

Viking Men: Clothing the legs

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This article represents my attempt to collect archaeological facts, and interpretations of the leg wear worn by the Vikings. I have chosen to focus on the larger garments used to clothe the legs (and the occasional sock), and will leave the discussion of leg windings to another time. As usual, my intention with gathering this information is to be able to make my own best guess, which of course may differ from yours :-)

Large leg clothing can be roughly divided into two categories: leg pieces that are worn separately from each other (one for each leg), and leg pieces that (sometimes together with extra pieces) are sewn together at the crotch, creating one continuous garment. In this article, I will be using the term "hose" or "hosa" for the first category and the term brók (plural brækr) for the second.

Facts: Archaeological finds

Birka

The excavation of Birka was mainly conducted in the 1870s by Hjalmar Stolpe. Although Stolpe made fairly accurate drawings of the different graves, textiles was not considered to be important at the time, and was omitted from the drawings. The textile fragments were later analysed by [Agnes Geijer](#) (in 1938) and reanalysed by Inga Hägg (in 1974 and [1986](#)).



Grave **905** contained a skeleton and various metal artefacts. Among these were two bronze hooks shaped as animal heads, found in a position just below the knees. According to [Linderholm et. al.](#) the skeleton was osteologically determined as male.

Photograph by [Christer Åhlin SHMM](#) 

Eine im Birkamaterial ganz einzig dastehende Erscheinung ist ein Paar tierkopfförmiger Bronzehaken, die wir versuchsweise Gamaschenschlüsse nennen wollen. Die unverrückte Lage im Grab 905 ergibt, dass die Haken Wickelgamaschen oder Unterbeinkleider aus starkem Wollstoff festgehalten haben, die in den leinenen Beinkleidern eingehakt wurden, welche letztere über das Knie hinabreichten. Abgesehen von Steigeisen, die in manchen Gräbern vorkommen, sind diese Haken die einzigen Überreste an Bein- und Fussbekleidungen, die vorgefunden wurden.

Agnes Geijer: Die Textilfunde aus den Gräbern, p 144-145

As shown in the photograph some textile fragments have been preserved on one of the hooks. The woollen fragments are at the lower end of the hook, indicating that it once was sewn (or otherwise fastened) to a woollen garment that would have covered the lower leg of the man in the grave. According to Geijer, it was probably a wool leg winding or some kind of stocking or hose. The bronze hooks were then hooked into some kind of linen garment that would have reached just below the knees.

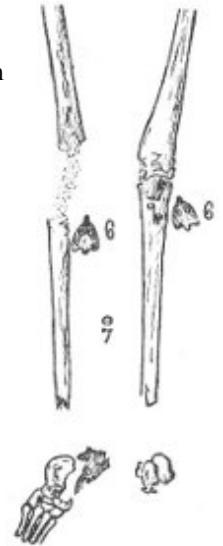
Inga Hägg elaborates further in her report on the Birka textiles. According to her, the wool fragments were plain woollen twill, and each hook was hooked into an iron ring which had been sewn into the lower edge of

a knee-length garment. These rings were not mentioned by Geijer, but she must have known about them as they appear to be the only source of traces of linen. Based on them, Hägg suggests that the knee-length garment would have been made of linen, or of wool with a linen lining.

Für die Körperbestattungen einmalig sind die Bronzehaken des Grabes Bj 905, die dem Plan nach an den Waden, gleich unter der Kniekehle lagen. Auf der Rückseite der Haken sassen Reste von grobem, Diagonalköper aus Wolle, wahrscheinlich von einem Paar Gamaschen. Die Haken waren an beiden Beinen nach oben gerichtet, um in je einen Eisenring zu haken, der an der Unterkante der bis über die Knie reichenden Beinkleider festgenäht war. An den Eisenringen sitzen noch Reste von Leinwand, die darauf deuten, dass diese Beinkleider aus Leinwand bestanden, oder vielleicht aus Wollstoff mit Leinwandbesatz.

Inga Hägg: Die Tracht, p 68

Illustration, Agnes Geijer: Die Textilfunde aus den Gräbern, p 147



Unfortunately, the tiny fragments are the only part of these garments that are left, which makes it impossible to say anything more conclusive about what form they took. According to Geijer, the hooks are the only remnants of leg and foot coverings that were found at Birka, with the exception of crampons, which occur in some tombs.

Haithabu

One of the major excavations of Viking clothing was in Haithabu in Schleswig-Holstein, Germany. The textile material is from the 10th century and was analysed by Inga Hägg, who wrote [reports](#) in German, with short summaries in Swedish. Unfortunately my German is poor (it is my third language), so I am very grateful to Lena Palt for her assistance with my translations. Any mistakes are mine alone.

Most of the finds at Haithabu come from the harbour and consist of used clothing which was coated with tar and used as ship's caulking. In addition to the harbour finds, Inga Hägg also [analysed](#) the textile remains from the settlement and graveyard of Haithabu. This provides additional information about what the Viking inhabitants of the town were wearing.

The textile material from the settlement and the harbour is very similar, with the same garment types being found and the proportion of the different weaves being roughly the same.

The graves on the other hand, differ from this by generally having textiles of higher quality, and a much larger proportion of tabby weave (73% instead of the 25% in the harbour and settlement). According to Hägg, the differences could indicate that the content in the graves reflect beliefs and social standing, while the textiles from the settlement and harbour may give a truer picture of what people was wearing every day.

The harbour

The clothing fragments from the Haithabu harbour are generally better preserved and larger than fragments found in graves. The drawback is that it is harder to interpret which garment each fragment belongs to when we don't have the information that a layer in the grave or position on the body gives.

The fragments listed below are the ones currently believed to stem from either hose or brækr, but this can change as we learn more about Viking Age clothing in the future.

There are three fragments, **22 A-C**, that are believed to belong to a finely woven wollen brók.



Fragment 22 A-C. Vermutlich fragmentarischer Gurtabschluß einer Hose aus ziemlich feiner rötlicher Wolle in Rauten-, Spitz- und Gleichgratkörper. Erhalten sind drei Teile (Teile A-C), die beim Auffinden um zwei Holzstäbe gewickelt waren.

Teil A: Abwechselnd Rauten- und Spitzkörper. Zwei Kanten abgesäumt (Naht 1-2) und eine dritte Kante mit einer Reihe von überwendlichen Stichen (Naht 3). Länge 26-29 cm, Breite 9-10,5 cm. Teil B: Zwickelförmiges Fragment aus Rautenkörper mit einer Webkante und zwei stark ausgefransten Kanten. Keine Nähte erhalten. Länge der

Webkante 9 cm, Breite 6 cm. Teil C: Schmäler Streifen aus ziemlich feinem Gleichgratkörper 2/2. Kanten ausgefranst. (Ursprünglich vielleicht Schlaufe vom Gurtabschluß.) Länge 13 cm, Breite 1,5-2,5 cm. Stoffstärke in allen Teilen 0,15 cm.

Inga Hägg: Die Textilfunde aus dem Hafen von Haithabu, p 28, illustration modified from p 29

The largest fragment (22 A) is made of alternating lozenge and broken twill. Two of the edges have a hem stitched in place (1 and 2 in the drawing), and there is a third edge with a series of overcast stitches (3). The fragment is 26-29 cm long and 9-10.5 cm wide.

Fragment B is a fragment of lozenge twill shaped as a gore with a selvedge (along the top) and two strongly frayed edges. There are no remains of seams on this fragment. It is 9 cm long (along the selvedge) and 6 cm wide.

Lastly, fragment C is a narrow strip (13 cm long, 1.5-2.5 cm wide) of fairly fine 2/2 twill. The edges are frayed. This strip may conceivably have been a belt loop fastened to a brók waist band. All of the fragments are roughly 0.15 cm thick. They are reddish in colour and have been dyed with walnut shells.

The next set of relevant fragments, **39 A-B**, are interpreted as a brók made from lozenge twill and broken twill. The fragments are worn, but the fabric has been dyed.

Fragment 39 A-B. Fragmente, die möglicherweise vom Schritteil einer Männerhose aus Rauten-15; und Spitzkörper stammen. Stark abgenutzt und deutlich sekundär zerschnitten.

Teil A ist aus drei Teilstücken (Teile a-c) zusammengenäht. Teil Aa: Mittelstück aus feinem Rautenkörper mit Verbindungsnahten (Nähte 1-4) an drei Seiten. Höhe 15,5 cm, Breite 13,5 cm. Teile Ab-c: Schlecht erhaltene Seitenstücke aus sehr feinem Spitzkörper, die durch feste Nähte (Nähte 1-2, 4;) mit auffallend dunklen Stichen und breit umgeschlagenen Kanten am Mittelstück befestigt waren. Ein drittes Teilstück war ursprünglich offenbar bei Naht 3 vorhanden.

Teil B besteht aus dem gleichen Rautenkörper wie das Mittelstück und ist rundum stark abgenutzt und zerrissen. An zwei Kanten befinden sich Reste von Nähten. Ihrer identischen Bindungsart sowie diesen Nähten nach zu urteilen, läßt sich eine ursprüngliche Vernähung mit Fragment 39 Aa vermuten; eine Annahme, die indes letztlich unsicher bleiben muß.

Möglicherweise bilden die Fragmente 39 Aa und 39 B zusammengehörende Reste vom Mittelzwickel einer Männerhose. Die erhaltene Gesamthöhe beträgt etwa 23 cm. Die Seitenstücke (Fragmente 39 Ab-c) gehören demnach zu den Hosenbeinen oder zu Zwickeln an diesen.

Alle Teile zeigen starke Gebrauchsspuren und sind wahrscheinlich umgenäht, jedoch nicht geflickt worden. Jetzige Stoffstärke ca. 0,1 cm.

Inga Hägg: Die Textilfunde aus dem Hafen von Haithabu, p 28 illustration modified from p 30



Fragment 39 A is stitched together from three sections of fabric (Aa-c):

- Fragment Aa: This appears to have been a piece from the centre part of the garment, with seams (1-4 in the illustration) connecting it to other pieces on three sides. It is made from fine lozenge twill, and is 15.5 cm high and 13.5 cm wide.
- Fragment Ab and Ac: These side pieces have been fastened to the centre piece by firm seams (1-2, 4 in the illustration) with striking dark stitches and wide, folded edges. The fragments are currently poorly preserved, but are made of very fine broken twill. It also appears that seam 3 originally fastened a third piece.

Fragment 39 B consists of the same lozenge twill weave as the centre piece, and is very worn and torn. There are remains of seams at two of the edges. The identical weave and the edge seams may be seen as indications that fragment 39 B and 39 Aa originally was sewn together, possibly as fragments of the centre gore of a man's brók. The resulting overall height of the piece would then be roughly 23 cm, and the side pieces (Ab and Ac) would then belong to either the brók legs or gores connected to the legs. Unfortunately there is no way to be certain of this.

All the fragments show clear signs of wear. They have been hemmed, but don't seem to have been patched. The current thickness of the fabric is 0.1 cm.

Finally, there is a third set of fragments. **72 A-B** and **91 A** are made from a thin wollen tabby and are believed to come from a brók.

Fragment 72 A-B. Reste von Vorderseite und Schritt einer Männerhose aus dünnem Stoff in Tuchbindung.

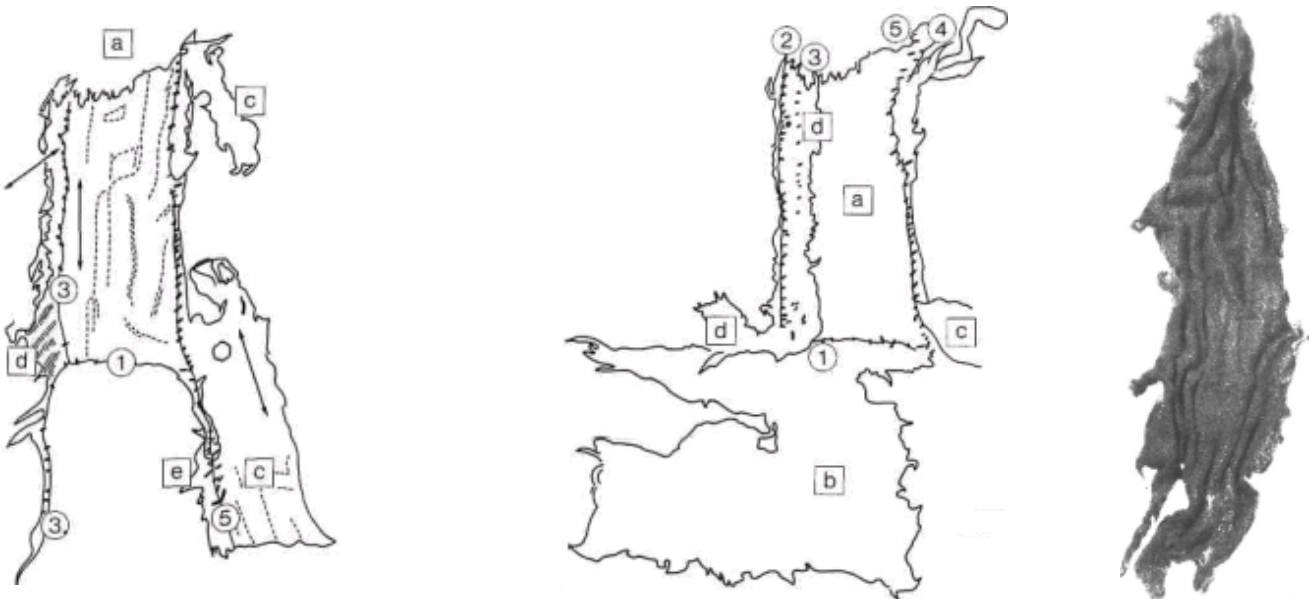
Fragment 72 A: Aus sieben verschiedenen, symmetrisch geordneten Teilen zusammengenäht (Teile a-g). Stoffstärke, Teil a, 0,1 cm, Teile b-g und Fragment 72 B, 0,05 cm. Teil a: Garndrehung z/z. Bandförmiger Zwickel aus feinem, rötlichen Gewebe in ripsartiger Tuchbindung mit Falten. Nach oben abgerissen, seitlich und unten Schnittkanten und Nähte erhalten. Höhe 12,5 cm, Breite 5-7 cm. Teil b: Garndrehung z/z. Rechteck aus feinem, grünlichen Stoff in Tuchbindung mit niedrigen Falten, unregelmäßig verteilt wie bei einem Kreppgewebe, und mit starken, länglichen Gebrauchsspuren am Rücken jeder Falte. Eine Kante des Stückes mit Teil a zusammengenäht (Naht 1), die übrigen abgerissen. Länge 10 cm, Breite 14 cm. Teil c: Garndrehung z/z. Dünnes, rötliches Gewebe in sehr feiner Tuchbindung mit dichten Fältchen. Durch doppelte Stichreihen (Nähte 4-5) mit den Teilstücken a, b und e verbunden. Die übrigen Kanten abgerieben und abgerissen. Teil d: Garndrehung z/s. Sehr wenig erhalten. Gegenstück zu Teil c und wie dieses aus dünnem, sehr feinem rötlichen Gewebe in Tuchbindung mit Fältchen. Teile e-f: Garndrehung z/s. Wenig erhalten, Gewebe schräg gezogen und größtenteils aufgelöst, aber deutlich in Tuchbindung mit Falten. Beide Teile von grünlicher Farbe. Teil g: Nur noch ausgefranste Kett- und Schußfäden (z/s) und vereinzelte Stiche vorhanden.

Inga Hägg: Die Textilfunde aus dem Hafen von Haithabu, p 34

Fragment 72 A consists of seven symmetrically placed different pieces (a-g) that have been stitched together:

- Fragment a: A long, narrow gore of fine reddish cloth in tabby weave with wrinkles. It has been torn at the top, but the edges and seams at the side and bottom has been preserved. The piece is 12.5 cm high, 5-7 cm wide and woven from z/z yarn.
- Fragment b: A rectangle of a fine green cloth in tabby weave. The fragment has shallow wrinkles irregularly distributed across it, like crepe fabric, and there are clear traces of wear on the back of each wrinkle. One edge of the rectangle has been stitched to fragment 72 Aa (seam 1 in the illustration), the other edges are torn. The piece is 10 cm long and 14 cm wide and woven from z/z yarn.

- Fragment c: Thin reddish very finely woven tabby weave with dense wrinkles. Fastened to fragment a, b and e with double rows of stitches (seam 4-5). The remaining edges are worn and torn. The piece is woven from z/z yarn.
- Fragment d: This piece is the mirror piece to 72 Ac, but is very poorly preserved. Like piece 72 Ac it is made from a very finely woven reddish tabby with wrinkles. It is woven from z/s yarn.
- Fragments e-f: The fabric in these fragments has been pulled at an angle and is almost totally deteriorated, but there is still enough left to see that they were made from a tabby weave with wrinkles. Both pieces have a greenish colour and were woven from z/s yarn.
- Fragment g: Only jagged warp and weft threads (z/s) and isolated stitches remain.



Fragment 72 A (position of a, c, d and e shown)

Fragment 72 A (right side, position of b shown)

Fragment 72 B

Inga Hägg: Die Textilfunde aus dem Hafen von Haithabu, drawings modified from p 32 and 33, photograph p 36

Fragment 72 B is made from the same thin, reddish cloth in very fine tabby weave as fragment 72 Ac, and it has the same dense small wrinkles with clear traces of wear on the back of each wrinkle. The fabric in all of the fragments is very thin; piece 72 Aa is 0.1 cm thick, the rest, including fragment 72 B are 0.05 cm.

Fragment 72 B. Dünnes, rötliches Gewebe in sehr feiner Tuchbindung aus dem gleichen Stoff wie Fragment 72 Ac und wie dieses mit dichten, länglichen Fältchen versehen. Am Rücken der Fältchen sind Abnutzungsspuren in Form von dünnen Stellen und Verfilzung deutlich zu erkennen.

Inga Hägg: Die Textilfunde aus dem Hafen von Haithabu, p 34

The last fragment, **91 A**, is a band-shaped piece made of a fine reddish tabby weave with wrinkles. Both the top and bottom have been torn, but along the side edges there are remains of adjoining pieces stitched in place. These side pieces are very badly preserved, but it is possible to discern that one piece have been made from a loose, very fine, reddish fabric with z-twisted yarn both in warp and weft, while the other piece is from a similar thin fabric with z-warp and s-weft (cf fragment 72 Ac and Ad). The band-shaped fragment is 16 cm long, 3-5 cm wide and 0.1 cm thick.

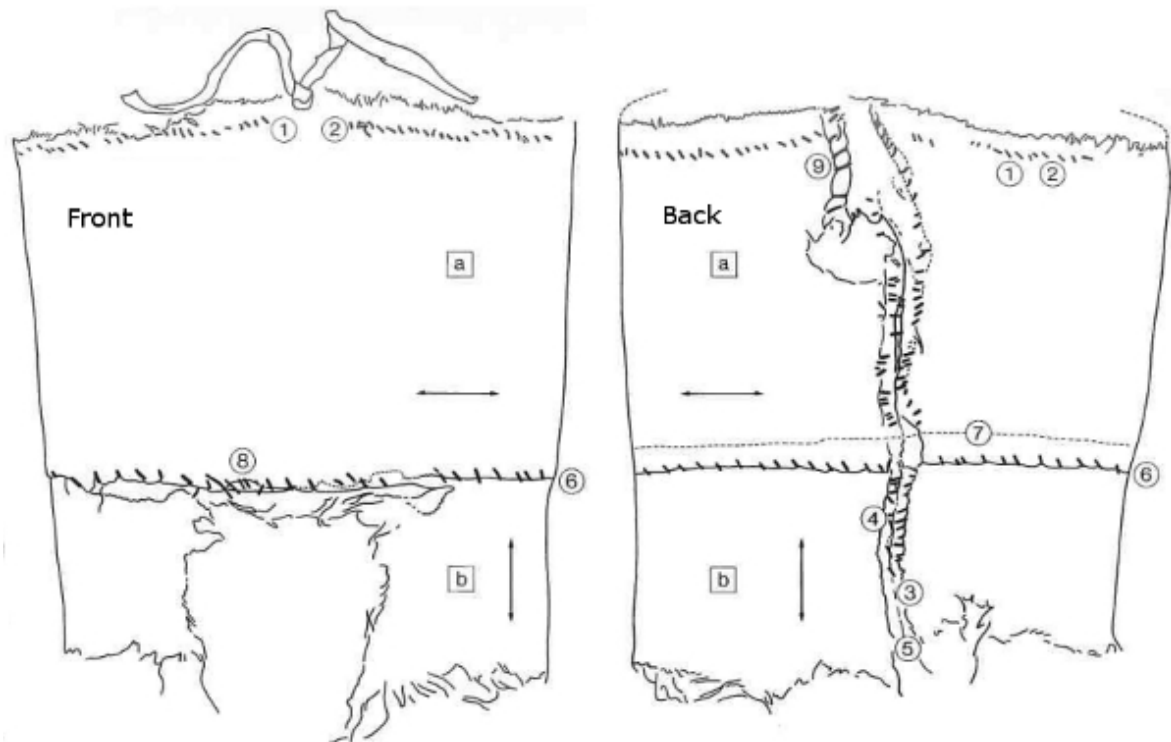
Fragment 91 A. Bandförmiges Stück aus feinem rötlichen, ripsartigen Gewebe in Tuchbindung mit Falten. Beide Enden abgerissen, Seitenkanten mit Verbindungsnahten und Resten von anschließenden Schnittmusterteilen. Länge 16 cm, Breite 3-5 cm. Gleicher Stoff wie Fragment 72 Aa. Die seitlich angenähten Teile sind sehr schlecht erhalten. Erkennbar ist allerdings einerseits ein lockerer, sehr feiner, rötlicher Stoff mit z-gedrehtem Garn sowohl in der Kette als im Schuß, andererseits ein ähnlich dünner Stoff mit z-Kette und s-Schluß (vgl. Fragmente 72 Ac-d). Teil a, Stoffstärke 0,1 cm.
Inga Hägg: Die Textilfunde aus dem Hafen von Haithabu, p 34 illustration p 32



While there has been no chemical analysis of the dyes, Hägg reports that there is a clearly visible difference in the colour of the different parts of 72A. Roughly half of the fragments (Aa, Ac and Ad) have a reddish colour, while the other half (Ab, Ae and Af) have been dyed yellow-green.

The traces of wear on the back of each wrinkle are an indication that the cloth was creased or pleated in its original form (instead of the wrinkles being a result of the immersion in the harbour). These "pleats" do not run over the entire surface like e.g. [the pleated fabric from Birka](#), but run in discontinued waves (like a crepe fabric). As far as I know, there are no traces of seams or otherwise indications that the pleats were created by sewing them in place. However, the use of z-spun yarn in both warp and weft on most pieces may have contributed to a fabric with a natural tendency to wrinkle.

In addition to the possible brækr fragments, the harbour also yielded two fragments believed to come from a hose. These fragments, **2a** and **2b** are made of semi-fine (0.15 cm thick) 2/2 twill in brown wool, where the weft is darker than the warp.



Inga Hägg: Die Textilfunde aus dem Hafen von Haithabu, drawing modified from p 21

- Fragment 2a: a band-like piece, 16-18 cm high and 22.5 - 24 cm wide (when folded double). The weft lies transverse to the height of the garment piece. The upper edge of the fragment is hemmed (seam 1-2).
- Fragment 2b: currently 11 cm high, but is torn along the bottom and extended in all probability further down originally. The fragment is 21.5 - 22.5 cm wide (when folded double). The weft is parallel with

the height of the fragment. There is a heavily abraded part of the fragment where it has been worn through.

The two fragments have been stitched together horizontally (seam 6-7 in the illustration) and folded and stitched into a tube (seam 3-5).

At the upper edge of fragment 2a, a leather band has been pulled through a hole and knotted. The leather band is somewhat irregularly shaped, probably a leftover piece and the ends of the strips are 12.5 cm and 13.5 cm long, respectively and 0.4-1 cm and 0.8 cm wide respectively.

The fabric is heavily worn, indicating frequent use, and there are two mending seams (seam 8-9). In spite of the wear, there are no traces of patching, indicating that when the fabric was worn through, the garment was retired and used as ship caulking. Fragment 2b is torn at the bottom, leaving a total current height of 2a-b of about 27 cm.

Fragment 2. Oberer Teil einer Gamasche oder eines Langstrumpfes mit angeknüpftem Lederband. Aus naturbrauner Wolle, Kette dunkel, Schuß hell. Aus zwei Teilen (Teile a-b) mit einer Kappnaht (Naht 6-7) zusammengenäht, beide Teile in mittelfeinem Gleichgratköper 2/2. Der Stoff ist umgebogen und röhrenförmig zugenäht (Naht 3-5), durch häufige Benutzung aber stark abgerieben. Nach unten ist das Stück unregelmäßig abgerissen. Es ist deshalb nicht mehr feststellbar, ob es sich um eine Gamasche oder einen mit Füßling versehenen Langstrumpf handelt. Erhaltene Höhe insgesamt etwa 27 cm. Stoffstärke 0,15 cm.

Teil a: bandförmig zugeschnitten, Höhe 16-18 cm, Breite (doppelt) 22,5-24 cm. Kette quer zur Höhe des Gewandstückes gelegt. Teil b: Kette in Längsrichtung des Gewandes. Die Form dieses Musterteils ist folglich nicht mit der von Teil a identisch; es dürfte sich weiter unten am Bein erstreckt haben. Erhaltene Höhe max. 11 cm, Breite (doppelt) 21,5-22,5 cm. Es sind insgesamt 9 Nähte vorhanden, von denen wenigstens zwei (Naht 8-9) sekundär zugefügte Ausbesserungsnähte darstellen. Die übrigen gehören zu den beiden Verbindungsnähten, die das Stück in horizontaler beziehungsweise vertikaler Richtung durchqueren, und zum oberen Kantsaum (Naht 1-2). Das Lederband, eigentlich ein etwas unregelmäßig geformter, schmaler Streifen - wohl ein Zuschneiderest -, ist an der oberen Saumkante der Gamasche oder des Strumpfes durch ein Loch gezogen und zugeknötet worden. Länge der Bandenden 12,5/13,5 cm, Breite 0,4-1/0,8 cm.

Inga Hägg: Die Textilfunde aus dem Hafen von Haithabu, p 20, 24 illustration p 21

The settlement

The finds from the settlement tend to be more poorly preserved than the harbour finds. The proportion of high quality weaves found is similar, but the remains from the settlement are significantly more worn and often show traces of being patched, unlike the garments from the harbour. Still, the finds from the settlement confirms and in some cases expands the view of daily wear among the inhabitants of Haithabu as presented by the harbour finds.

Unfortunately, the evidence for brækr or hose found at the settlement is even more fragmentary and uncertain than the harbour. There is one set of fragments that are currently believed to be a brók, namely **S 19 A-O**.

These fifteen fragments are small, between 0.7 x 1.0 cm and 3.0 x 15 cm, and made of thin, possibly crepe woven, wool tabby that may be dyed (in a colour that was blue or possibly green). There appears to be two slightly different qualities of fabric, whereof fragments A, B, C and D are slightly finer than the others.

On some fragments there has been preserved a short stretch of folded fabric along an edge. These folds have a thin decorative wool yarn stitched along the outer edge and are whip stitched along the inner edge with bright wool yarn. The three fragments with such decoration are all of the slightly inferior quality (E, N and

L).

The two largest fragments (A and E) show traces of a secondary cut along one edge, which is interpreted to mean that they probably were cut from an edge or seam of the original garment. Hägg believes that this also holds true for the smaller fragments, namely that S 19 A-O are pieces that was left after the original garment was repaired or reworked. The cutting lines are wavy instead of straight, which indicates that the fabric lay in wrinkles or pleats when it was cut.

Lastly, it can be established that the fragments (and thus the garment fabric) has lain in double layers, which were stitched together (probably with thread made from vegetable fibres - like linen). One such pair of fragments are A and E, which still have traces of the double row of stitches that bound them together. Fragment A is of slightly finer fabric than E, raising the possibility of a lining and an outside that differs in fabric quality.

The S 19 fragments are unfortunately far too small to allow a reliable interpretation of the original function or shape of the garment from which they originate. Some guesses can be made though. The garment in question was made from a fine crepe woven tabby, and was wrinkled or pleated. This is very similar to the fragments found in Haithabu harbour ([72 A-B](#) and [91 A](#)) and so may be from the same type of garment (currently believed to be a brók). Alternatively, one may draw comparisons with a crepe woven sleeve fragment found at Elisenhof, and a pleated underdress fragment from Haithabu. However, as none of the tunic or dress fragments are stitched in double layers, while there are indications of a possible double layer among 72 A-B and 91 A, Hägg concludes that the S 19 fragments probably belong to a brók.

The identification of S 25 and S 37 as possible hose fragments is even more uncertain. These fragments are believed to come from the same garment due to the similar quality of their fabric, and the position of the finds in relation to each other. Both are made from medium fine 2/2 woollen twill.

Fragment S 25: Zerfetztes Gewebe aus mittelfeinem Gleichgratköper 2/2, stellenweise stark eingelaufen, mit abgeriebenen Oberflächen jedoch ohne Spuren einer ursprünglichen Walkung oder Rauhung. Ein Rand ist umgelegt und in Richtung der Schußfäden genäht (Naht 1). Daneben befinden sich noch helle Garne eines abgerissenen Flicklappens (Naht 2). Die Gratstreifen laufen von links nach rechts (z-Grat).

Fragment S 37: Stark abgenutzter Rest aus mittelfeinem Gleichgratköper 2/2. Das Fragment besteht aus einem größeren Teil (Teil a) mit Resten von drei geradlinig geschnittenen und genähten Rändern und einem angenähten, vierseitigen Flicklappen (Teil b). Die Randnähte - Verbindungsnahte vom Kappnahttyp (Naht 1,2,5) - haben Teil a an allen drei Rändern mit anderen Musterteilen verbunden. Die Breite des mittleren Teils zwischen den seitlich angenähten Stücken (Teil c-d) beträgt 25,5 cm.

Von den angrenzenden Musterteilen ist wenig erhalten: Bei Naht 1 (Teil c) und bei Naht 5 (Teil d) ist nur so viel übrig, daß die Richtungen der Gratstreifen deutlich erkennbar sind. In diesen beiden Teilen laufen die Gratstreifen auf der rechten Stoffseite einheitlich von links nach rechts (z-Grat), im mittleren Teil (Teil a) umgekehrt von rechts nach links (s-Grat). Die Richtung der Kettfäden ist dagegen in allen Teilen - abgesehen vom Flicklappen - gleich. Bei der geraden, etwa 25 cm langen Naht am Rande von Teil a (Naht 2) war ein weiterer Musterteil (Teil e), von dem fast nichts erhalten ist, angesetzt.

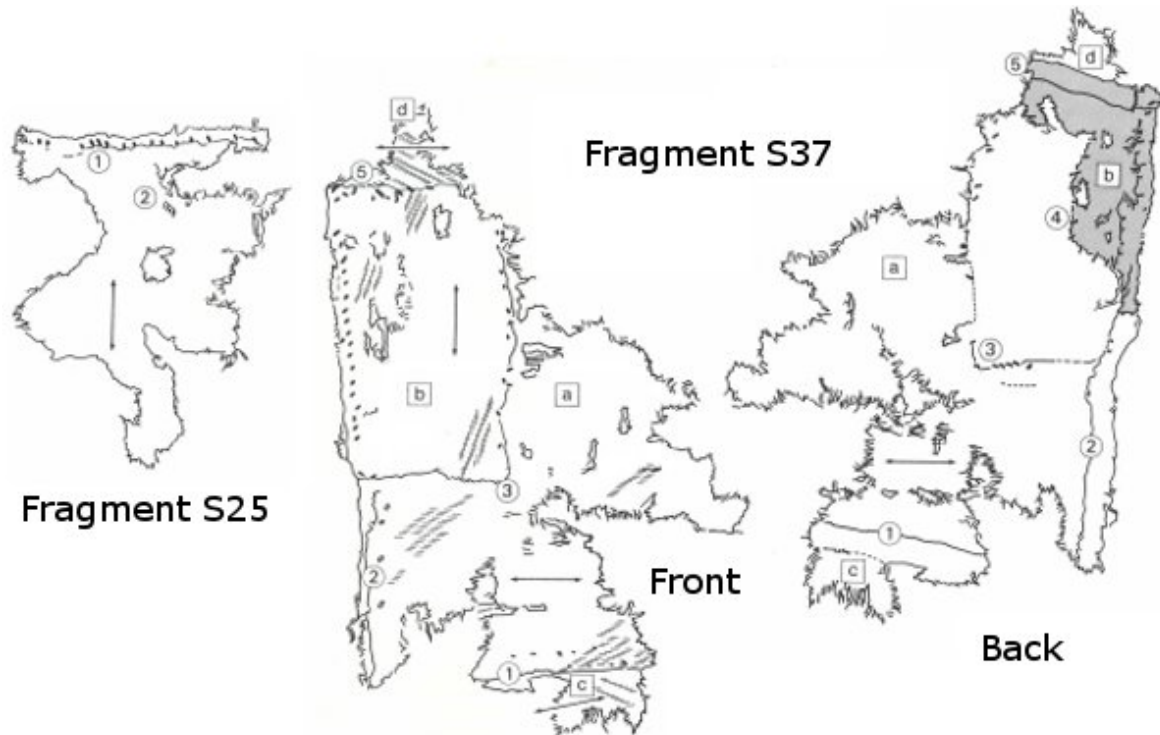
Die Kappnahtkonstruktion der Verbindungsnahte weist darauf hin, daß der Stoff kein Futter besessen haben dürfte. Die Ränder des in Rechteckform geschnittenen Flicklappens (Teil b) sind ebenfalls zweimal umgeschlagen und mit doppelten Stichreihen (Naht 3) an der Unterlage befestigt. Außerdem hat man bei Flickern auch die ausgefranzten Ränder des Loches mit Stichen gesichert (Naht 4).

Inga Hägg: Textilfunde aus der Siedlung und aus den Gräbern von Haithabu, p 29

Fragment S 25 is very worn. Its surface is abraded and shows no traces of felting or roughness. One of the edges is folded and stitched in place (seam 1), creating a hem. There is also some light yarn left from where a patch has been torn off (seam 2).

Fragment S 37 is also heavily worn. It consists of a larger part (a) with a sewn on quadrangular patch (b). Three of the edges of part a have been folded and stitched with flat-felled seams (seam 1, 2, 5) that connects it to other pieces (c, d and e). Very little of these pieces remain, especially of piece e that was attached by seam 2, but from what is left it can be seen that the direction of the warp is identical to part a. The only exception is the patch (b) where the warp is perpendicular to the warp in the other pieces.

The patch is sewn to part a by folding it twice and attaching it to by double rows of stitches (seam 3). In addition, the frayed edges of a hole have been secured by stitching (seam 4) and by this patch.



Inga Hägg: Textilfunde aus der Siedlung und aus den Gräbern von Haithabu, drawing modified from p 30

The use of flat-felled seams to connect the pieces of the garment indicates that there was no lining.

The fragments are too small to provide for any definitive identification of what garment they belonged to. Inga Hägg points out that the quality of the cloth is comparable with the hose found in Haithabu harbour (fragment 2). While the weave itself is not enough, she argues that the dimensions of the fragments (fairly narrow pieces) and the use of flat-felled seams (very rare in the textile finds from Haithabu) indicates that this is a hose of some kind.

Personally, I find the identification too uncertain, and the fragments too small to give any useful information regarding the construction of a Viking Age hose (if it indeed is a hose). I do want to mention the fragments here however, as they are part of the very limited and uncertain picture we have of Viking Age leg clothing.

Skjoldehamn

In 1936 a body was found in a bog on Andøya, Norway. Unfortunately, it was not properly excavated by archaeologists. Instead it was dug up, reburied in a different place in the bog, dug up again by a farmer and

sent to Tromsø museum, where it was analysed by [Guttorm Gjessing](#). The body was dressed in several garments and wrapped in a large woollen blanket. Based on the cut of the clothing, Gjessing believed it to be from the late medieval period. However, recent carbon dating places it at 1050-1090 (with an alternative date at 1150-1210). Gjessing reported on the find in 1938, and it was re-examined in [Dan Halvard Løvlid's](#) master thesis from 2009.

There is quite a bit of uncertainty surrounding the gender and ethnicity of the body found at Skjoldehamn. Løvlid refers to two independent analyses of the skeleton (by Per Holck and Berit Sellevold). The gender-specific parts of the skeleton are missing, but they believe that it was either a Norse woman or a Sami man on account of the person having too slight a build for an ordinary Norse man. DNA analysis in 1999 (by Maria Arvidsson and Anders Götherström) found neither a Y-chromosome nor the Sami-specific genetic marker, and concluded that the body was probably a Norse woman (20-30% chance of being Sami). Götherström has later stated to Løvlid that increased knowledge of DNA analysis implies that the conclusions are less certain than they originally thought, and that the lack of Y-chromosome could also possibly be explained by DNA deterioration. In a [follow up article](#), Løvlid identifies several similarities between the Skjoldehamn decoration and Sami clothing, and argues that Sami origin cannot be excluded as a possibility, although more research is needed. I have decided to not exclude the Skjoldehamn material from possible Viking finds in spite of the uncertainty regarding the ethnicity of the wearer. Even should it turn out to be influenced by Sami fashion instead of Viking culture, it demonstrates tailoring techniques that would have been observed by the Vikings, and might also have been in use by them. The uncertain dating is more problematic. Still, the alternative date places it in early medieval times in an area with little direct contact with Europe (and thus probably more conservative clothing traditions) and thus may still indicate of how Viking bræk were made.

Brók

The find contains five woollen 2/2 twill fragments that are identified as belonging to a brók. They currently appear to be golden brown in colour, but according to Løvlid a more thorough analysis indicate that the brók was made of lightly felted undyed white wool.



Dan Halvard Løvlid: Nye tanker om Skjoldehamnfundet, p 110

The lower parts of both brók legs have been preserved. There is only one seam on each leg, and it ends in a split (7-9 cm long) at the bottom. The circumference of the legs at the bottom is fairly narrow; 36-38 cm.

Both legs have been decorated. There is a striped woven band (2,2 cm wide) running along the bottom of each leg. Two braids (ca 0,5 cm wide) have been stitched along the bottom of the band; first a teal braid and then a red braid at the very bottom.

The seam on each leg has been covered with alternating red and teal embroidery. On either side of the embroidered seam there is a line of blue couching stitches, with a line of red couching stitches running outside it. The embroidered seam and blue couching stitches appears to end about 18-19 cm over the split. The red couching stitches keep on running parallel to

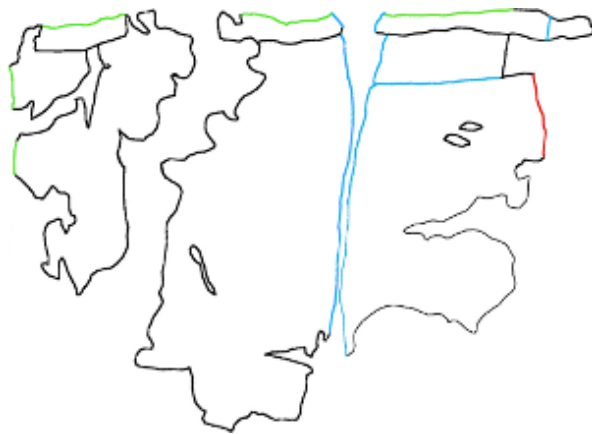
the seam, but it is unclear from these fragments exactly how far it goes.

Fragments as they would have looked if unfolded. Blue lines marks seams and green lines marks where the fabric has been folded. Based on a drawing by Dan Halvard Løvlid: Nye tanker om Skjoldehamnfunnet, p 105-106

Interestingly, although the legs of the brók were decorated, long bands had been wrapped around each ankle. The bands were decorated with small silver rings, and Løvlid notes that there are small discolorations on the leg pieces that probably stem from these rings about 7-12 cm above the bottom. If the ankle bands were tied here and wrapped downwards, they would have covered the decoration on the bottom of the brók. On the other hand, just because the ankle bands were worn in the grave doesn't mean that they were always worn together with the brók.



Two of the brók fragments have remains of a drawstring channel running along one edge, and thus must stem from the top of the brók.



The largest of these fragments appears to consist of three (possibly four) separate pieces of fabric. Two pieces are connected by a side seam. One of them has then been lengthened at the top by one, or possibly two strips of fabric roughly 12-13 cm wide (the area is badly preserved and thus hard to interpret), and has remains of a selvedge along one side. The smallest of the fragments with remains of a drawstring channel have no obvious traces of a seam. However, one of the sides has been folded, and both Gjessing and Løvlid believe that there originally was a seam inside the fold.

Fragments as they would have looked if unfolded. Blue lines marks seams, green lines where the fabric is folded, and red line a selvedge. Based on drawings by Dan Halvard Løvlid: Nye tanker om Skjoldehamnfunnet, p 105-106

The drawstring channel was created by folding the fabric inwards, fastening with couching, before folding the fabric outwards and fastening the fold with running stitches from the face side. Thus the raw edge with its couching stitches would have been visible on the outside of the brók.

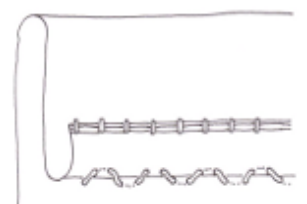


Illustration: Dan Halvard Løvlid: Nye tanker om Skjoldehamnfunnet, p 108



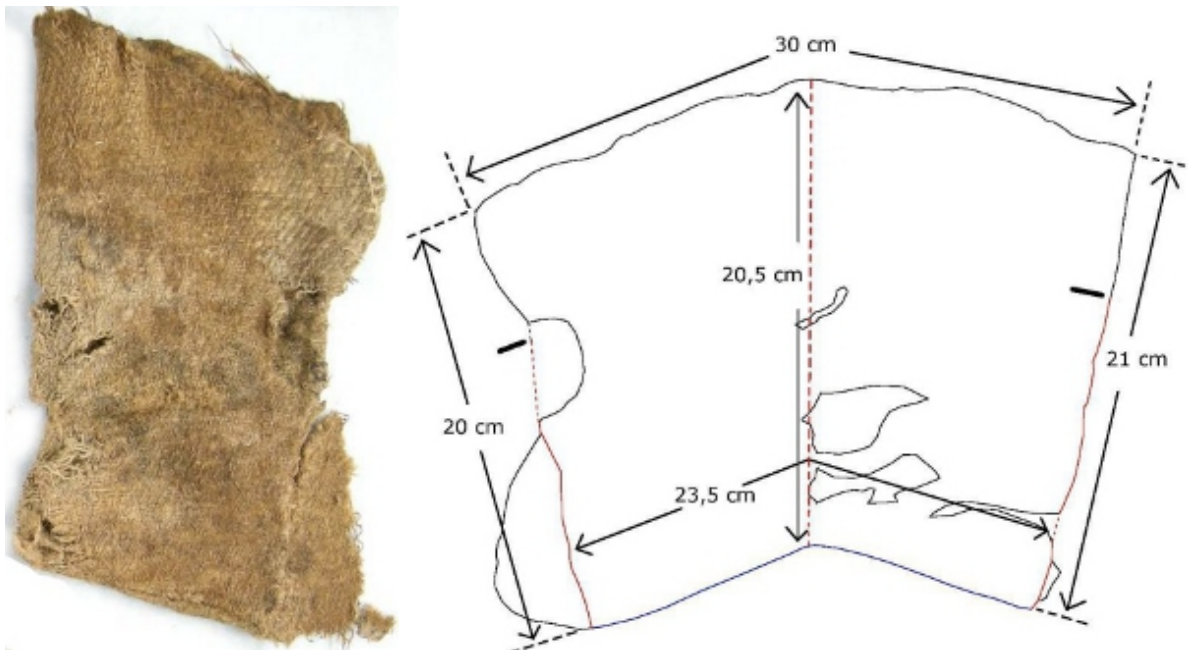
The final preserved brók fragment has no drawstring channel, but there are traces of a seam along one edge, with traces of red couching stitches running parallel to it.

Blue line marks a seam. Based on drawing by Dan Halvard Løvlid: Nye tanker om Skjoldehamnfunnet, p 105

Socks or short hose

The Skjoldehamn find includes more leg clothing than the brók. Two ankle wraps were wound around the feet, and three fragments from socks (or short hose) were found within the shoes. The fragments were all made of 2/2 woollen twill, but when Løvlid examines the thread thickness and count of the three pieces, he finds small differences that implies that only two of them (L1 and L3) could have been cut from the same cloth.

The first piece (L1) is a fairly well-preserved shaft of one of the socks. It is 20-21 cm high at the front and 20.5 cm at the back. At the top, the circumference is 30 cm. The heel of the sock has been created by folding the shaft lengthwise (along the dashed red line in the drawing), and then folding one side of the bottom edge of the shaft and laying it over the other side (both marked by blue lines in the drawing), before sewing both together using woollen yarn.



Photographs and drawings, Dan Halvard Løvlid: Nye tanker om Skjoldehamnfundet, p 123, 127

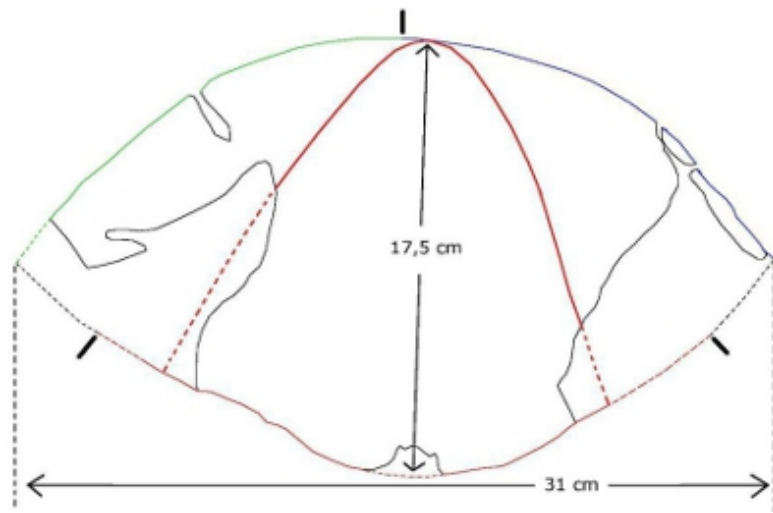
A small fragment of a different 2/2 woollen twill is sewn on to the right side of the shaft, roughly 11.5 cm below the top. Løvlid believes this is part of the front piece of the sock. The top of the shaft has not been hemmed, instead it and the upper part of the front edges of the shaft have been secured from unravelling by various forms of overcast stitches.

The next piece (L2) is the shaft of the other sock. It is less preserved than L1. The top edge is 26.5 cm long and has been secured from unravelling by overcast stitches using woollen yarn. One of the front edges is stitched the same way, while the other is a selvedge. There are remains of another fragment stitched to the selvedge 6.5 cm below the top and 5 cm downwards (where L2 ends). According to Løvlid this is probably part of the front piece of the sock.



Photograph, Dan Halvard Løvlid: Nye tanker om Skjoldehamnfundet, p 123

The final fragment (L3) is only partly preserved, but appears to have been shaped roughly like an American football.



Photographs and drawings, Dan Halvard Løvlid: Nye tanker om Skjoldehamnfunnet, p 123, 128

It has been folded in two places (thick red lines in the drawing) and its outer edges (blue and green line) have been stitched together, creating a sock tip that would have covered the front of the foot. The tip is currently 17.5 cm long. Unfortunately, we don't know whether this was the original length, or whether part of it is missing. The lower edge (thin red line) is partly turned inwards in places, which may indicate a former seam, but there is no definitive proof of the tip being stitched to a shaft here.

The direction of the warp, thread count and thread thickness is very different for L3 and the small fragment stitched to L1. Thus, L3 is very unlikely to have belonged to the same sock as L1. Instead L3 and L2 must have belonged together.

York



The remains of a sock or shoe-liner from the Viking Age were found in the backyard of one of the 10th century wattle buildings at Coppergate in York. It was created using nålebinding (single-needle knitting/knotless netting in English). While it is of little relevance when trying to discover how sewn hose would have been constructed in the Viking Age, I have included a short description of it here for completeness sake (it is Viking Age leg clothing, and may

have been combined with brækr or hose). However, if you are interested in more of the construction details, I recommend [Carolyn Priest-Dorman's article](#) on Viking Age nålebinding and her sources.

Photograph: [Christine Kyriacou, Frances Mee and Nicola Rogers](#): Treasures of York, p 14. Basic facts about the sock was also found [here](#).

The sock appears to be badly worn and may have been patched. It had a narrow red band (dyed with madder) around the ankle. It is unclear whether this was a decorative edge or whether it once continued into a red stocking-type garment that has been lost.

Peripheral finds

Most of the archaeological evidence for clothing from the Viking Age is fragmented and hard to interpret, and this is definitively the case for leg clothing. As the finds are so few, it may be useful to consider some of

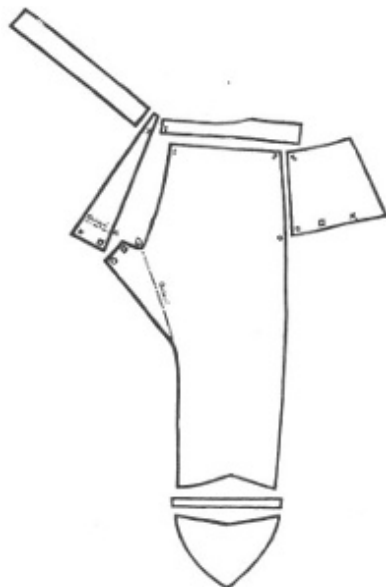
the well-preserved early Iron Age brækr found in Germany and some hose finds before and after the Viking Age. Although not from the Viking Age, they can show us something about construction techniques and clothing development in the nearby periods.

Thorsberg

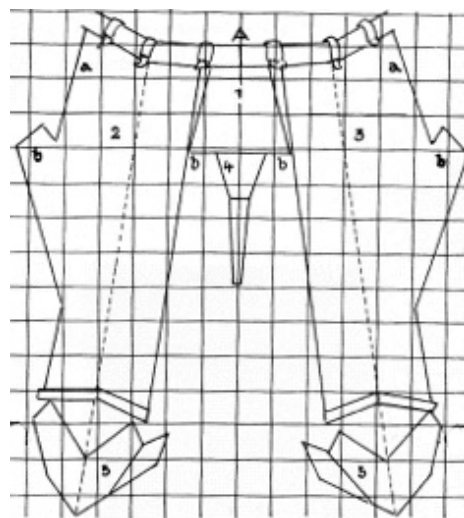
In 1860-1861, Conrad Engelhardt excavated the Thorsberg bog in northern Germany. In addition to weapons, ceramic vessels etc. a large amount of textiles were found, including fragments of two brækr. Many of the items had been broken, bent or otherwise rendered useless before being deposited in the bog, indicating that they had been left there as a sacrifice. The deposits were made over a long period of time, and while the exact date is unknown, the textiles were deposited between 100 and 300 AD.

The brækr have been analysed several times, among others by [Margrethe Hald](#) in 1950 and [Karl Schlabow](#) in 1976. The latest analysis was made by [Susan Möller-Wiering](#) and published in 2011. The first brók (3684) is made from a fine reddish 2/2 diamond wool twill, and is intact with the exception of the lower part of one of the legs, where the last 30 cm is missing. From top to toe, the brók measure about 125 cm; and the circumference at the waist appears to be about 90-100 cm.

Due to the excellent preservation of the brók one should expect the construction pattern to be clear and undisputed. Unfortunately, Schlabow's pattern differs somewhat from the one presented by Hald. Möller-Wiering refers to an unpublished analysis made by Anna Nørgard that finds Hald's diagram to be closer to reality. (I am a bit puzzled by this, as Hald's pattern lacks one of the crotch pieces and one of the foot pieces mentioned by Möller-Wiering. However, it might be that Nørgard mainly considered the shape of the leg pieces, which is slightly different in the two prospective patterns.)



*Pattern from Margrethe Hald:
Olddanske tekstiler p 341*



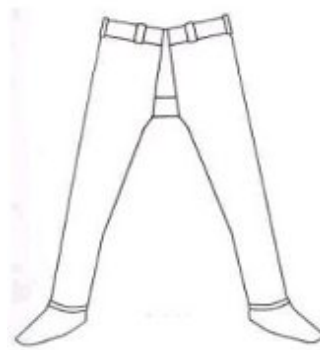
*Pattern from Karl Schlabow:
Textilfunde der Eisenzeit in Norddeutschland, figure 165*

Only the front of the brók is visible in the current exhibition. Upon her examination Möller-Wiering found that it is constructed from one large piece of cloth for each leg up to the waist, plus several smaller pieces made from the same fabric. A large, trapezoid piece makes up the back, while two smaller ones were used for the crotch and the middle of the front.

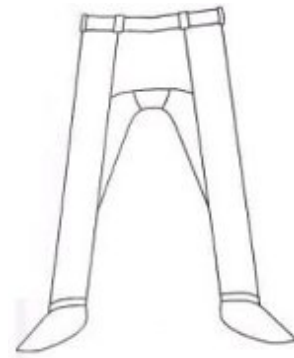
This confirms the rough pattern presented by Schlabow and Hald (although Hald misses one of the crotch pieces), but because of the way the brók is mounted, Möller-Wiering cannot give details as to exactly how the leg pieces are shaped.



Photographs of brók taken at Schleswig-Holsteinisches Landesmuseum



Front of brók



Back of brók

Inga Hägg: *Die Textilfunde aus dem Hafen von Haithabu*, p 31

Along the top of the brók there are two narrow strips running along the waist.

[The strip around the left hip] is 4-7 cm wide (seam not included) with the warp running parallel to the waist. <...> The strip around the right hip is 7,5 cm wide throughout which results in an asymmetrical middle section in the front of the trousers as there, near the middle, the strip on the left side is only 4 cm wide. In the back, both strips <...> meet in the middle.

The strips around the waist are used as a basis for six loops for keeping a belt in place. Two of them are attached in front, two at the sides and another two in the back. Their lower end seems to have reached down to the horizontal seam which could have served as a strong basis. Their upper ends were folded around the edge of the trousers and fastened on the inside.

Susan Möller-Wiering: *War and worship*, p 49



The preserved leg ends in a "stocking", with a 2 cm wide strip of cloth running around the ankle and a foot made from one larger piece and a gore that runs from the back of the ankle and down under the foot.

There is one peculiarity; the seam running up along the leg has been left open from the ankle to roughly 32 cm above the heel. Along this open seam, there are several bluish cords that have been stitched through the cloth.

Schlabow believed these were used to tie the leg closed, while Möller-Wiering argues that if that were the case, the cloth in the immediate area around the cords should show wear from being pulled - which it doesn't. She poses that the cords are probably part of some decoration, although she admits that if the opening was closed by using some kind of leg wrapping, this decoration would not be visible. The use of leg wraps is supported by the two fragments from such wraps that were found at the site.

The second Thorsberg brók (3685) is much more fragmentary. Like 3684, it is made from a fine reddish brown 2/2 woollen diamond twill, and have integrated stockings at the bottom of the legs. The pattern presented by Karl Schlabow shows the stockings as a part of the same piece as the rest of each leg. However, Susan Möller-Wiering believes that the stockings are made from separate pieces, like the stockings of 3684.

The entire piece of clothing consists primarily of five parts: two for the legs, two for the feet and a quadrangular one set in on the back and the waist. The stockings are mounted in a way that they point straight outwards to the left and right. The long seams on the back go down in a position where they are very comfortable when riding. Further down on the legs, these seams sit on the calves where they are left open. <...>

As stated above, the seams were left open along the calves, namely on a length of c. 20 cm, starting about 17 cm above the seam beneath the foot. It is not possible to ascertain how it was once fastened. However, it is clear that the stockings were not merely the elongation of the trouser-legs but separate pieces sewn onto the legs: further up, the z-system [in the z/s weave] runs from top to bottom while down at the stockings, it is placed around the leg.

Susan Möller-Wiering: War and worship, p 52-53

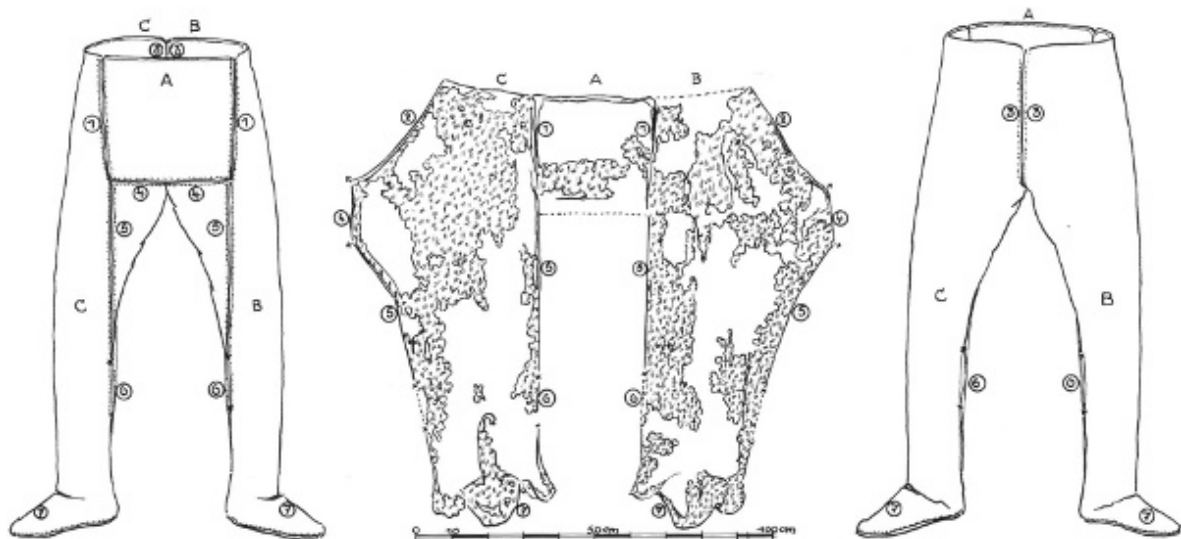


Illustration from Schlabow Karl: Textilfunde der Eisenzeit in Norddeutschland, figure 172-174

The preserved parts of the stockings are very fragmentary and currently mounted in an arbitrary way, and there is no way to ascertain how the open seams along the calves were closed. Nor are the remaining fragments of the legs directly connected to whatever remains of the stockings, and the upper edge of the brók is not preserved, which means that the original length cannot be determined (although it was at least 120 cm).

The circumference at the current top is 90-95 cm and the cut of the legs is narrow, leading Möller-Wiering to conclude that the wearer was a tall, slim person.

The preserved length and the missing upper edge suggest that the trousers once reached rather far up the body. Therefore, it seems unlikely that loops for a belt as on trousers 3684 should be assumed for the missing part still further up. Another explanation for how to keep the trousers in place is that the uppermost part was rolled down over a simple, hidden belt.

Susan Möller-Wiering: War and worship, p 53

Damendorf

A bog body was found in the Damendorf bog in Germany in May 1900. The body was covered by a cloak, and at its feet was deposited a brók wrapped around two leg wraps, a leather strap and a pair of leather shoes.

The brók have been analysed by several people during the years, including Johanna Mestorf (in 1900), Karl Schlabow (in 1976) and Heide Marie Farke (in 1994). It was also mentioned by Susan Möller-Wiering in her book from 2011.

According to carbon dating, the brók is from 135-335 AD. It is made from z/s woollen diamond twill with slightly coarser weave than the Thorsberg brækr and was originally dyed red.

All of the seams had disintegrated, probably on account of being made with linen thread, but five woollen pieces were well preserved. Narrow, tablet-woven edges occur as starting and finishing borders and as side edges of the cloth.

Due to the rounded edge in the crotch area, Schlabow believed that there must have been a semicircular piece inserted in the front, although no trace of this piece was found. According to Möller-Wiering, the existence of such a piece was disproven by Heide Marie Farke in 1994.



Thus the dress pattern is quite similar to [the Thorsberg] trousers 3685: the two main parts constitute the legs, reach up to the hips and meet in front of the belly. An almost quadrangular piece was inserted in the back, in this case supplemented by two triangular pieces below. As the upper end, a strip of cloth was added using the starting border as the outermost edge. On this strip Johanna Mestorf observed traces of former buttons or laces. Down at the bottom, the legs end in flaps which were interpreted by Mestorf and Hjalmar Falk as straps in the sense of stirrup pants. These flaps are irregularly cut and torn. This contrast to the other features of the trousers may suggest that this shape, although old, is not the original one. Yet Mestorf wrote that the flaps seem to have been sewn together under the feet.

Susan Möller-Wiering: War and worship, p 114

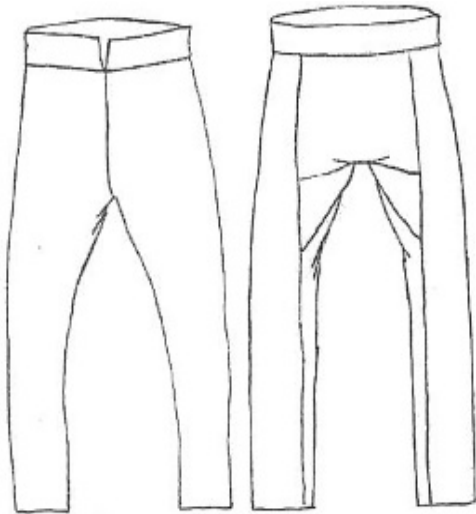


Illustration from Lejre Forsøgscenter: Sy dine egne Jernalderbukser

Textile experts Anne Batzer and Lis Dokkedal at [Lejre forsøgscenter](http://www.lejreforsogscenr.dk) in Denmark have made a reconstruction of the Damendorf brók. They observe that if the flaps are stuffed inside the shoes, they keep the brók from sliding up, and so may have been a part of the original design after all.

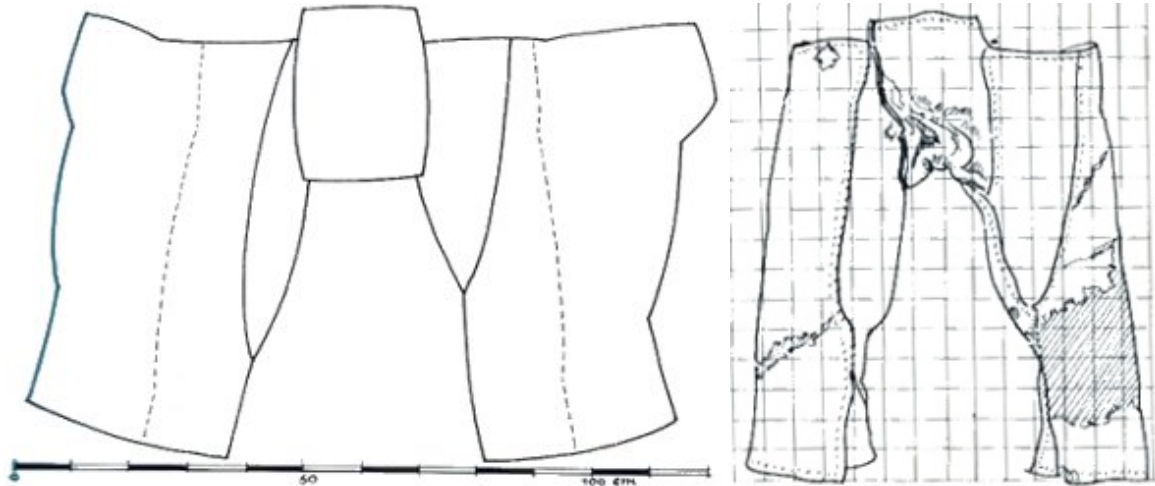
Dätgen

A brók, two woollen belts (one of them tablet woven) a cloak and the remains of a pair of sleeves were found along with a bog body in Dätgen in Germany. The brók was analysed among others by Karl Schlabow in 1976, and is mentioned in passing by Susan Möller-Wiering.

According to carbon dating, the brók stems from 345-535 AD and is made from 2/2 plain twill (z/z). The natural colours of the wool have been used to produce a decorative effect, with the threads varying in colour from almost black up to light brown.

Basically, the dress pattern of these breeches seems to be identical to the trousers from Damendorf, with two pieces of cloth for the legs and the hips, joined on the belly, and with a rectangular addition in the back. The triangular insertions are larger here, reaching up to the upper edge of the trousers. This edge is hemmed and runs around the hips, i.e. it does not reach as far up as the other trousers do.

Susan Möller-Wiering: War and worship, p 114



Karl Schlabow: Textilfunde der Eisenzeit in Norddeutschland, figure 188 (pattern) and 190 (back of the brók)

The inside seam of the brók stop at knee-height, and Schlabow observes that it was probably worn with leg wraps covering the lower leg in cold weather.

Interestingly Schlabow states that the fine weave of the sleeves and the outstanding decorative pattern of the tablet woven belt that were found together with the brók indicate that the Dätgen bog body was a woman, because they were too fine (and thus too feminine) to be worn by a man.

Der für die Eisenzeit typische Mantel liegt vor, und von der Bekleidung der Oberkörpers sind nur die mit dem Torfspaten abgetrennten Ärmel überliefert. Sie sind in der Webart so fein gearbeitet, daß sie auf die halblangen Ärmel einer Frauenbluse hindeuten <...>. Außer der Hose gehören zu dem Fund noch 2 gewebte Gürtel. Der eine im schlichten 2 cm breiten Bandgewebe wird der Gürtel der Hose gewesen sein. Aber ein zweiter Gürtel im hervorragenden Muster der Brettchenweberei deutet auf ein Frauenschmuck hin.

Es ist nicht anzunehmen, daß ein Mann einen solchen Schmuckgürtel getragen hat. Vielmehr berechtigt dieser, nach wochenlangem Fleiß mit Brettchen gewebte Schmuck zu der Annahme, die sich auch mit dem Hinweis von J. Mestorf im 44. Bericht des Museum Kiels 1907 deckt, daß die Moorleiche von Dätgen eine Frau gewesen ist, die ihre Wollhose mit einem Gürtel unter ihrem starken Leib verschnürt getragen hat.

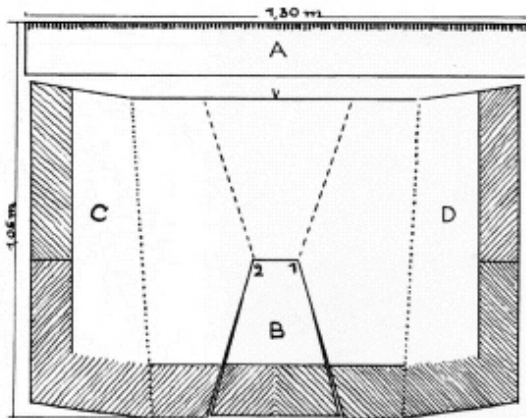
Karl Schlabow: Textilfunde der Eisenzeit in Norddeutschland, p 79

If this is the case it is the first archaeological evidence I am aware of that indicate that Iron Age women occasionally wore brækr. I am sceptical in regards to Schlabow's thesis though, as we know too little of early Iron Age custom to easily determine what would be considered to be feminine decoration. Unfortunately, there seems to be no more information concerning the bog body itself, which may indicate that it was not preserved after the excavation. Without the possibility of a DNA analysis, the gender of the wearer of the Dätgen brók may remain unknown.

Marx-Etzel

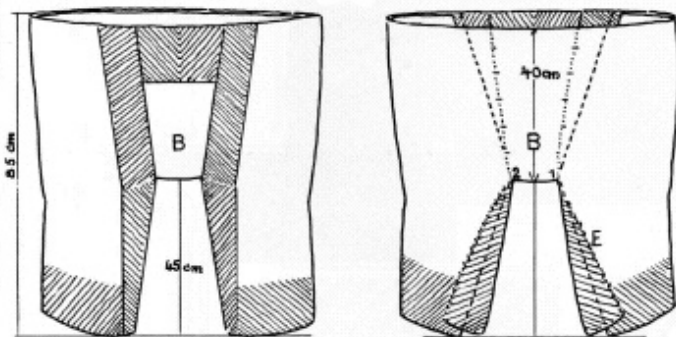
Karl Schlabow also analysed a brók found together with a bog body near Marx-Etzel. It is mentioned in Susan Möller-Wiering's book, but in very little detail.

The brók is from 45-125 AD according to the carbon dating. Like the Dätgen brók, it is short (above knee-height).



Karl Schlabow: Textilfunde der Eisenzeit in Norddeutschland, figure 194, 195a and 195b

It was made from a single piece of woollen cloth, woven in the exact size needed, and cut and folded in a way that used all the available fabric. (A technique that reminds me of e.g. the way the tunic worn by the Egtvedt girl (Bronze Age Denmark) was constructed.) The cloth is z/s diamond twill in dark brown wool, with some variations in colour from almost black to light brown.



The circumference at the waist is roughly 135 cm, leading Schlabow to believe that the fabric would have been gathered in folds and held in place at the waist by a belt.

With the exception of the Marx-Etzel find, all of these brækr share a basic construction pattern. They have a relatively narrow fit, and the long brækr come with some kind of "footies". All of them have a *single* fabric piece for each leg, with a seam running along the inside or back of the leg. They also have a quadrangular piece (sometimes with added gores) in the back. While the majority of the brækr just have the leg pieces meeting in the front, the more sophisticated Thorsberg brækr (3684) have additional gores in the crotch area.

Martres-de-Veyre

In 1893 several graves were excavated at Martres-de-Veyre in France. Grave D contained the body of a young woman from the 2nd century AD who was wearing a pair of woollen hose (among other garments, possibly including a pair of cloth shoes or slippers).

Unfortunately, I have not been able to get access to the original report from the find, written by A. Audollent in 1921 and 1922. I therefore have to make do with the short description of the hose by [Katrin Kania](#) from 2010.

The hose was made from woollen twill and reached above the knee. The shafts were made by a single piece of fabric each, sewn into a tube by a seam running along the back of the leg. A foot piece (with a seam along the bottom) was sewn to the shaft. The upper edge of the hose ended in fringes, which might have covered a garter if that was used.



Photo copyright of the professors [Michael and Neathery Fuller](#), published with their permission.

Unter der einfachen Tunika trug die junge Frau ein Paar Strümpfe, die mehr als kniehoch waren. Die Beinlinge bestehen jeweils aus einem Stück Stoff, das auf der Beinrückseite zu einer Röhre zusammengenäht ist. Am unteren Ende ist ein Fußteil angenäht, das eine Naht unten aufweist. Der Abschluß oben ist mit Fransen versehen, die möglicherweise herunterfallen und damit ein eventuell verwendetes Strumpfband verdecken sollten.

Katrin Kania: Kleidung im Mittelalter, p 375

Herjolfsnes

More than 50 garments in various states of preservation were found during an excavation by Poul Nørlund of a churchyard in Herjolfsnes, Greenland in 1921. Many of the garments had been used as a shroud for the bodies, instead of a coffin. This meant that they did not necessarily fit the body of the deceased very well. While I have not read Nørlund's original report, [Else Østergård](#) did a new study of the textiles in 2004. I have selected some of the best preserved hose to use as examples here. According to radio carbon dating, the Herjolfsnes garments are from the time period 1150 - 1530 AD. Unfortunately, as none of the hose fragments have been dated, we cannot place them more precisely than this.

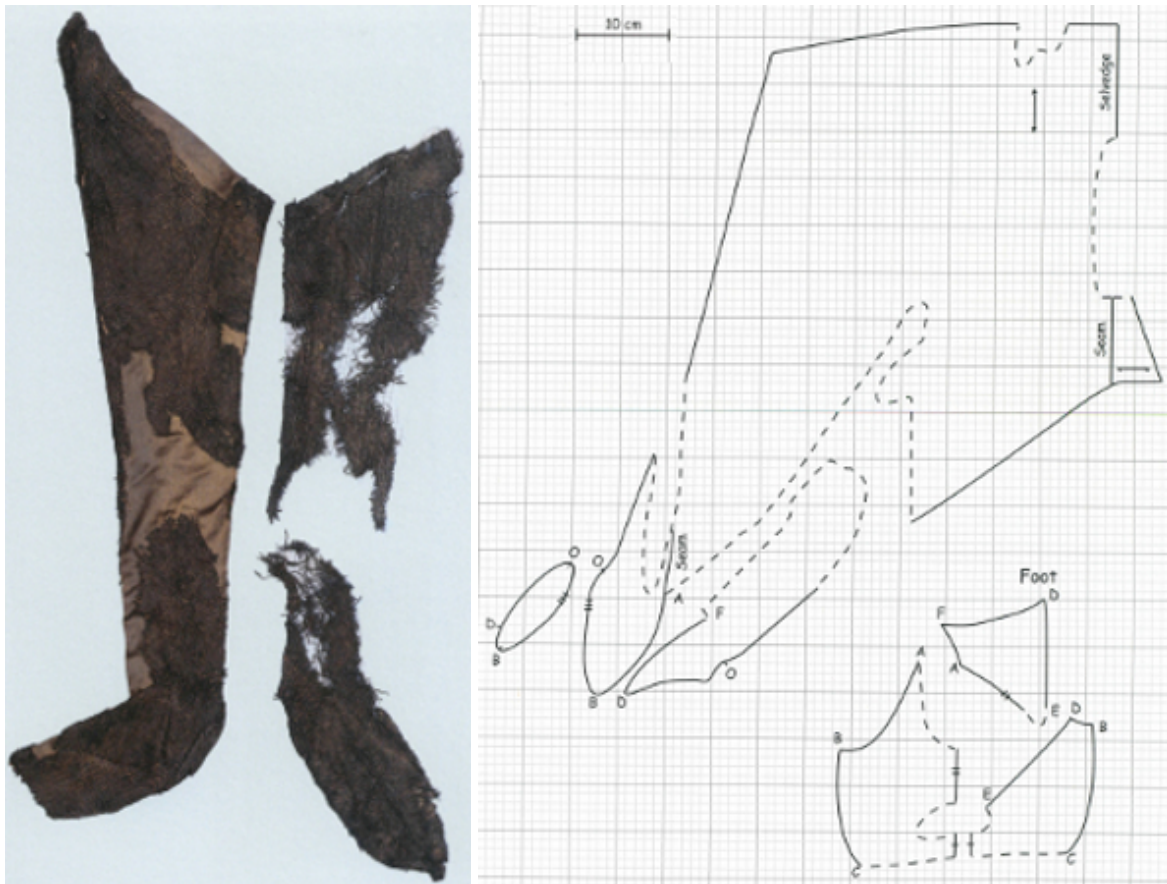
The first hose, **D10616**, is sewn from 2/2 woollen (originally white) twill. It is 42-43 cm high, with a circumference of 36 cm at the top and 25 at the bottom. At the bottom of the leg there are two vertical vents roughly 7 cm high. Along the edges of the vents are remains of a seam allowance folded towards the reverse side. Currently this described as a "footless stocking". (Of course, given the state of preservation of the hose/stocking we cannot know whether it did not have a foot, or if the foot fragments were simply not found or not correctly identified during the excavation.)

Photo from Else Østergård: Woven into the Earth, p 226

According to Østergård, Nørlund described the hose as sewn together at the back of the leg, with a strap probably used to hold it in place on the leg lying beside it. However, the current preservation of the hose is very poor, and no seams or strap remain.



There was also a fairly long hose (**D10613**) sewn in 2/2 twill that originally was almost black. It measures 88 cm from the top to the tip of the toe (provided that it has been assembled correctly). The circumference at the top was 55 cm and the shaft was cut on the bias, leaving a selvedge as part of the upper edge.



Else Østergård: Woven into the Earth, p 223 (photo of D10613 and D10614), p 295 (pattern of D10613)

The foot consists of six pieces. According to Østergård, it is doubtful that all the pieces were found and assembled correctly in the 1920s. Thus, the current reconstruction of the foot is uncertain. It is possible that the two longest pieces originally were part of the shaft, but today they are separate pieces that go from midway below the foot around the heel and up into the leg. Three pieces start from the same point under the bottom of the foot, while the fourth is a heel. The hose is currently open at the front of the foot, but we do not know whether this was the case originally.

There is a very similar, but less preserved hose (**D10614**) that Nørlund believes is paired with D10613 (even if it is constructed of dark and light grey 2/2 twill).

Nørlund describes the foot of D10614 as being made from a single piece (apart from gussets at the heel) that has a seam running along the bottom. Østergård disagrees. According to her, the original seams are still intact and the foot does not fit Nørlund's description. Unfortunately, while her description of the foot appears to have several similarities to her description of D10613, it doesn't give a very clear picture of the construction pattern.

The foot is composed of six largish pieces, the two longest of which continue from the middle under the foot around the heel up into the leg. The pieces are not sewn together above the foot. The other pieces are more or less sewn together leaving finished seam allowances towards the reverse side as well as torn-off edges.

Else Østergård: Woven into the Earth, textiles from Norse Greenland, p 225

The last hose I have selected, **D10615**, is sewn in woollen tabby that once was white, but currently sports a reddish brown colour. The leg is 45.5 cm long and has an upper circumference of 42 cm. The lower part of the shaft is very fragmented, but there are two vertical vents 16 cm long that divides the lower part of the shaft into three "flaps" (just like D10616).



Else Østergård: Woven into the Earth, p 224

A foot piece has been sewn on, but according to Østergård the seam is new (possibly from 1920) and the front piece is missing, making the whole placement of the piece very uncertain. She reports that Nørlund thought this fragment originally was a strap behind the heel, and that there was a larger foot piece sewn to the shaft that has now disappeared. (If this is true, I wonder why they then sewed the fragment to the front of the shaft.)

Together the Herjolfsnes hose fragments give us some information about Norse hose in medieval times. However, due to the fragmented evidence we know very little about the construction of the feet. Fortunately, they are not the only examples of hose found from this time period.

Bremen



An archiepiscopal grave in Bremen from the first half of the 1200s contained a pair of woollen hose (in addition to the symbolic silk hose and other garments for the Archbishop). Although I have only had access to a short description of the find by [Margareta Nockert](#), I am including it here due to the similarity in the pattern of the woollen hose and the later [Bocksten find](#).

Illustration in Margareta Nockert: Bockstenmannen och hans dräkt, p 98

Just like the Bocksten hose, the Bremen hose has two vents at the bottom of the shaft, and a single "foot piece". The two vents technique is also known from Herjolfsnes ([D10613](#) and [D10616](#)). However, the upper part of each shaft of the Bremen hose is very wide and consists of several pieces of fabric before narrowing significantly towards the ankle. It was lined with linen.

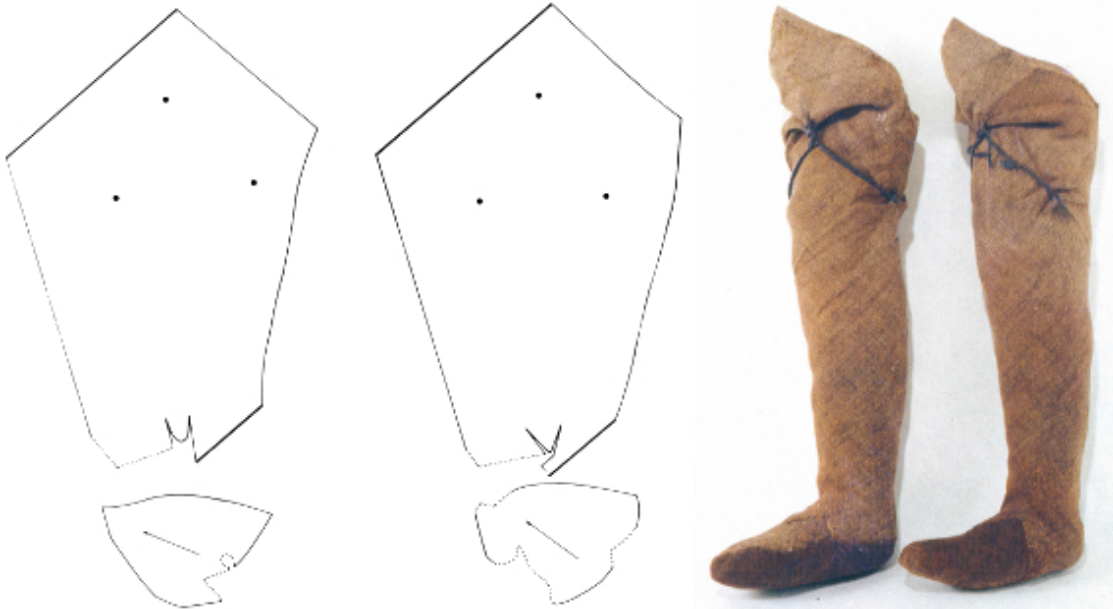
Bocksten

The body of a man was found in a bog in Bocksten in Sweden in 1936. It was sufficiently well-preserved to lead the farmer who found it to call in the police in case it was evidence of a recent crime. During the examination of the body, the upper part was undressed and one foot was removed. Fortunately the Director of Varbergs museum, Albert Sandklef managed to rescue the body and clothing before further damage was done, allowing Agnes Geijer to take part in the conservation of the textiles. The textiles were first analysed by Sandklef in 1936, and later by [Margareta Nockert](#) in 1985. The find has been dated to about 1350.

The man was wearing tigh-high woollen hose (among other garments), made from woollen twill. Each shaft was made of a single piece, cut on the bias and sewn together along the back of the leg. At the bottom, two vents were cut, creating two side pieces and a frontal piece. There are traces of stitches on both frontal pieces.

Hosorna har varit hopsydd med söm baktill. Nedtill är de uppklipta så att et kilformat stycke på vardera sidan om kilen går ned på fotens sidor. Mittfliken saknar fällvikning men har stygnmärken runt om, ca 2 stygn/cm. De rektangulära styckena får båda fällvikningar mot rättsidan närmast mittfliken. Längs stadkanten under foten finns inga nu synliga stygnmärken.

Margareta Nockert: Bockstenmannen och hans dräkt, p 58.



Margareta Nockert: Bockstenmannen och hans dräkt, p 61 (photo of right foot), p 63 (pattern and photo of hose).

A leather strip (left leg) or two twined leather strips (right leg) had been fastened on each side of the knees and at the top of the hose. Respectively 10 and 2.5 cm of the leather strips remained above the highest fastening point. According to Nockert this part would originally have been at least 40 cm, in order to reach the belt of the wearer.

In addition to the shafts there were some extra fragments that appear to be part of the hose. While there were no seams left, there were plenty of stitch holes that allowed Nockert to place these fragments in relation to each other.

Both feet appear to have had a triangular piece that was folded and sewn together along two edges, creating a sock tip that would have covered the front of the foot. There is an impression of the front "flap" of the shaft in the fabric on top of each of the triangular pieces, showing that they were stitched to the shaft here. This means that the seam creating the sock tip was running along the bottom of the foot. It appears that the side pieces of the shaft were laid with an overlap with the sock tip, and folded beneath the foot.



The right sock has a separate sole stitched to the bottom, possibly to protect the seams. The left sock tip is very worn at the bottom, but have no trace of a separate sole. In addition to the hose, the feet had been

wrapped in foot cloths made from pieces of worn clothing.

Interpreting the facts

That is the end of the hard evidence, and we're entering the land of interpretations. Due to the limited and fragmentary archaeological evidence for Viking Age leg clothing, we need to combine it with other (and less reliable) sources, like poetry and illustrations, when attempting to reconstruct these garments.

Wool or linen?

The usual method for preserving textiles in e.g. graves is by being close to a metal artefact. Unfortunately, leg clothing is seldom worn in direct contact with a lot of metal, which may explain why there is so few of these finds from the Viking Age.

The brækr fragments found at Haithabu and Skjoldehamn are all made of wool. The only trace of linen brækr that I am aware of is Birka grave [905](#) with the bronze hooks. However, although the archaeological evidence for linen brækr is scant, there is some circumstantial evidence for their existence.

In his book on Viking clothing, [Thor Ewing](#) points out that the Icelandic sagas explicitly mentions "lín brækr", and the saga phrase "in linen clothing" (í linklæðum) suggests that while it was unusual to wear *only* linen outside the house, linen clothing was ubiquitous. Ewing also refers to an edict of Diocletian from the late Roman period, which lists coarse linen as cheaper than fine wool, and argues that this supports the suggestion that linen could have been in common use.

While the sagas were written after the Viking Age, the Hudud al-'Alam, a tenth-century Persian source, and the account of Ibn Rusta are both contemporary sources. They describe the clothing of the Rus (Vikings in Russia), including wide and baggy linen brækr. Together with the archaeological evidence from Birka these sources confirm that Viking brækr could be made from both linen and wool.

However, the choice of material may have varied according to geography, custom, social status and personal taste. The eleventh-century writer Adam of Bremen remarks that the Norwegians rely upon their flocks for their clothing (indicating that linen was seldom used). The same might have been true of the early Icelanders - when Ketill puts on woollen shirt and brók in the Fljótsdæla saga, the saga writer notes that equivalent linen clothing was not worn "at that time".

Unfortunately, the existing finds are far too few for us to draw any conclusion as to whether one type of material was more prevalent than the other in the making of brækr. All we can conclude is that both types existed.

To dye or not to dye?

Identifying dyes from the archaeological evidence is challenging, partly because it is difficult to separate colour originating from dye from rust or other discolouration, and partly because plant dyes decay in the ground. In addition, the archaeological evidence can only take us so far. The fragments are just too few to give a correct picture.

So what can we tell about the colour of Viking leg clothing? While all of the Haithabu brækr fragments were dyed, they were also made of finely woven fabric, indicating that they were high status garments. It is

likely that the less wealthy would have worn undyed clothing, probably made from cloth with a less careful selection of wool than the Skjoldehamn brók or the hose fragments from Haithabu harbour.

According to Hägg one set of brók fragments from the harbour ([22 A-C](#)) had been dyed a reddish brown with walnut shells. This is a dye that is found on fragments from several other garments at Haithabu. It has an antibacterial effect, something that is very useful in clothes worn close to the body, like brækr or undertunics. Additionally, Hägg notes that [39 A-B](#) was dyed (but doesn't say which colour) and that [S19](#) was dyed either blue or green.

However, the most interesting set of brók fragments in terms of colour are [72 A-B and 91A](#). These appear to have been dyed in two separate colours: red on one side of the garment (believed to be the front) and yellow-green on the other side (believed to be the back of the brók). This must have created a striking impression when the brók was new. The sagas have a term for parti-coloured garments, namely halflit, halfskipt or tviskipt. Also according to Hägg, the sagas often speak of a red-green combination, just like the find at Haithabu.

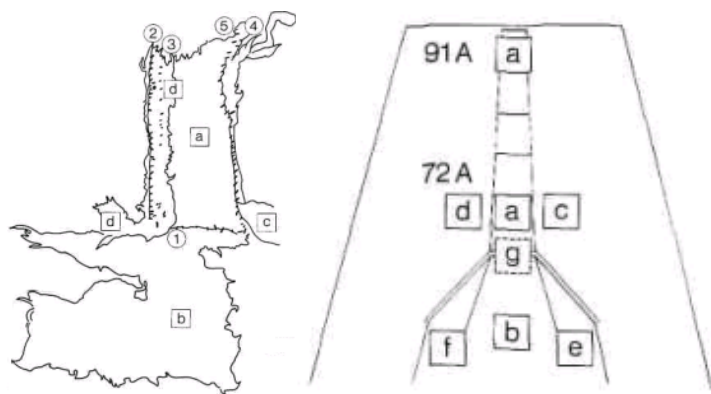
While dyed linen did exist (found in e.g. Birka grave [563](#) and [762](#), and in Pskov), neither Geijer nor Arbman mentions colour when reporting on the content of grave [905](#). As most of the linen found in Birka graves was undyed, I will assume that this is the case for the brók fragments from 905 as well, until told otherwise.

Although there is a limited set of colours found in the archaeological evidence for leg clothing, it is not unlikely that a wider range were in use. Collecting and summarizing the different studies by textile archaeologists in regards to which dyes were likely to be known and used by the Vikings is a separate research project though, and not one I have had time to do (yet). Instead I recommend the work done by [Carolyn Priest-Dorman](#) in her [article](#) on colours in the Viking Age.

Shape of brækr and hose

Hábrækr ("high breeches")

One of the finds from Haithabu harbour ([72 A-B and 91 A](#)) appears to have been pleated or creased, something that indicates a baggy garment. The complex arrangement of seams and different fragments in 72 Aa-g leads Inga Hägg to interpret this as the crotch area of a brók. According to her it follows the same basic construction pattern as the early Iron Age brækr.



Haithabu, p 32. Photograph taken at Wikinger museum Haithabu

If fragment Aa forms part of a frontal centre gore, Ab becomes the remains of a rectangular gore in the centre back of the brók. Parts c, d, e and f then belong to the legs, with c and d in the front and e and f in the back. Part g probably represents some form of strengthening seam or double layering of the cloth over the central crotch seam. Hägg also mentions the possibility that the legs had double layers of fabric.

Drawing from Inga Hägg: Die Textilfunde aus dem Hafen von

Arranging 72Aa-g in the manner described above results in all the red fragments ending up on one side,

while the yellow-green ends up on the other. As mentioned earlier, parti-coloured clothing in red and green is known from the sagas. The use of two dyes on each leg does however indicate that unlike the early Iron Age brækr, this brók must have had two seams running along each leg.

While fragment 72 B has no seams or other indicators that can be used to position it, 91 A has some badly preserved fragments along the sides that appear to be identical to 72 Ac and Ad in colour and thread count. With this in mind, Hägg suggests that 91 A is a continuation of the front gore from right above where 72 Aa ends. If this is the case, the central gore would have been at least 30 cm long.

Of course, using early Iron Age evidence to explain Viking Age clothing is fraught with uncertainty. However, given how few fragments remain of Viking Age brækr, we have to guess in order to get anywhere near a wearable garment. The issue then becomes how to make informed guesses, based on what little evidence we have. Personally I prefer using patterns from nearby time periods (and a relevant cultural area) as a starting point, but I am aware that opinions might differ on this.



As you can see, the archeological evidence is limited. However, the early Iron Age brækr pattern provides the best explanation I have seen (so far) for the complex arrangement of seams and pieces in 72Aa-g. We know that the pattern type was in use at least as late as 500 AD, and so it is not that much of a stretch to assume that it survived to the Viking Age. Finally, while the sagas are somewhat problematic as a source of Viking clothing, I find Thor Ewing's point that the use of an early Iron Age pattern fits well with the reference to "seat-gored brækr" (setgeira-brækr) in the Laxdæla saga interesting.

While the interpretation of 72Aa-g and 91A gives us an idea of the type of pattern used for this brók, the small fragments are still a long way from allowing us to reconstruct a complete garment. There are fragments of a similar brók found at the Haithabu settlement ([S19](#)), but these are too small to yield information about the cut or shape of the original garment, although they indicate that some of these brækr were constructed by stitching together fabric in double layers, with the "lining" being of a lesser quality than the outer layer.

The next clue to the shape of these brækr is instead provided by the wrinkles running in waves across both sets of fragments. Hägg points out that this fits well with the wide and pleated brók described in the tenth century Afghan-Persian source, *Hudud al-'Alam*, as worn by the Russian Vikings.

Out of a hundred cubits of fine linen, more-or-less, they sew trousers, which they put on tucking them up above the knee.

Hudud al-'Alam, quoted by Ewing in Viking clothing, p 96

The Arab Ibn Rusta gives a similar description in his account of the Rus, but even more incredibly allots a hundred cubits of cloth to *each leg*.

Unlike the brækr described by these sources, the Haithabu fragments are made of wool. However, both Inga Hägg and Thor Ewing propose that the linen brók in [grave 905](#) at Birka might possibly have been a wide wrinkled brók, with metal hooks at each knee. Unfortunately, the fragments of fabric preserved by the metal artefacts are much too small to make it possible to conclude on the type of brækr they were attached to.

Although the finds from Haithabu are the only (so far) more or less certain archaeological evidence for the existence of these wrinkled brækr, there are several depictions of them on e.g. picture stones. While care must be taken when trying to interpret Viking Age images, they give an indication of how the brækr must have looked when they were "tucked up above the knee" as described by the Hudud al-'Alam.



Picture stone from Lärbro, Tängelgårda, Gotland



Picture stone from Stenkyrka, Lillbjärs, Gotland



Picture stone from Halla, Broa, Gotland
Photograph by [Svenska kulturbilder](#)



Silver figurine from Uppåkra
[Barbaricum](#), p 62

If we look closely at the description provided by Hudud al-'Alam, he doesn't say that the brækr were permanently gathered (e.g. by sewing them into pleats) at the knee. Instead, "which they put on tucking them up above the knee" could be interpreted as wide brækr that are tied or otherwise gathered (e.g. by leg windingas) each time they are put on.

With this in mind, Thor Ewing suggests a new interpretation of the men in the Oseberg tapestry, namely that they are wearing wide brækr that haven't been gathered yet. This is a somewhat controversial theory, but if it is correct it would explain some of the picture stones with what appears to be knee-length wide brækr, like the picture stone from Smiss in Gotland.

Leftmost: Picture stone from Smiss, Gotland, photograph by [Statens historiska museer](#) 

Rightmost: Male figure, Oseberg tapestry, Thor Ewing: Viking Clothing, p 85



According to Inga Hägg we do not have a probable Viking term for the wrinkled, baggy brók. Thor Ewing, however, theorizes that they might have been called hábrók. He refers to the right hand man of Haraldr Hárfagri, Hauk Hábrók ("high breeches") who is supposed to have visited Russia, and so could have adopted the brók that gave him his nickname from the Rus. In addition, hábrók is a term that also is used as

an epithet in Viking poetry for hawks, whose feathered upper legs may look somewhat similar to a baggy knee-length brók.

The hábrók is similar to the apron dress in that it appears to be tied to the Scandinavian culture in the Viking Age. Unlike the apron dress, however, there is no evidence of "proto-hábrækr" before the Viking Age. So where did the inspiration for these bræk come from?

The Vikings travelled extensively, and we know that they sometimes brought fabric and possibly entire garments back home with them. However, while baggy bræk often are associated with oriental or Arab fashion *today*, both Hudud al-'Alam and Ibn Rusta describe the hábrók as something exotic, which means that it was not similar to what they were used to at home. With this in mind, Thor Ewing suggest that the hábrækr either originated with the Rus and Scandinavians of the Viking Age, or that they must have taken an existing fashion for baggy bræk to new extremes.

Inga Hägg proposes a more convoluted origin. She believes that the hábrók may originally have derived from Scythian pleated bræk, whose influence then was transmitted through the Roman army (which absorbed many foreign clothing items into its early "military uniform") into the knee-length Celtic *braca* that Gallo-Germanic people were said to wear at home. These influences were retransmitted directly to Scandinavia by North Germanic soldiers in the late imperial period. If this is correct, it still means that the hábrækr must then have evolved into its own unique garment (seeing that it is nothing like what is worn by Germanic people during the Viking Age).

Thor Ewing: Viking Clothing, p 101, picture stone from Sockburn, England

While some people call the hábrækr "Rus trousers", they were not confined to Russian Vikings alone. The style was known in Sweden (as demonstrated by the picture stones and figurine), in Denmark (Haithabu) and in Norway (if the interpretation of the Oseberg tapestry is correct).

They were even known in Viking England, as shown by the carving on a cross from Sockburn. Still, with the amount of fabric used, they must have been high status clothing.

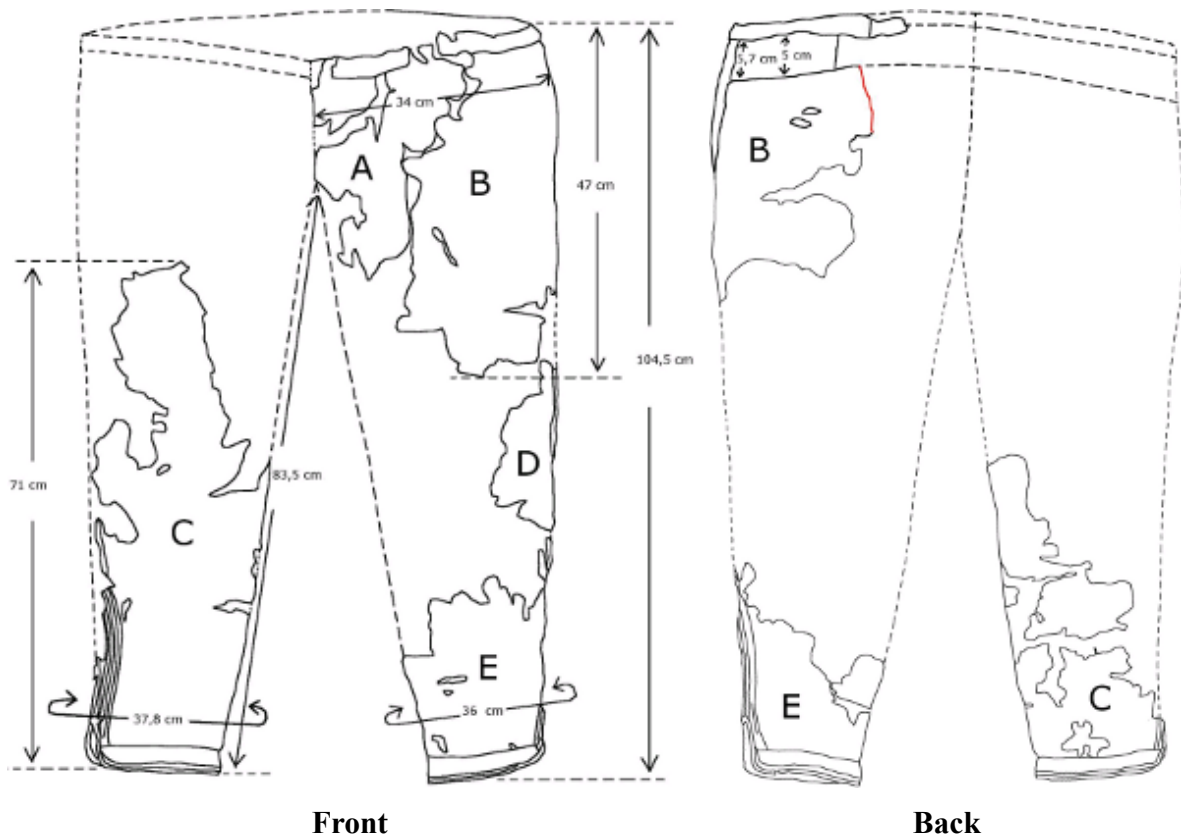


Ökulbrækr ("Ankle breeches")

The [Skjoldehamn](#) brók has a narrow cut (at least compared with the pleated hábrækr) with a drawstring at the top and decorated, slim legs, that ends at ankle-height.

The find has the largest and best preserved Viking Age brók fragments that has been found so far, and should in theory give us a good understanding of its construction. Unfortunately, things are not so simple in practice. Gjessing's report from 1938 has absolutely no documentation regarding exactly where on the body the different fragments were found. This makes it hard to judge the accuracy of his interpretation, and even harder to reinterpret the find in light of new evidence.

Gjessing's reconstruction is shown below.



Dan Halvard Løvlid: Nye tanker om Skjoldehamnfunnet, p 105-106. Selvedge (red line) not mentioned by Gjessing.

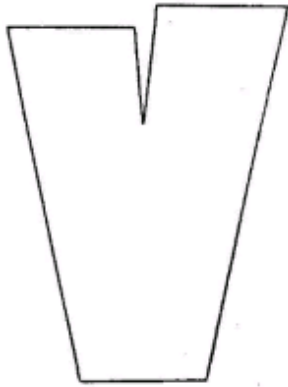
Gjessing believes that the decorated leg seams would have been running along the *outside* of the leg, so that they may be easily seen.

He places the two fragments with remains of a hem (A and B in the illustration) on the left half of the brók. The long seam in fragment B becomes part of the side seam along the outside of the leg, and the strip of fabric lengthening a part of B runs along the back of the brók.

As mentioned above, fragment A have a vertical fold at the left edge. Although there is no trace of stitches left Gjessing interprets this to indicate that there was a vertical seam inside the fold. He proposes that this was part of a seam running along the crotch of the brók.

På venstre forside er broken delvis bevart helt frem til midten. Tøiet var her på to steder i en lengde av henholdsvis 5,5 cm og 5 cm brettet inn langs en loddrett linje, slik at alt ligger meget nær å tro at broken har hatt en loddrett midtsøm. Noe sikkert bevis har en riktignok ikke da det ikke var noen løse tråder etter selve sømmen bevart; men på den annen side må broken efter den måten buksebeina er klippet på ha vært avdelt på ett eller annet vis her.

Finally he places fragment D so that the edge with traces of a seam matches up with the left side seam. Since there are traces of the red couching stitches on fragment D, but not on fragment B, Gjessing finds it likely that this part of the decoration stops somewhere around the area above the knees.



Based on his positioning of the fragments, Gjessing proposes a reconstruction pattern where the brók is made from two identical pieces, one for each leg (see illustration). These legs have a seam running along the outside, and one or two strips lengthening the back of the brók. A vertical seam runs from the front to the back, connecting the two legs in the crotch area. Using the length of the upper edges of fragment A and B he calculates the width of the brók at waist height to have been 130-140 cm.

Dan Halvard Løvlid: Nye tanker om Skjoldehamnfunnet, Gjessing's pattern p 154

Dan Halvard Løvlid is sceptical to this interpretation. He points out that some of these placements are highly uncertain, and that there are details that Gjessing missed that calls his whole reconstruction into question.

According to Løvlid, fragment A could just as well belong to the *right half* of the brók, and the fold that Gjessing interprets as seam allowance for a crotch seam could instead be the side seam of the right leg. This means that both the construction of the crotch and the total width of the brók is uncertain.

The same goes for the length of the brók. According to Gjessing, fragment B, D and E could be fitted together down the length of the left leg, giving a total length of 1 meter.

Den samlede lengden fra linningen til underkanten av buksebeina har vist sig å være helt sikker. De ulike tøistykkene har kunnet passes til hverandre i hele sin lengde på venstre side.

Gjessing, Guttorm: Skjoldehamndrakten. En senmiddelaldersk nordnorsk mannsdrakt, p 48

Løvlid points out that Gjessing has placed the three fragments slightly apart in the reconstruction in order to achieve his length of 1 meter. If these gaps were to be bigger, the brók would be longer. Thus, provided that all three fragments belong on the left side (not unlikely, but still undocumented), the 1 meter only represents the minimum length of the brók.

Lastly, Løvlid observes that fragment B ends in a selvedge in the back that runs parallel with the side seam, roughly 19-21 cm from it. This is the detail that calls Gjessing's entire reconstruction into question. The selvedge not only means that the fabric ended there, it also must have been stitched to something, something Løvlid interprets as there being *two* seams running down the upper part of the left leg.

In order to explain how the bottom part (fragment E) has only *one* seam he proposes that at least the left leg must have been divided into an upper part and a lower part, connected by a horizontal seam. There is no trace of this seam on B, D or E, but it could have run in the gap between B and D or between D and E. However, fragment C reaches 71 cm upwards on the right side of the brók, without any trace of a horizontal seam. This could mean that there was no horizontal division of this leg, or that it was placed significantly higher than on the left leg, or that the brók was longer than 118 cm, creating a gap between the height where C ends and the height where B begins.

Due to the different uncertainties detailed above, Løvlid feels unable to conclude on a reconstruction pattern for the Skjoldehamn brók. He does however, find the suggested pattern by Gjessing to be unlikely, both

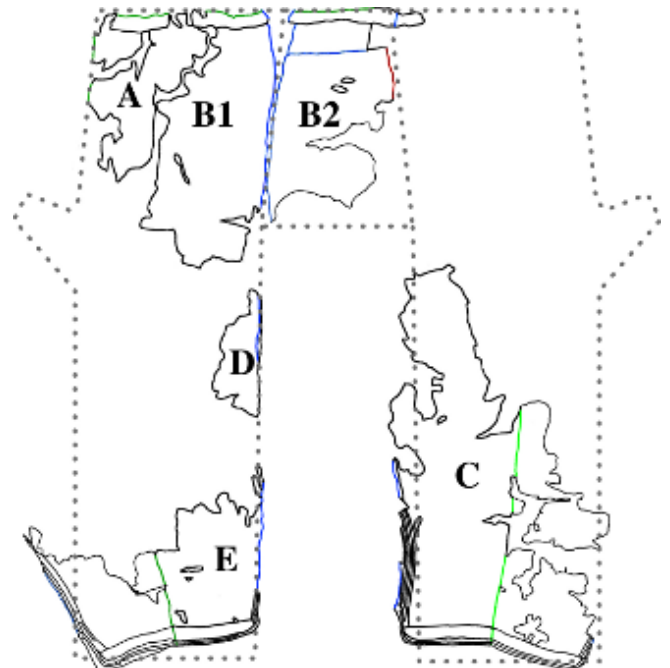
because it doesn't fit all the evidence (like the selvedge) and because when testing the pattern he finds the resulting brók somewhat impractical in use. (Reenactors that have tried the pattern state that brækkr made this way have a tendency to split along the crotch.)

I understand Løvlid's frustration, but using his detailed examination of the fragments I believe that there is an interpretation that can fit the evidence.

The early Iron Age brækkr and the hose from different periods described under peripheral finds have one thing in common; they are constructed in a manner that leaves a *single* seam running along the leg. This fits well with the evidence we have from Skjoldehamn. The lower parts of the brók legs (C and E) are well enough preserved to allow us to see that they had a single seam, at least at that height. With that in mind, I find it preferable to use the basic construction pattern from the Iron Age to explain the Skjoldehamn brók, instead of inventing a new pattern that have no parallel in the relevant time periods (Gjessing), or trying to introduce brók legs that have a single seam at the bottom and two seams at the top (Løvlid). (In addition, the survival of such a pattern into the Viking Age is [indicated](#) by 72 A-B from Haithabu harbour).

Using the Iron Age pattern as a starting point, fragment B can be interpreted as a leg fragment and a semi-rectangular gore in the back of the brók, instead of two sides of one leg. This placement explains the selvedge, while allowing for a single seam leg. Unlike Gjessing's pattern, it is a practical design that we know was used before the Viking Age, and that allowed for physical work and fighting without splitting. There might conceivably have been a gore in the front of the brók, but if so, no evidence of it remains, and the width and length of the brók remain unknown (for the reasons stated by Løvlid).

Unfortunately, due to the lack of detail in Gjessing's report, we cannot judge how well this interpretation fits with the original positions of the fragments on the body. (And unless a more detailed report surfaces, we will never know.)



Beside the Skjoldehamn find, the other evidence for Viking Age brækkr with a narrow cut is the fragments [22 A-C](#) and [39 A-B](#) from Haithabu harbour.

Due to being found in the harbour instead of on a body, we do not know for certain whether these sets of fragments represent brækkr at all (and Inga Hägg states e.g. fragment 39 could be interpreted as part of the sleeve of a coat). In the end, Hägg's reason for proposing that they are brækkr is the similarities they share with the weave and pattern of early Iron Age brækkr.

She interprets 22 A-C can be interpreted as part of the top edge of a brók (either a leg or a seat gore), the tip of a gore and a single belt loop. 39 A-B is interpreted as belonging to the crotch piece of a different brók. Both appear to have been made predominantly from lozenge twill, but other types of weaves have been used in some of the pieces. (I wonder if the mix of weaves were to achieve specific properties, like stretch, in different pieces, or if it were a matter of taste or of using "cheaper" fabric for certain pieces).

Of course, even if we accept that these are Viking Age brækr, the fragments are from the upper areas, and so we cannot tell whether these brækr would have ended at the knee, the ankle, or were footed like e.g. one of the Thorsberg brækr.

As the archaeological evidence is limited, it can be useful to look at other sources as well.



The picture stone from Ardre, Gotland give a rough illustration of how the Skjoldehamn brók and other ankle-length brækr may have looked. The crew on the ship depicted on this stone are all wearing ankle-length brækr. The same motif appears on a picture stone from Tjängvide, Alskog in Gotland.

Ankle-length brækr seem to be mentioned in the sagas as ökulbrækr, hökulbrækr or höklabrækr. There has been some discussion as to the meaning of these words, but Ewing argues that they are clearly linked to okkla or ökkla (ankle), making (h)ökul-skúaðr "ankle-shoed" and ökulbrækr simply "ankle breeches".

When this term appears in the sagas, it denotes low-status brækr, and seems to be used as shorthand for "ill-dressed bumpkin". Ewing therefore proposes that they would have been made from coarse cloth and cut to a simple pattern. I am a bit doubtful whether this assumption is correct however. While I accept that the ökulbrækr have a low status in the sagas, I am more uncertain as to whether the way the sagas view these garments truly reflects their status in the Viking Age.

It seems that Ewing is unaware of the Skjoldehamn find, or of the new dating that places it within the Viking Age. This ankle-length brók was made of white woollen cloth, which would have required some effort to create, and decorated with woven bands and decorative stitches. The cutting pattern is uncertain, but Løvlid's thesis shows that it would at a minimum have been more complex than the simple pattern suggested by Gjessing.

All of this suggests to me that while the Skjoldehamn brók might not have been worn by the wealthy, it would be wrong to classify it as ill-fitting and low status. On the other hand, it may have been of Sami origin, and thus not directly applicable when interpreting Viking fashion.

The brækr found at Haithabu are clearly high status, as shown both by the fine twill cloth, the complex cut and the fact that they were dyed. However, it is impossible to tell whether they were indeed ökulbrækr, and so they can't be used as an argument either way. The picture stones from Gotland are interesting though. These sailors are carrying swords, signifying both wealth and status, which in my opinion makes it unlikely that they are simultaneously wearing brækr only fit for bumpkins.

In summary, there is some evidence for the use of ankle-length brækr by the Vikings. The Skjoldehamn brók may be the closest we have to a pattern, with all its uncertainties. The status of ökulbrækr is unknown, but might have been more varied than the picture painted by the sagas.

Leistabrækr ("Footed breeches")

Several of the early Iron Age brækr end in socks or straps that fully or partially encloses the feet. As mentioned earlier, there are indications that the construction pattern of these brækr, with a single fabric piece for each leg and a quadrangular piece in the back (sometimes with added gores in the back and/or front) survived into the Viking Age. If it did, the fragments [22 A-C](#) and [39 A-B](#) from Haithabu can be interpreted as following such a pattern. Unfortunately, no trace of the lower legs survive, so while they *might* have been footed brækr (unlike the Skjoldehamn find or the hábrækr fragments from Haithabu), there is no way we can know.

While the archaeological evidence doesn't give any definitive answers, Thor Ewing points out that the sagas indicate that footed brækr still existed in the Viking Age. In Njáls saga, chapter 134, Flósi chooses to wear footed brækr (so-called leistabrækr). Footed brækr also appear in Eyrbyggja saga, chapter 45, and a related style, with bands under the foot (reminiscent of the Damendorf brók) occurs in Fljótsdæla saga chapter 16.

The sagas assign a higher status to leistabrækr than ökulbrækr. *If* this reflects reality, the dyed and finely woven fabrics used in fragments 22 A-C and 39 A-B would indicate that they were leistabrækr, and thus were footed. (However, as argued earlier, I am not so sure that the status of ökulbrækr in the sagas is a true indication of the status they were given by the Vikings).

While the sagas indicate the existence of leistabrækr, it is unclear how common they were. There has also been some discussion as to their use. Inga Hägg proposes that the footed Thorsberg brók was derived from Parthian riding brækr, through the medium of Roman military uniform. She believes that it was worn by a horseman, probably an officer.

Not only would a foot soldier wear out the sewn-on feet very quickly but it would also be very unpleasant for him to have to walk on the middle join and indeed rather dangerous on long marches. In the case of riding breeches, however, the feet would be practical as they keep the trouser legs taut and prevent them from riding up when on the horse.

Inga Hägg: [Sacrificed garments](#), p 29

According to Möller-Wiering, the experience of people wearing a replica of such footed brækr or stockings is that the seam under the foot slides aside, away from the sole, and does not constitute a problem when walking. However, she acknowledges that in a society where only the rich would own a horse, there might be special riding brækr that show status.

While the Thorsberg brók might or might not have been made for riding, Ewing returns to the sagas as a source (although a problematic one) of information on how the Vikings would have used their footed brækr. He points out that Flósi is wearing a leistabrók *because he has chosen to walk*, and that this is so that he will be on the same footing as his men. Thus Ewing concludes that footed brækr were considered more suitable for walking than riding among the Vikings.

Flósi var í leistabrókum því að hann ætlaði að ganga. Vissi hann að þá mundi öðrum minna fyrir þykja að ganga.
Njáls saga, chapter 134 (original text with modern Icelandic orthography)

Flósi wore leistabrók because he meant to walk. He knew that then the others would mind it less to walk. (Or more precisely "knew he that then would others less think of walking" where 'think less of' is meant literally instead of a synonym for 'have a lower opinion of')

Translation with help from Tor Gjerde

Personally, I do not find the few passages in the sagas a sufficient argument to limit footed brækr to walking, but neither do I agree with Hägg that a seam running underneath the foot would be an argument for these being exclusive riding brækr. Several of the existing hose from before and after the Viking Age have a foot piece with a seam along the bottom of the foot, without being classified as riding hose. The seat

construction of the early Iron Age brækr make them well suited for riding, but the flexibility of movement could also be an advantage when fighting, sailing or working.

If we look at picture stones and figurines, we can find several people that might be wearing leistabrækr and who is walking or riding. Of course, this is not conclusive - on a picture stone or figurine it is pretty much impossible to tell the difference between footed brækr, hose or bare feet.



Picture stone from Sanda, Gotland



Picture stone from Lärbro, Tängelgård, Gotland



Silver figurine from Birka (Bj 825)

[Christer Åhlin SHMM](#) 

Given the uncertainty of the current evidence, my conclusion is that there are several indications that footed brækr existed and was used by the Vikings. They were probably constructed in the same manner as earlier footed brækr (and later hose), with a single piece of fabric for each leg, a broad gore in the back, possible extra gores in the front or down the legs, and one or more foot pieces. They might have been better fitted and of a higher status than brækr reaching to the ankle, but I do not believe that they were restricted for a specific use (riding or walking).

Hose and knee-length brækr

As can be seen from the peripheral finds, hose or long stockings were in use before and after the Viking Age. In addition, the fragments [2a-b](#) from Haithabu harbour provides a clear confirmation that hose was also worn during the Viking Age. While the Haithabu fragments are far from a complete garment, there are

several details that provide information about how this hose may have looked. The circumference (45-48 cm) indicates that the hose reached to the upper part of the leg. It is probable that the leather band was used to tie it to a belt (similarly to what was the case for the later Bocksten hose), which would place the vertical seam along the back of the leg.

Unfortunately, due to fragment 2b being torn at the bottom, it is not possible to determine the total length of the hose, or whether it originally had an attached foot piece at the end. However, Inga Hägg believes that the heavily abraded place at the front was where the knee would have been when the hose was worn. If true, this means that in addition to the 27 cm high fragment, there would have been a part from the knee and down to either the ankle or the foot.

There is an additional set of fragments ([S25 and S37](#)) found at the settlement that have been identified by Hägg as possibly belonging to a hose. The identification is very uncertain however, and the fragments are too small to tell us anything about the construction and cut of Viking Age hose.

The [Skjoldehamn socks](#) were much shorter than the hose found at Haithabu. Due to one of the shafts ([L1](#)) being preserved in its entirety, we can determine that the original length of the sock was 20-21 cm. These socks were obviously not tied to a belt. Instead, they may have been partially covered by ankle bands that were tied around the brók legs and downwards towards the socks.

Just like for the brók, Gjessing's report gives no details regarding *where* the sock fragments were found, which makes the reconstruction more difficult. Fortunately, the seam that ran beneath the foot on the L1 sock shaft has been preserved. Thus, we can determine that the shaft was folded in such a manner as to leave the opening (or seam) along *the front* of the leg, unlike the Haithabu hose or the hose in the peripheral finds, which all had the seam running along *the back* of the leg.

Illustration modified from, Dan Halvard Løvlid: Nye tanker om Skjoldehamnfunnet, p 128

In addition, Dan Halvard Løvlid proposes that the tip of the Skjoldehamn sock ([L3](#)) was sewn to the shaft ([L2](#)) with the seam facing upwards. This is the complete opposite of the way the majority of earlier or later hose appear to have been constructed. To give some examples, the [Martres-de-Veyre](#), [Bremen](#) and [Bocksten](#) hose all have foot pieces with a seam running beneath the foot, a principle that was also used in the construction of the feet of one of the [Thorsberg brækr](#). However, Løvlid argues that the small fragment from the sock tip sewn on to the right side of L1 doesn't show any traces of a seam where the fragment meets the bottom of the shaft, and thus the seam must have been placed on the top of the sock tip.



Personally, I do not find the evidence that clear cut. As far as I can see, very little of bottom of the sock tip stitched to L1 is preserved, and I do not think that the tiny piece that is aligned with the bottom of the shaft is sufficient to exclude the presences of a seam. Lacking clear evidence of the orientation of the sock tip, my preference would be to follow the general construction principles of earlier and later hose, and place the seam facing downwards. Due to the deplorable lack of details in Gjessing's report however, we may never know what the correct position would be.

The Skjoldehamn socks were worn together with an ankle length brók. Provided that the [sock from York](#) wasn't part of a hose, it would probably also have been worn in combination with a long brók, or a hose. However, the Haithabu hose was long enough to reach above the knee, and would have required a shorter

brók of some kind. Also, the bronze hooks found at the knees of the skeleton in Birka grave [905](#) indicate that Vikings sometimes wore knee-length brækr with hose. As mentioned above, it is possible that the man in grave 905 was wearing a hábrók, with woollen hose or leg windings that started at the knee (although the fragments are much too small to be able to tell). On the other hand, the Haithabu hose would not combine well with the wide hábrækr, and so there must have existed other (and slimmer) types of knee-length or shorter brækr worn by the Vikings. Unfortunately the finds give no information regarding how these might have looked.

We know that straight knee-length brækr were already worn by Germanic people during the early Iron Age (as demonstrated by the finds from [Dätgen](#) and [Marx-Etzel](#)). Also, while not directly applicable to Viking clothing, the Frankish people were wearing knee-length brækr at the same time as the Vikings. These are mentioned in *de Carolo Magno*, written by a monk around 883-884:

This was the attire or apparel of the Franks of old: shoes gilded outside, adorned with laces of three cubits, kermes-dyed bands on the shins, and under these, hose and breeches of linen, of the same colour but varied with the most intricate work. Above these and the bands, in and out, before and behind, the long laces were arranged in the style of a cross.

De Carolo Magno, translated by Thor Ewing in *Viking Clothing* p 78, my underlining


There was continuous contact between the Frankish people and Vikings during the Viking Age, so they might have been wearing similar short brækr - although the Vikings (as far as I know) were not wearing cross-gartered laces. *De Carolo Magno* describes *linen* brækr and hose. Given the mention of *linklæðum* in the sagas, it is probable that the Vikings also used linen in these brækr sometimes.



Several of the people shown on picture stones may be wearing hose. Unfortunately, it is almost impossible to tell them apart from people wearing *leistabrækr* or bare feet. One illustration we are pretty sure is showing someone with hose is the Danish King Cnut in the Winchester *Liber Vitae*. He has fairly elaborate garters (*hosna-reim*) tying the hose at each knee. However, it is hard to tell from the illustration whether the hose continues above the garters, or if he is wearing a very slim brók.

Lacking other evidence, Thor Ewing suggests that the cut of the short brækr followed simple patterns, akin to medieval braies, instead of the more complicated Iron Age brækr pattern (as seen in the *Dätgen*, *Damendorf* and *Thorsberg* brækr).

According to him they would have looked somewhat like the brækr worn by Christ in the eleventh century crucifix from Gotland in Sweden.

Photograph of silver crucifix by [Yliali Asp SHM](#) 

Finally Ewing points out that when hose are mentioned in the sagas they are often dyed and associated with other markers of high status. For example, king Sigurðr Sýr wears blue hose in *Heimskringla* and red hose is mentioned in *Njál's saga*.

Ewing further suggests that perhaps the fact that the saga-writers is choosing to describe the hose is a sign that it was made from high-status dyed linen.

While I agree that the Vikings sometimes used dyed linen as part of their clothing, I think this is a tenuous conclusion. My limited experience with the sagas is that clothing is mentioned because it has an impact on the story, e.g.

because it is of high status, a gift or holds a special meaning, and that one should be very careful when extrapolating from this.

Fastening the brækr

The brækr could have been kept in place by several different techniques. From the brók found at [Skjoldehamn](#) we know that one possibility was to gather the brók at the waist by a drawstring running within a channel. Also, the fragments [22 A-C](#) from Haithabu include a possible belt loop, and so may have sported a Thorsberg-type waistband with belt loops and a belt.

Some earlier techniques, like rolling the top of the brók down over a belt (possibly used with the second brók from Thorsberg), or using some kind of buttons or laces (possibly found on the Damendorf brók), might also have been used in the Viking Age.

Thor Ewing suggests that many Viking men would have been wearing two belts; one to keep up the brók or hose, and one to secure the tunic. Interestingly, there is seldom more than one buckle in the graves (many graves have none), and where more is found, the extra buckles are rarely found in the waist area. In addition, where buckles have been found with associated textile remains, it appears that they have been used to secure the shirt or tunic.

Due to metal buckles being expensive and decorative, it makes sense that they would have been openly displayed rather than hidden under the tunic. With this in mind, Ewing argues that the brók belt would not have been buckled, but instead would have been tied in place. According to him, tablet-woven bands are decorative and high-status, and thus unsuitable as brók belts. Instead he suggests a simple leather belt with a slit at one end through which the other end passes before it is tied, or a belt of rope of some kind.

Some reconstruction patterns

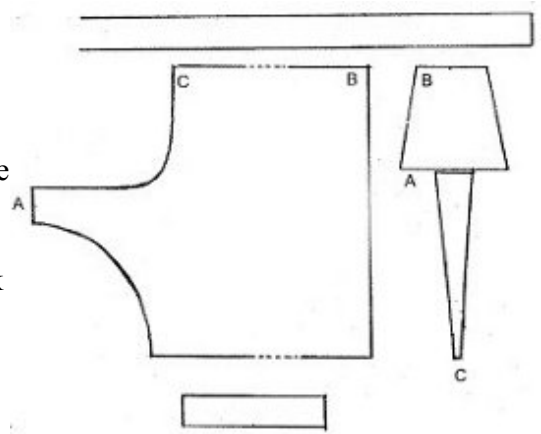
Hábrækr



This reconstruction is presented by Historiska världar, a project run by [the Museum of National Antiquities](#).

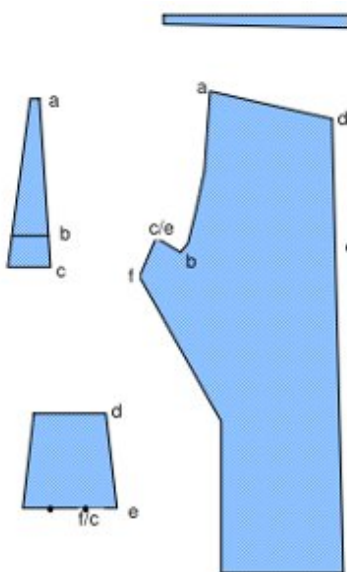
They don't set a specific geographic place or time for their reconstruction, but the pattern they suggest appears to build on the evidence from the Haithabu finds.

One difference though, is that the legs of the two-coloured hábrók from Haithabu must have been divided into two parts in order to dye the front and back in different colours. Thus, unlike the early Iron Age brækr, it must have had a seam running along both the inside and the outside of each leg.



The Thorsberg type brækr

As seen above, the Thorsberg pattern may make a good starting point for leistabrækr and ökulbrækr. None of the reconstructions presented here have added the stockings of the "footed" brækr.



[Nille Glæsel](#) presents a [pattern](#) as part of her report on Viking Clothing to the [Viking museum in Lofoten, Norway](#).

She follows the interpretation by Margrethe Hald with the exception of the waistband, which is cut in one single piece instead of two that are sewn together. The front gore is also made from one piece, as per Hald's pattern. (The Thorsberg brók have a front gore created by two pieces that have been sewn together.)

[Shelagh Lewins](#) use an identical [pattern](#), down to a single-piece waistband and front gore. She presents a detailed step-by-step set of instructions on how to fit the pattern to the prospective wearer.

Lastly, a slightly [adjusted pattern](#) with step-by-step instructions is presented by [Matthew Marino](#).

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