

## Traces of callimanco in Estonia: purchased worsted striped fabrics from the late 18th to early 19th centuries

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### Abstract

*Estonia has a rich textile heritage, with large collections preserved in the museums. This study focuses on historical callimanco fabric samples or swatches from the 18th and first quarter of 19th centuries. While the iconic striped skirt of folk costume has become a symbol of Estonian identity, a subset of professionally crafted fabric in skirts and bodices has been overlooked in scholarly investigations.*

*The research explores potential links between striped fabric samples found in international 18th and 19th-century pattern books and the striped skirts and bodices integral to Estonian folk costumes. While foreign studies, such as Dr Michael Nix's examination of the Norwich fabric industry, shed light on fabric trade routes, no clear connection to Estonia's museum collections has been established.*

*This article aims to bridge these gaps by analysing items in Estonian museums, focusing on potential connections with callimancoes manufactured in Norwich, England. The study is crucial, given the lack of comprehensive research on this topic since Aino Voolmaa's 1971 footnote on kamlott and Eevi Astel's 1998 belt book adopting the term. By employing technological-comparative analysis, the study examines each individual artefacts' technological aspects, weaving density, fabric width, yarn twists, and surface gloss. Microscopic analysis aids in identifying fibre materials, contributing to a comprehensive understanding of the fabrics. The article closes with a comparison of stripe patterns in Estonian museum fabrics and those in foreign fabric sample-books and concludes that these fabrics indeed came from Norwich, England.*

**Keywords:** historical wool and worsted fabrics, stuff, callimanco, Norwich, historical striped skirts, traditional clothing, kamlott, kalmink

## Introduction

Estonia's most extensive historical textile collection is housed in the Estonian National Museum, boasting a collection comprising approximately 61,500 items. A focused examination within the temporal bounds of the 18th and 19th centuries reveals that the majority of the artefacts originate from Estonian farmsteads, crafted by the lower social classes. This prevalence can be attributed to the nation's burgeoning sense of identity, commonly referred to as the national awakening, which took root in the latter half of the 19th century. The establishment of museums in the early 20th century was a significant consequence of this cultural renaissance.

A distinctive feature of Estonian history lies in the linguistic and societal divide between the upper social class, predominantly German-speaking landlords, and the peasants and serfs, who communicated in Estonian. This dichotomy influenced the ideological framework of the national awakening, wherein a fundamental principle emerged: the exclusive preservation, collection, and safeguarding of Estonian intangible and material heritage. As a result, the emphasis on artefacts created by the Estonian peasantry in the national textile collection reflects a deliberate effort to encapsulate and promote the unique cultural and historical identity of Estonians during this transformative period.

Since the national awakening, the striped skirt, an integral component of our national costumes, has evolved into an iconic symbol encapsulating Estonian identity. The distinctive stripe patterns from these skirts have permeated various facets of our cultural landscape, appearing in logos, local flags, furnishings, and even adorning the doors of our homes. Consequently, considerable scholarly attention has been devoted to the comprehensive study of historical skirts from the 19th century, resulting in the documentation and publication of their stripe patterns, colours, and other defining characteristics in numerous publications about folk costume (Kaarma, Voolmaa 1981; Kurrik 1979 [1938]; Manninen 2009 [1927]; Moora 1957) or more specifically about folk costume skirts (Jöeste 2012; Loite 2013; Luhamaa 2022; Marks, Västriik 2016; Voolmaa 1971).

However, a subset of skirts and fabric samples exists that deviates in fabric width, weave, and yarn composition. Notably, these items share a commonality: their fabric was professionally manufactured and almost certainly produced in a setting distinct from traditional home-based spinning and weaving practices. Despite their distinctiveness, these skirts and bodices with professionally crafted fabric have hitherto eluded scholarly investigation.

In 1971, Estonian researcher and ethnographer Aino Voolmaa contributed a seminal overview article on Estonian historical skirts. The article spans

39 pages, delving into various techniques and designs employed in Estonian skirts. However, a mere footnote is dedicated to purchased skirts within Voolmaa's comprehensive examination (Voolmaa 1971). In this footnote, she calls the fabric "kamlot" and mentions one plain red skirt, four striped skirts and a chequered piece of fabric that were held in the collection of the Estonian National Museum at that time.

The term *kamlot*<sup>1</sup> after being used in 1971 in Aino Voolmaa's article (Voolmaa 1971) thereafter gained prominence through Eevi Astel's works and the belt book (Astel 1984: 1998), where she provides a short overview of one type of men's belts made from professionally manufactured, thin, striped fabrics. However, the precise definition of the term *kamlot* remains ambiguous. Aino Voolmaa, besides naming the six different items, states that the term refers to a thin and fluffy and at the same time coarse or rough fabric, without providing information on the weaving technique of the fabric. Eevi Astel adds, when describing striped belts that *kamlot* is made from Angora goat wool and is a dense twill-woven fabric (ibid., 21). But one can determine even from the pictures in the same book that the belts are produced in plain weave.

Estonia has maintained its independence for over three decades, a period marked by increased global mobility. Individuals are now more prone to travel, engaging in visits to foreign museums, and disseminating their discoveries through social media platforms. Simultaneously, museums globally have embarked on the digitization of their collections, establishing online databases to showcase their artefacts. In this context, numerous instances of old fabric sample books designed for international trade in the 18th and 19th centuries have come to light. This phenomenon prompts an intriguing inquiry: is there a potential connection between the striped worsted fabric samples found in the aforementioned books in foreign museums and the striped skirts integral to our traditional folk costumes?

In recent years, outstanding work has been conducted by the historian and researcher Michael Nix who has investigated Norwich's stuffs<sup>2</sup> fabric industry and its trade through both the port of London and its nearest port Great Yarmouth. Norwich, once the largest and wealthiest English town after London, has been an important centre of the textile industry since the 14th century. In the 15th century, double-worsted woollen fabric, characterised

1 In this article the word *kamlot* is always spelled the way it was used in the cited source.

2 Stuff was made with combed long wool tightly spun into smooth, strong, silky worsted yarn. Worsted yarn was used in both the warp and weft. The fabric was not fulled and the woven threads can be seen on the surface. Cloth on the other hand was made with carded short wool and was fulled. Stuffs could also be woven with a worsted warp and carded woollen weft or worsted yarn mixed with silk, mohair, cotton or linen.

by having twice as many weft threads as warp threads, gained popularity. However, by the mid-16th century, the major production centre shifted to continental Europe, specifically to the Low Countries, and to a lesser extent, to France and Germany. In the hope of reviving the city's textile trade, in 1565, the Mayor and Corporation of Norwich invited thirty Flemish and Walloon men, accompanied by their families and servants, to settle in Norwich. By 1579, their numbers had grown to about 6,000. These new arrivals brought skills in weaving colourful fabrics with floral, chequered, and striped patterns, and Norwich experienced a resurgence. Over the next century, these skills merged with Norwich's existing expertise in wool fabric production and dyeing, forming an industry known for the production of "Norwich Stuff". The peak of the textile industry in Norwich occurred in the 18th century. However, from the second quarter of the 19th century onwards, Norwich's industry could not compete with the northern industrial towns, where coal and other necessary raw materials were more readily available. (Nix 2023.) One of the many fabrics produced in Norwich was the striped callimanco, woven with strong, tightly spun worsted yarn.

This article aims to fill the gap by analysing items made with purchased striped fabric in Estonian museums and deciding the extent to which Norwich callimancoes reached Estonia. Callimanco also sometimes called calamanco, calimanco or kalamank is a satin weave fabric, often striped, but also flowered, brocaded, checked, ribbed, spotted and even plain (more on the specifics of the striped form of this fabric from pages 75–80). Such a focus is pertinent because there exists a research gap both in Estonia and abroad. In Estonia, no one has comprehensively delved into this topic since Aino Voolmaa's footnote in 1971. Even then, the fabrics themselves were not described. No one has compared the width, density or weaving techniques of purchased fabrics, not to mention determining the fibres of the fabric, and grouping fabrics based on this information.

Another research gap lies in the fact that no one has successfully determined the impact of professional craftsmanship, purchased goods, and international cultural contacts on Estonian folk art. Elle Vunder attributes the spread of floral embroidery to professionally created pattern designs and artisans (Vunder 1992: 21), but addresses the influences only in relation to embroidery. The potential Baltic German influence on our folk costume was indicated by Viires in 1990, based on a brief comparison of vocabulary as he noted that someone should further explore this topic (Viires 1990: 1265). Helmi Üprus has more specifically pointed to various outside influences in her article "Estonian Folk Art from the Perspective of Art History". She considers the church to be a very significant influence and provides an overview

of numerous symbols or decorative motifs, attributing their origins to various art styles, but also highlights the role of the manor and professional craftsmen (Üprus 1969).

Purchased fabrics were undoubtedly luxury goods that not everyone in the 18th or the 19th century could afford. Considering how little Baltic German textile heritage we have collected in museums, purchased textiles that have reached us through peasant use may serve as a guide in this topic. Regarding the cultural connection between the Baltic Germans and Estonians during the period under review, understanding purchased striped fabrics might better explain our peasantry's love for the striped skirts as well.

Abroad, however, there is a lack of information about the items preserved in Estonian museums. Michael Nix's study analysing trade and maritime documents suggests that large amounts of striped callimancoes were transported to the Russian empire. For example, in 1791, the manufacturers J. & J. Ives, Son & Baseley sold goods with an overall wholesale value of £109,282 of which £25,741 (23.6 per cent) went to Russia. Sixty per cent of the firm's trade with Russia involved the supply of callimancoes. Other products transported to Russia included camblet, satin and lasting (Nix 2023: 390).

## Method

In the scope of this research are items made of striped, woven, worsted, non-printed historical fabric that have been used in Estonia and are now collected to Estonian museums. While trying to determine the characteristics of this fabric, other items made from bought woollen fabric from the 18th and early 19th centuries have been looked through as well. In Estonia we are used to terming all bought historical fabrics from that time period "kamlott", despite the fact that the historical fabric dictionary "Textiles in America 1650–1870" by Florence M. Montgomery has around 550 entries, most of them about different historical fabric types (Montgomery 2007).

The main method employed in this study when examining museum artefacts is technological-comparative analysis. Based on the established analytical points of craft research (Jöeste et al 2020), the focus is not only on describing the artefact's appearance and aesthetics, but also on the technological aspects of its creation.

To make up the sample, I initially utilised the Estonian Museums Information System (MuIS). Where I reviewed all skirts, items from Ruhnu (an island in the Gulf of Riga), aprons, pockets, and children's hats available in the system. These were the categories where I expected to find items dating from the 18th to the early 19th century with purchased worsted fabric used as material. Subsequently, I examined the artefacts, and utilising a table formed

through Google Forms, compiled information on the general descriptions of the artefacts, fabric weaving density, fabric panel width, yarn twists, and the surface gloss.

Visual analysis was then supported by microscopic analysis of artefacts in the Estonian National Museum's collections, during which the fibres in both weft and warp were identified, and photographs of the fibre surface structure were taken.

Fabrics have been grouped and described based on the data obtained. Given the lack of vocabulary in Estonian for distinguishing all identified and described types of fabrics, historical written sources mentioning terms for different fabric types used in these regions during the 18th and 19th centuries have been sought and described.

Subsequently, narrow landscape photo cutouts of the stripe patterns of striped purchased fabrics, known as callimanco, found in Estonian museums, were created. These pattern photos were then compared with those in catalogues of preserved fabric samples in foreign museums and collections.

I compiled the digital files of all the sample books containing Norwich callimanco fabrics. A significant portion of these books are in the United States, at the Winterthur Library, and are digitised and freely accessible. One book is housed in the Victoria and Albert Museum in London, which is also digitised and available for download. Additionally, one book and a few separate pages of callimancoes are held in the collections of the Nordiska Museet in Sweden. These files are also downloadable. The photo files of two dispatch books from Norwich I obtained from the Norfolk Museums Service, England, after corresponding with the museum. I also personally examined these books on my trip there.

Subsequently, I took each strip of Estonian stripe pattern and examined all the pages of all the pattern books containing striped callimancoes. In my initial reading, there were a total of 184 such pages. I conducted this comparison using two screens: one displaying the digitised image of the pattern catalogue, and the other showing the stripe strip created from the museum photo of the Estonian item.

In the translation of this article into English, the ChatGPT text model has been utilised as an assistant (ChatGPT).

### **When words shape our world: deciphering the term 'kamlott'**

Books discussing folk costumes from the early 20th century make no mention of purchased woollen fabrics being used as a material of Estonian folk costumes. Ilmari Manninen's work does not cover men's belts with the name kamlott or purchased skirt fabrics (Manninen 2009 [1927]), and Kurrik's



**Photo 1.** The characteristics of a kamlotvöö can be seen from this close-up of a Jöelähtme men's belt ERM 4673. It is woven in a plain weave with a 2-ply zzS yarn for warp and 1-ply Z yarn for weft. Most of the belts have a horizontal pattern with lighter yarns at both ends, suggesting that the length of the belt must have been already decided while weaving. *Photo by Tiina Kull.*

book does not use the term either. Kurrik only suggests, at the beginning of her book when describing the weave of striped skirts, that a few skirts from mainland Estonia might also be woven in satin weave (Kurrik 1979: 3 [1938]).

Aino Voolmaa refers to all purchased fabrics of skirts with the term *kamlot*, and Eevi Astel adopts the term for purchased belts (see photo 1) with a statement that “the same kind of fabric was already known as a material for the skirts of wealthier farmers’ wives from the 18th century”, so in Estonian we have only one umbrella term. This term covers both striped shiny satins, single-coloured shiny plain, as well as chequered thin plain fabrics, and plain weave striped belts added by the subsequent researcher. Could the fact that Eevi Astel mistakenly writes in her book that the belts are twill woven (Astel 1998: 21) be the basis for the entries of the term “*kamlot*” into the Estonian dictionaries? In the explanatory dictionary of the Estonian language *kamlot* is defined as “a certain dense, twill-bound woollen fabric” (‘*Kamlot*’, 2009). The lexicon of foreign words adds a couple more possibilities to the composition of the fibre, but still restricts the weaving technique to twill: “type of tightly twill-bound fabric made of wool, semi-wool, or silk” (‘*Kamlot*’, 2012).



In the newspaper dated February 2, 1867, an announcement was made regarding an auction taking place at the Riga market, where cotton and woollen fabrics were being offered for sale, including a quantity of 132 arshins (93.88 metres) of woollen-*kamelot* fabric (1867a). Similar auctions or announcements with *kamlot*-fabric being sold are advertised in other numbers of the same newspaper as well (1857a; b; c, 1859, 1867a; b, 1855, 1856). This shows that the term was actively in use during the 19th century in German and in Russian but does not actually reveal the composition or structure of the fabric itself.

Better understanding of this term can be reached through two lexicons in German. The first is meant for all who are dealing with any kind of merchandise from almonds to raw materials written by Johan Christian Schedel (Schedel 1800) and the second was written by Max Heiden (Heiden 1904) meant for those wanting to know more about textiles and art. In the 1904 book the word *kamlot* is written 11 times in association with different things: angora wool, camel wool, combed wool, even cotton. This can be quite confusing. Some light is shed on the matter from the first book: on page 714 there is an entry for *kamelot* or *kamm~~l~~lot*, that is then explained in three pages listing all the places and different varieties such fabric was to be found in, but also stating that to get a true *kamelot*, the wool had to be combed twice. This sentence clarifies it all, as combed wool in German is *kammgarn*, and thus it seems that the second “m” might have been simplified through time, and it originally was an umbrella term for all fabrics made of combed wool, similar to the usage of the word ‘stuff’ in English.

From that same dictionary an entry for callimanco fabric is under *calmang* (also *kalmank calmande* and *calamande*), which is explained as striped or other type of woollen fabric with one side more beautiful and shiny, often calendared. Also, it is noted that these fabrics are called woollen atlas in German: “heißt man ihn in Deutschland wollenen Atlas” (Schedel 1800: 714). In Estonian, the term for satin weave is also *atlass-sidus*.

Where it gets confusing again is the next entry after *calmang* and that is *calminken*, also *calmink* and *kalmink*, that is described as fabric being produced in Russia and then transported to the Netherlands and England. Today, callimanco is called *kalmink* in Dutch and in Swedish.

This puzzle can be solved through another book that is of great value to any historian researching trade in the 18th century: English translation of Russian toll taxes in 1767 (1767). It has a list in Russian of all the goods either exported or imported, a translation and explanation in English and amounts of taxes for the toll. The term *камлоты* (*kamlotō*) on page 10 is translated to English as *camlet*, the term *каламинка* (*kalaminka*) as *callimanco* and both



have only import taxes. Then there is also the term *каламенка* (*kalamenka*) on page 46, that is translated into English as linen twill (*linen drilling*) and has a much higher export tax than import tax. Could this be the mix up why we have twill listed as one key factor for the term *kamlott* in the Estonian dictionaries?

A book about Dutch folk costume published in 1998 states that it is unclear where the woollen fabric used in their folk costume came from and how it was woven, but while listing places and foreign terms for it, makes the mistake of naming it *kalamenka* in Russian: “There are traces of it being made in Leiden in the Netherlands, Brabant in Flandria, Florentine in France or Norwich in England. In Dutch it is called *kalemink* or *kalmink*, in French *calamande*, in English *calimanco* and *calmanco*, in Russian *kalamenka* (Havremans-Dikstaal, Schram-van Gulik 1998: 43).

However we use the term *kamlott* nowadays in Estonia, either for just camblet fabric or as an umbrella term for all combed woollens. When searching for surviving notes from the 18th and 19th centuries, we find the term *kammelatt* in the Estonian dialect dictionary. It is defined as a type of fabric. For example, in the Ambla dialect, *kammelati seelik* is described as a rainbow-coloured skirt (1998). This description quite nicely fits with the characteristics of striped callimancoes with their stripes and shine. It also adds a bit of romantic admiration that could be imagined about bought and expensive foreign fabrics. Other terms being used by Estonians while items were collected by the museum are *kalmuk* (deaccessioned skirt ERM 4667, belt ERM 4673) and “city fabric” (skirts ERM 4690 and ERM 11171).

Clergyman Frederic Joachim Ekman (1798–1872), describing life on Ruhnu in 1847 in his Swedish-language book, mentions the word *kamlott* twice. First, when he describes the red bodices of young girls (see figure 1), and later when he describes the attire of the Ruhnu’s pastor (Ekman 1847: 70, 171).

Despite the lack of vocabulary to describe specific historical fabrics in today’s Estonian, the terminology exists in English. Michael Nix relies on

**är ofärgad. Om sommaren, då värmen förbjuder att nyttja de varma yllekamisolerna, gå, i synnerhet de yngre qvinnorna och flickorna, klädda i vanligen röda kamlotts-lifstycken, framtill fastsnörda, baktill försedda med korta skörten och utan ärmor; men**

**Figure 1.** Friedrich Joachim Ekman using the term “kamlotts-lifstycken” in his overview of Ruhnu in 1847 in Swedish. Translation from Swedish: In the summer, when the heat prevents the use of warm woollen camisoles, especially younger women and girls typically wear *kamlott*-bodices in red. These bodices are fastened in the front with ties, have a short tail in the back, and are sleeveless. Source: Ekman 1874: 70.

archival sources for naming fabric types in his book and on pages 238–239, he illustrates a striped fabric in satin weave is called “callimanco”, a plain weave single-coloured fabric is “camblet”, and a striped or chequered plain weave fabric is “camletee”. All of these three are woven on handlooms. On more complicated drawlooms, that have been studied by Eva-Liisa Kriis in Estonia (Kriis 2022), there were such fabric types made in Norwich as “cheverett”, “borderett”, “diamantine”, “esterett”, “harlequin”, “ladine”, “belleisle”, “floredda”, “martinique”, “blondine”, “brocade”, “brussels”, “damask”, “dresden”, “grandine”, “russalin”, “taboret”, “tapizado”, and “satin”.

### Callimanco fabric items in Estonian museums and their characteristics

This study focuses on the distribution of callimanco fabric items across four Estonian museums: the Estonian National Museum (five bodices, three skirts and an apron), Järvamaa Museum (one skirt), Saaremaa Museum (one children’s cap), and Aibolands Museum in Haapsalu, where the private collection of the Steffenson Family is kept (two bodices and one children’s cap). Four Ruhnu items were left out due to both Nordic museums being closed because of renovations and the relocation of collections (figure 2).



**Figure 2.** Muhu apron on the left and on the right Ruhnu items that are in the Nordiska Museet in Stockholm, Sweden (two bodices and a child’s cap) and the Kansallismuseo (The National Museum of Finland) in Helsinki (one bodice).

*Photo collage by Tiina Kull with courtesy to muis.ee, finna.fi and digitaltmuseum.se.*



**Figure 3.** Callimanco fabric skirts with suggested year they were made and the year in which they were collected. Collage by Tiina Kull with photos from personal collection and *muis.ee*.

two main groups: manor-related skirts and Ruhnu-specific garments, with the exception of one apron from Muhu island (figure 2). However, this apron differs significantly from other items. In addition to wool, its fibre composition includes cotton, silk, and linen. The number of warp threads in the apron fabric is half that of other fabrics, and it is also the narrowest of all the fabrics studied, measuring 31 cm in width.

Leaving aside the Muhu apron, the first group of callimanco comprises four skirts from the Northern Estonian folk costume group. They are from Ambla, Pilstvere and Vaivara parishes. Three of the skirts out of four have additional notes indicating that the fabric originated from manor houses, from where it had been passed on as a gift to peasants (figure 3). Pilstvere skirt (ERM 15466) was given to the great-great-grandmother of Julie Schönberg by the wife of the manor tenant of Kõo<sup>3</sup>. Both of the Ambla skirts have connections to the local manor as well. The skirt in the Estonian National Museum from Ambla (ERM 11171) was given to the museum from Jäneda manor by the miller Karel Waldmann, with the context that the fabric is from the manor of Pruuna-Kõrve (today known as Pruuna). The miller was married to the

3 In the museum papers the gifter was named *kindraliproua* in Estonian so the general's wife in blunt translation, but that is the term that 19th century Estonians often used to refer to the landlords living in state-owned manors so called *riigimõis*.



**Figure 4.** All the callimanco items from Ruhnu island. Notice that six items on the left are made out of fabric with identical pattern repeat. The bodice on the right has three different types of callimanco fabric used.

*Collage by by Tiina Kull with photos from personal collection and muis.ee.*

daughter of another miller Jaak Sõnajalg and as his family were servants in many different manor houses. There is no reason to doubt this account of its provenance. The Ambla skirt now held in Järvamaa Museum (PM\_345 E 70), has a tag written in calligraphy that it is from Kukevere manor.

The second significant group of callimanco garments consists of wedding bodices and children's caps from the island of Ruhnu in the Gulf of Riga (figure 4). A regional distinction emerges as Ruhnu was an island community habited by Swedes with unique cultural ties to the mainland, akin to the Swedish tradition.<sup>4</sup> The use of callimanco fabric as wedding attire may suggest it is an older type of folk costume, as in many regions earlier clothing styles have been preserved specifically for ceremonial rituals as is indicated by Manninen (2009: 74–75 [1927]). Similarly, an older cut can be identified in Ruhnu wedding bodices when compared to, for example, a camblet fabric jacket collected from Jõelähtme (ERM A 509:6060). Ruhnu people had connections to both the market of Riga and the market of Kuressaare and Pärnu (Russwurm 2015: 399 [1855]). Besides the suggestion that wedding attire might be of older type there is no indication in museum collections of their age.

4 Ruhnu is a little less than 12 square kilometre island 70 kilometres from Kuressaare and 90 kilometres south from the city of Pärnu. Until 1944 Ruhnu was inhabited by coastal Swedes, a group of Swedish speaking people that due to the isolation kept their traditional ways of life.

The use of callimanco fabric as material for women's bodices is also a widespread practice in Sweden. By searching the term "kalmink" in the digital collections of the Nordiska Museet, digitised images of hundreds of Swedish folk costume bodices can be found.

Having gathered information about items made from callimanco fabric found in Estonia, I identified, whenever possible, the width of each fabric panel, weave density and pattern repetition. Additionally, I conducted microscopic analyses on items held in the Estonian National Museum's collections. Based on these, my detailed research results are shown in table 1 in the appendix and generalisations about this fabric are presented in the following subsections.

The first and perhaps the most readily noticeable characteristic that emerges mainly in callimanco fabric skirts is that the skirts are composed of narrow panels. All the skirts consist of 6–7 panels with a width of 36–44 centimetres. There are two such bodices in Steffenson's private collection where panel width can be measured as they are constructed so that the back pieces are joined at the top and the selvedge can be seen in both armholes. The panel widths of those are also within the same range – with 40 and 42 centimetres.

Other characteristics that set callimanco apart from home-woven half woollen skirt fabrics is that they are woven as warp satin, unlike the Estonian striped folk costume skirts that employ the weft faced plain weave and stripe pattern formed from the weft not the warp. Because on the right side of items woven in satin weave there are more floats, the right and reverse sides of the fabric differ from each other.

Additionally, it is much simpler to achieve tone-on-tone transitions in the warp, as intentional shifts from lighter to darker tones, or vice versa, can be set in place during the warping process rather than requiring the weaving of each transitional shade from separate yarn skeins. Similar tone-on-tone transitions are also employed in the stripes of Estonian folk costume skirts as stated in the beginning of 20th century by Ilmari Manninen. He brings out three characteristics of Estonian skirts and the first one of them states: "The transition between adjacent colours can be either abrupt or subtle, often barely noticeable; frequently, there are darker and lighter shades of the same colour side by side" (Manninen 1927: 228). Aino Voolmaa also refers to the similar stripe pattern of callimanco fabric and Estonian folk skirts: "Regarding the stripe patterns of skirts, in earlier domestically woven skirt fabrics from Northern Estonia, surprisingly precise imitation of the aforementioned store-bought woollen skirts can be observed. These also feature light-coloured main stripes with transition tones concentrated





**Photo 2.** Magnification of 9.5 times, where 2-ply warp yarns and 1-ply weft yarns are visible on a red stripe of a bodice from Ruhnu (A509:5455 on the left) and on a green stripe of an apron from Muhu (A509:4833 on the right). Simultaneously, it can be observed that the Muhu apron fabric is woven much more loosely and from thicker warp yarns than other striped fabrics were. *Photos by Tiina Kull.*

symmetrically around the core, consisting of stripes. Alongside these symmetrical vertical reflections of stripes, termed *täislauk*, there are occasionally asymmetrically repeating colour groups, termed *poollauk*.” (Voolmaa 1971: 118)

All examined callimanco fabrics have been woven with a 2-ply warp, where two Z-twist strands have been spun into a yarn with a S-twist. As the weft yarn, a single-thread, fairly slanting Z-twist yarn has been employed (see photo 2).

Another point of differentiation between callimanco fabric skirts and national costume striped skirts lies in the post-weaving treatments of the fabric. While pleated traditional skirt fabrics in Estonia might have been pressed with the help of warm ryebread loaves in some regions, other specific treatments to the fabrics are unknown. Callimanco on the other hand is typically heavily processed after weaving, resulting in a noticeable sheen and a crisp texture that can be felt upon touch. The surface treatment of callimanco is particularly well-preserved in the deep pleats on the back of Ruhnu bodices, concealed during wear due to the unique pattern cut of the bodice, but traces of an unknown substance are also noticeable under magnification (see figure 5).



**Figure 5.** Magnification of 50 times of Ambla skirts (ERM 11171) fibre from its purple stripe. Black dots are the substance of the surface treatments and as it can be seen that the fibre has taken the shape of weaving structure, this picture shows that the gloss was added to the outside of the fabric after weaving. *Figure by Tiina Kull.*



**Figure 6.** A painting “Estonian Woman with a Child” by Carl Timoleon von Neff, where a glossy striped skirt is worn by a young woman. *Image by EKM j 153:39 M 38, Eesti Kunstimuuseum SA.*

The Rijkserfgoedlaboratorium (National Heritage Laboratory) in the Netherlands found evidence of sandarac gum, beeswax and the possible use of either gum arabic or tragacanth gum during an analysis of the glaze in 2021 (Leijense et al 2022).

It can be speculated that the same gloss is depicted in the artwork “Estonian Woman with a Child” (see figure 6) by the artist Carl Timoleon von Neff, painted in the 1850s. Particularly notable is the fact that the entire work is painted in meticulous detail, and it can be observed that the linen sleeves and apron do not shine, only the cap and skirt have a gloss.

### **Manufacturers’ samplebooks as a reference for following the trail of trade**

During the 18th and 19th centuries, textile manufacturers promoted their products through fabric sample or swatch books or cards. In contrast to modern online shopping applications and glossy magazines with printed photographs, historical pattern books featured small samples of each actual product. These pattern books or cards played a crucial role in marketing different textiles across the seas to consumers and today they serve as valuable research material to scholars interested in historical textiles. Another type of pattern book was used for accounting. These are books where every swatch of fabric for each shipment was glued onto the pages of the book with additional information



of how many items, on which date and on whose order they were shipped. Efforts are underway worldwide to digitise these historical fabric sample books.

However, in Estonia, there has been no comprehensive effort to compile information about fabric samples as they are scattered around different museums and archives, and often hidden behind the archival terms like “dosier”. As a result, knowledge of the existence of fabric samples in the archives is attained through references or articles made by previous researchers. Helmi Üprus mentions the existence of such a book in the Estonian History Museum. It is probably the one sent from Leeds, England, that can be found in the museum’s information system, MuIS as AM\_5905 TE 53. Hannes Vinnal supplements his article on Pärnu’s historical trade offices with a photograph of fabric samples from the archives (Vinnal 2021: 44), illustrating the importance of these books in documenting commercial history. Although the topic is intriguing, the scope of this article does not allow for a comprehensive compilation of the Estonian fabric sample collection, which certainly presents an exciting challenge for future research.

During this study eleven different fabric sample books from Norwich containing 184 pages with strips of striped callimancoes were examined and compared to the stripe patterns found on items from Estonian museums. Two almost exact and two very close matches were discovered.

The first almost exact match is ERM 11171, a skirt from Ambla (figure 7). Similar stripes are found elsewhere, but there are almost exact matches in a dispatch book in the Norfolk Museums Service’s collection, dated 30 April 1792 and 1 May 1792. There is a very slight difference, whereby the Norwich patterns have small red stripes on the edges of the red-centred stripes, while these thin red stripes are absent on the Estonian skirt. Additionally, on the skirt preserved in the Estonian National Museum, the white stripes have become discoloured or dulled over time, whereas the samples are still bright and white.

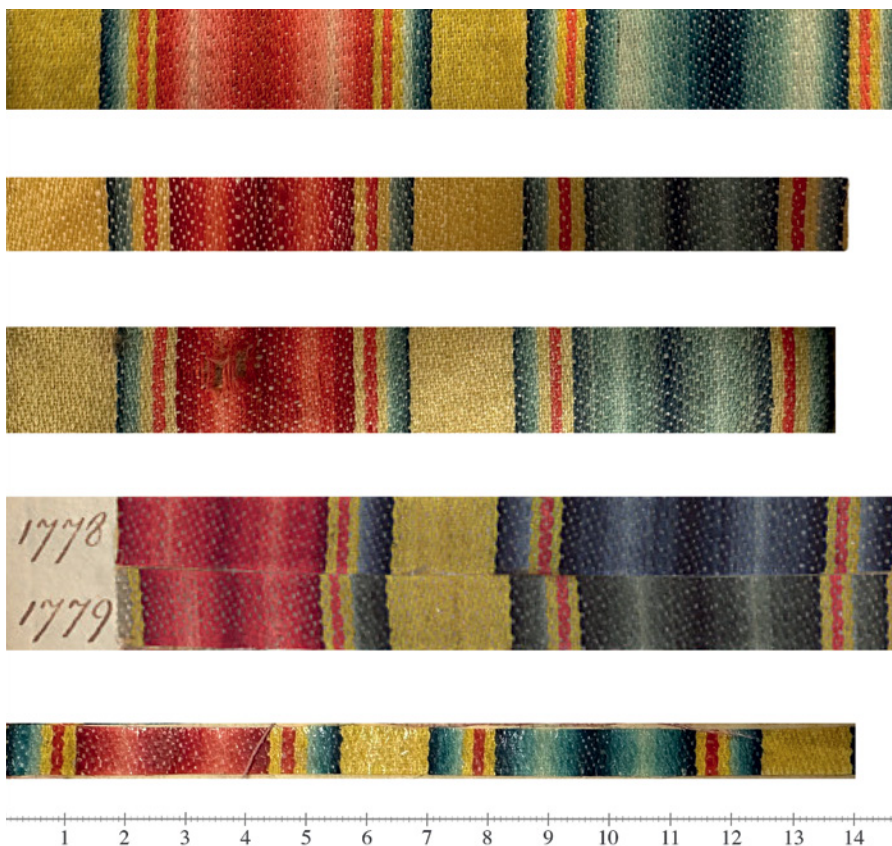
It is interesting to note regarding this stripe pattern that, thanks to Michael Nix’s research, it is known that on 1st of May 1792, the firm J. & J. Ives, Son & Baseley of Norwich dispatched a shipment to an unidentified client in Russia. It consisted of 550 callimancoes, 100 camblets, and 50 striped florentines, all packed into five bales. Using various sources it was concluded that the callimancoes could have been carried by one of two ships: either the 92-ton brig Flora which departed Great Yarmouth for Reval and St Petersburg on 13 May, or on the 64-ton sloop Margareta which sailed for the same two ports on 5 August.<sup>5</sup>

5 From e-mail communication with Michael Nix 17.04.2024.



**Figure 7.** Stripe pattern from the Estonian skirt ERM 11171 (no 1) and similar stripes from a Norwich pattern book with two stripes (no 2 and 3) being almost exact matches. *Photo collage by Tiina Kull, courtesy of Norfolk Museum's Service regarding the images from the pattern book NWHCM:1966.658.*

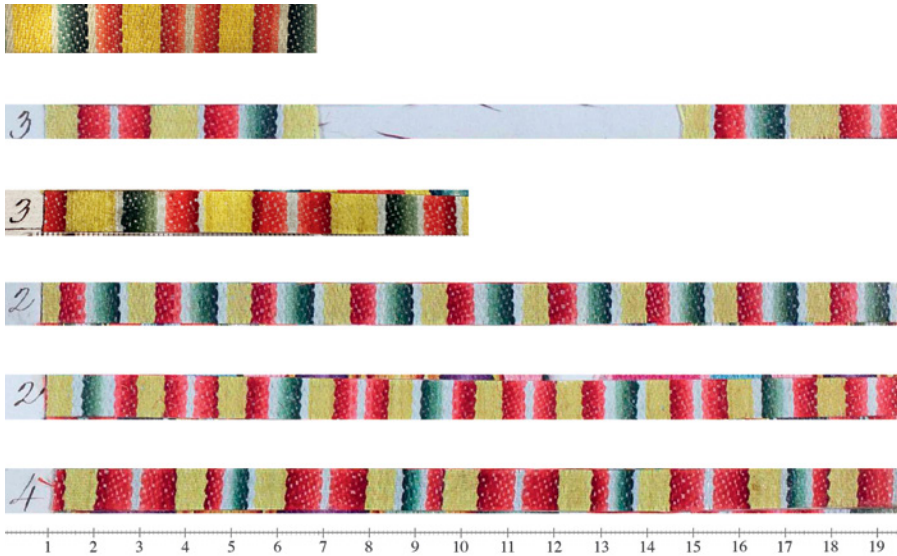
The second precise match is between a skirt from Pilstvere and a pattern book held at the Winterthur Library in Delaware, U.S.A. More precisely, the exact same stripe pattern is also found on six items collected from Ruhnu, although they are slightly smaller in width. While the blue stripe on the Pilstvere skirt is 6 cm wide, the same stripe on the Ruhnu items is 4.5 cm wide (see figure 8). It is noteworthy regarding this pattern book that it was compiled by John Christopher Hampp, who was of German descent (born in Marbach in 1750) and moved to Norwich, where he was involved in the textile industry as a master weaver and merchant. In addition to the textile trade, he imported mediaeval stained glass windows from Europe for English churches. Hampp died in Norwich in 1825 and is buried in St. Giles Church (Hampp 1793). As it is known that the pattern book was compiled between 1790 and 1805, this gives an indication of the time frame in which the Ruhnu wedding bodices could be dated.



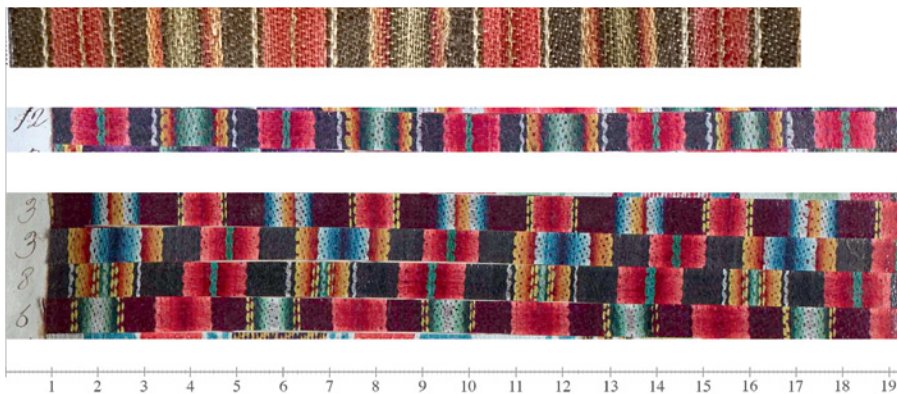
**Figure 8.** The pattern repeat of three Estonian items on a proportional scale, where it is visible, that the colours of Pilstvere skirt ERM 15466 (no 1) are the same as Ruhnu bodice from Steffenson's private collection (no 2) and Ruhnu bodice ERM A 741:20 (no 3), but the width differs. Same pattern repeat and different widths can be seen on the two scraps from the pattern book by John Christopher Hampp (no 4)<sup>6</sup> with the upper fabric a bit more blueish and wider compared to the one below with a bit more greenish hue and narrower stripes. Another exact stripe is in the Norwich pattern dispatch book of the company Ives & Basely (no 5). *Photo collage by Tiina Kull, courtesy of The Winterthur Library regarding the image from the pattern book Col50\_65x695-2 and Norfolk Museum's Service regarding the image of NWCHM:1981.50.23.*

Close patterns are also found on the Ruhnu wedding bodice ERM A 563:2038, where the pattern book shows a pattern repetition with one red stripe between two green stripes (no 3, 5 and 6 on figure 9), while on the bodice held at the Estonian National Museum, two green stripes are adjacent. Otherwise, the stripe widths, colours, and transitions are one-to-one (see figure 9).

6 The pattern books in Winterthur Library and Estonian examples might not be scaled correctly, as the widths of fabric strips held there are unknown.



**Figure 9.** Stripe pattern of Ruhnu bodice ERM A 563:2038 (no 1) and five different but similar patterns from Norwich's Museum pattern book NWCHM 1966.658 page 13 (no 2), page 26 (no 3), page 49 (no 4), page 50 (no 5), page 73 (no 6). *Photo collage by Tiina Kull with courtesy to Norfolk Museum's Service regarding the images from the pattern books.*



**Figure 10.** The Stripe pattern of Ambla skirt PM\_345 E 70 (no 1) compared to few of many similar but not exact stripe patterns that can be found in catalogues NWCHM 1966.658 on page 49 (no 2) and NWCHM 1981.50.23 on page 97 (no 3). *Photo collage by Tiina Kull, courtesy of Norfolk Museum's Service regarding the images from the pattern books.*

Very similar pattern matches in several sample books are found on the skirt PM\_345 E 70 held at the Järva County Museum. The only anomaly is that all these similar patterns have white stripes around the green pattern group, whereas on the skirt from Ambla, the white stripes are around the red pattern group (see figure 10).

## Discussion

Helmi Üprus briefly touches on the subject of striped skirts, their origin and fabric sample catalogues in Tallinn, but associates striped skirts with the purchase of silk striped fabric (Üprus 1969: 28) and does not address the existence of purchased worsted striped fabric among the skirts of the Estonian peasantry. Aino Voolmaa two years later connects the purchased striped skirts to those that were home-woven (Voolmaa 1971: 118) but does not describe these items. The connection that Aino Voolmaa refers to based on the appearance of these fabrics seems even more impossible to dispute after my research. The stripe rhythm and the gradual transition of patterns from one colour to another in callimanco appear to have been carried over into Estonian peasant skirts. Furthermore, it is interesting that, technically, the reproductions have been more troublesome to execute than the purchased fabric.

My study has proven that the purchased woollen striped callimanco fabric in Estonian museums is indeed from Norwich, England. This can be proven by both comparing the characteristics (weaving structure and density, yarns used, surface gloss) and comparison of the stripe patterns. We cannot be entirely certain that the skirt fabrics arriving here were dispatched from England exactly at the time when the fabric sample strip is recorded in the dispatch book along with the date. Rather, we can confidently say that on that date, fabric with the same pattern was dispatched. As evidenced by my research trip to the Norwich museum and my work with digital pattern sample books, similar pattern structures are repeatedly found in these books. The frequent movement of similar fabric across the Baltic Sea is evidenced by the identical striped pattern of the yellow Pilstvere skirt (ERM 15466) and items from Ruhnu (ERM A 741:20, ERM A 563:2036, two bodices and a childrens' cap in private collection of Steffenson, SM \_ 10379:155 T). The stripes of the Pilstvere skirt are wider, and the items from Ruhnu also have different tonalities, with some being more bluish and others having a greener undertone.

Moreover, there were also striped patterns of Estonian items for which I found no match, even though the fabric weave density and other parameters suggest a similar manufacturer. The only item that differed in such a way that I feel confident proposing an alternative production location was the Muhu apron (ERM 509:4833).

However, what the origin of the fabrics from Norwich changes is the period in which these callimanco items are placed in our cultural history. Aino Voolmaa refers to the first striped skirts from the mid-18th century, based on four facts. A Põltsamaa manor worker had a striped skirt listed as her pay in 1745, the years of making for both callimanco skirts: ERM 15466 from Pilstvere and ERM 11171 from Ambla are dated to 1750 and 1760 in



her article, and the description of two workers who escaped from a spinning house in Tallinn wearing striped skirts in 1765 (*ibid.* : 116). All the similarities I found in the pattern books are rather from the late 18th century. For both skirts I found exact matches dating the probable purchase to 1792 with the Ambla skirt and to 1790–1805 with the Pilstvere skirt. Examining the quantities of fabric registered in Danish customs documents, the peak of trade between Norwich and Estonian ports similarly falls in the late 18th century and the early 19th century. In Estonia, items made from this fabric were worn and passed down for a longer period, as evidenced by the fact that they have survived in museums to this day.

In the marketing of Norwich's products, the Russian Empire was an important client, with the production of callimanco fabric being particularly prominent for this market. From a table compiled by Micheal Nix one can calculate that 88% of one Norwich's fabric producers callimanco produced in a year was transported to Russia and it made up 14% of its annual gross income (Nix 2023: 390). Examining all ships transporting fabrics between England and Estonian ports (Pärnu, Tallinn and Narva) according to the Danish Sound Toll Registers, more than 69,000 pieces of stuff were brought to Estonia between 1766 and 1817 from London and Great Yarmouth (the port of Norwich), of which 61 per cent came from Great Yarmouth<sup>7</sup>. It all suggests that the amount of callimanco fabric visible to the eyes of late 18th or early 19th century Estonian peasants must have been much larger than we had known before based on the few surviving textile items.

Whether and how it was used or by which social class remains unknown. The three skirts being gifted from the manor houses, might suggest the use of this fabric among upper social classes. References to skirts made from callimanco fabric are also found in a book on North Holland folk costumes, where it is explained that according to a text from 1776, skirts made from red-blue kalamink were worn by wealthier peasants or the middle class, as a colourful reminder compared to the dark clothing of the poor (Havermans-Dikstaal, Schram-van Gulik 1998: 43). One skirt that has a significant resemblance to the yellow Pilstvere skirt is preserved in the Frisian Museum (T1957-418). Marie Ulväng studied clothing of different social classes in the Swedish county of Härjedalen between 1750 and 1820. Based on the mandatory probate inventories she found that the use of purchased worsted fabric differed between the social classes and genders. The wealthier men tended to own single-coloured camblet fabric items, often a three-piece-costume, whereas

7 From an email with Michael Nix 13.07.2024. This excludes about 13,750 pieces where ships visited Reval as an intermediary port before their final port of call in St Petersburg. The number of pieces delivered in the two ports is not known.

the women from the poorer classes (länsmän, farmers and peasants) owned aprons, skirts or bodices made from colourful striped callimanco (Ulväng 2021). However, in the case of reports from both countries, definitive parallels cannot be drawn concerning the Estonian territories, as there is not much known about the clothing of the German-speaking population that formed upper social classes (town citizens, manor workers and landlords). At the same time, it is interesting to note the overlap in the types of items made from striped fabric and the mentioning of a wealthier middle class as the buyer for the callimanco both in the Dutch book and in Ulväng's study.

### Conclusion

This study provides a comprehensive mapping of callimanco textile items preserved in Estonian museums. Historically, references such as Aino Voolmaa's 1971 article mentioned only a few striped skirts, but this research has revealed their broader use, including a skirt from Paide Museum and wedding bodices and boys' hats from Ruhnu. Unique distinctions, like the apron from Muhu Island, have also been noted.

We can say that the *kamlott* belts collected in the Estonian National Museum are not the same fabric as callimanco, and although we lack vocabulary in Estonian to talk about historical fabrics, the use of the term *kamlott* is justified, referring to fabrics woven with combed wool. However, the term explanation should not be limited to just the weaving technique of twill.

Detailed analysis of the callimanco fabric characteristics revealed its narrow width, warp-faced satin weave, use of double zzS warp yarn, single Z weft yarn, tone-on-tone colour transitions, and a distinctive glazed finish that imparts a shiny and slightly crisp texture. These findings are crucial in understanding the technical aspects of callimanco fabric and might aid in recognizing this type of fabric in any museum.

Pattern and technological comparisons indicate that these museum items originated from Norwich, England. This connection enriches our understanding of Estonian history and provides English counterparts with cultural validation of the significance of their textile exports. The widespread popularity of striped skirts among Estonian peasants thereafter is a testament to this cultural exchange.

The matched stripes offer a more precise chronological framework, potentially dating the wider spread of striped skirts to a later period. Although Norwich textiles were available earlier and we have earlier historical remarks, the peak of callimanco trade occurred at the end of the 18th and beginning of the 19th centuries. This timeframe also aids in dating previously undated Ruhnu items.



Although this study explored only a narrow aspect of the prelude of Estonian folk costume traditions, it adds new layers and clarifications to a topic that has up until now been treated in fairly general and hypothetical terms – the origins of the idea among Estonian peasant women to weave and wear striped folk skirts. Despite these advancements, much remains to be explored in the field of purchased historical textiles in Estonia. The provenance of *kamlott* belts and coarse linen twill textiles from the Russian Empire, and numerous other artefacts, some mentioned by Aino Voolmaa, such as the plain-woven camblet skirt from Koeru, or green apron from Kihnu Island, await further investigation.

### **Acknowledgements**

Throughout the process of writing this article, I have been in correspondence with Michael Nix from England, and he has been most generous by sharing detailed information about the production of Norwich fabrics, leading me to many useful historical sources. I also want to thank Michael and Ann for welcoming me on my trip to Norwich. During microscopic analysis I was accompanied by the head of the conservation unit at Estonian National Museum Eve Keedus, for which I am most thankful to her. I would also like to thank my supervisors, who have repeatedly reviewed this text and supported my independence in directing this research. Thank you.

## Appendix

Museum number	Item	Width of panel in cm	No of panels	Warp yarns	Warp yarns per cm	Weft yarn	Weft yarns per cm	Visible matter on the fibre surface under 200x microscope
ERM 15466	skirt	44	6	Wool zzS	28	Wool Z	20	Yes
ERM A 509:1971	skirt	40	7	Wool zzS	27	Wool Z	19	Yes
ERM 11171	skirt fabric	40	6	Wool zzS	20	Wool Z	19	Yes
PM 345 E 70	skirt	36	7	- zzS	20	- Z	17	-
ERM A 509:4833	apron	31	2	Wool+cotton+ linen+ silk zzS	14	Wool+cotton+ linen+ silk Z	18	Yes
ERM A 741:20	bodice	40	-	Wool zzS	27	Wool Z	19	Yes
ERM A 563:2036	bodice							
Private collection of Steffenson	bodice							
SM 10379:155 T	hat							
ERM A 563:2038	bodice	-	-	Wool zzS	24	Wool Z	17	Yes
ERM A 563:2039	main fabric of a bodice	-	-	Wool zzS	21	Wool + cotton Z	20	Yes
ERM A 563:2039	bodice shoulder	-	-	Wool zzS	26	Wool Z	22	Yes
ERM A 563:2039	small patch	-	-	Wool zzS	21	Wool Z	15	Yes
ERM A 509:5455	bodice	-	-	Wool (one yarn – light green – might be wool + cotton) zzS	25	Wool Z	18	Yes
ERM A 563:2038	bodice	-	-	Wool zzS	24	Wool Z	17	Yes
Private collection of Steffenson	bodice	42	-	- zzS	23	- Z	17	-
Private collection of Steffenson	hat	-	-	- zzS	21	- Z	17	-

**Table 1.** The results of technological-comparative and microscopic analysis regarding all callimanco items in Estonian museums. *Table by Tiina Kull.*

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**Patternbooks**

NWCHM 1981.50.23 (pages 83-120). A Norwich dispatch book, pages 83-120 contain 28 pages of striped callimancoes that were sent out in 1791.

NWCHM 1792 1966.658. Norwich company Ives & Basley dispatch book. Strips of fabric were sent out in 1792. Contains 52 pages with striped callimancoes.

Col50\_65x695-1. A pattern book dated 1785–1831. Contains four pages with striped callimancoes.

Col50\_65x695-2. A Norwich pattern book by John Christopher Hampf, dated 1790-1805, contains six pages of striped callimancoes.

Col50\_65x695-3. A pattern book dated 1794-1797, contains 19 pages with striped callimancoes.

Col50\_65x695-4. A Norwich dispatch book from year 1788, contains 52 pages with striped callimancoes.

Col50\_65x695-5. A pattern book by Booth & Theobald from 1790–1810, contains 6 pages with striped callimancoes. The arrangement and numbering of swatches corresponds exactly to a book inscribed 'Charles Tuthill' which is in Castle Museum, Norwich.

VA 67-1885. A Norwich textile pattern book of John Kelly, made for the Spanish and Portuguese markets, dated 1763. Contains 6 pages with striped callimancoes.

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NM.0017648B\_12 (q,r,s,t,u,v). Six separate sheets with strips of callimancoes glued to them.

NM.0017648B\_16. One sheet of paper with Norwich's striped callimancoes glued to it.

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SU4106:443. Striped callimanco bodice from Ruhnu island. <https://suomenkansallismuseo.finna.fi>

NM.0144894. Striped callimanco bodice from Ruhnu island, has bodice's main part and shoulder pieces made from two different striped callimanco fabrics. <https://digitaltmuseum.se>

NM.0230656. Striped callimanco bodice from Ruhnu island. Front and back seem to be made from red-white-yellow striped callimanco while shoulder pieces are cut out from white fabric with flowers. <https://digitaltmuseum.se>

NM.0145181. Child's hat from Ruhnu island made from striped callimanco fabric. <https://digitaltmuseum.se>

**Archival materials (researched in person)**

AM\_5905 TE 53. A pattern card made of leather and cardboard, externally shaped like a book with red foldable covers. Contains 54 samples of printed colourful patterned wool fabric, pasted onto nine pages, with the sequence numbers 961-1014 attached to them. The covers are edged with a gilded ornament. The front bears the inscription “Brooks & Hebdens Leeds” and the number 7 in black.

ERM 11171. A striped callimanco skirt fabric from Ambla parish with a note saying that it was a gift from the Pruuna-Kõrve manor. It is now displayed in the permanent exhibition of Estonian National Museum and thus has been made a new waistband by the conservators.

ERM 15466. A striped callimanco skirt from Pilstvere parish, also collected with a note that it was a gift from manor house.

ERM A 509:1971. A striped callimanco skirt from Vaivara parish.

ERM A 509:4833. A striped callimanco apron from Muhu island. Dated 1770 but could have inconsistencies with the dating as the owner family moved to collecting location only in the mid 19th century.

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ERM A 509:5455. A striped callimanco bodice from Ruhnu island.

ERM A 509:6060. A red camblet wedding jacket from Jõelähtme Parish, dated 1823.

ERM A 563:2036. A striped callimanco bodice from Ruhnu island.

ERM A 563:2038. A striped callimanco bodice from Ruhnu island.

ERM A 563:2039. A striped callimanco bodice from Ruhnu island, has three different fabrics used.

ERM A 741:20. A striped callimanco bodice from Ruhnu island.

PM\_345 E 70. A striped callimanco skirt from Ambla parish.

SM\_10379:155 T. A striped callimanco child's hat from Ruhnu island.

Items from Steffenson's collection. Two bodices and a child's hat from Ruhnu island sewn out of striped callimanco fabric.



**Tiina Kull.** Photo by Anu Pink.

## Eestis säilinud *callimanco*-kangaste otsinguil: kammlõngast triibulised ostukangad 18. saj lõpust kuni 19. saj alguseni

### Resümee

Käesolev uurimus keskendub atlasskoelistele villastele ostukanga näidetele 18. sajandist ja 19. sajandi esimesest veerandist, millele on eelnevad uurijad viidanud kui kamlott-kangale. Siiani on uurimustes vähe käsitletud professionaalsetes tingimustes valmistatud ostukangaid meie seelikutes (joonis 3) ja Ruhnu liistikutes (joonised 2 ja 4).

Uurimistöökäsitleb võimalikke seoseid rahvusvahelistes 18. ja 19. sajandi kanganaidiste kataloogides leitud triibukanga ribade ning Eesti rahvarõivaste osaks olevate triibuseelikute ja triibulisest ostukangast liistikute vahel. Välismaised uuringud, näiteks Dr. Michael Nixi uurimus Norwichi kangatööstuse kohta, heidavad valgust rahvusvahelisele kangakaubandusele ja selle ulatusele. Samas ei ole senini leitud seost Eesti muuseumikogudes olevate konkreetsete esemete ja kaubandust puudutavate allikate vahel.

Siinse uurimuse eesmärk oli neid lünki täita, analüüsides Eesti muuseumide esemeid ja keskendudes võimalikele seostele Inglismaal Norwichis toodetud triibulise kangaga. Antud uurimissuund on oluline, arvestades, et pärast Aino Voolmaa 1971. aasta seelikute ülevaateartiklis tehtud allmärkust kamloti kohta ja Eevi Asteli 1998. aasta rahvarõiva võid kirjeldava raamatu kamlottvööde kohta kirjutatud peatükki, ei ole seda kangast keegi uurinud.

Artikli esimeses pooles analüüsib autor termini kamlott kasutamist ja tähendust. See on suure tõenäosusega tähistanud kammvillast kootud kangast. Kuigi meie võõrsõnade leksikon ja seletav sõnaraamat ütlevad, et tegemist on toimse kangaga, ei ole selline kitsendus kuidagi õigustatud. Õiget eestikeelset vastet *callimanco* kangale, mis on triibuline, lõime-atlassina kootud kitsas ostukangas, eesti keeles ei olegi.

Teine peatükk annab ülevaate tehtud tehnoloogilis-võrdlevast analüüsist, mille abil uuritakse iga muuseumieseme tehnoloogilisi aspekte, kudumise tihedust, kanga laiust, lõnga keerdu ja pealispinna läiget. Mikroskoopanaliis aitab tuvastada kiumaterjale, panustades kangaste põhjalikumasse mõistmisse.

Artikkel lõpeb Eesti muuseumide kangaste triibumustrite võrdlusega välismaistes kanganaidiste kataloogides leiduvate mustritega ning järeldab, et meie muuseumikogudes olevad kangad pärinesid tõepoolest Inglismaalt Norwichist.

**Võtmesõnad:** ajaloolised kammvillased kangad, *callimanco*-kangas, kamlott, kalmink, Norwich, triibuseelik, rahvarõivad