

Items From 10th Century Hedeby (Haithabu)



Wikinger Museum Haithabu, photo from museum website

Ula Brennassdottir (E. A. Paulsen)
January, 2020

All materials in this document, including, but not limited to the written materials, graphics, photographs, etc. are for non-profit educational use intended for study and research only.

No written material in this document may be copied, stored or published in any format without the express written permission of the copyright holder.

Copyright © January 2020 E. A. Paulsen

Table of Contents

Table of Contents

<i>Introduction.....</i>	<i>2</i>
<i>Serkr (under dress).....</i>	<i>4</i>
<i>Smokkr (apron dress).....</i>	<i>5</i>
<i>Kappe (hat).....</i>	<i>7</i>
<i>Kam (comb)</i>	<i>9</i>
<i>Bag Handles</i>	<i>12</i>
<i>Bone Needles.....</i>	<i>15</i>
<i>Glass Beads</i>	<i>17</i>
<i>Appendix 1 – Stitches.....</i>	<i>19</i>
<i>Resources</i>	<i>20</i>

Introduction

Hedeby (Old Norse: Heiðabýr; German: Haithabu) was an important stronghold in Viking Age Denmark from the 8th-11th centuries CE and, along with Birka in present-day Sweden, it was the most important Viking trading center in Europe. During this time it flourished under the control of Danish Vikings.

Hedeby is located near the modern city of Schleswig, Germany on the Jutland Peninsula, but it was Scandinavia's southernmost trading port in the Early Middle Ages. Due to its favorable position at the nexus of the Frankish Empire and Danish Kingdom, as well as the Schlei River which connects to the Baltic Sea, the town of Hedeby attained great wealth as a mercantile settlement with extensive trading ties to western Europe, Scandinavia, the Slavic and Byzantine east, and the Arab World.

The first written records of Hedeby date to Frankish annals from 804 CE when Charlemagne, King of the Franks, awarded his Obotrite allies former Saxon lands following the Battle of Bornhöved in 798 CE. Christianity arrived in Hedeby around 820 CE, although it is thought the majority of its inhabitants remained pagan until at least the 11th century. Hedeby continued to grow rapidly in the 9th and 10th centuries as trade with the Varangian Rus and the Byzantine Empire increased. At its height around 900 CE Hedeby encompassed an area of around 60 acres with a population of approximately 1,500 people.

Hedeby is mentioned in several early medieval documents including Rimbert's *Life of Saint Ansgar*, Ohthere of Hlogaland's *History Against the Pagans*, Adam of Bremen's *Gesta Hammaburgensis Ecclesiae Pontificum*, and an Arab account written by Ibrahim bin Yaqub al-Turtushi. These records written by foreigners attest to a lively commercial town, populated by Danes, Frisians, Franks, Germans, Swedes, and Slavs, and archaeological excavation have confirmed Hedeby's multi-ethnic composition.

The merchants of Hedeby imported a wide selection of raw materials which in turn became the backbone of an array of craft industries. Ore from Sweden, soapstone from Norway, ceramics from the Rhine River, pots from the Baltics, and luxury textiles from Byzantium have all been found in the archeological sites of Hedeby. Hedeby was a manufacturing site for glass and amber beads, textiles, shoemaking, smithing, and ship building. Historians and archaeologists believe Hedeby was a major nexus of import, export, and transit trade in Northern Europe.

Hedeby declined as a major emporium in the late 10th / early 11th century as a result of political, economic, and environmental shifts. The nearby city of Schleswig grew in importance as the Schlei River leading up to Hedeby's harbor became deeply silted-up with sand. In a protracted period of conflict between Norway and Denmark from 1048-1064 CE, Harald Hardrada of Norway sacked Hedeby, setting the town and many of the ships in its harbor on fire. Snorri Sturluson, the renowned Icelandic historian and poet, later mentioned this event in his *Heimskringla*. In 1066 CE Hedeby was sacked by Slavs, forcing the residents to relocate

across the Schlei River to Schleswig, which took over Hedeby's role as a mercantile center and conduit of international long-distance trade during the Middle Ages.



Viking Age Trade Routes in North-West Europe, Ancient History Encyclopedia

Serkr (under dress)

10th Century Serkr

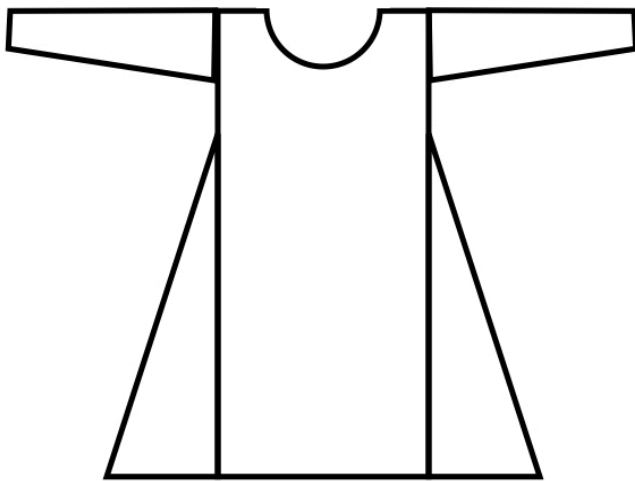
Materials:	linen, natural and dyed
Thread:	unknown, likely linen
Stitches:	whip stitch on gore, others unknown
Pattern:	rectangular construction with shoulder seams, oval neckline, side gores

Recreated Serkr

Materials:	linen, bleached
Thread:	cotton
Stitches:	back stitch and rolled whip stitch
Pattern:	rectangular construction with shoulder seams, oval neckline, side gores

The serkr found in both the graves and harbor are made of linen, most are undyed and two were dyed with walnut shells. While there is no entire extant garment most researchers agree that the evidence shows the garment was made of rectangular panels with tapered sleeves, a large rounded neckline, and side gores.

I used bleached white linen (3.5 oz. from www.fabric-store.com), cut with rectangular construction, a rounded neckline, angled sleeves, and side gores. I sewed all seams with a back stitch followed by a rolled whip stitch using white cotton thread. The hems, neck, and cuffs are rolled and whip stitched.



Smokkr (apron dress)

10th Century Smokkr

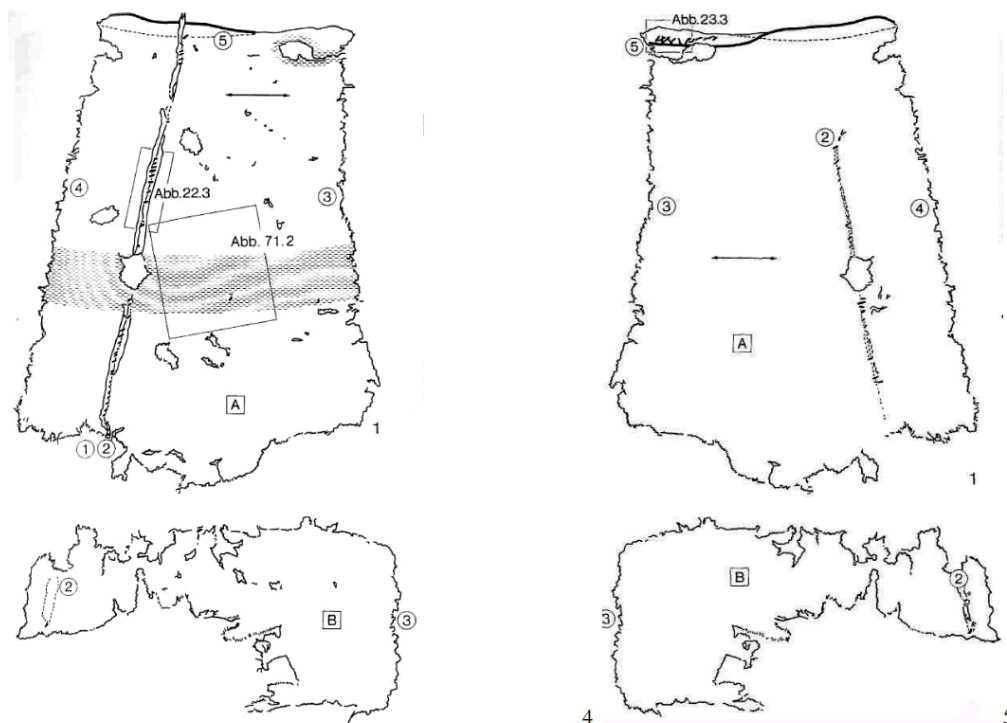
Materials:	wool, dyed
Thread:	unknown, likely wool
Stitches:	herringbone at top, rest unknown
Pattern:	rectangular construction (panels + gores)

Recreated Smokkr

Materials:	wool, dyed with madder
Thread:	silk, dyed with woad
Stitches:	running and buttonhole for seams, whip for hems
Pattern:	rectangular construction (3 panels + 3 gores)

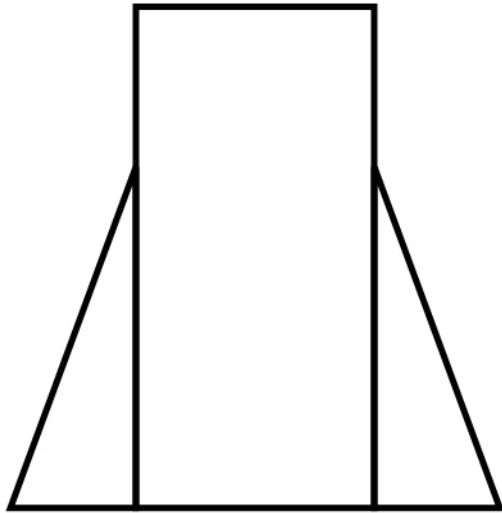
While there are large pieces of smokkr dresses in both grave and harbor finds no full extant pieces have been found. Most fragments are of wool but there are also pieces that appear to either be lined with linen or a second linen smokkr was worn under the wool one. There is also evidence of both wool and linen being used for the strap loops based on remnants found with brooches, however it is unclear if the loop material was the same as the smokkr itself.

An interesting aspect of one large extant piece is what appears to be an external dart, or perhaps a repair of some kind, that was then covered with a decorative braid, as well as the fabric showing wear in a manner that could be explained by the use of a belt.



Analysis of Fragment 14, Inga Hagg

I chose to make mine from wool that I dyed with madder root. Unfortunately my dying skills are not great and the color did not come out evenly. I used silk thread dyed with woad (purchased) for all stitches. I used a running stitch followed by a buttonhole for all the seams and a whip stitch for the top and bottom hem. I made my strap loops from the same bleached linen as the serkr and finished with a running stitch in white cotton thread. In using a three panel design I put the back strap loops on the center back seam instead of directly opposite the front loops. I have no evidence of back strap placement but feel this will wear better over time.



Kappe (hat)

10th Century Kappe

Materials:	wool, 2/2 twill
Thread:	unknown, likely wool
Stitches:	unknown
Pattern:	rectangular band and two piece oval top

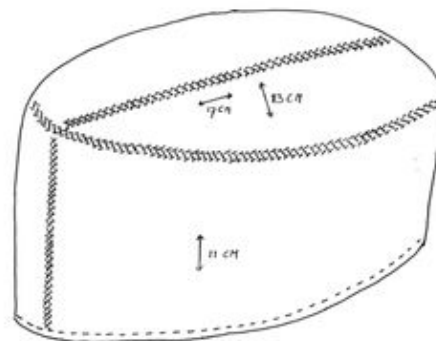
Recreated Kappe

Materials:	wool, plain weave, commercially dyed
Thread:	wool, commercially dyed
Stitches:	buttonhole
Pattern:	rectangular band and one piece oval top

A portion of what appears to be a basic pillbox hat was found in a former well at Hedeby. The extant piece is of 2/2 twill with a curved seam and appears to have been heavily worn before it was discarded. A very similar hat was found in Leens, Netherlands, from about the same timeframe. Given the known trade routes and that this basic hat shape had already been in use since Roman times it seems likely that it was a common pattern.



Haithabu Hat Fragment, Inga Hagg



Leens Hat Find, Journal of Archeology in the Low Country

I made my hat from plain weave scrap wool and commercially dyed wool thread. The pattern is just an oval the circumference of my head with a rectangular band. All seams and hem are done with a basic button hole stitch.



Kam (comb)

10th Century Kam

Materials: elk and red deer antler, bronze rivets
Construction: single or multiple plates, usually single sided
Decoration: carved lines and/or circles

Recreated Kam

Materials: white deer antler, brass rivets
Construction: multiple plates, single sided
Decoration: carved lines

Antler combs are common in most graves in the Viking world, including at Hedeby. The most common style is a single comb made from multiple plates, riveted together with bronze pegs.



Composite Single Comb, Dan Carlsson

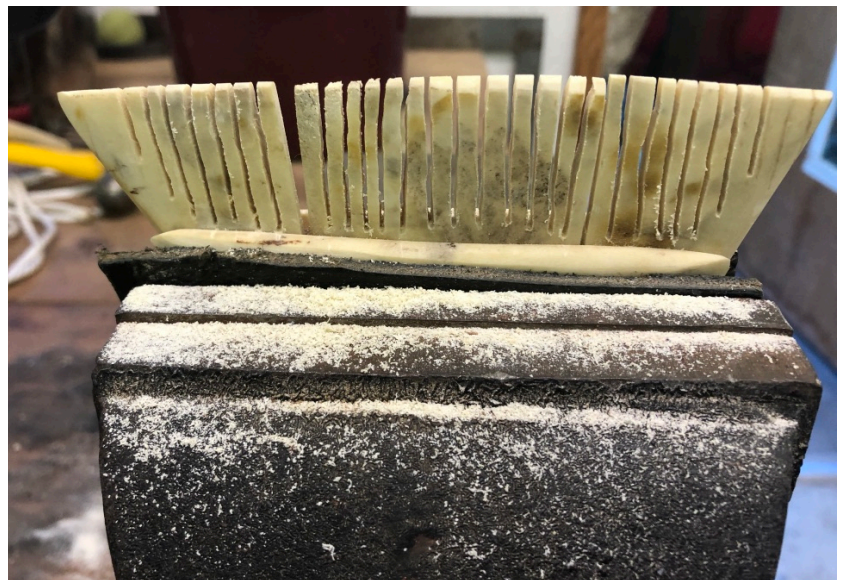


Composite Single Comb, Dan Carlsson

My comb is made from white deer antler as it is more readily available in North America. I started with a half rack and cut a piece from the straight center section for the tooth plates and one of the tines for the joining plates. Following much sanding I roughly pieced them together.



Once I had the basic shape I was looking for I soaked the pieces in water overnight to soften them. After softening I clamped the pieces together with flat pieces of wood and let it dry overnight to align the plates. I riveted everything together with brass wire after drilling holes. Once the plates were riveted in place it was time to cut the teeth. I placed the comb in a vice to cut the tines. I did the first few cuts just freehand but did the rest with a metal ruler as a straight edge with much better success. My teeth aren't as fine as those of the extant pieces but I believe with practice I will get better.



The final step was scribing in the decorative lines, final sanding, and finishing with oil.



CAUTION Always wear a respirator and eye protection when working with antler or bone. The fine particulate is a known carcinogen.

Bag Handles

10th Century Handle

Materials: ash and maple

Recreated Handle

Materials: oak

The excavations at Hedeby uncovered several long wooden objects that researchers now believe to be the handles or frames of cloth bags. Unfortunately the fabric has disintegrated in most cases, however there are traces of textile remnants attached to some. In looking at the wooden pieces, minor textile fragments, and a similar extant bag made from antler and hide from a Sami settlement we can extrapolate the use of these wooden pieces.



Wooden Bag Handles on display at Haithabu Museum



Sami Leather and Antler Bag, photo from Europa.org

To create mine I used oak from my woodpile. I started with a piece that had a good, straight, grain and cut it to the approximate size of the pair of handles. From there I refined the shape, drilled wholes for a strap and slots to attached fabric. The final steps was to cut the piece in half to create the matched pair of handles. They are finished with olive oil, although linseed or flax oils would have been more appropriate I used what I had on hand.



Cutting the jagged top on the second set was a bit more difficult but nothing a vise and a good saw and some files can't handle.



Bone Needles

10th Century Handle

Materials: usually bone, sometimes antler

Recreated Handle

Materials: cattle bone

Bone needles appear in both graves and in settlement excavations. They were possibly used as clothing fasteners and likely for naillbinding. Size and shapes varied widely.



Needles from Hedeby, photo by Kurt Schietzel

I used a cooked and well cleaned cattle bone, sawn into lengthwise pieces. I then sanded the bone until I achieved the shape I wanted, drilled a small hole in the rounded end, and oiled for the final finish.



CAUTION Always wear a respirator and eye protection when working with antler or bone. The fine particulate is a known carcinogen.

Glass Beads

Numerous glass fragments have been found in excavation at Hedeby, including many beads. Based on known finds it is likely that some glass items were made in Hedeby from raw materials imported from the Near East and Byzantium and other items were imported as finished products.

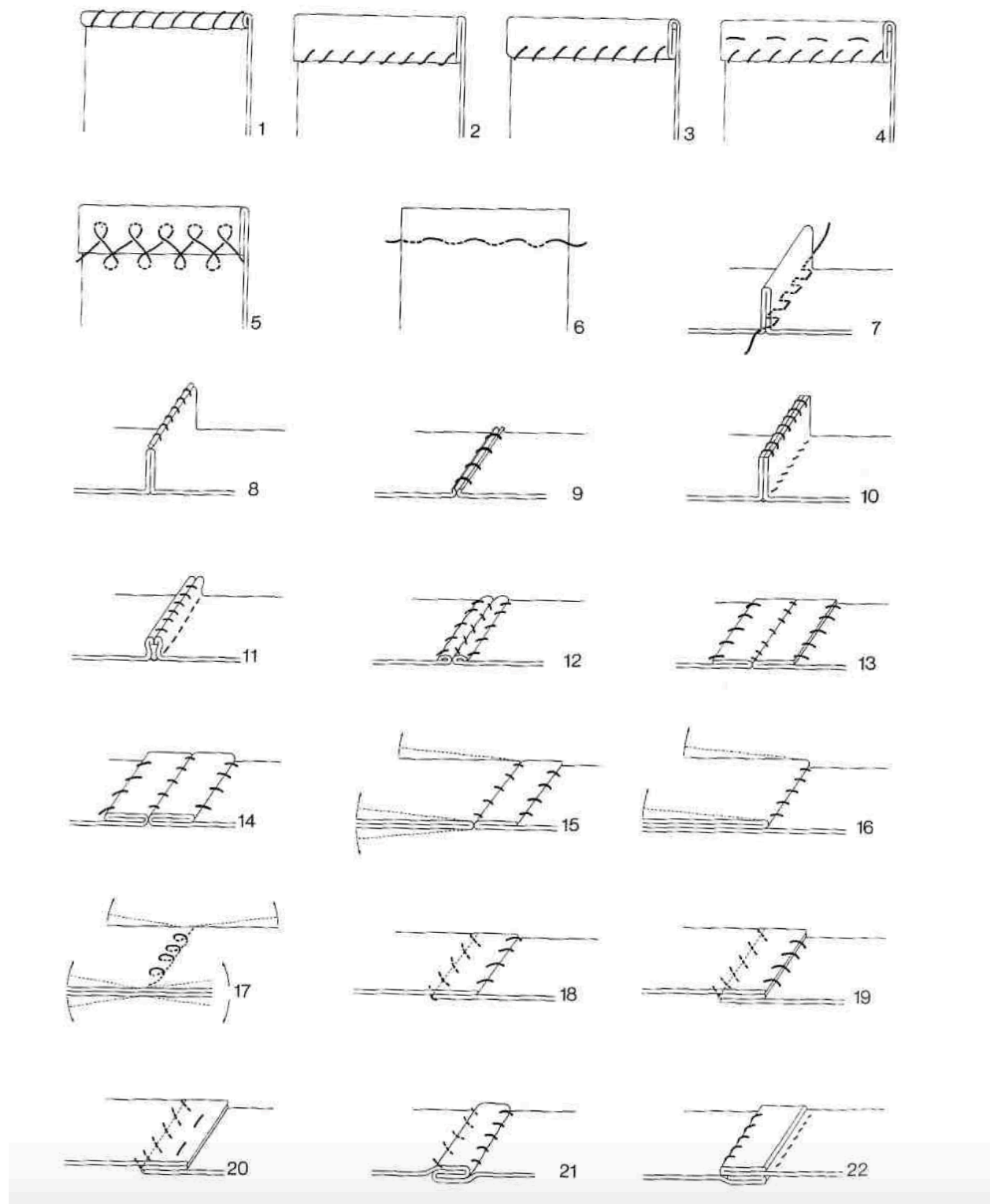
Most glass beads were round , cylindrical, or disk shaped although there are a few examples of more triangular or conical beads. Colors varied greatly as did decoration/design. The beads were likely made in a beehive glass furnace, one has not been excavated at Hedeby to date but they have been found in other Viking Age settlements.



Unfortunately, I do not have a beehive glass furnace (yet!) so my beads were created with a modern gas torch.



Appendix 1 – Stitches



Analysis of stitches used in Hedeby, Inga Hagg

Resources

Baker, Jennifer. "Stitches and Seam Techniques." New Varangian Guard, n.d.
<http://nvg.org.au/documents/other/stitches.pdf>.

Bantelmann, Albert, Müller-Wille Michael, Kurt Schietzel, and Hildegard von. Schmettow.
*Berichte Und Mitteilungen Zur Urgeschichte, Frühgeschichte Und
Mittelalterarchäologie*. K. Wachholtz, 1986.

Boutrup, Joy, and Catharine Ellis. *The Art and Science of Natural Dyes: Principles, Experiments,
and Results*. Schiffer Publishing, Ltd., 2018.

Brandenburgh, Chrystel. "Early Medieval Textile Remains from Settlements in the Netherlands.
An Evaluation of Textile Production." *Journal of Archaeology in the Low Countries* 2, no.
1 (May 2010). [http://jalc.nl/cgi/t/text/text-
idxe1f2.html?c=jalc;sid=095741f1231d8f86c4f63866855fbf08;rgn=main;idno=m0201a0
2;view=text](http://jalc.nl/cgi/t/text/text-idxe1f2.html?c=jalc;sid=095741f1231d8f86c4f63866855fbf08;rgn=main;idno=m0201a02;view=text).

Brather, S., U. Muller, and H. Steuer. *Zeitschrift Fur Archäologie Des Mittelalters*, n.d.

Carlsson, Dan. *Combs and Comb Making in Viking Age and Middle Ages*, n.d.

Carlsson, Dan. *Viking Beads*, n.d.

Combs from Antiquity, the Middle Ages, and Renaissance, n.d.
<http://www.larsdatter.com/combs.htm>.

Dean, Jenny. *Wild Color the Complete Guide to Making and Using Natural Dyes*. Watson-Guptill,
2010.

Englert, Anton, Athena Trakadas, and Wulfstan. *Wulfstans Voyage: the Baltic Sea Region in the
Early Viking Age as Seen from Shipboard*. Viking Ship Museum in Roskilde, 2009.

Hägg Inga. *Textilien Und Tracht in Haithabu Und Schleswig*. Wachholtz, 2015.

"Hedeby." Northern Europe's Largest City In Viking Age - Viking Denmark, January 1, 1970.
<http://www.vikingdenmark.com/hedeby-germany.html>.

Hilberg, Volker. "The Access to Raw Materials and Its Impact on Hedeby's Development in the
Viking Period." P. Eisenach, Th. Stöllner, A. Windler (eds.), *The RITaK conferences 2013–
2014. Raw Materials, Innovation, Technology of Ancient Cultures RITaK 1. Der Anschnitt
Bd. 34 (Bochum/Rhaden 2017) 253-270.*, n.d.

https://www.academia.edu/39322101/The_access_to_raw_materials_and_its_impact_on_Hedeby_development_in_the_Viking_period.

Jesch, Judith. *Women in the Viking Age*. The Boydell Press, 2006.

Lewins, Shelagh. A Viking Pinafore, n.d.

http://www.shelaghlewins.com/reenactment/hedeby_apron/hedeby_apron.htm.

Lorenzen, D. "The Vikings of Haithabu (8th -10th Century AD): Burials and Identity (Master's Thesis 2018)." Academia.edu - Share research, n.d.

https://www.academia.edu/36892711/The_Vikings_of_Haithabu_8th_-_10th_Century_AD_Burials_and_Identity_Masters_thesis_2018_.

Lupa, Rua. "Norse Merchant Hat - A Hat Outside Of History." Academia.edu - Share research, n.d. https://www.academia.edu/23738723/Norse_Merchant_Hat_-_A_Hat_Outside_Of_History.

Makarov Nikolaj Andreevič, Anna Vladimirovna. Mastykova, and Hohlov Aleksandr Nikolaevič. *Arheologiâ Baltijskogo Regiona = Archaeology of the Baltic*. Nestor-Istoriâ, 2013.

Price, Neil, and Stefan Brink. *The Viking World*. Routledge, 2012.

Sawyer, P. H. *The Oxford Illustrated History of the Vikings*. Oxford University Press, 1999.

Schatte, Torben. "Haithabu Und Schleswig - Stadtentwicklung Im Nördlichen Europa Im Früh- Und Hochmittelalter." *Institut f. Prähistorische Archäologie Seminararbeit*, n.d.

Sigmundsson, Svavar. *Viking Settlements and Viking Society*. Proceedings of the Sixteenth Viking Congress, 2009.

Tait, Hugh. *Five Thousand Years of Glass*. Published for the Trustees of the British Museum by Britihs Museum Press, 1995.

Thunem, Hilde. "Viking Women: Aprondress." Viking women: Clothing: Aprondress (smokkr), n.d. <http://urd.priv.no/viking/smokkr.html#evidence>.

Verberg, Susan. "Viking Women: Aprondress." Viking women: Clothing: Aprondress (smokkr), n.d. <http://urd.priv.no/viking/smokkr.html#evidence>.

Verberg, Susan. "Women's Set of Viking Winter Clothes Based on Haithabu and Birka Textile Finds." Academia.edu - Share research, n.d. https://www.academia.edu/31139188/Womens_Set_of_Viking_Winter_Clothes_based_on_Haithabu_and_Birka_textile_finds.

“Viking Age Fashion: Pillbox Hat from 10th Century Haithabu (Hedeby).” Project Broad Axe: Life, Death, and Fashion in Medieval Europe, n.d.
<https://projectbroadaxe.weebly.com/viking-age-nordic-history/viking-age-fashion-pillbox-hat-from-10th-century-haithabu-hedeby>.

“Viking Women: Aprondress.” Viking women: Clothing: Aprondress (smokkr), n.d.
<http://urd.priv.no/viking/smokkr.html#evidence>.

Wiener, James Blake. “Hedeby.” Ancient History Encyclopedia. Ancient History Encyclopedia, January 1, 2020. <https://www.ancient.eu/Hedeby/>.