

ON THE ISSUE OF SILK WEAVING IN GENOESE KAFFA AND TEXTILES FROM THE BELORECHENSKAIA KURGANS

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At the end of the 19th century, Professor Nikolai I. Veselovskii was excavating medieval kurgans near the villages of Belorechenskaia, Andriukovskaia, and Kostromskaia in the Maikop District (Kuban region). The richest graves were being unearthed in the kurgans of the Belorechenskaia group. Among the burial goods were imported silk textiles, Venetian and Syrian glass vessels, metal composite belts manufactured in the workshops of the eastern Crimea, and coins of the Golden Horde. Based on an analysis of the artistic style of the burial goods, the Arabic inscriptions on some artifacts, and coins, Veselovskii dated the burial complexes to the 14th–15th centuries (Veselovskii 1898, p. 2). The silk dresses and fabrics found in the Belorechenskaia kurgans are of particular interest, since they give one the opportunity to reconstruct the costumes of the medieval population buried in kurgans near the Belaia River.

Studying the materials from the Belorechenskaia kurgans is somewhat difficult because all the finds were divided by the Imperial Archaeological Commission between the Historical Museum in Moscow and the Imperial Hermitage in Saint Petersburg. “The distribution of materials was made according to the following principle: precious and beautiful objects were given to the Hermitage, and the ordinary ones to Moscow. As a result of this decision, even the assemblages from the same graves

were also separated. Out of 84 kurgans, 77 of them contained burial goods; 46 assemblages (complete or almost complete) went to the Historical Museum, 23 – to the Hermitage, and 8 were divided between the museums” (Levasheva 1953, p. 164). Moreover, not only were the burial goods assemblages divided but the artifacts as well – some fragments of the velvet caftan from Kurgan 20 went to the Historical Museum (GIM Inv. No. 37258) and some of them to the Hermitage (GE Inv. No. TB-373; GE Inv.No. TB-373).

The excavated textile was partially described in Veselovskii’s published report (1898), valuable today for his *in situ* description of the finds. Though the discoveries were made over a century ago, the Belorechenskaia fabrics are still the most valuable sources of knowledge we have about imported textiles from this period in the North Caucasus.

Fifty years after Veselovskii’s excavations, the Belorechenskaia materials were studied by Varvara P. Levasheva (1953). However, her work was limited to general descriptions of burial rite and goods, without a detailed analysis of each grave’s assemblage as a complex of interrelated objects. Levasheva named the places of origin for several different fabrics but did not provide any supporting reasons. She came to the conclusion that “...fabrics found in graves are of only luxurious types. Almost all of them are of Oriental origin, with a majority produced in Iran, though Italian fabrics were used for a caftan from a female grave. Quite frequently there was also Chinese silk resembling kamkha” (Levasheva 1953, pp. 192–93). She offered reconstruction drawings of two sets of dresses. Accompanied by the descriptions, the information given on the dresses’ cut has been taken for granted by other scholars and referenced in their publications (Ravdonikas 1990, pp. 70–71, Fig.19; Kramarovskii and Tepliakova 2009, pp. 29,



Fig. 1. Map showing location of Belorechenskaia. Source: Stieler's Handatlas (1892), Blatt 49, reproduced in Wikimedia <http://upload.wikimedia.org/wikipedia/commons/7/78/Kuban_district_ru.jpg>.

31; 2010, pp. 471–72). This unfortunately led to the repetition of inaccuracies made by Levasheva in her reconstructions and has not added anything new to the already known data on the costume of the local medieval population.

Recently, five textile items were displayed in the exhibition, *The Golden Horde. Its History and Culture*, and published in its catalog, where Mark G. Kramarovskii suggested that fabrics discovered in the Belorechenskaia kurgans were produced in the Genoese city of Kaffa (Kramarovskii 2005, p. 93). He repeated this hypothesis in his later publications (Kramarovskii and Tepliakova 2009, p. 26; 2010, p. 463). However, his assumption that a technological analysis of the Belorechenskaia silks from the Hermitage part of the collection would support their having been produced in Kaffa remains unproven. He could not distinguish any feature that would point to the Crimean origin of the Belorechenskaia silks. In an article written in collaboration with Anastasiia N. Tepliakova, he stated that “according to the pattern design, the fabrics can be dated to the second half of the 15th century but the place of their manufacture has remained questionable,” and that “all the fabrics studied, whose place of production is still undetermined, belong to the late stage of the Belorechenskaia kurgans that are nonetheless dated no later than the late 15th century” (Kramarovskii and Tepliakova 2010, pp. 464, 468).

Thus, scholars have had differing opinions on the cultural attribution of textiles from the Belorechenskaia kurgans. Veselovskii believed that the deceased were dressed in clothes made out of European fabrics. He wrote (1898, pp. 12–13) that “men and women had silk, brocade, and velvet garments in lilac, green but mostly in brown and dark yellow colors; it was either plain and striped, or decorated with flower designs, large and small free design, probably of Western European make.” On the other hand, Levasheva believed that the majority of fabrics from the Belorechenskaia kurgans were produced mainly in Iran and China, with only one fabric, found in Kurgan 20, made in an Italian workshop (Levasheva 1953, pp. 192–93). The opinion of Kramarovskii and Tepliakova is not clear and somewhat contradictory. In some cases they suggest that the Belorechenskaia textiles were made in workshops of the Crimean city of Kaffa, in others they suggest Italy, Cairo, or Spain (Kramarovskii 2005),¹ or, as indicated above, are uncertain about where they were produced (Kramarovskii and Tepliakova 2010, pp. 464, 468). Kramarovskii and Tepliakova’s claims notwithstanding, there is no basis to conclude that silks from the Belorechenskaia kurgans were produced in the Crimea. But given the authors’ attempt to tie these silks to Kaffa workshops, I would like to discuss this hypothesis in more detail.

Arguments supporting the idea that there was a silk industry in Kaffa have been made by both Irina Konovalova and Aleksandr G. Emanov, who analyzed the written sources of the 14th–16th centuries (Konovalova 1993, pp. 335–38; Emanov 1995, pp. 53–54). According to Konovalova, reference to silk production in Kaffa can be found in Russian documents that recorded Kaffa “kamka-kufteri”; in *massaria* (the Treasury Ledger Book of the city of Kaffa) for 1386 that mentioned local Armenian and Georgian weavers; and in a work by Johannes de Galonifontibus, who noted in Kaffa silk and camlet weavers. Among other “Kaffa silks,” Konovalova writes about *khemka* and *sendal* (*kemeha de Keфе, cedalini de Chapha*). But the distinctive characteristics she indicates as specified by the written sources are limited to the color and size of the fabric’s décor (light green, dark green, purple, grass-colored, light green with small-size design, white with large-size design, etc.), which of themselves do not specify the textiles’ provenance.

Emanov (1995, pp. 53–54) argued as follows:

In Kaffa itself, earlier than anywhere else in the Eastern European periphery, was established its own silk industry. This follows from the writing of Johann de Galonifontibus who visited Crimea at the turn of the 14th–15th century. He wrote about ‘...the famous and populous town of Kaffa, the meeting place of merchants from all over the world... All Oriental languages are spoken here; once I managed to count 35 languages altogether... It is possible to find here the Genoese – town craftsmen, and the truly best masters on silk, camlet, and other outstanding crafts’ (Galonifontibus 1980, p.14). ...Caffae *massaria* mentioned Armenian silk weavers (*magistri camocatorum*) (Balard 1978, p. 285). There is no doubt that raw and semi-raw silk and cotton were used in craftsmanship. It seems that with the development of silk weaving in Kaffa, the city not being simply a place of its re-exportation as it was assumed previously, ... should be connected the emergence of “Kaffa” taffeta and silk, both in crimson and other colors; the “Kaffa” ribbon and border known from the Old Russian sources, ... and with the existence of silk weaving in Kaffa should be connected a ritual garment sewed out of colorful Kaffa *kemkha* with the blue selvedge trimmed with gold (*planeta camocati Caffé diversorum collarum cum frexio celesti bordato aureis*) that was mentioned in a Genoese will, ... or an indication of the Kaffa *sendal* (*cedalini de Kaffa*) in one of the Ragusa Acts, or the familiarity with the Kaffa *kamkha* (*Kemha de Keфе*) by the compilers of the Turkish customs rules.

In other words, Emanov argued that the term “Kaffa” applied to certain silk fabrics — sendal, kemkha, and taffeta — which not only were re-exported but were products of the city’s own “silk industry,” the existence of which is confirmed, in his opinion, by the writings of Johann de Galonifontibus.

Now Kramarovskii and Tepliakova admit (2010, p. 463) that “Kaffa silks, as well as other variations of local textile present a special attribution problem.” At the same time, Kramarovskii has written, “We do not have any evidence about textile manufacturing on the main territories of the Golden Horde. Genoese Kaffa, perhaps, constitutes an exception but only at the end of the 14th century” (2005, p. 93). In support of this hypothesis, he cites some of the same written evidence as do Konovalova and Emanov and adds: “The Latin name for the Gate of Weavers, Porta Vonitche vel Filatorum, tells us about the presence of weaving in the city as a specialized craft but more likely it describes the place as a concentration of weaving workshops.” Yet he is skeptical whether any of the written sources really can prove the point. Ultimately, he argues, one “must find the necessary archaeological proofs,” none of which he has adduced. So in fact there is no hard evidence that would enable us to identify “Kaffa silks.”

In discussing the hypothesis about Kaffa silk production, close attention should be paid to the names of fabrics in the written sources — camlet, taffeta, kemkha, and sendal. The fabrics named were produced in the wide territory from China to Europe. The written sources do not describe any specific identifying features of the “Kaffa” fabrics. Nor can be sure whether “Crimean flax linen,” as it is known from Rashid al-Din, was delivered to Ilkhanate Iran, or whether it had some distinctive features (Rashid al-Din, p. 238).

According to Marco Polo, camlets were produced in Kalacha, the Province of Tangut (that is, probably the Gansu region in China): “In this city they manufacture beautiful camlets, the finest known in the world, of the hair of camels and likewise of white wool. These are of a beautiful white. They are purchased by the merchants in considerable quantities, and carried to many other countries, especially to Cathay” (Polo 1908/1914, p. 139). The technique of manufacturing camlet was adapted in Western workshops using the fleece of other animals, the Angora goat or fine-fleeced sheep. There is no evidence for the early technique of camlet manufacture. Written sources of the 12th–13th centuries describe camlet as a beautiful, pricey fabric with a smooth exterior used for making both male and female garments. The term “camlet” had a wide application to fine fabrics: without pile, in plain or satin weave, made of wool or silk threads, or a blend of

both (Merkel and Tortora 1996/2007, p. 89). Emanov noted that white or colored camlet is often mentioned in the treasury accounting books of Kaffa and that Cypriot camlet was in high demand in the Black Sea region (Emanov 1995, pp. 47–48). However, he does not list any specific feature that would distinguish the Kaffa camlet from the Cypriot one. Thus, the evidence of Galonifontibus is the only reason to assume the production of camlet in Crimean weaving workshops. An indirect argument supporting the hypothesis about the production of wool fabrics in Kaffa may be Rashid al-Din’s mention of the sheepskin fur coats that were delivered to the Ilkhanate from the Crimea (Rashid al-Din, p. 238). Obviously, sheep breeding could have produced raw wool for textile production.

In regard to the silk masters mentioned by Galonifontibus, we would emphasize that silk weaving was a highly specialized field. For example, from the mid-14th century, masters of the Venetian silk guild were divided between velvet weavers and the weavers of other silks. The latter were further subdivided into groups specialized in making satin on treadle looms who wove plain and simple-patterned silk, and masters who worked on drawlooms who wove complex figured silks, lampas, or damask (Monnas 2008, p. 8). It is not clear what kind of specialists were the silk weavers Galonifontibus describes. Among the Kaffa fabrics mentioned in other textual sources are taffeta, kamkha, and sendal. Taffeta and sandal are monochromic silk fabrics of a plain weave; kamkha is a term for monochromic fabrics with a pattern created by the interchanging of the main weaves used for making both pattern and ground.² As a rule, all three types of fabrics are woven with one warp system and one weft system, and are produced with one or two main weaves on a simple loom. It is hard to say what could be the specific technical features of the hypothetical Kaffa fabrics — taffeta, sendal, and kamkha — that would make it possible to place them into a special group of textiles. However, if a textile industry, in fact, existed in Kaffa, the silk masters described by Johann Galonifontibus probably would have belonged to the masters of satin (*maestri del raso*) specializing in the weaving of simple silk fabrics. It is not clear what technique was applied for “Kaffa” ribbons and border. In any event, so far, there is no evidence that could suggest the weaving of silk velvets or lampas in Kaffa. In England, the term “Kaffa silk,” used in the 16th century, also referred to fabrics produced both in satin and damask, or fabrics imitating Kaffa silks “produced in the Low Countries as a silk and linen union, combining a silk or silk-and-wool warp with a flax weft” (Monnas 2011, pp. 250, 252).

It was an established practice for Italian cities to accept migrants who imitated silks of their

specialization (Monnas 2008, p.17). Thus we might assume that silk weavers in the Genoese colony of Kaffa were the Genoese weavers of camlet, taffeta, kamkha, and sendal mentioned by Galonifontibus, even while we have to recognize that there are no criteria to distinguish the assumed Crimean fabrics from similar Genoese silks. Discoveries of archaeological textiles in present-day Kaffa/Feodosiia would be of no help unless a specific mark on a fabric clearly indicates Kaffa as the place of its production.

Although Kramarovskii (2005, p. 93) has suggested that technical analysis of silk fabrics from the Belorechenskaia kurgans will show that they were manufactured in Kaffa, he perhaps fails to realize that technological analysis may in fact not be sufficient for the attribution of archaeological textiles and the regional location of their production. Anna A. Ierusalimskaia has emphasized that while technological analysis is important for a general classification which in some instances may identify fabrics produced in the same center, it is not enough to identify the centers themselves (Ierusalimskaia 1992, p. 11). The most reliable feature in determining the place of a workshop is its identifying mark. But such cases are rare for medieval textiles. The majority of the preserved silks have been attributed on indirect evidence that includes a combination of stylistic, technical, and iconographic features and, when available, evidence from written sources (Monnas 2008, p. 17).

Fig. 2. A female costume from Belorechenskaia Kurgan 20. Reconstruction by Zvezdana V. Dode, drawing by Irina P. Oleinik.



It would be hasty to reject the notion of a weaving industry in the Crimea that could satisfy the needs of the ordinary population and produce simple silk fabrics for export. However, there are no grounds to discuss the presence of highly specialized local weavers there. And thus, more specifically, there is no basis to place workshops in the Crimea, namely in Kaffa, that could have woven the complex silk fabrics found in the Belorechenskaia kurgans.

To determine the place of manufacture of the Belorechenskaia fabrics, a thorough analysis should be conducted.³ All these fabrics should be descriptively catalogued and presented in a monographic study. But, for now, in the context of the hypothesis of the origin of the Belorechenskaia silks from Genoese Kaffa, I can but confine myself to discussing in greater detail the technological and ornamental features of the velvet caftan from Kurgan 20.

This caftan is undoubtedly the most notable find among the other textiles from the Belorechenskaia kurgans. In Kurgan 20, a costume of a deceased woman has been fully preserved: head dress, two caftans, and leather boots (Fig. 2; Color Plate VI); her clothing was supplemented by adornments and accessories (Veselovskii 1898, pp. 41–42). The outer caftan, which will be the subject of further discussion, was made of red velvet, with pile that combines both cut and uncut loops. The caftan was made out of velvet with a design in cut silk pile, textured with satin and bouclé areas, formed by a pattern weft, with a silk core S-twisted with a thin strip of gilt silver.

Scholars have defined the fabric of the caftan differently but did agree on its color. Veselovskii (1898, p. 41) believed that it was made of “lilac brocade with silver thread.” Later, Levasheva (1953, pp. 188–89) described the same color but described the fabric as follows: “An expensive gilt aksamit Italian velvet of this dress initially was in lilac color, but now its shades had dimmed and turned overall in to the brownish tone.” Tat’iana D. Ravdonikas (1990, p. 70) also suggested that “the initial lilac color of the velvet turned brownish by the time of excavations.” However, the lilac effect noted by Veselovskii appeared as a result of the oxidation of silver threads that textured practically the whole surface of the fabric used for the caftan. Analyses of dyes recently performed in the Laboratory of Scientific and Technical Expertise by Liudmila S. Gavrilenko determined that the weft and pile threads of the fabric were dyed with carminic acid derived from cochineals (Kramarovskii and Tepliakova 2010, p. 472). Thus, the original color of the fabric was red.

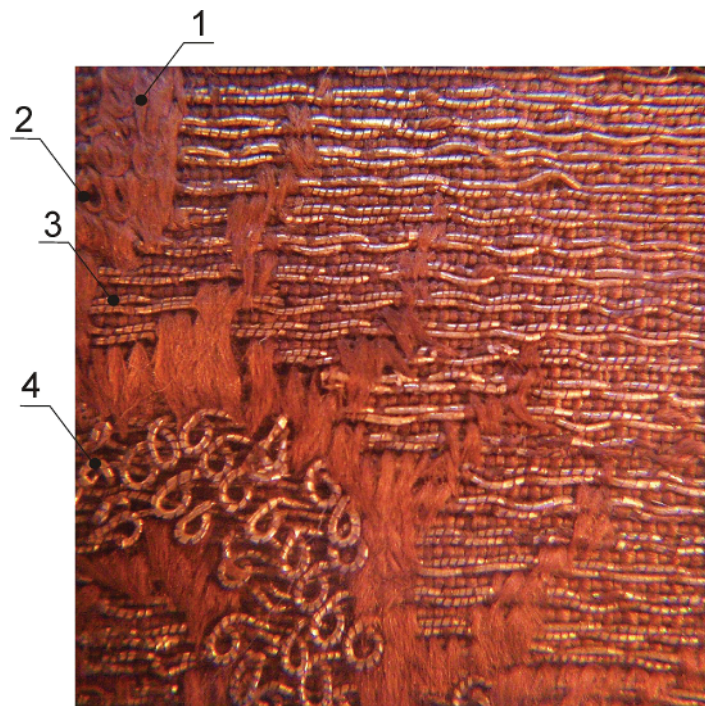
A few words should be said about the terms “brocade” and “gilt aksamit velvet” used by

Veselovskii and Levasheva in regard to the type of the Belorechenskaia fabric. In Russian, the word “brocade,” unlike in Western European terms, usually refers to fabrics with silk warp and silver or gold wefts, without specifying the type of fabric or the way of applying the metal weft (through the whole width or in certain patterned areas). Thus, it does not imply the fabric’s structure or technique, and the term “brocade” cannot be applied to the Belorechenskaia fabric.

The “aksamit velvets” mentioned in the Russian written sources are a type of velvet decorated with a pattern, woven with the gold and silver threads [Klein 1925, pp. 34–35]. Russian medieval documents recorded structural features typical for imported fabrics, but in translation, these nuances had been transformed into descriptive definitions based on the visual perception of a fabric, more comprehensible for mentality of a Russian medieval man (Vishnevskiaia 2004, p. 49). The term “gilt aksamit velvet” applied by Levasheva to the Belorechenskaia fabric fits the accepted Russian terminology; however, there is no historical context of its production and usage.

There are various kinds of velvet – with cut and uncut pile, with combinations of cut and uncut pile loops, with combinations of pile in different heights, and with areas of pile design contrasting with a smooth ground. To apply the term “velvet” to the Belorechenskaia fabric points to the technique in a

Fig. 3. Structure of velvet from Belorechenskaia Kurgan 20: 1 - cut loops and 2 - uncut loops of the silk pile surface; 3 - textured satin; 4 - bouclé areas created with the patterned weft of a silk core S-twisted with a thin strip of gilt silver.



general way but does not reflect these specific features.

Western European historiography describes velvet fabrics with a metal bouclé weft by the Italian term “allucciato” (Landini and Redaelli 1994, p. 189). I used it for attributing the Belorechenskaia fabric in a preliminary paper about this find (Dode 2010, p. 121). Kramarovskii and Tepliakova (2010, p. 468) attributed the Belorechenskaia fabric to another type of velvet, “a riccio d’oro” or “riccio sopra riccio,” described by the Italian scholars Roberta Orsi Landini and Alfredo Redaelli. This suggestion is correct but needs some refinement. The Italian terms “allucciato” and “a riccio d’oro” do not indicate a type of a fabric but the weaving methods that produce different effects. In the 15th century, the term “allucciato” meant a luminous effect made by brocaded wefts raised in a shape of small gold loops spaced in intervals of velvet pile (Landini and Redaelli 1994 p. 189; Monnas 2008, p. 301), or as metal weft floats on the surface of a damask or satin (Monnas 2008, p. 302). For different types of velvets of the 15th–16th centuries woven in technique “a riccio d’oro,” the gold or silver wefts were drawn as loops (similarly to “allucciato”), but made them in bouclé for distinguishing the elements of design. Therefore, gold and silver loops, often made in different heights to the silk pile of a velvet, created three-dimensional effects in the design (Landini and Redaelli 1994, p. 189; Monnas 2008, p. 301). Strictly speaking, during the weaving of the Belorechenskaia fabric the method “a riccio d’oro” was used, but an indication of only the method does not cover all its technological aspects. Attempts to classify the Belorechenskaia fabric based on a single feature are ineffective.

Velvets woven in technique similar to the Belorechenskaia fabric were called in Italian terms of the 15th century “velluto broccato riccio sopra riccio,” that is, *velluto* – velvet, *broccato* – brocade as an indication of the usage of the gold or silver thread, and *sopra riccio* – a combination of cut and uncut loops.

Therefore, in order to define a type of a fabric with a complex structure, all the techniques used for its weaving should be listed. With such an approach, the Belorechenskaia fabric can be described as a figured velvet with cut and uncut velvet pile and one supplementary metal weft forming details of the pattern with combination of dense metal loops and satin texture (Fig. 3). This kind of complex technique was used for producing a special decorative effect. Discussing the technique used in Italian fabrics of the 15th century, David Jenkins noted that “the velvet technique with its cut pile effect, its areas of brocading and the use of gold weft loops increased the aura of magnificence



Fig. 4. Venetian velvet of the late 15th century. The Metropolitan Museum of Art, New York. Rogers Fund, 1912 (12.49.8). Reproduced with the kind permission of the museum.

exuded by this design. Nowhere else was the technique used as fully to exploit sheer luxury for its own sake" (Jenkins 2003, p. 351). It seems that the Belorechenskaia fabric woven with gilt threads looked similar to the well-preserved Italian velvet from the Metropolitan Museum of Art (12.49.8) (Fig. 4) which, according to Melinda Watt (personal communication), was produced in a Venetian workshop at the end of the 15th – beginning of the 16th century.

An important source for the cultural and historical

attribution of the Belorechenskaia fabric is its design, which is composed of a large flower with ogival petals, in the middle of which is a thistle or artichoke, the pattern also including a pomegranate (Figs. 5, 6). Textiles with such elements were extensively depicted in the works of Italian artists of the 15th century. As Jenkins pointed out, "In the early fifteenth century, plant forms in a variety of styles became dominant but these were eventually overtaken by a fashion for large pomegranate designs accompanied by elaborate foliage and undulating stems" (Jenkins 2003, p. 351). Richard Glazier noted that the artichoke was the main motif in figured Florentine textiles (Glazier 1923, p. 60). However, a particular design cannot be used with certainty as the criterion for establishing a weaving center. Judging by the extant examples, similar designs including artichoke or thistle motifs in the center of a flower with ogival petals are equally present in Florentine and Venetian figured velvets. Glazier himself noted that the popularity of this motif in Italian art could be explained by its decorative value (Glazier 1923, p. 60).

Textiles with similar patterns can be seen in paintings of Italian artists of the 15th century who worked in Venice, such as Antonio Pisanello, Jacopo Bellini, Andrea Mantegna, and Antonello da Messina. The composition of decorative elements closest to those on the Belorechenskaia velvet can be found in the paintings of the Venetian artist Carlo Crivelli, who greatly contributed to our knowledge of designs in luxury fabrics (Glazier 1923, p. 63).

Silks with Italian designs, where the main pattern is the same flower as the one in the Belorechenskaia velvets with ogivally arranged leaves and artichoke motifs, can be found in the paintings of the Northern Renaissance artists, specifically in works by Jan van Eyck, Petrus Christus and Hans Memling. Two works of Hans Memling, *St. Catherine* (early 1480s) (Fig. 7, next page) and the *Madonna with Child and Angels* (after 1479) (Fig. 8) depict the same velvet fabric covering the throne. The main ornamental motif in it is a large flower with ogival leaves. The complex elements on either side of the flower and artichoke motifs fully match the décor of the Belorechenskaia fabric (Fig. 9). Such a detailed reproduction of ornamental elements was possible only when an artist had the real fabric in front of him. Another parallel gives a representation of a kaftan embroidered on the tomb cover of Maria of



Fig. 5. The Belorechenskaia textile. Reconstruction by Z. V. Dode based the surviving fragments (published in *Lo Stile dello Zar* [Milano: Skira, 2009], p. 152, no. 44).

Fig. 6. Pattern unit on a fabric from Belorechenskaia. It was reproduced twice along the width of the woven piece.



Fig. 7. Hans Memling. "Virgin and Child with Saints Catherine of Alexandria and Barbara." The Metropolitan Museum of Art, New York. Bequest of Benjamin Altman, 1913 (1440634).
Reproduced with the kind permission of the museum.



Fig. 8 (right). Hans Memling. "Madonna and Child with Angels." National Gallery of Art, Washington, DC. Andrew W. Mellon Collection (1937.1.41).



Fig. 9. Textile décor of the complex setting of the outer edge of the flower with pointed leaves in paintings by Hans Memling and on a fabric from Belorechenskaia.

Mangup, where the cut of the cloth and décor of the fabric are similar to the those found in kurgan 20 (Fig. 10).

Lisa Monnas pointed out that at the end of the 19th century it was a common belief that velvet fabrics in the paintings of the Northern Renaissance artists were made in the Netherlands. However, after the research of Brigitte Klesse, who studied silks depicted in works of the Italian masters of the 14th century, and identified Italian, Spanish, Iranian, Egyptian, and Chinese examples, it became clear that the location of a textile workshop cannot be directly associated with the origin of a painting (Monnas 2008, p.19).

Fig 10. Embroidered portrait of Maria of Mangop executed in satin stitch. Grave cover, dated 1477. The Putna Monastery, Romania. After: Atasoy and Uluc 2012, Fig. 4.



The pattern and complex weaving technique of the Belorechenskaia fabric, typical for the decorative Italian velvets of the 15th–16th centuries, leave no doubt that this textile was manufactured in an Italian workshop. Its precise origin should, however, be further explored. In Italy, silk weaving enterprises established in various centers — Venice, Lucca, Florence, Milan, and Genoa — had their own standard measurement usually based on an arm's length (Monnas 2008, p. 17). Silks woven in these centers differed in their individual widths, and selvedge types, and to a lesser degree, in their repertoire of designs. Thus, in order to determine the origin of the Belorechenskaia fabric, one should define its key identifying features. Such an attempt was made by Levasheva, who based her work on information given to her by the restorer, Ekaterina S. Vidonova: "In the process of studying the fragments from the bottom part of the caftan, it became clear that the robe was cut from a single piece: selvedges were discovered in its seams; based on this, it was established that the width of the gold velvet fabric was 56 or 58 cm with selvedges" (Levasheva 1953, p.189). Citing the work of Vladimir K. Klein, where the author noted that Venetian velvets are characterized by the unusual size of the repeating pattern, up to 1 arshine 7 ¼ vershoks in height and 14 ½ vershoks in width (that is along the whole width of a fabric in piece) [Klein, 1925, p. 37], Levasheva believed that the Belorechenskaia fabric belonged to the production of Italian workshops (Levasheva 1953, p.188). However, she did not suggest a specific center.

I believe that the Belorechenskaia fabric was woven by Venetian artisans, but to support this attribution, certain adjustments should be made to the information provided by Levasheva. In her work are several inaccuracies in converting the obsolete Russian measurements. It is known that one *vershok* equaled 44.5 mm; therefore, 14.5 vershoks equaled 64.5 cm, not 56–58 cm as she calculated. Also questionable is the width of the fabric: only the back of the Belorechenskaia caftan could be cut from the whole loom width. However, no single fragment from the caftan's back has been preserved. Thus, the width defined by Levasheva cannot be considered as the original one. It seems that either Levasheva or Vidonova calculated the size based on the reconstruction of the fabric's pattern but made some errors in measurements. In her article, Levasheva provided an illustration captioned as "pattern unit of the Belorechenskaia ..." (Levasheva 1953, p. 190, Fig. 7), but in fact, it is the reconstruction of a pattern. In reality, the pattern unit of the Belorechenskaya fabric was narrower than its width: 156 cm along the vertical line, and 31.9 cm along the horizontal line (Fig. 6). The

pattern unit repeats twice along the width of fabric. Thus, the width of the fabric equaled 63.8 cm, which corresponds to the Venetian standard (Jenkins 2003, p. 347). This was the standard for Venetian velvets during the 15th century and it continued to be used into the 16th century, except in textiles made for export. Beginning from 1507, the width of all exported fabrics was 55.8 cm (Monnas 2008, p. 321, table 2, continued). By comparison, voided satin velvets made in Florence to imitate Venetian velvets were woven in a width of 65.6 cm (Monnas p. 320, table 2).

As mentioned above, the Belorechenskaia fabric was dyed with carmine acid. However, some carminic dyestuffs contain kermesic acid as well (Hofenk de Graaff 2004, pp. 64, 70). Different textile centers in Italy had special markers for velvets dyed in kermes. Venetian silks dyed with kermes had green selvedges with one gold thread, while Florentine silks dyed with the same dyestuff had selvedges containing two gold threads each (Monnas 2008, p. 319, table 1). The green color of the selvedge of the Belorechenskaia fabric indicates Venice as the source of this fabric. In Venice, a gold thread started to be woven into the selvedges from 1457; before that, only the green selvedge indicated the use of kermes. The absence of a gold thread from the selvedge of the Belorechenskaia fabric which was dyed with kermes allows us to accept the year 1457 as the *terminus ante quem* for the production of the fabric.

To conclude, parallels to the decorative elements of the Belorechenskaia fabric in paintings of Italian artists of the 15th century point to its manufacture in one of the Italian textile centers of that time. But its technological features narrow the space and time frame: the width of the fabric and green color of its selvedge point to Venetian workshops of the mid-15th century, before 1457. Fabrics with similar decorative elements continued to appear in European paintings during the early 1480s. It is not known when the velvet was acquired by those who buried their dead in the Belorechenskaia kurgans. In general, the grave from Kurgan 20 can be dated to the second half of the 15th century, but at present, there are no grounds for establishing a more precise date for it.⁴

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Notes

1. The catalog accompanying *The Golden Horde. History and Culture* exhibition is inconsistent. In its descriptive part, it indicates Kaffa as a possible place of production for silks No. 524, No. 525, and No. 528 (*Zolotaia Orda* 2005, p. 93). However, the catalog entries name Kaffa as a place of manufacture only for silk No. 525. Silk No. 524 is considered to have been produced in Italy (p. 225), silk No. 516 (from the Belorechenskaia group) in Cairo for No. 516 (p. 224),

and No. 526 (also from Belorechenskaia) in Mamluk Egypt or Spain (p. 225). This is at odds with the authors' conclusion (p. 226): "Judging by a certain technical and ornamental similarity, fabrics Nos. 516, 524–526, 528 are possible to combine into one group of fabrics produced, probably, in Kaffa workshops."

2. In Russian, "kamkha" and "damask" both apply to the same type of fabric. Vladimir K. Klein, who studied imported *kamkha* fabrics in the collections of the Armory Chamber and Historical Museum in Moscow and their written descriptions in primary sources, came to the conclusion that all of them, except one fabric with a supplemental gold weft, had only one warp and one weft.

3. Kramarovskii and Tepliakova made an attempt at a technical analysis of the Belorechenskaia fabrics, the results published in *Zolotaia Orda* 2005. However, their technical descriptions, which omit important details, do not always reflect the real structure of the fabrics. For example, Tepliakova gives the structure of silk fabric No. 526 as follows, "By its technical features, this fabric is identical to the fabric of the cap [cat. No. 516 – Z.D.] but has a patterned weft" (p. 225). The description of the cap's fabric (cat. No. 516) states: "This fabric is similar to the fabric of a caftan (cat. No. 528). There is no patterned weft, and each face weft is a gilt one" (p. 224). The author ignores the obvious fact that if a structure of one fabric has a patterned weft, and the structure of another fabric does not have one, these two fabrics cannot be treated as identical. One may also question the accuracy of establishing a "similarity" between fabrics woven in different techniques. According to Kramarovskii and Tepliakova, the caftan's fabric (cat. No. 528) is made in *lampas* technique (p. 226). Now fabrics woven in this technique have a system of ground (warp and weft) threads and a system of patterned threads (supplementary warp and supplementary weft or wefts). The catalog description for the cap (cat. No. 516) does not specify what technique was used for its fabric (cat. No. 516), but since this fabric, as Tepliakova herself notes, lacks one of the wefts, the technique cannot be *lampas*. In sum then, the authors fail to describe typical technical features of the Belorechenskaia fabrics that could unite them and, at the same time, differentiate them from fabrics produced in other centers of textile industry.

4. Kramarovskii and Tepliakova date the Belorechenskaia kurgans on the basis of the coins found in them: "... out of three female graves discussed above, only one of them, a grave from kurgan 20, contained coins, the youngest of which belongs to the second third of the 15th century" (Kramarovskii and Tepliakova 2009, p. 30; 2010, p. 468). This statement leads to the erroneous dating of the female grave in Kurgan 20. Veselovskii indicated (1898, pp. 40–41) that the coins were found only in one grave, Kurgan 12, presumably placed in a pouch in the box near the deceased's feet: "In the box, there was an open-work silver star, probably from the pouch with three Golden Horde coins ...". And indeed, in another publication, Kramarovskii had accurately cited Veselovskii's description of the coins being in Kurgan 12 (Kramarovskii 2009, p. 464). At very least here then, on the basis of the coin evidence, Kurgan 20 must have a *terminus post quem* of some time in the second third of the 15th century.

