

a study of a 13th-century votic knit fragment

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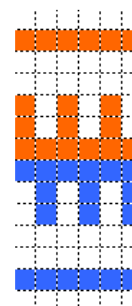


abstract

A piece of a 13th-Century mitten was found in a Votic [12] cemetery in Jõuga in 1949, but remained largely unknown until the beginning of 21st Century. A brief study has been published that describes the properties of fibre, yarn and colour. The knitting aspect of this mitten remains unknown. I would like to share a few facts about this fascinating piece.

The yarn was spun from local wool using worsted method, in which all the fibres are aligned. Two z-spun singles were s-plyed to achieve a 1.4 mm thick yarn. Some of the yarn was dyed with madder, some left natural. The blue yarn was produced with a ~50/50 blend of natural white fibre and indigo-dyed fibre. The use of red yarn is significant, as the colour red was believed to have protective magic. The mittens also contain fibre coloured with expensive imported dye, making them even more precious.

The mittens were knit in round using Eastern method. The colour pattern is stranded, and colour floats are carried above the white. The mittens appear to have been made by a skilled knitter for special occasions, such as a wedding or a funeral. The knitting is consistently even and of a fine gauge (2.5 stitches / 3 rows per cm).



introduction

In Estonian Institute of History textile collection is a fragment of knitting from the 13th Century (AI 4008 XXII: 156). It was excavated from Votic cemetery (*zhalnik*-grave XXII, skeleton K) at Jõuga in North-Eastern Estonia in 1949. This burial was dated to 1238-1299 using Novgorod chronology [4]. Some aspects of this find were published in an article about textiles from Votic cemeteries [5]; details about knitting style, techniques, etc. used to make this fragment have not been published until now. In this paper, I intend to establish the knitting techniques used to create this late 13th-Century Votic knit fragment.

Extant knit items are rare, early knit items even more so. It is very exciting to discover new pieces and to find new information about this subject. Each new find carries the potential to increase this knowledge in leaps and bounds, although the scarcity of extant items it is also a liability. There are so few items available for comparison, and it is very easy to draw wrong conclusions from such a limited base.

Bishop Rutt [11] has written a thorough account of knit items and fragments known in the West. However, he does not mention Estonian knitting even though there were published materials available at the time of writing his book. To be fair, these materials were published in Soviet Union, and it is unlikely that Rutt would have had access to them. With this study, I hope to fill some of the gaps in Western knowledge about knitting in Estonia.

background

There does not appear to be a clear date of origin for the practice of knitting within the current territory of Estonia. The socks (ERM A 445:4) and mittens (ERM A 445:5) of Rabivere Bog find, dated to 17th Century [1], were considered the oldest knit items in Estonia for a long time. Later excavations at St. Michael's Nunnery [13] and Pirita Abbey [14] have produced some bronze knitting pins [8]. One pin from Pirita Abbey is exhibited in Tallinn City Museum, second floor Medieval Room, Pirita Abbey section. It is double-pointed, about 20 cm long and ~2.5 mm in diameter. This evidence, combined with this knit fragment, suggests that people in the towns and rural areas of Medieval Estonia [15] were at least aware of the practice. As a new craft, however, knitting was probably not very common.

The knit fragment that I have examined was found in a burial of a woman at her hand and was identified as a piece of a mitten/glove [16] cuff [4], [5]. It is more likely that the fragment was originally part of a mitten, because gloves do not appear in Estonian peasant knitting in until the late 18th Century [1].

The original report on Votic cemeteries in North-Eastern Estonia [4] and on this fragment [5] claim this fragment (and some nalbound mitten fragments) were parts of special burial mittens. Others disagree and say that there were no special burial clothes; people were buried in their everyday clothes, although they concede that women were sometimes buried in their wedding attire [6], [10]. Mittens that were knit specially for such occasions would have been decorated more ornately than normal work mittens [1]. With these things in mind, it is reasonable to conclude that this mitten was knit either for a wedding or a funeral.

yarn

The yarn was spun from local wool with median diameter of 28μ [5].

As is visible on the scan, the individual fibres lay parallel to each other.

This is a characteristic of a combed top or yarn spun from the lock.

There are no surviving records that indicate Estonians using wool combs, but we know that wool combs were used in earlier Viking

cultures as well as in Western Europe, so it is possible that Vikings or later conquerors introduced this technology to the Estonians. Wool cards came into use in Estonia after Middle Ages [10]. Two z-spun singles were s-plied to the final yarn thickness of 1.4 mm [5].



Some of the yarn was dyed with madder, some with indigo and some left natural white [5].

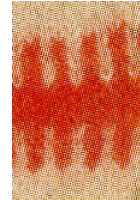
The colours have changed in the soil, but the red and blue of madder and indigo are still recognizable; the natural white has turned pale yellow. The indigo blue yarn contains about 50% un-dyed wool [5].

The yarn dyed with indigo was precious because the dyestuff had to be imported at great cost.

Thrifty spinner blended some natural fibre with the blue to increase the length of the blue yarn. Red colour was associated with blood in Estonia and had magical properties. It was believed, that disease and evil spirits could not penetrate an area bound by red [7].

colour pattern

This pattern differs from later ethnographic mitten patterns that cover the whole area of the mitten and have different design principles. It is similar in overall effect to embroidered cuff patterns on 18th and 19th Century Estonian nalbound mittens [1] and embroidery on Tuukkala mitten from Finland. There also is a strikingly similar colour pattern used on mid 19th-Century wedding gloves from Petseri County [6]; both have a strong resemblance to a double-sided comb.



The published text [5] specifies two purl rows under the first row of blue/white pattern. Close examination of the fragment established that there are no purl rows; there is a white row of plain knit stitches below the first pattern row.



The published picture [5] shows a row of purl, four rows of blue/white, a row of solid blue, a row of solid red, two rows of white/red, three rows of solid white and a row of solid red. Careful counting of stitch rows of the front and the rows of floats on the back of the fragment resulted in two blue/white rows after white row and before blue row.

This suggests that the comb pattern is symmetrical. There could also have been a single blue row below the comb pattern to echo the single red row above. Decorative elements on peasant clothing in Baltic area tend to be symmetrical, therefore it is likely that this pattern also was symmetrical. Furthermore, the pattern on Petseri gloves is symmetrical, having equal number of rows in comb "teeth" and no single rows of colour on either side [7].

knitting technique

There is one crossed stitch in the solid red row. It is most likely a mistake, since all other identifiable stitches are uncrossed.

This type of right-slanting cross can be made by mistake only if the stitches lay on the needles open to right, a method of knitting Bishop Rutt classifies as Eastern [11]. In addition, the eastern knitting untwists an s-spun yarn, this effect can be observed in stitch close-ups.



Since there is no cast-on or selvage, it is uncertain whether this mitten was knit flat like the Rabivere mitten (ERM A 445:5) or in round like Rabivere sock (ERM A 445:4) [9]. My opinion is that it was more likely knit in round, because:

1. the extant western medieval gloves are knit in round [2], [11];
2. the knitting Madonnas [11] depict knitting in round, making it the proved method of knitting existing at that time;
3. the Rabivere sock is patterned and there is a jog in the pattern [9], indicating it was knit in round;
4. the extant Estonian needles are short and double-pointed, therefore more suitable for knitting in round.

The fragment also does not contain any decreases or a thumb opening. Therefore there is no certainty as to how the mitten was constructed, or what techniques were used to make the thumb or the closure of the tip.



The pattern is stranded — the floats are not twisted around each other. The coloured yarn is carried above the white yarn.

The knitting is consistently even, and there are no gaps between the purl rows at the back of the fragment. Gauge is 2.5 stitches,

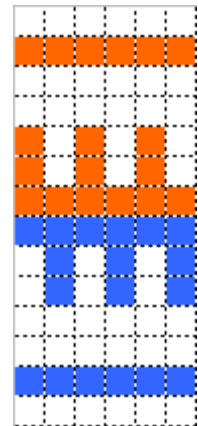
3 rows per cm[17] with slight variations introduced by distortions and breaks in fabric.



conclusion

I intended to establish the knitting techniques used to create this late 13th-Century Votic knit fragment. There are no other comparable items and, in the light of new finds, my conclusions could be proven wrong. In this study, I also plan to start filling the gap in Western knowledge about knitting in Estonia. Scant information is a certain improvement over no information; and inaccurate data can be revised.

The original account and pattern drawing are somewhat faulty. Careful examination of the fragment revealed that the comb pattern was, in fact, symmetrical and there are no purl rows before the blue/white comb pattern begins. It is likely that there was also a blue row below blue/white rows.



The knitter was not a beginner, the floats and stitches are even in size. The single mistake could have been made due to poor lighting conditions. The knitter used eastern method of knitting to produce this item. Since there are no surviving cast-on, selvage or cast-off stitches, it is impossible to say how the mitten itself was constructed. The mittens were most likely knit with double-pointed needles in the round, since comparable western items were knit in the round and there have been finds of double-pointed needles in Estonia.

This item is definitely knit and not produced by nalbinding. The fragment was a part of a special mitten — mitten knit especially for burial or a wedding. The knitting is fine and is executed with skill that shows practice. The pattern uses smooth yarn dyed with valuable pigment — indigo. Red yarn, dyed with madder, was associated with blood and had magical protective properties.

It was a privilege to have been able to study this fragment of knitting. Thank you, Jaana, for allowing me to do this, for letting me to pester you with questions and for lending me a stack of books to read.

bibliography and notes

- [1] K Konsin, "Silmkoesemed", *Eesti rahvakunst I* (Tallinn 1972), 7, Colour plate I
A book on Estonian ethnic knit items. Gives a brief overview of known history of knit textiles in Estonia and reproduces a picture of pieces of socks and a mitten dated to late 17th century, the eldest knit items that were known at the time of publishing of the book.
- [2] M Flury-Lemberg, "Textile Conservation..." (Bern 1988), 244-247
Accounts of conservation work done on textiles, among which are two pairs of liturgical knit gloves.
- [3] S Õispuu, "Eesti ajalugu, 1. osa" (Tallinn 1989)
A high school textbook on Estonian history from prehistory until 19th Century.
- [4] P Ligi, "Vadjapärased kalmed Kirde-Eestis (9.-16. sajand)", *Muinasaja teadus 2* (Tallinn 1993), 7-152
An article on Votic graves in North-Eastern Estonia. Gives an account of excavations and finds, also dating the grave complexes.
- [5] J Peets, "Tekstiilileide Ida- ja Kirde-Eesti muinas- ja keskaegsetelt kalmetelt", *Muinasaja teadus 2* (Tallinn 1993), 220, 227
An article on textile fragments found in prehistoric and medieval graves in East and North-East Estonia. Author describes the properties of the wool yarn and the dyes used in the knit fragment.
- [6] H Valk, "Rural Cemeteries of Southern Estonia 1225-1800 AD", *CCC PAPERS 3* (Visby – Tartu 2001), 75
A general survey of South Estonian local cemeteries, their finds and burial customs. Among the studied cemeteries were not only Estonian, but also Votic cemeteries.
- [7] R Piiri, "KINDAD Õnnetähest männakirjani" (Tartu 2001)
A catalogue of ethnic mittens and gloves in Eesti Rahva Muuseum (ERM) collections.

- [8] J Tamm, "Eesti keskaegsed kloostrid " (Tallinn 2002), 94
A book about monasteries and monastic life in Estonia. Mentions bronze knitting needles found in archaeological excavations at Pirita Nunnery and St. Michaels Nunnery.
- [9] A Uudelepp, handwritten notes (Tallinn, Tartu 2003)
Notes on stitch counts and technical details of AI 4008:156 and ERM A 445:4-5.
- [10] J Ratas, several discussions (Tallinn 2003, 2004)
We have discussed and examined the fragment, and have had general discussions about Estonian topics in the Middle Ages. Jaana Ratas was a textile conservator at Estonian Institute of History until fall 2003.
- [11] R Rutt, "A History of Hand Knitting" (2003)
The most recommended source on historic knitting. He does not mention Estonian knitting, medieval or later.
- [12] Votics are a Finno-Ugric people whose villages, in the Middle Ages, were situated at the Northern shores of Lake Peipus and between Lake Peipus and Lake Ladoga [4].
- [13] Construction of Pirita Abbey started in 1400 and first inhabitants were sent there in 1412. The whole complex was destroyed during Livian War, in 1577 [8].
- [14] St. Michael's Nunnery was founded in 1249 and ceased to operate in 1629 [8].
- [15] Construction of Pirita Abbey started in 1400 and first inhabitants were sent there in 1412. The whole complex was destroyed during Livian War, in 1577 [8].
- [16] Modern South Estonia was part of Livonia [3].
- [17] 'kinnas' in Estonian is both, 'mitten' and 'glove'.
- [18] 6.35 stitches / 7.62 rows per inch.

glossary

Blending:	mixing different fibres while preparing them for spinning.
Cards:	hand tools, similar to dog slicker brushes, used in pairs to prepare wool for spinning.
Cast-off:	an edge finish to keep stitches from unravelling.
Cast-on:	a foundation row of knitting.
Combing:	preparing wool for spinning with wool combs.
Combs:	hand tools that resemble long-tined rakes.
Crossed stitch:	a knit stitch where one leg of the stitch crosses the other.
Eastern knitting:	a method of knitting, looping the yarn around the pin from back to front.
Flat knitting:	a method of knitting using two pins, forming a flat piece of fabric.
Fleece:	the coat of fibre from a sheep or other animal.
Float:	a loose length of yarn on the surface of the fabric.
Gauge:	a measurement of the number of stitches and rows in fabric, aka tension.
Indigo:	a blue dye made from indigo plant (<i>Indigofera tinctoria</i>).
Jog:	a clear line in pattern where the rounds begin and end in round knitting.
Knitting in round:	a method of knitting using four or more pins, forming a tube.
Knitting:	manipulating yarn with two or more pins to create fabric.
Lock:	a group of fibres formed by a natural division in a fleece.
Madder:	a plant (<i>Rubia tinctorum</i>) used to produce red dye.
Nalbinding:	a method of producing fabric with a length of yarn and a darning needle.
Plying:	twisting two or more yarns together in the opposite direction to that in which they were spun.
Purl:	a reverse knit stitch.
S-twist:	yarn spun counter-clockwise has a 'S' twist.
Seaming:	sewing two pieces of knit fabric together.
Selvage:	an edge stitch that makes seaming easier.
Spinning:	twisting fibres with a tool to make yarn.
Stranding:	multicolour knitting where the floats are not twisted around each other.
Top:	a fibre preparation where all the fibres are aligned.
Worsted:	a yarn spun from combed top, firm, shiny and resists felting.
Z-twist:	yarn spun clockwise has a 'Z' twist.