

# Viking Men: trousers and breeches

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This article represents my attempt to collect archaeological facts and interpretations of trousers and breeches worn during the Viking Age.

Old Norse have several terms for garments covering the feet or legs. There is *leistr* (short sock), *sokkr* (long sock/stocking), *hosur* (what we would call hose - a fitted long tube of fabric for each leg, may be footed or footless). In addition, there is the *brók* that are leg coverings that (sometimes together with extra pieces) are sewn together at the crotch, creating a continuous garment. Finally, there can be strips of fabric or textile bands wrapped around the lower part of the legs (*spjorr*).

In this article I will focus on the *brók* (plural *brækr*). As usual, my intention with gathering the information is to be able to make my own best guess, which of course may differ from yours.

## Contents

- [Facts: archaeological evidence](#)
  - [Birka](#)
  - [Haithabu](#)
  - [Skjoldehamn](#)
  - [Mammen](#)
  - [Peripheral finds](#)
    - [Thorsberg](#)
    - [Damendorf](#)
    - [Dätgen](#)
    - [Marx-Etzel](#)
- [Interpreting the facts](#)
  - [Shape of brækr](#)
    - [Hábrækr \("High breeches"\)](#)
    - [Ökulbrækr \("Ankle breeches"\)](#)
    - [Leistabrækr \("Footed breeches"\)](#)
    - [Short brækr](#)
  - [Fastening the brækr](#)
  - [Wool or linen?](#)
  - [To dye or not to dye?](#)
- [Some reconstruction patterns](#)
- [Bibliography](#)

## Facts: Archaeological evidence

### Birka

The main excavation of Birka was conducted in the 1870s by Hjalmar Stolpe, yielding a large amount of textile material from the 9th and 10th century. The textile fragments were stored, and later analysed by Agnes Geijer ([1938](#)) and Inga Hägg ([1986](#)).

Grave **905** contained the only remnants of leg and foot coverings that were found at Birka, with the exception of crampons that occur in some tombs (Geijer 1938, p. 145).



The grave contained a skeleton and various metal artefacts. Among them were two bronze hooks shaped as animal heads, found in a position just below the knees. The skeleton was osteologically determined as male (Linderholm, Jonson, Svensk, Lidén [2008](#), p. 452).

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.

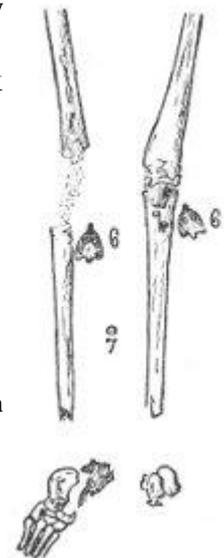
*Geijer 1938, p 144-145*

The animal heads were attached to garments covering the lower leg, possibly leg windings or some kind of hose (Geijer 1938, p. 144). These garments were made of a coarse woollen diagonal twill (Hägg, 1986, p.68). Each hook had been hooked into an iron ring, which had been sewn into the lower edge of a garment that reached just below the knees. On the iron rings are tiny remains of linen, leading Hägg to suggest that the knee-length garment would have been made of linen, or of wool with a linen lining (Hägg 1986, p. 68).

*Illustration Geijer 1938, p. 147*

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.

*Hägg 1986, p. 68*



### Haithabu

Various excavations of the former Viking settlement of Haithabu, near Schleswig Holstein in Germany, have yielded a large amount of 10th century textile material. A majority of the

preserved fragments were found in the harbour. These fragments were the remains of clothing that had been torn up, coated with tar, and used as ship's caulking ([Hägg 1984](#)). Excavations also uncovered textile fragments from the settlement and graves of Viking Haithabu ([Hägg 1991](#)).

Due to the presence of tar, Haithabu harbour yields unusually well preserved textile fragments. However, the harbour finds provide no information on the position of each fragment on the body. Thus, identification of which garment each fragment belong to is based solely on their shape. Each garment that can be identified however, provide a fascinating glimpse of how everyday clothing may have looked.

Many of the garments found at Haithabu appears to have been cut to fit the body. Hägg (1984, p. 214) points out that not only does each garment fill a specific function, but the tailoring have become more advanced. Patterns are no longer solely based on the rectangular fabric coming off the looms, but instead uses pieces cut on the diagonal, in curved shapes etc. in order to create garments tightly fitting the body. The many remnants of cut-offs confirms the impression of more sophisticated cuts and shaping.

De många efter kroppens former snävt skurna plaggen i Hedeby, t.ex. skjortan och byxan i mansdräkten eller tunikan och hängselkjolen i kvinnodräkten, visar att den dräkthistoriska utvecklingen nu nått en nivå, där dräktens olika delar genom tillskärning och sömnad givits olika, mycket bestämda funktioner. <...>

Klädesplagg, som huvudsakligen är sammansydda av större och mindre firsidiga tyglängder kan i och för sig vara funktionsbestämda, men kan inte betecknas som produkter av en avancerad tillskärarkonst. I sådana fall baserar sig mönstret på den i vävstolen givna formen. När emellertid inte de firsidiga och rätvinkliga tyglängderna bildar utgångspunkten för mönstret utan kroppens former, så att stoffytorna måste skäras till på diagonalen, i bågform, i kilstycken osv. uppkommer en i princip helt ny uppbyggnad av snittmönstret. De här analyserade mönstren vittnar om stor erfarenhet i tillskärningskonsten: <...>

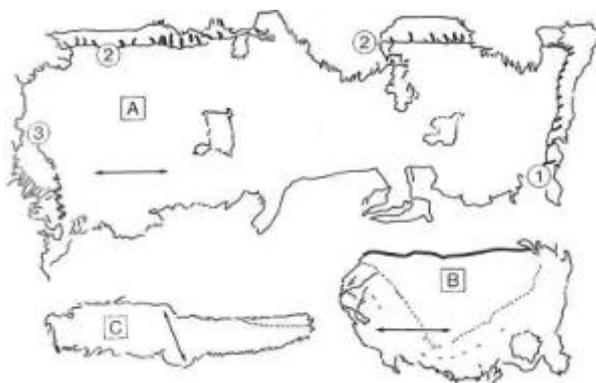
Exemplen av detta slag är många, de här anförda torde räcka till för att visa, att dräkten i Hedeby befunnit sig på ett högt utvecklat stadium. De många resterna av tillskärningsspill bekräftar detta intryck.

*Hägg 1984, p. 214*

## The harbour

The harbour yielded several fragments identified as possibly belonging to brækr.

**Fragments 22 A-C** 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 Gleichgratköper. Erhalten sind drei Teile (Teile A-C), die beim Auffinden um zwei Holzstäbe gewickelt waren.

Teil A: Abwechselnd Rauten- und Spitzköper. 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 Rautenköper mit einer Webkante und zwei stark ausgefranst Kanten. Keine Nähte erhalten. Länge der Webkante 9 cm, Breite 6 cm. Teil C: Schmalere

Streifen aus ziemlich feinem Gleichgratköper 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.

*Hägg 1984, 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.

**Fragment 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.

*Hägg 1984, 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 **fragment 72 A-B** and **91 A** are made from a thin wollen tabby and are believed to come from a brók.

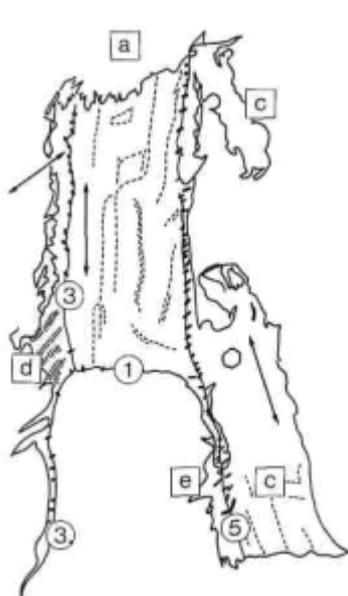
**Fragment 72 A-B.** Reste von Vorderseite und Schritt einer Männerhose aus dünnem Stoff in Tuchbindung.

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.

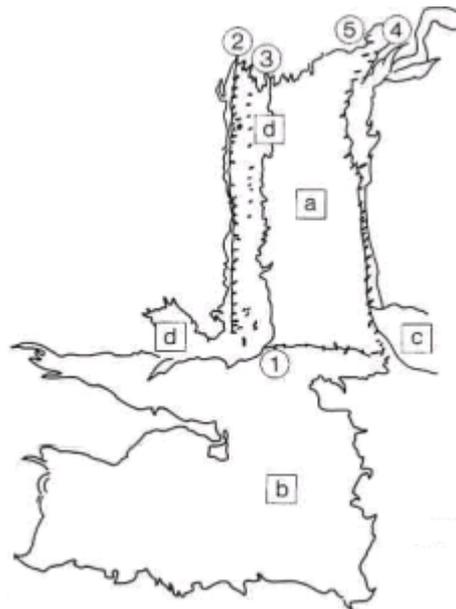
*Hägg 1984, p. 34*

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

Hägg 1984, 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.

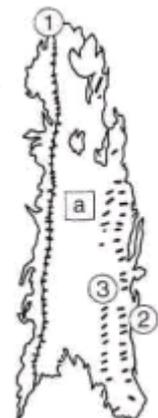
Hägg 1984, p. 34

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-Schuß (vgl. Fragmente 72 Ac-d). Teil a, Stoffstärke 0,1 cm.

Inga Hägg 1984, 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.

## **The settlement**

The Haithabu settlement and harbour have similar proportions of high quality weaves. However, remains from the settlement tend to be more worn and often show traces of being patched, unlike the garments from the harbour.

Unfortunately, the evidence for brækr 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 (Hägg 1991).

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, indicating 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.

## Skjoldehamn

In 1936 a body dressed in several garments and wrapped in a large woollen blanket was discovered in a bog on Andøya, Norway. It was dug up by a farmer, reburied in a different place, dug up again a few months later and sent to Tromsø museum. The textiles were first analysed by Gjessing (1938) and later by Løvliid (2009).

Based on the cut of the clothing, Gjessing (1938, p. 69-70) believed it to be from the late medieval period. However, the blanket has later been carbon dated twice; once in 1986, placing it in the period 1180-1280, and once in 2002, where it is dated to 936-1023 (Løvliid 2009, p. 21-22).

There is much uncertainty surrounding the gender and ethnicity of the person found at Skjoldehamn. Although the gender-specific parts of the skeleton are missing, Holck and Sellevold (paraphrased in Løvliid 2009, p. 20) both concluded that the slight build of the body made it unlikely that the person was a Norse man.

A DNA analysis carried out in 1999 by Arvidsson and Götherström (referenced in Løvliid 2009, p. 22) found neither a Y-chromosome nor the Sami-specific genetic marker. Based on this they suggested the body was probably a Norse woman. However, later developments in the field of genetics casts doubt on these conclusions. The lack of Y-chromosome could be explained by deterioration, and Sami identity is not only a matter of genetics (Götherström, quoted in Løvliid 2009, p. 22). There is several similarities also between the Skjoldehamn decoration and Sami clothing (Løvliid 2010).

The uncertainty surrounding the identity of the wearer, and the dating, means that the find must be treated with caution. However, even if it should represent Sami fashion instead of Norse, it tells us something about tailoring techniques that would have been observed by the Vikings.

### The Skjoldehamn 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 Løvliid a more thorough analysis indicate that the brók was made of lightly felted undyed white wool.



*Photograph: Løvliid 2009, 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.

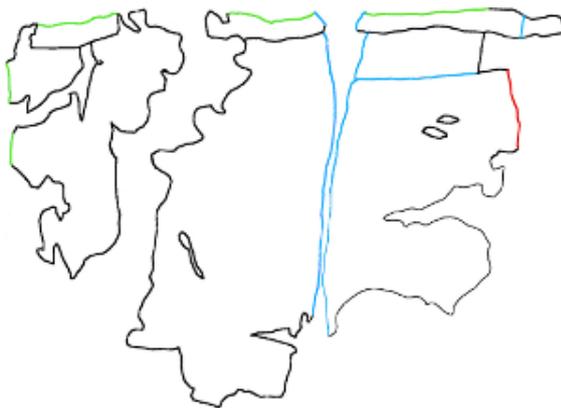
*Fragments as they would have looked if unfolded. Blue lines marks seams and green lines marks where the fabric has been folded. Illustration by Tor Gjerde and Hilde Thunem, based on a drawing by Løvlid 2009, p. 105-106*



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.

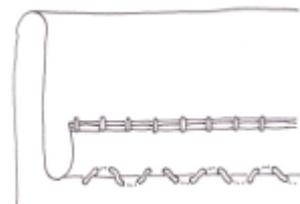
The largest of these fragments appears to consist of three (possibly four) separate pieces of fabric. Two pieces are connected by a side seam. One of them has then been lengthened at the top by one, or possibly two strips of fabric roughly 12-13 cm wide (the area is badly preserved and thus hard to interpret), 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. Illustration by Tor Gjerde and Hilde Thunem, based on drawings by Løvlid 2009, 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: Løvlid 2009, 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. Illustration by Tor Gjerde and Hilde Thunem, based on drawing by Løvlid 2009, p. 105*



## Mammen

In 1868 the burial mound Bjerringhøj, in Mammen in Denmark was dug up by farmers. The artifacts in the grave was shared among them, and only afterwards recovered by Feddersen (from the nearby Viborg Cathedral School) and sent to the National Museum of Denmark. The skeletal remains suggests that the grave contained one adult (possibly male) that was more than 30 years old, and one younger individual. The mound was re-excavated in 1986, and sufficient wooden remains was found allow dendrochronological dating of the burial to 970-971 AD (Rimstad et al. [2021](#), p. 736-737, 744).

The textiles were analysed by Hald ([1950](#)) and Østergård ([1991](#)). Due to the unprofessional excavation of the grave, there is no information about the precise position of the textiles, making it difficult to identify which garments the different fragments belonged to. Thus, for many years, there were no fragments identified as clearly part of a garment clothing the legs.

However, in 2020 the skeletal remains, which had gone missing in the museum storage was rediscovered and analysed by Rimstad et al. (2021).

The right shin bone (tibia) still had several textiles attached to it. Two rolls of woven cloth currently lie 8 cm from where the bone ends, and the ankle joint begins. One roll is 17 cm long, encircling the bone, while the other is only 4,5 cm. However, there was an additional roll fragment (11 cm long) found in the box that the bones had been stored in (Rimstad et al. 2021, p. 747).



*Photograph by Rimstad, in Mannering & Rimstad 2023, p. 52.*



The fabric rolls were made by folding a square of open-weave woollen tabby in half and rolling it into a cylindrical shape. The tabby had traces of blue colour pigments in the fibres, indicating that it originally was dyed blue (Rimstad et al. 2021, p. 747).

*Photograph by Fortuna, in Mannering & Rimstad 2023, p. 53.*

The other excavated textiles from Mammen included a 13,5 cm x 10 cm fragment of a similar open-weave tabby, also with traces of blue dye. The tabby is almost gauze-like, with 16 x 16 threads per cm (Østergård 1991 p. 128), and is of the same textile quality as the other fabric rolls (Mannering and Rimstad [2023](#), p. 52). Given the similarities between the

fragment and the fabric rolls found on the shin bone, it is believed to belong to a fabric roll that has been unrolled (Rimstad et al. 2021, p. 746-748).

In addition to the fabric rolls there were several fragments of a tablet-woven band with gold and silver pieces found in connection with the right shin bone. The band would have been fastened beneath the lowest of the fabric rolls (Rimstad et al. 2021, p. 748).

Beneath the lowest roll on the tibia is a small fragment of a tablet-woven band with gold and silver threads (...). More of the same tablet-woven band is located on a piece of dried human skin on the posterior of the tibia, and as two loose fragments, measuring 140 x 7 mm and 60 x 7 mm, respectively. The smaller piece retains the shape of a half circle from its original placement around the tibia. The tablet-woven band is made with two outer silk tablet warps, along with wefts of silk and silver threads, creating a geometrical pattern.

*Rimstad et al. 2021, p. 13.*



*The tablet-woven band from the right tibia. Photograph by R. Fortuna, National Museum of Denmark, in Rimstad et al. 2021, p. 14.*

Finally, there was a 5 cm x 2,5 cm fragment of woollen 2/1 twill attached to the bone 11 cm from the lower end. This fragment had small stitches with a two-ply yarn, identified by Rimstad et al. (2021 p. 747) as embroidery thread. They propose that this fragment belong to the same garment as some of the other embroidered fragments from the grave, possibly a tunic.

## Peripheral finds

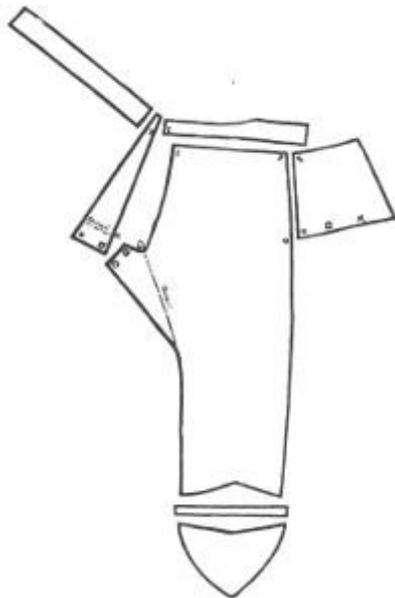
Most of the archaeological evidence for clothing from the Viking Age is fragmented and hard to interpret, and this is definitively the case for leg clothing. As the finds are so few, it may be useful to consider some of the well-preserved early Iron Age brækr found in Germany. Although not from the Viking Age, they can show us something about construction techniques and clothing development in the nearby periods.

### Thorsberg

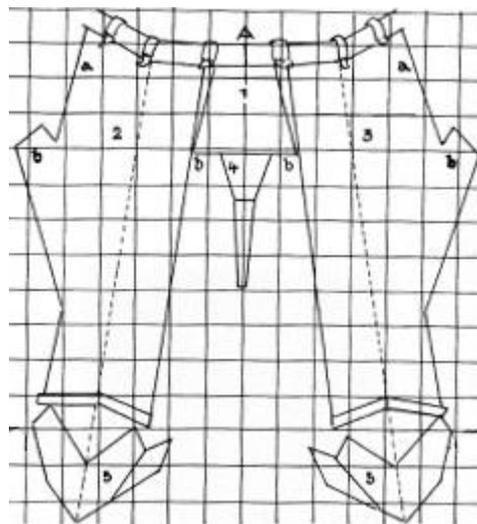
In 1860-1861, Conrad Engelhardt excavated the Thorsberg bog in northern Germany. In addition to weapons, ceramic vessels etc. a large amount of textiles were found, including fragments of two brækr. Many of the items had been broken, bent or otherwise rendered useless before being deposited in the bog, 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 Hald (1950) and Schlabow (1976). The latest analysis was made by Möller-Wiering (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 Hald (1950 p. 341)*



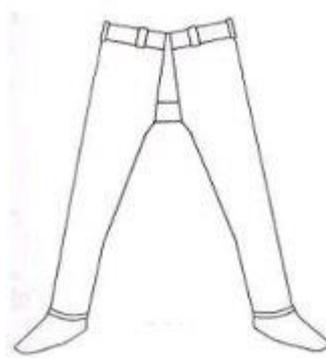
*Pattern from Schlabow (1976 fig. 165)*

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.

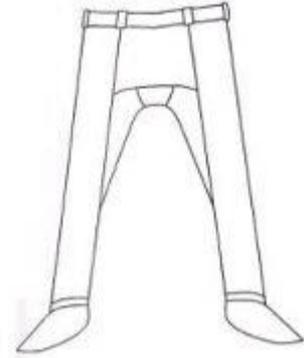
This confirms the rough pattern presented by Schlabow and Hald (although Hald misses one of the crotch pieces), but because of the way the brók is mounted, Möller-Wiering cannot give details as to exactly how the leg pieces are shaped.



*Photo by Hilde Thunem at Schleswig-Holsteinisches Landesmuseum*



*Front of brók Hägg (1984, p 31)*



*Back of brók*

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.

*Möller-Wiering 2011, p. 49*



*Photographs by Hilde Thunem at Schleswig-Holsteinisches Landesmuseum*

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.

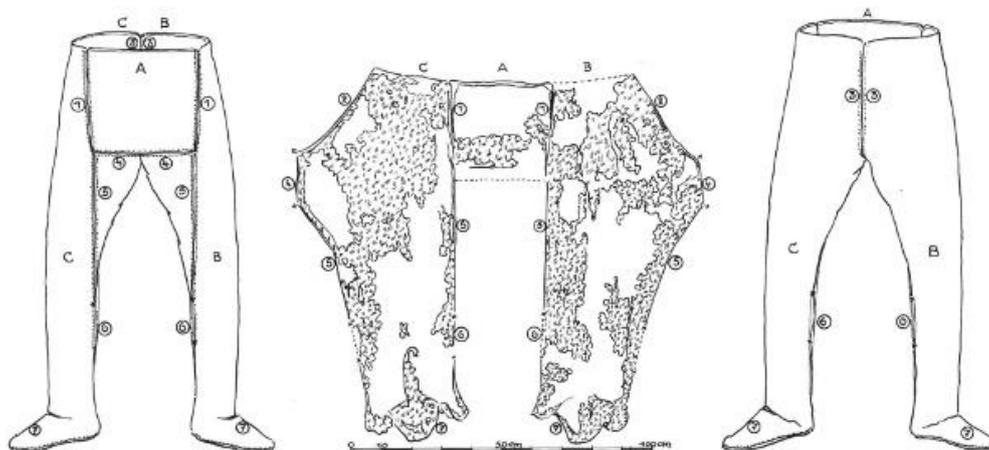
Schlabow believed these were used to tie the leg closed, while Möller-Wiering argues that if that were the case, the cloth in the immediate area around the cords should show wear from being pulled - which it doesn't. She poses that the cords are probably part of some decoration, although she admits that 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 Schlabow shows the stockings as a part of the same piece as the rest of each leg. However, 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.

*Möller-Wiering 2011, p 52-53*



*Illustration from Schlabow 1976, 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.

*Möller-Wiering 2011, 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 Schlabow (1976) and Möller-Wiering (2011). Both mention an earlier work by Mestorf in 1900. Möller-Wiering (2011) also refers to an analysis by Farke from 1994.

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.

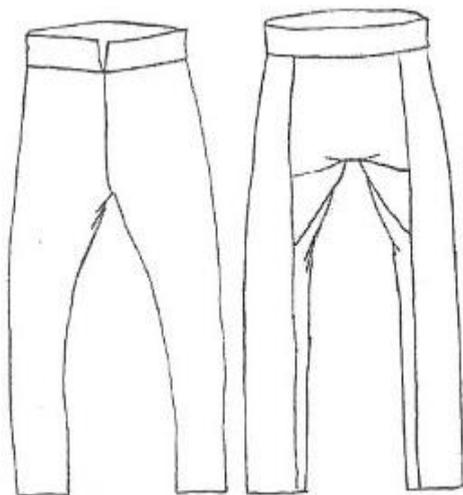
*Photo by Hilde Thunem at Schleswig-Holsteinisches Landesmuseum*



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 (2011), 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.

*Möller-Wiering 2011, p 114*



*Illustration from Lejre Forsøgscener: Sy dine egne Jernalderbukser*

Textile experts Anne Batzer and Lis Dokkedal at [Lejreforsøgscener](http://Lejreforsogscener.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.

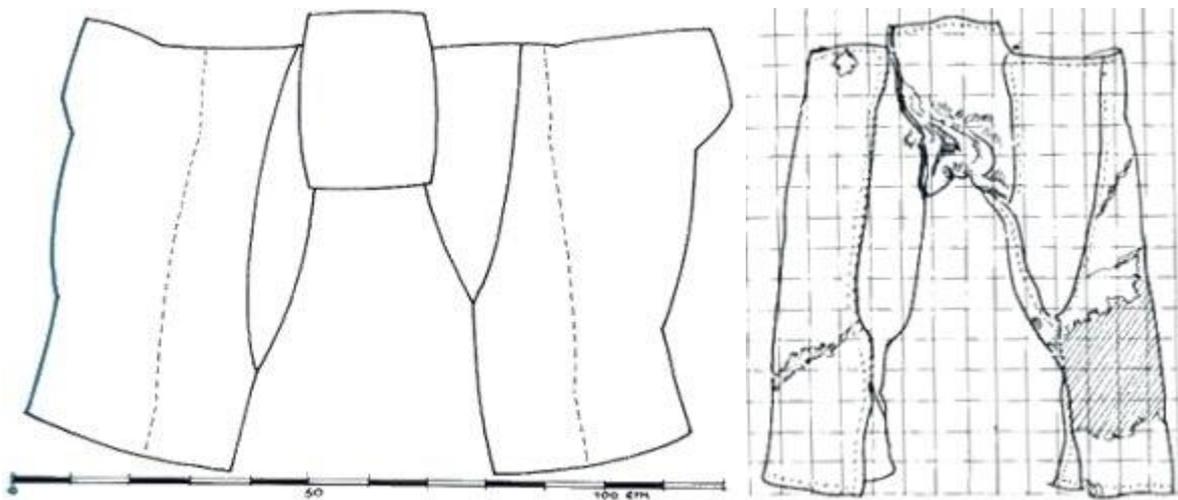
## Dätgen

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 Schlabow (1976), and is mentioned by Möller-Wiering (2011).

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.

*Möller-Wiering 2011, p 114*



*Schlabow 1976, 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.

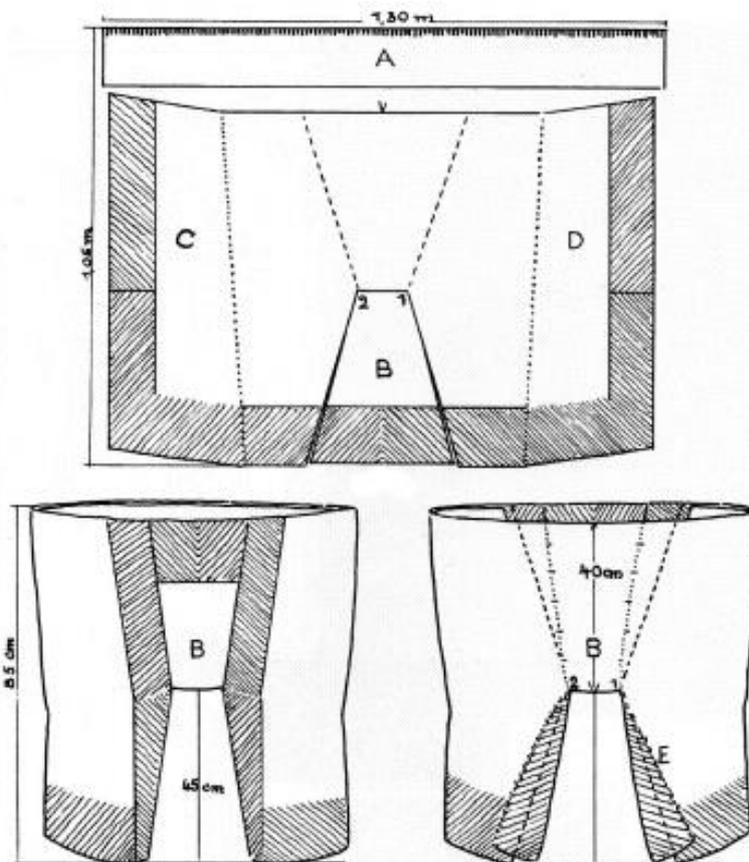
*Schlabow 1976, p 79*

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

Schlabow (1976) also analysed a brók found together with a bog body near Marx-Etzel. It is mentioned by Möller-Wiering (2011), 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).



*Schlabow 1976, 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.

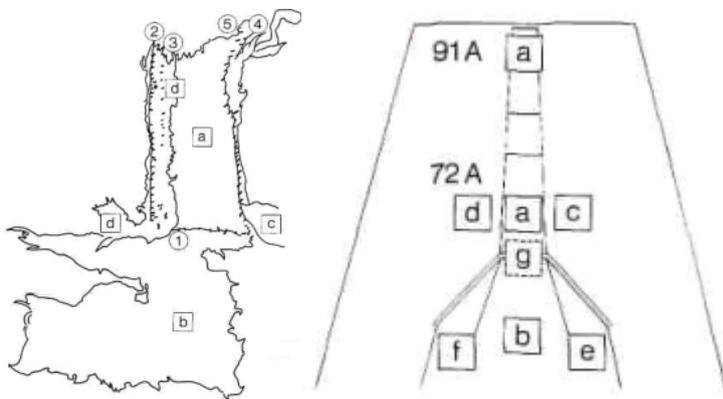
## Interpreting the facts

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 brækr, we need to combine it with other (and less reliable) sources, like poetry and illustrations, when attempting to reconstruct these garments.

### Shape of brækr

#### 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 Hägg (1984) 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.



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 Hägg 1984, p 32. Photograph by Hilde Thunem at Wikinger museum Haithabu*

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, Ewing ([2006](#)) notes that the use of an early Iron Age pattern fits well with the reference to "seat-gored brækr" (setgeira-brækr) in the Laxdæla saga.

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.

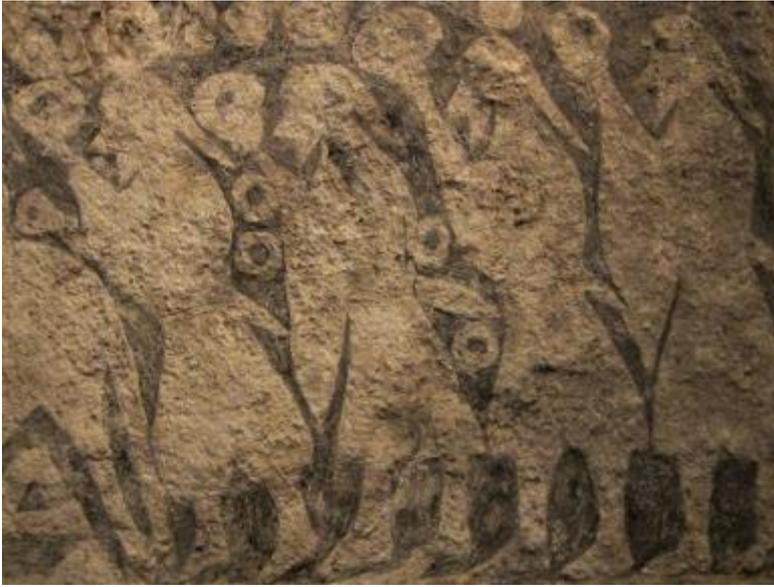
Out of a hundred cubits of fine linen, more-or-less, they sew trousers, which they put on tucking them up above the knee.

*Hudud al-'Alam, quoted by Ewing 2006, 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 Ewing (2006) 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 windings) each time they are put on.

With this in mind, Ewing (2006) 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, Ewing 2006, p 85

According to Hägg (1984) we do not have a probable Viking term for the wrinkled, baggy brók. 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-hábræk" 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, Ewing (2006) suggest that the hábræk 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.

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 hábræk 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).

While some people call the hábræk "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.

[Europa re-enactment association](#): Picture stone from Sockburn.

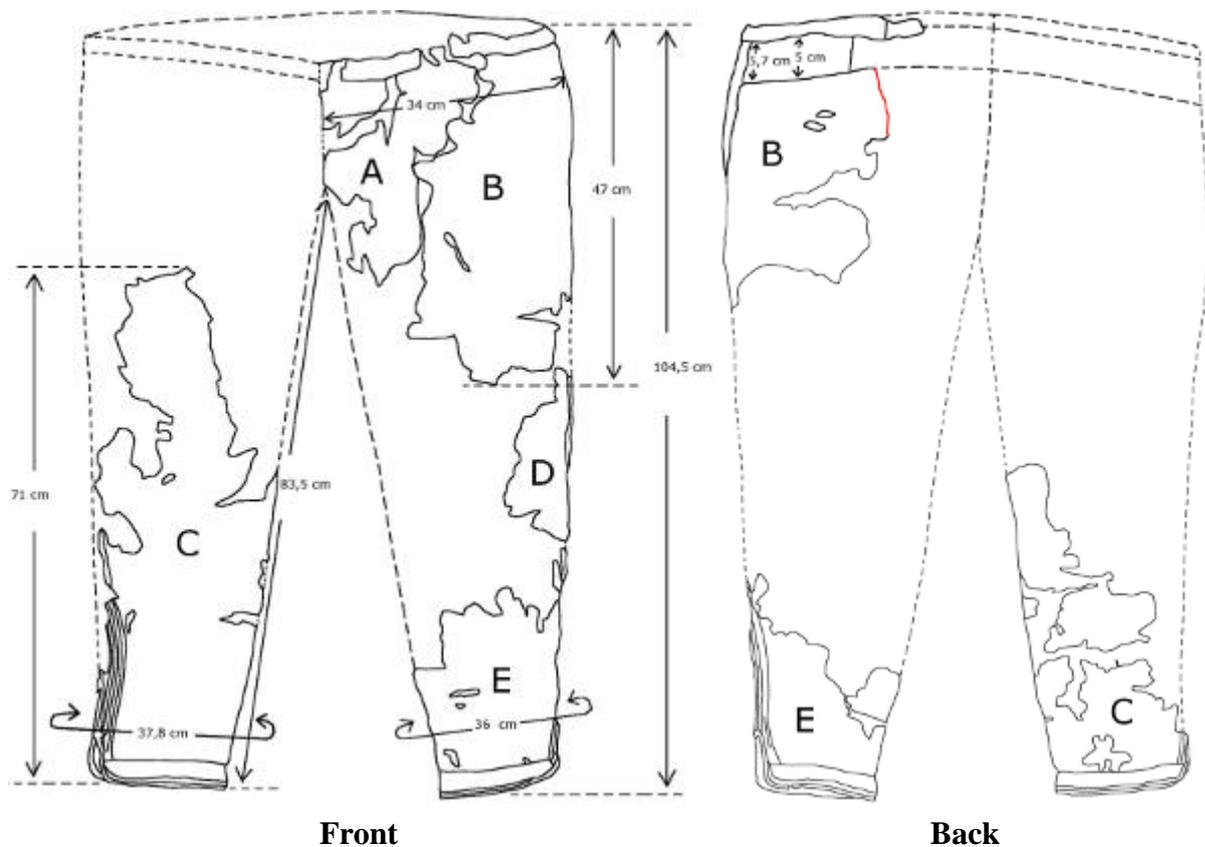


## Ökulbrækr ("Ankle breeches")

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 (1938) give no information 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.

*Skjoldehamn: Interpretation by Gjessing (1938)*



*Løvlid 2009, 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.

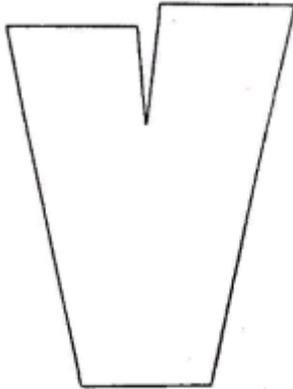
He places the two fragments with remains of a hem and drawstring channel (A and B in the illustration) on the left half of the brók. The long seam in fragment B becomes part of the side seam along the outside of the leg, and the strip of fabric lengthening a part of B runs along the back of the brók.

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 etter den måten buksebeina er klippet på ha vært avdelt på ett eller annet vis her.

*Gjessing 1938, p. 48*

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.

*Løvliid 2009, Gjessing's pattern p. 154*

*Skjoldehamn: Interpretation by Løvliid (2009)*

Løvliid (2009) is skeptical 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 Løvliid, 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 (1938, p. 48), 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 tøyestykkene har kunnet passes til hverandre i hele sin lengde på venstre side.

*Gjessing 1938, p. 48*

Løvliid 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, Løvliid 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 Løvliid 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, Løvliid 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.

#### *Skjoldehamn: Interpretation by Thunem (2014)*

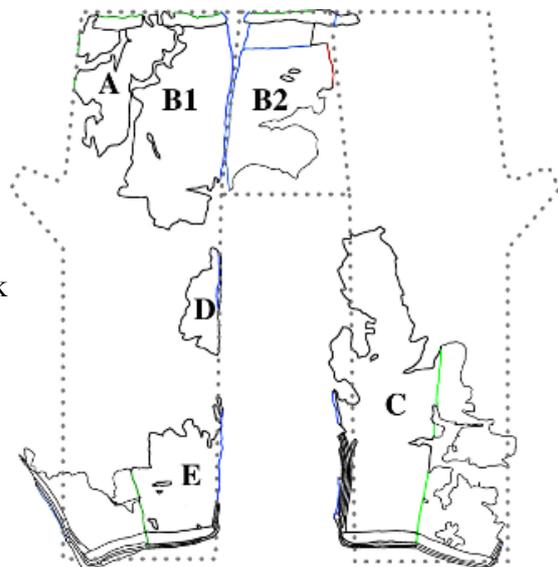
Using the detailed examination of the fragments done by Løvliid (2009) I believe that there is an interpretation that can fit the evidence.

The early Iron Age brækr 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 (Løvliid). In addition, the survival of the basic Iron Age 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 at the crotch. 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 Løvliid).

*Illustration by Tor Gjerde and Hilde Thunem*



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.

### *The find from Mammen*

The brók from [Mammen](#) is also likely to have ended at the ankle. The two fabric rolls and the tablet-woven band that were found attached to the right shin bone is interpreted as an ankle cuff. The construction is very similar to the two wrist cuffs that were found in the grave, except that in the case of the wrist cuffs, the fabric rolls were covered with silk cloth Rimstad et al. (2021 p. 749).



*The wrist cuffs from Mammen. Photograph by R. Fortuna, National Museum of Denmark, in Rimstad et al. 2021, p. 745.*

[The wrist cuffs] are complete, with no traces of stitch holes or attachments for a sleeve or other garment. The cuffs must therefore have been separate components that could be added to the outfit as required, but this was probably not the case with the ankle cuffs. The

outer fabric has not survived, neither are there any stitch holes in the wool rolls. We suggest, however, that the ankle cuffs must have been visible and sewn-on the lower part of the trousers legs. The placement of the rolls at the ankle further shows that the trousers must have been long, rather than knee- or three-quarter length. This is an important observation, as evidence for long trousers from this period is rare, aside from in iconographic sources (...).

*Rimstad et al. 2021, p. 749*

Rimstad et al. (2021 p. 749) suggests that the ankle cuff would have been fastened to the leg of a brækr. The fabric rolls around the shin bone is not sewn together, and thus may have had an opening at one place to allow the foot to easier pass through. As there is no other fragments that can clearly be identified as part of the brók, Mannering & Rimstad (2023 p. 45-47) turn to the Skjoldehamn find for a possible construction pattern, using a similar interpretation to the one I have suggested above.

There were no traces on the ankle cuffs of the brækr itself. Rimstad et al. (2021 p. 750) originally suggests that the brækr could have been made from a plant-fibre textile, such as flax or hemp, that may have deteriorated in the grave. However, when making a reconstruction in 2023, Mannering & Rimstad decide to use a wool tabby (based on one of the other fragments in the grave).

They further suggests that two silk rouleaus that were found in the grave may have decorated the back of the brækr leg (Mannering & Rimstad 2023, p. 51).

*Photo by Fortuna, Mannering & Rimstad 2023, p. 55*

The two identical and fully preserved rouleaus, measuring 16.2 x 3.0 cm, are made of two padded rows of a silk tabby, sewn together with a double layer of silk samite (table 5.7, fig. 5.25).

Through very small holes in the outer fabric, it is possible to see the padding fabric which is a quite coarse wool



tabby made in z-twisted yarn. No dye samples could be taken from this textile, but the greyish colour indicate that it could originally have been blue. As the preserved rouleaus are not attached to any other textile and no sewing stitches are visible, their original function is still unknown.

*Mannerling & Rimstad 2023, p. 51*

The fabric of the brækr and the use of silk rouleaus in this specific reconstruction is speculative. However, the brók fragments from Skjoldehamn and the ankle cuffs from the Mammen grave provide archaeological evidence for the existence of brækr that ended at the ankle. Furthermore, the grave goods and other textiles from the Mammen grave clearly indicate that this was a high-status individual.

#### *Other evidence for Ökulbrækr*

Lastly we have the possible brækr 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 brækr 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 brækr is the similarities they share with the weave and pattern of early Iron Age brækr.

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 (2006) 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 (2006) 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.

Ewing appears to be unaware of the Skjoldehamn find, or at least 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 detailed description of the fragments shows that it would at a minimum have been more complex than the simple pattern suggested by Gjessing (1938).

Thus, 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. It may have been of Sami origin, and thus not directly applicable when interpreting Viking fashion. However, this is not the case for the find from Mammen, in Denmark. Furthermore, although only the ankle cuffs remain, this would clearly have been a high-status garment.

The potential brækr-fragments found at Haithabu are also clearly high status, as shown both by the fine twill cloth, the complex cut and the fact that they were dyed. However, the identification of these fragments are uncertain, and none of them are from the lower part of the garment.

Lastly, the picture stones from Gotland show sailors carrying swords, signifying both wealth and status, along with their ökulbrækr.

In summary, there is evidence for the use of ankle-length brækr by the Vikings. The Skjoldehamn brók may provide the closest we have to a pattern, with all its uncertainties. The status of ökulbrækr is unknown, but the Mammen-find indicates that it 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, Mammen find or the hábrækr fragments from Haithabu), there is no way we can know.

While the archaeological evidence doesn't give any definitive answers, Ewing (2006) 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 correct 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. Hägg (2001, p. 29) 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 joint 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.

*Hägg 2001, 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.

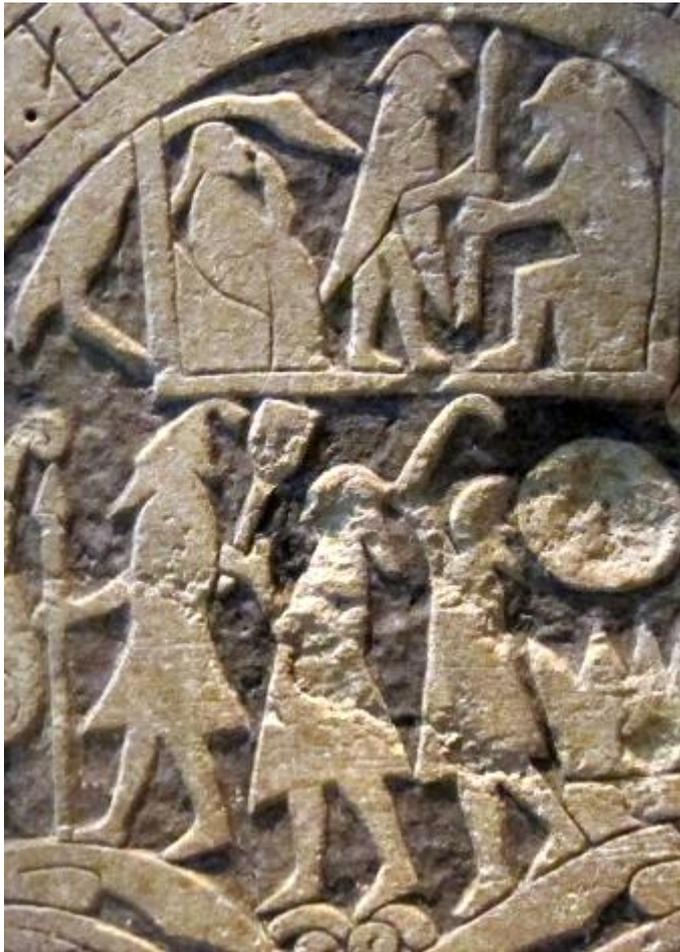
Flósi var í leistabrókum því að hann ætlaði að ganga. Vissi hann að þá mundi öðrum minna fyrir þykja að ganga. *Njáls saga, chapter 134 (original text with modern Icelandic orthography)*

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.



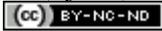
Picture stone from Sanda, Gotland



Picture stone from Lärbro, Tängelgårda, 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).

### Short brækr

The ankle length Skjoldehamn brók was worn together with short socks and ankle bands wound around the brók legs, an ensemble that would have covered the entire leg. As for the knee-length brók at Birka in grave 905, the fragments still remaining on the bronze hooks indicate they were worn with some kind of knee-length hose (or possibly leg windings).

However, at Haithabu there has been found fragments of a [hose](#) that would have reached above the knee. This 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 Ewing (2006 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.

*Photograph of silver crucifix by Yliali Asp SHM* 

Lacking other evidence, 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.



## 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.

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.

## 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 Skjoldehamn and Haithabu are made of wool. As for the Mammen find, the ankle cuffs were made of wool, but the fabric in the brækr itself is unknown, and may have been linen (Rimstad et al. 2021, p. 16). The only preserved 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.

Ewing (2006) notes 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. De Carolo Magno describes how the Franks were wearing *linen* brækr and hose, something that supports the use of linen in brækr sometimes. 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.

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 Age brækr? While all of the Haithabu brækr fragments were dyed, they were also made of finely woven fabric, indicating that they were high status garments. Likewise, the high-status individual buried at Mammen wore ankle cuffs where the inner core (that is the only surviving part of the fabric rolls) were made of woollen cloth that had been dyed blue.

According to Hägg (1984) 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.

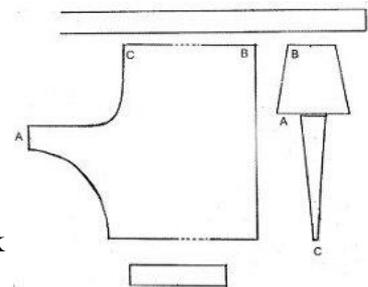
However, the most interesting set of brók fragments in terms of colour are [72 A-B and 91A](#). These appears to have been dyed in two separate colours: red on one side of the garment (believed to be the front) and yellow-green on the other side (believed to be the back of the brók). This must have created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

Although 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](#). Of course, given that the brækr fragments in this case amounts to tiny pieces on a metal ring, the lack of details is not surprising. Lastly, while there is some evidence for dyed brækr, 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.

## 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.

[Shelagh Lewins](#) has a pattern that use the pattern by Hald (1950) as a template, but cuts the waistband in one single piece instead of two that are sewn together. The pattern is complicated, but Lewins presents a detailed step-by-step set of instructions on how to fit the pattern to the prospective wearer. A slightly adjusted pattern with step-by-step instructions is presented by [Matthew Marino](#).

More about Viking Age hose and socks:  
<https://urd.priv.no/viking/hose.html>

More about Viking Age clothing:  
<https://urd.priv.no/viking/>

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