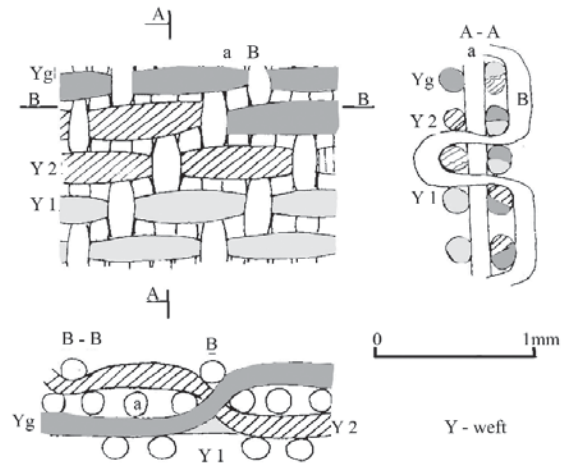


Fig. 8. Schematic drawing of the silk samite from burial 56.

on the convex surfaces of the appliqués. The metal composition analysis (Engavatova et al. 2005) indicates that these appliqués were made of gilded silver.

On top of the appliqués was a layer of a tabby textile, which may have been a veil or a head scarf. A small preserved fragment provides an impression of what it looked like. An irregularity in the weave, which is noted three times along one weft thread, suggests an intentional patterning technique (Fig. 10).

Just below the skull and above the rib, a second row of appliqués (type 1) was preserved. They were positioned on a thin layer of birch bark, which was covered with a 1-1.5 mm thick layer of a dark organic substance. Just like in the case of layer "X", at first glance it appeared to be a layer of dirt, but detailed microscopic analysis identified silk fibre in this layer "Y" as well. Thus, it appears that a silk textile was in direct contact with the birch bark, to which appliqués of type 1 were attached. In between the appliqués were oval glass beads with a diameter of 1-2 mm. Type 1 appliqués also have a rectangular shape, measuring 0.8 x 0.6 cm and with a thick-

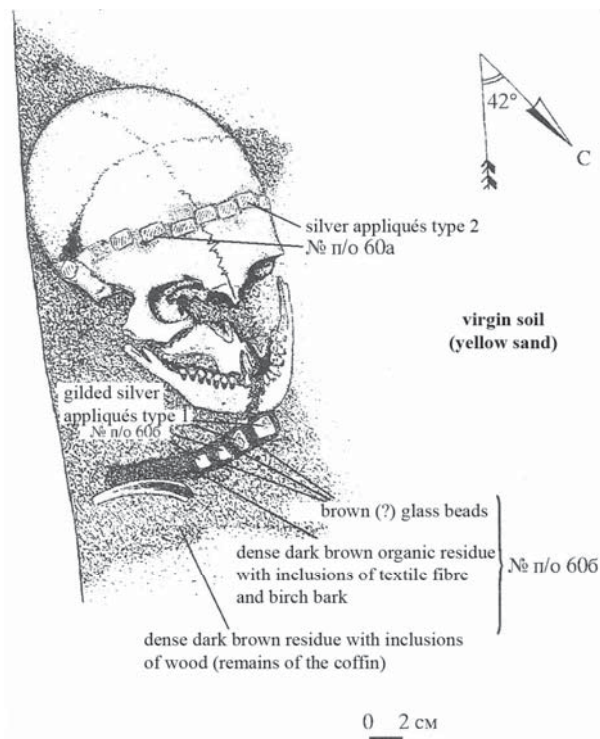


Fig. 9. Drawing of the head area of burial 61.

ness of 1 mm. However, they have a different decorative pattern. The appliqués have holes in all four corners and in one of them remains of a silk thread were preserved, probably used to sew it to the substrate. The configuration of type 1 appliqués in the burial and their analyses indicate that they belonged to a collar, which consisted of silk textile on a birch bark base and appliqués and beads sewn on the textile.

The investigation of the metal composition and production method (Engavatova *et al.* 2005) permits us to conclude that type 1 appliqués are made of three metal layers, which is unusual for this period. Metal analysis showed that layer 1 was made of almost pure silver, gilded on both sides; layer 2 was made of gold-silver alloy and gilded; layer 3 was not as well preserved, but appeared to be the same as layer 2 and probably also gilded. The gilding in this case is quite unusual, since the alloy was covered by almost pure gold.

The reconstruction of the costume detail from burial 61 is presented in Figure 11. The forehead of the young woman was covered by a silk fabric decorated with gilded appliqués. On top of that she wore a scarf or head cover of fine silk with pattern band. This would be in accordance with the reconstruction of contemporary female burial costume suggested by Saburova (1988). In addition, the young woman wore a garment with silk collar on a bark base, decorated with glass beads and gilded appliqués. The presence of birch bark indicates that the collar was stiff and upright.

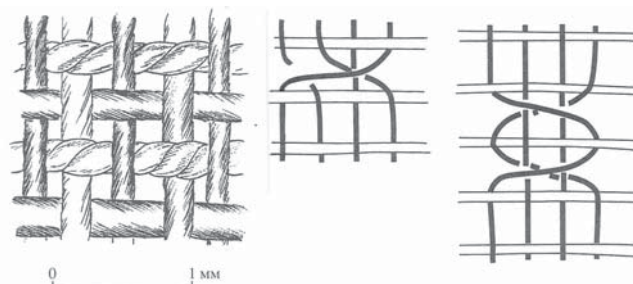


Fig. 10. Drawings of bindings of the silk head cover: 1) tabby; 2) area with damaged weave; 3) decorative binding.

Conclusions

Five of the burials of the Dmitrovsk Kremlin contained fragments of garment elements made of silk: three collars and a sleeve trimming of gold-woven bands and two collars of silk fabric, one with gold embroidery and the other with sewn-on gilded appliqués and beads.

In burial 36, a fragment of gold-woven band was found in a secondary context. It was identified as a sleeve trimming. Sleeve decorations are exceedingly rare in ancient Russian contexts.

A well preserved cuff of a sleeve was found in the burial of Vladimir, son of Yaroslav the Wise, who died in 1052. Cuffs are also preserved in the burial of Varlaam of Khutyn who lived in the 12th century (Yakunina 1955). Fechner mentions a sleeve decoration in the collection of the State Historical Museum in Moscow, decorated with a gold-woven band, which was found in the Moscow region (Fechner 1971, 219).

Burial 61 contained a burial costume of a young woman that included a forehead cover and thin, light, semi-transparent head veil. No direct comparisons have been found so far but similar light fabrics are known from other burials. Thus, a thin silk gauze-like textile was preserved on the skull in a 13th century burial in Moscow Kremlin (Sheliapina 1973, 58). Remains of thin textiles are also known from Old Russian hoards of 12-13th centuries (Fechner 1974, 69). Such thin fabrics were made of silk tabby and decorated with in-woven designs, gold thread embroidery (Mikhailovskij hoard found in 1903) or gold-woven bands (12th century burial in Smolensk, church of Ioann Bogoslov, excavated by Khozerov in 1924). Appliqués from collars and headdresses are ubiquitous in the territory of the entire Rus, including peripheral regions of the 12-13th centuries (Saburova 1976, 229). The appliqués were made of stamped or gilded silver and various alloys (Kuzmina 2006).

We do not know the social class of the five deceased in the burials of Dmitrov Kremlin, but certainly their position was above average. No doubt, gold-woven and embroidered textiles served as a symbol of higher social class, and in 1216, before the Battle of Lipovets, prince Yaroslav Vsevolodovich told his troops: "If the shoulder-collar is gold-embroidered – kill!" (Katasonova 2006).

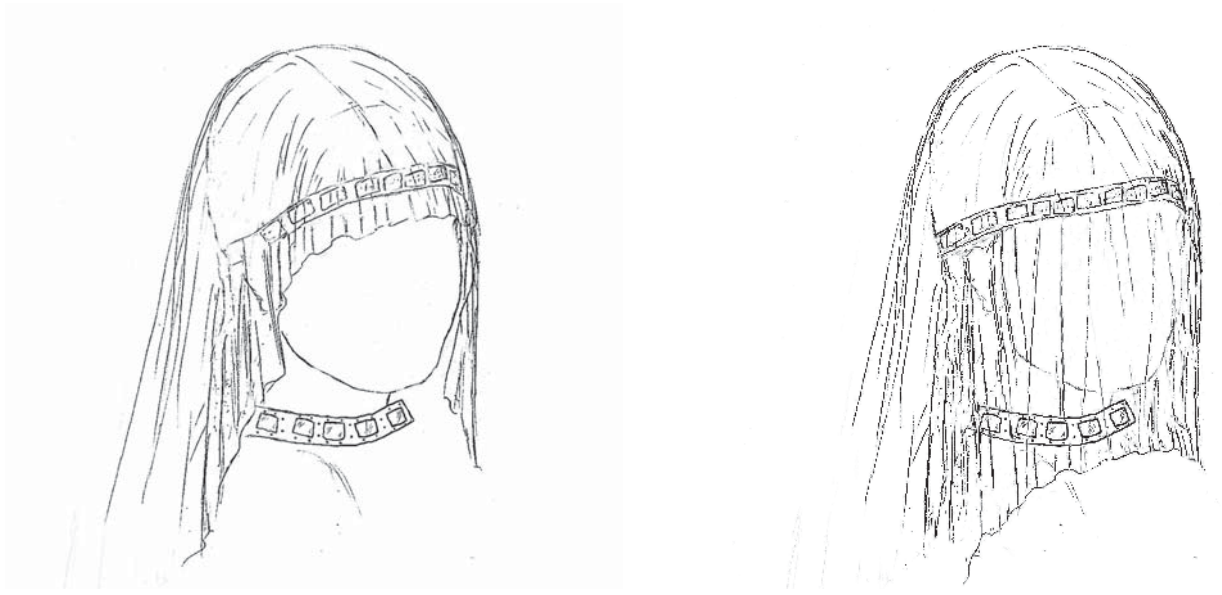


Fig. 11. Two reconstructions of the woman's headgear from burial 61 (Drawing by Margarita Tokmancheva).

Bibliography

Darkevich, V. P. and Borisov, G. V. (1995) *Древняя столица Рязанской земли* [Ancient capital of the Riazan land]. Moscow.

Engavatova, A. V., Orfinskaya, O. V. and Golikov, V. P. (2005) Исследование золототканых текстильных изделий из некрополей Дмитровского кремля [Investigation of gold-woven textiles from the necropoleis of Dmitrov Kremlin]. In *Русь в IX – XIV веках. Взаимодействие Севера и Юга* [Rus in 9-14th c. Interaction between North and South]. Moscow.

Fechner, M. V. (1971) Шелковые ткани как источник для изучения экономических связей Древней Руси [Silk textiles as a source for the investigation of economic connections of ancient Rus]. In *История и культура Восточной Европы по археологическим данным* [History and Culture of East Europe based on archaeological data]. Moscow.

Fechner, M. V. (1974) Некоторые данные о внешних связях Киева в XII в. [Some information on external connections of Kiev in the 12th c.]. In *Культура средневековой Руси* [Culture of Medieval Rus]. Moscow.

Fechner, M. V. (1993) Древнерусское золотное шитье X – XIII вв. в собрании Государственного Исторического музея [Ancient Russian gold embroidery of 10-13th c. in the collections of State Historical Museum]. In *Средневековые древности Восточной Европы* [Medieval antiquities of Eastern Europe]. Труды ГИМ, issue 82, 3-21. Moscow.

Katasonova, E. Yu. (2006) *Золотное шитье домонгольской Руси* [Gold embroidery of pre-Mongol Rus] <http://io.ua/s7704> (accessed in 2008)

Kuzmina, O. V. (2006) Языческие элементы в городском костюме Великого Новгорода XIV – XV веков [Pagan elements in the urban costume of Velikij Novgorod in 14-15th century]. In V.V. Khabarov and E.V. Khabarova (eds), *Реконструкция исторического костюма. Сборник материалов Fashion-блока XV Международного фестиваля «Зиланткон»* [Reconstruction of historical costume. Collection of materials of fashion-block of 15th international festival "Zilantkon"]. Kazan.

Lantratova, O. B., Golikov, V. P., Orfinskaya, O. V., Aliyev, A. D. and Payushina, O. V. (2002) Экспериментальное исследование техники изготовления золотных нитей в золотоордынском текстиле XIII-XIV из собрания ГИМ [Experimental investigation of production technique of gold threads in Golden Horde textiles of 13-14th c. in the collections of the State Historical Museum]. In *VI Научная конференция Экспертиза и атрибуция произведений изобразительного искусства 2000* [6th Scientific Conference Expertise and Attribution of Art Monuments 2000] Moscow.

Novitskaya, O. V. (1965) Гаптування в Київській Русі (За матеріалами розкопок на території УРСР) [Sewing in Kiev Rus (based on excavated materials from the territory of Ukrainian Soviet Socialist Republic)]. *Archeologiya* 28, 26.

- Orfinskaya, O. V., Engavatova, A. V., Golikov, V. P. and Yegorov, K. A. (2002) Исследование тканей из погребений средневекового могильника на территории кремля города Дмитрова [Investigation of textiles from burials of Medieval cemetery on the territory of Kremlin in the city of Dmitrov]. In *Археологическое изучение Подмосковья (Дмитров, Мытищи, Тарасовка)* [Archaeological investigation of the Moscow region (Dmitrov, Mytischki, Tarasovka)]. Moscow.
- Pogodin, L. I. (1996) Золотное шитье западной Сибири (первая половина I тыс. н.э.) [Gold embroidery of western Siberia (first half of the 1st millennium AD)]. *Istoricheskij Ezhegodnik*
<http://www.omsu.omskreg.ru/histbook/>
- Saburova, M. A. (1976) Стоячие воротники и "ожерелки" в древнерусской одежде [Standing collars and "ozherelki" in Early Rus clothing]. In *Средневековая Русь* [Medieval Rus]. Moscow.
- Saburova, M. A. (1988) Погребальная древнерусская одежда и некоторые вопросы ее типологии [Ancient Russian burial garments and some questions regarding their typology]. In *Древности славян и Руси* [Antiquities of Slavs and Rus]. Moscow.
- Samokvasov, D. Ya. (1916) *Древности Северной Черниговщины* [Antiquities of Northern Chernigov area]. Moscow.
- Sedova, M. V. (1997) *Суздаль в X – XV вв.* [Suzdal in 10-15th c.] Moscow.
- Sheliarina, N. S. (1973) Археологические исследования в успенском соборе [Archaeological investigations in Dormition Cathedral]. In (*Optical Character Recognition*) *Электронная библиотека Государственного музея Московский Кремль. Материалы и исследования 1.* Moscow.
- Yakunina, L. I. (1955) *Фрагменты тканей из Старой Рязани* [Textile fragments of Old Riazan]. Краткие сообщения о докладах и полевых исследованиях Института истории материальной культуры XXI. Moscow

Translated from Russian by Margarita Gleba