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# Clothes make the man : early medieval textiles from the Netherlands

Brandenburgh, C.R.

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# 7. Old Finds Rediscovered: Two Early Medieval Headdresses from the National Museum of Antiquities, Leiden, the Netherlands

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The two headdresses discussed in this article provide detailed information about the construction and sewing techniques used to make such items in the sixth to ninth centuries. The two garments show remarkable resemblance in decorative sewing techniques, which have also been documented in other high status burials around the North Sea. The widespread use of these techniques needs further attention for it may shed light on either the way craft knowledge spread across these countries or the way international trade networks allowed such items to be distributed.

## 7.1 INTRODUCTION

In the early years of the twentieth century, the National Museum of Antiquities in Leiden, the Netherlands, obtained several textile finds from early medieval settlements in the north of the country. Among these finds were two items of headwear: a pillbox cap from Leens, which dates to between 600 and 900, and a headdress from Dokkum–Berg Sion, which recently has been radiocarbon-dated to the period 568–651. The hat from Leens was put on display for a while, was recorded,[342] and afterward disappeared in the organic storage of the museum. The headdress from Dokkum–Berg Sion was never recognized as such and spent its days in the storage of the museum as well. Recently both artifacts were rediscovered and analyzed by the author.

Because no restoration had been conducted on the finds and no linings had been fixed in them, it was possible to analyze the objects in detail, from both the outside as well as the inside. Sewing techniques and the order in which the pieces were put together could be reconstructed and will be presented in this chapter. The results shed light on a range of questions concerning the production and use of the headdresses: How were they made? What techniques were used? How were they worn and by whom? And lastly, how can we relate these items to other finds from the sixth to ninth centuries?

### 7.1.1 The Frisians and their settlements in the northern coastal area of the Netherlands

The northern coastal area of the Netherlands has been inhabited since the early Iron Age, which in this region started around 750 BC. The lives of the people living on the marshlands near the coast were strongly influenced by the changing landscape. The rising sea level caused the water to flood the open land several times, depositing layers of clay. This made the land fertile, but also wet and unstable. People protected themselves against the water by building their settlements on raised mounds, known as *terpen* (singular terp) or *wierden*. Leens (province of Groningen) and Dokkum–Berg Sion (province of Friesland), where the headdresses were found, are examples of such raised settlements. The area became densely populated from the fifth century. The inhabitants-generally known as Friezen or Frisians-were mainly farmers who worked the land and kept livestock. Craftspeople were present as well: evidence for the production of bone, metal, amber, and glass artifacts, as well as textiles and pottery, is found in many settlements. Written sources mention the existence of a large Frisian kingdom, which is probably not a correct description of the way society was organized. It is more likely that the area was divided into several smaller territories, led by local leaders, who were in turn affiliated with one or more strong kings. Many prestigious objects from the area indicate that a part of society was indeed well off.[343] From the eighth century, the political power of the Frisians diminished. Frankish troops conquered the ruling Frisian kings, and the area was slowly Christianized. Still, the economic position of the Frisians was by no means lost. They are known in written sources for their activities in trade, and from the eighth century, they became part of an international trade network.[344] Many rich finds from the eighth to tenth centuries indicate that the area was still wealthy.

### 7.1.2 Archaeological research in the terpen-area

Archaeological research in the area of the *terpen* has known a long history, starting at the end of the nineteenth century. The soil of the *terpen* that had accumulated for centuries had become a valuable fertilizer, and therefore groups of diggers methodically dug away large parts of the mounds. These commercial excavations uncovered many artifacts, which drew the attention of local historians. By the beginning of the twentieth century, a broad network had developed of people monitoring the commercial excavations. These local historians could not conduct systematic research, but their efforts nevertheless produced a vast collection of artifacts, photographs, and documentation.

342. The hat is mentioned in Bender Jørgensen 1992, 220, cat. NL IV:3 s.

343. Knol e.a. 2005, 187–92.

344. Lebecq 1983.

Meanwhile, archaeologists and historians had recognized the rich history of the area and started to conduct research into the *terpen* and their inhabitants. A key figure in the research of the area was Professor Albert van Giffen. Van Giffen started his career in the north of the country, but was employed by the National Museum of Antiquities in Leiden from 1911 to 1916. In 1916 he started working for the Groninger Museum in Groningen. Throughout his career Van Giffen visited the excavations several times, documenting sections and collecting artifacts. In later years he conducted the first systematic archaeological excavations in the *terpen*. Many of the diggers had an eye for antiquities as well; they often collected archaeological finds and offered them to museums. Most finds came into the possession of the museums in the north of the country, but from 1911 to 1916, during Van Giffen's tenure, the National Museum of Antiquities in Leiden also started to collect artifacts from the northern provinces. As a result the museum now has a considerable collection of early medieval textiles from Dokkum–Berg Sion[345] and several other settlements in the provinces of Friesland and Groningen.

Many of the finds from the *terpen* are poorly dated. This reflects the way the objects were unearthed. Laborers generally excavated sections out of a mound, digging straight from the top down. This meant that they might collect objects dating from a span of more than a thousand years in a single day, making it difficult nowadays to affix a narrow date to the objects.

## 7.2 EXCAVATIONS AND HABITATION OF THE SETTLEMENT IN LEENS

The western Tuinster *wierde* near Leens was one of the first mounds to be excavated in detail by Van Giffen. During the commercial excavations in 1925 a section through the *terp* was documented, followed by a second section in 1926 and a third in 1930.[346] On these occasions only Carolingian artifacts were found. The central part of the *terp* was excavated in 1938 by Van Giffen. The three-meter-high mound was excavated in seven different levels, during which the remains of several houses and many artifacts were found. The chronology of houses and finds gives evidence of continuous habitation from 600 to 900.[347]

The hat from Leens was presented to the National Museum of Antiquities in Leiden in December 1930. However, it is unlikely that the hat was found by Van Giffen during his work on the site in that year. At that time Van Giffen was employed by the Groninger Museum, which logically would have received his finds rather than the National Museum in Leiden. Presumably the hat was found by laborers and sold to the museum in Leiden. This makes it difficult to assign a specific date to the object based on stratigraphy or associated finds. Without radiocarbon dating, the hat can only be assigned to the period 600 to 900, which is the entire period of habitation of the settlement.

## 7.3 THE PILLBOX CAP FROM LEENS

The hat from Leens (fig. 7.1) is very well preserved. It has not undergone restorations, and it was stored on a specially constructed base. Most of the hem has disappeared, but the hat is complete enough to reconstruct all of its measurements and characteristics. The hat is a so-called pillbox cap with a circumference of 51 centimeters. It is made from wool and consists of an oval crown and a more or less rectangular side panel. The hat is damaged but shows no traces of contemporary repair.

### 7.3.1 Fabric

The fabric used for the crown is a Z/S broken diamond twill with 13–14 warp threads per centimeter and 11–13 weft threads per centimeter. The warp is irregularly spun (low-to-medium twist) and 0.5–0.75 millimeter thick. The weft is low-to-medium twist and 0.5 millimeter thick. The broken diamond twill is irregularly woven. Many faults in the pattern are visible, showing some variation in the pattern repeat. In most cases the diamond pattern repeats after 12 weft threads and 18 warp threads.

345. 121 fragments of 77 individual weaves.
346. Van Giffen 1928–31, 23 and fig. 13.
347. Van Giffen 1935–40, 26–115; Knol 1993.

Fig. 7.1 Pillbox cap from Leens, Netherlands, ca. 600–900. Photo: National Museum of Antiquities, Leiden, Netherlands. For measurements, see fig. 7.2.

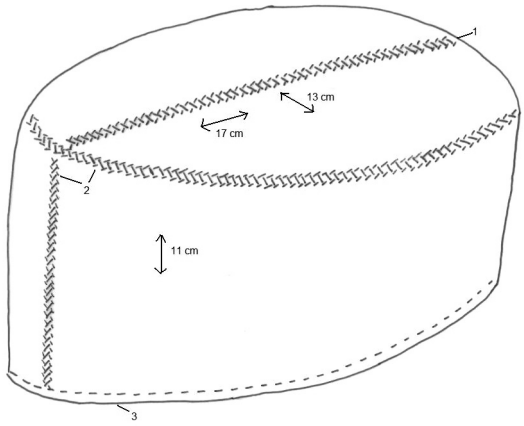


Fig. 7.2 Reconstruction drawing of the pillbox cap from Leens. Drawing: C. Brandenburgh.

The side panel is made out of a similar fabric, also a Z/S broken diamond twill with 12–13 warp and weft threads per centimeter. There are, however, small differences compared with the fabric used for the crown. The weft threads are more regularly spun: medium twist and 0.5–0.75 millimeter thick. Moreover, no faults are visible in the diamond pattern: the pattern repeat of 12 weft and 18 warp threads is consistent throughout the fabric. Nevertheless, both fabrics may be parts of the same original piece of cloth, since warp, fineness, and pattern repeat are consistent. The differences observed may be the result of inattentiveness of the weaver and the use of different batches of weft threads.

### 7.3.2 Construction

The construction of the hat (figs. 7.2 and 7.3) and the order in which the different parts of the hat were sewn could be analysed in detail because of the lack of modern interference and because the item was sufficiently flexible to be turned inside out during analysis.

The oval crown of the hat was made out of two similarly shaped halves stitched together. It seems that the oval edges of these two parts were first secured to prevent the pieces from fraying. These edges (8 millimetres when finished) were folded double and secured with a row of blanket stitches 4–5 millimetres long. After this the straight edges of the two halves were folded into each other and secured on the inside with blanket stitches 6–7 millimetres long, not visible from the outside (fig. 2.3, seam 1). The sewing thread used to secure all the seam allowances of the crown is a single Z-twisted thread, 0.5 millimetre thick. On the outside, the two parts of the crown were sewn using a decorative raised plait stitch (fig. 7.3, seam 1 and A) resembling a braid 3–4 millimetres wide. The stitch length here is 5–7 millimetres. The sewing thread used is a 2SZ medium-plied thread, 0.5–0.75 millimetre thick.

After this, the edges of the side panel were secured to prevent them from fraying. As with the crown, the edges (8 millimetres when finished) were folded double and secured with blanket stitches

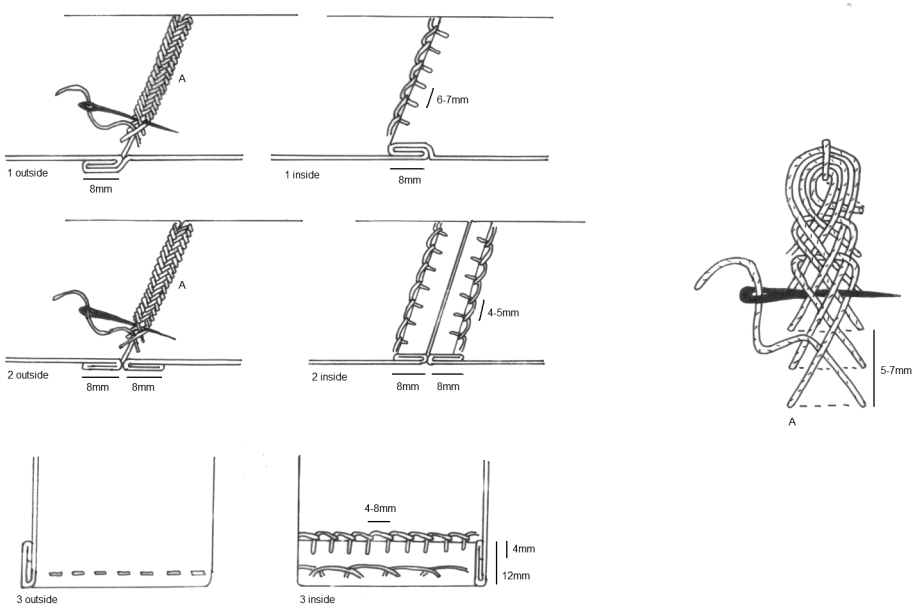


Fig. 7.3 Seams and stitching used in the pillbox cap from Leens. Drawing: C. Brandenburgh.

4–5 millimetres long (fig. 7.3, seam 2). The hem of the hat seems to have been sewn at this point as well, because the same sewing thread was used. To create the hem, the lower edge of the side panel was folded double and attached on the inside with blanket stitches 4–8 millimetres long (fig. 7.3, seam 3). The hem was furthermore stitched through with a row of running stitches, 4 millimetres from the edge. The sewing thread for all these edges as well as for the running stitch on the hem has the same characteristics as the thread used in the decorative stitch in the crown (2SZ thread, 0.5–0.75 millimetre thick, with a low twist and tightly plied).

Lastly, the side panel was closed (fig. 7.3, seam 2) and the upper edge of the side panel was attached to the crown, both with the same decorative stitch as used on the crown (stitch length 5–6 millimetres). The sewing thread for these seams is a 2ZS[348] medium-plied thread, 0.75 millimetre thick.

### 7.3.3 Colors

No dye analysis has been conducted on the fabric and the sewing thread. The thread used to stitch through the hem seems to be of a lighter color than the weave.

## 7.4 THE RESEARCH AND HABITATION OF DOKKUM-BERG SION

In the early twentieth century, the *terp* of Dokkum–Berg Sion was partly excavated by laborers. Professor Van Giffen visited the excavation several times. In 1909 he supervised documentation of a large section through the *terp*, which covers an area of about six thousand square meters.[349] This section uncovered the remains of several houses with sod walls. On the southern side of the mound a cemetery

348. 2SZ indicates a two-ply thread, consisting of two S-spun threads twisted together in Z direction.

349. Van Giffen 1910, 278 and plate V.

was found with 18 to 28 graves, both cremations and inhumations.[350] Van Giffen documented another section in 1925.[351] In 1928 the *terp* was completely excavated.

Finds from the *terp* give evidence of habitation starting in the Roman period. The settlement and cemetery documented by Van Giffen are most probably of Merovingian origin. The excavated houses, however, are of a type that continued to be constructed until the thirteenth century. During the later periods of the Middle Ages, a chapel of St. Mary and several other new buildings arose on the *terp,* housing a group of nuns who were allied to the nearby abbey of Dokkum. These buildings were demolished in 1580.[352]

The headdress from Dokkum–Berg Sion was offered to the National Museum of Antiquities in November 1913, together with a large quantity of other textiles. A month later the museum received another large group of textiles. Unfortunately these finds cannot be related to one of the excavations of Van Giffen, but were most probably found by laborers. The headdress has recently been radiocarbon-dated to the late sixth century or the first half of the seventh.[353] It is not certain whether the other textiles from Dokkum–Berg Sion are of the same date, but since they were stuck together in clay when offered to the museum, it is likely that they had been found near or on top of each other.

Fig. 7.4 Headdress from Dokkum–Berg Sion, dated to 568–651. Photo: National Museum of Antiquities, Leiden, Netherlands.

## 7.5 THE HEADDRESS FROM DOKKUM-BERG SION

The headdress from Dokkum–Berg Sion (fig. 7.4) is made out of one main panel with two side panels. The item is rather poorly preserved. Large parts of the main panel and the side panels have disappeared. This poor state of preservation poses problems in defining the shape of the headdress. Stitch holes in the main panel clearly show where the side panels were attached and where not, but this still leaves ample room for different reconstructions and hypotheses about the way in which the headdress may have been worn.

### 7.5.1 Fabric

The fabric used for the entire headdress is a Z/S broken diamond twill with 12–16 warp threads per centimetre and 11 weft threads per centimetre. The warp is regularly spun (medium-to-high twist) and 0.5–0.75 millimetre thick. The weft is low-to-medium twist and 0.75 millimetre thick. Both warp and weft are spun from naturally brown wool. The broken diamond twill is densely and regularly woven. The diamond pattern repeats after every 22 warp threads and 18 weft threads.

350. Van Giffen 1911.
351. Van Giffen, 1928-1931, 20–22 and afb. 3.
352. Ufkes & Schoneveld 1998, 13.
353. GrA-43945; 1445 ± 30 BP. Radiocarbon dating measures the age of organic objects in radiocarbon years before present (BP). Such raw ages need to be calibrated to give calendar dates, because the level of atmospheric 14C has not been strictly constant during the span of time that can be radiocarbon-dated. The reliability of this calibration is statistically defined as 1σ (68%) or 2σ (about 95.5%). When calibrating with a reliability of 1σ (68%), the hat dates between AD 599–644; when calibrating with a reliability of 2σ (about 95.5%), the hat can be dated between AD 568–651.

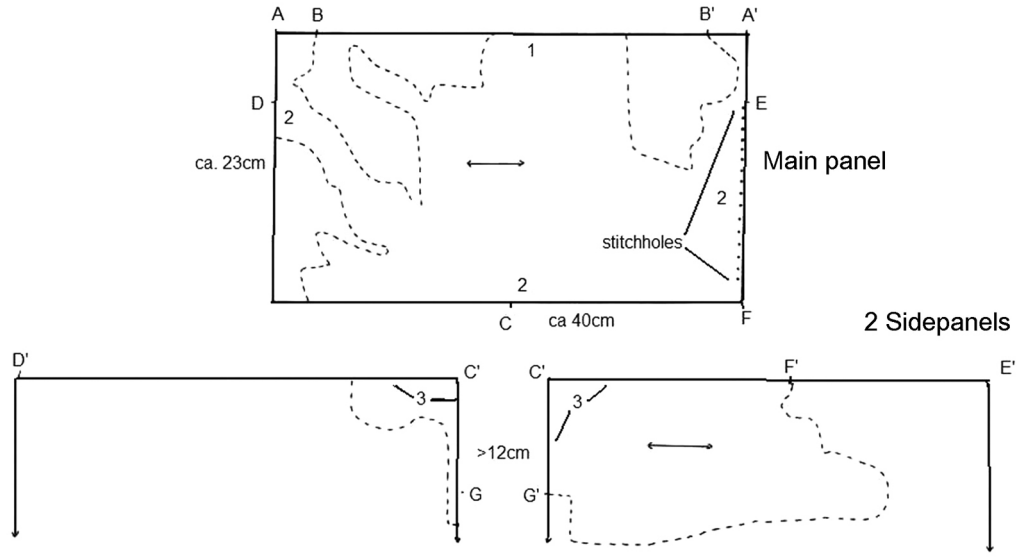


Fig. 7.5 Reconstruction drawing of the headdress from Dokkum–Berg Sion. Dotted lines indicate the actual remains. Drawing: C. Brandenburgh.

### 7.5.2 Construction

The headdress was made out of three rectangular pieces of fabric (fig. 7.5). The main panel measures approximately 40 x 23 centimetres. Although the side panels are poorly preserved, the stitch holes on the main panel suggest that the side panels would have measured about 40 centimetres. The width of the side panels could not be ascertained. The remaining width is 12 centimetres, but the original width was evidently larger since the hem is missing.

The edges (6 millimetres when finished) of the two short sides and one long side of the main panel were folded double and secured with blanket stitches 3–4 millimetres long, using a 2ZS sewing thread, 0.5 millimetre thick, with high twist and ply (fig. 7.6, seam 2). The other long side of this panel—the edge that would remain free, not joined to the side panels—was treated differently. This edge (10 millimetres when finished) was folded once and secured with a row of whip stitches 9 millimetres long, which are visible on the outside as well (fig. 7.6, seam 1). The sewing thread here is a Z-twisted double thread. Subsequently, the main panel was folded in half and sewn partly together into an open tube (fig. 7.6, seam A-B) using whip stitches in the same sewing thread. This seam is very badly preserved, leaving only 3 centimetres of stitching (3 stitches), which makes it impossible to reconstruct how long the seam originally was.

The edges (10 millimetres when finished) of the side panels were folded double and secured with a decorative stitch with a length of 4–5 millimetres (fig. 7.6, seam 3). The sewing thread here is a 2ZS thread, 0.75 millimetre thick, with low twist and medium ply. This thread is differently spun and plied from the one used to secure the edges of the main panel.

The side panels were joined together end-to-end and sewn onto the main panel using the same decorative stitch used in the hat found in Leens (fig. 7.6, seam C-D). The stitching resulted in a braid of 2.5 millimeters in width, with a stitch length of 6–7 millimeters. The sewing thread used is a 2ZS light-brown, medium-plied thread, 0.75 millimeter thick.

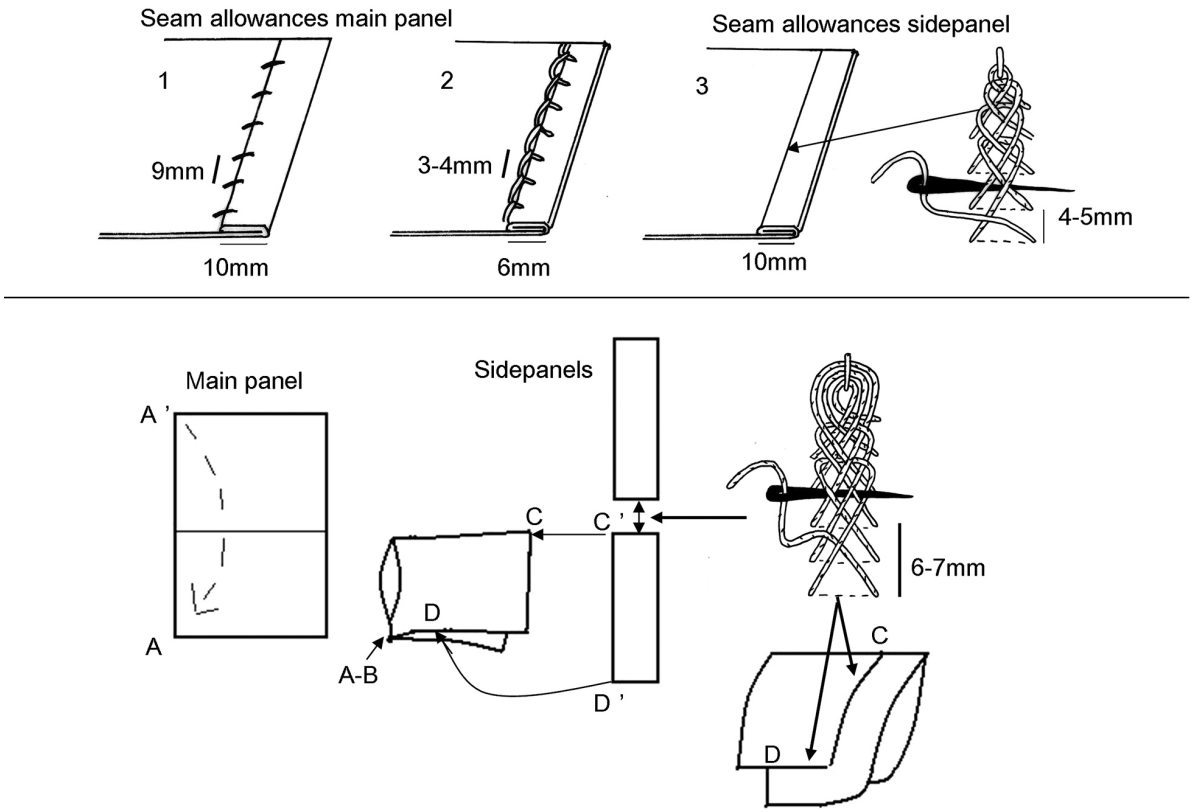


Fig. 7.6 Seams and stitching used in the headdress from Dokkum–Berg Sion. Drawing: C. Brandenburgh.

### 7.5.3 Colors

Dye analysis of the fabric and decorative stitching was conducted by Penelope Walton Rogers of the Anglo-Saxon Laboratory.[354] The headdress, which was originally of brown wool, was dyed with a tannin-based brown or black colorant. Tannins are widely distributed in nature, especially in material from trees, and it is not always possible to recognize tannins deliberately applied as dye. In this case, however, the colorant was detected in the main fabric of the hat but not in the needlework, which suggests that the tannins were present in a dye applied to give a solid black to the already naturally dark color of the fabric. The sewing thread was probably not dyed, and this decorative band would have contrasted with the dark fabric.

### 7.5.4 Ways to wear the headdress

When one attempts to construct a replica of the Dokkum–Berg Sion headdress, the result is a somewhat strange but also practical article, which could have been worn in different ways. The decorative stitching on the seams attaching the side panels to the main panel is clearly in contrast to the rather rough whip stitching on the other edge of the main panel. This suggests that the lavishly sewn seams were visible when wearing the headdress, and the other edge was perhaps partly out of sight. When one wears the decorative bands in the front, the other side falls at the back and is partly covered by the hair, which can be drawn into a plait or ponytail and placed through the tube formed by the main panel. Figure 7.7 shows three of the possible ways in which the headdress may have been worn. Furthermore, the decorative stitching used to secure the seam

354. Walton Rogers 2009

Fig. 7.7 Reconstruction of three different ways the headdress from Dokkum–Berg Sion may have been worn. Photos: A. Tamboer and G. Harteveld.

allowances on the inside of the side panels suggests that this edge may also have been visible while wearing the headdress. The third image in figure 7.7 shows the headdress with the edges folded back and the decorative stitching in contrasting thread clearly visible. A headdress of this kind is both decorative and practical since it would have enabled the wearer to protect his or her hair while working or cooking above a fire.

## 7.6 HISTORICAL CONTEXT

Several aspects relating to the hat from Leens and the headdress from Dokkum–Berg Sion need to be further elaborated. These concern these artifacts' wearers, their manufacturers, and their place within the existing knowledge of headgear in this period. Following the reconstruction presented above, it seems likely that the headdress from Dokkum–Berg Sion was worn by a woman or at least a person with long hair. The hat from Leens, however, is not so easily assigned to a specific person or gender. The following discussion of the development of European headgear throughout prehistory and the early Middle Ages offers clues as to how these items were worn and who may have worn them.

Archaeological finds and contemporary art give an impression of the developments in hats and headdresses throughout history. Several hats, caps, and hairnets have been found on bog bodies from the Bronze Age and Iron Age.[355] More evidence is available for the Roman period. John-Peter Wild, in his study of representation of clothing on tombstones in the northern provinces of the Roman empire, concluded that the hoods on capes were the most commonly used headgear for men in this period.[356] In some cases other headdresses have been observed.[357]

Roman soldiers frequently wore pillbox-shaped Pannonian hats (*pileus pannonicus*). In pictorial evidence these hats are depicted with a either a

355. The earliest find of headgear in the Netherlands is a fur cap found on a male body from the bog of Emmer-Erfscheidenveen (ca. thirteenth century BC). Groenman-Van Waateringe 1990; Comis 2003. In Denmark, hairnets and woolen caps made in sprang technique are the form of headdress most often found in female graves. Danish burials also show that conical woolen hats with piled, furry surfaces were customary among men during the Bronze Age. Iron Age male bog bodies were found wearing tight-fitting leather caps. Broholm & Hald 1939, 60–62 and fig. 11; Hald 1980.

356. Wild 1968a, 186.

357. Several types of hats known in the Roman period, such as the tight-fitting conical hat, the wide-brimmed Petasos, and the Phrygian hat, are not further elaborated here since they are not relevant to discussion of the Dutch hats.

smooth or a rough surface, suggesting they could be variously made of leather, felt, or a woven fabric.[358] A very well-preserved example of this type of hat has been found in Egypt, at the site Mons Claudianus.[359] This hat, which can be dated to the years 100 to 120, was made out of felt, dyed green. Its oval crown measured 19.5 x 13 centimetres, making it only slightly larger than the example from Leens. In late Roman art these hats are worn high on the head, covering only part of the hair.[360] At Mons Claudianus another example of a nearly complete Roman hat has been found, featuring a round crown, earmuffs, and neck protector. This hat was very colorful. It was sewn out of 15 triangular pieces of red, green, and yellow fabric.[361]

Women in the Roman provinces are sometimes depicted wearing a closely fitting bonnet which covers the hair completely. A woman from Neumagen is represented wearing such a bonnet, and a female statue from Ingelheim shows the same type of headgear, covering braids of hair and a bun at the neck. Wild concluded from the way the headdresses are depicted that they must have been made from a very light material, suggesting a gauze-like weave or a hairnet covering the bonnet.[362] Veils were in use in this period as well, hanging loose or attached with a fillet. Several funerary reliefs show women in matron's attire. It is not certain whether the deceased actually wore these clothes, but the effigies all clearly depict a specific type of headgear. The matronal bonnet is very high and large, covering two plaits. This bonnet is held in place by a net of cords.[363]

A sandstone head found in the Roman fort of Birrens in Dumfries, Scotland, shows a headdress different from the ones described above. The sculpture is considered of Roman date, although a medieval origin was originally also debated.[364] The headdress closely fits the head, while the front edge is folded back, showing a bit of hair. The side flaps beside the head are folded outward, giving the impression of a Dutch bonnet. Several incised lines are visible across the headdress that might be interpreted as stitching (possibly decorative) or seams. The side flaps as well as the incised lines show a resemblance to the headdress found in Dokkum–Berg Sion.

Only very few examples of headgear from the fifth to sixth centuries are known, and evidence from art is sparse as well. Remains of veils are recognized in several Anglo-Saxon graves. Several Byzantine mosaics at Ravenna (fifth to sixth centuries) depict women wearing veils and coifs.[365] One of the female heads on the scepter from the Sutton Hoo ship burial shows a woman with parted hair drawn away from the face.[366] The (probably male) figure on the Spong Hill pot lid wears a pillbox cap at the back of the head, comparable to the way this type of hat was worn in Roman times.[367]

Archaeological and pictorial evidence from the seventh to ninth centuries is more abundant. The Netherlands have yielded several hats and headdresses from this period. Besides the two headdresses described above, four others have been found, as has been discussed in section 6.4.[368] These are the hat from Leens, which dates to the period 600 to 900 (fig. 6.12);[369] The cap of Rasquert, which may be dated to the period 800 to 900 (fig. 6.14);[370] a hat Aalsum from the period 700 to 900 (fig. 6.11)[371] and hat from Oostrum, dated to the period 700 to 900 as well (fig. 6.2).[372]

358. Walton Rogers 2007, 209, fig. 5.58.
359. Mannering 2006, 153–54 and fig. 2.
360. Sumner 2009, 163.
361. Mannering 2006, 155–56 and fig. 6.
362. Wild 1968a, 199, fig. 20.
363. Ibidem 211.
364. Toynbee 1952, 63–65 and plate IX.
365. Walton Rogers 2007, 162–63.
366. Owen-Crocker 2004, 78, fig. 57.
367. Walton Rogers 2007, 209, fig. 5.58; Owen-Crocker 2004, 20, fig. 3; also discussion at 79.
368. A detailed publication on these four hats is being prepared by Hanna Zimmerman.
369. Groninger Museum, Groningen, Netherlands, object no. GM1939/IV:13/1.
370. Groninger Museum, Groningen, Netherlands, object no. GM1928/VIII:1.
371. Fries Museum, Leeuwarden, Netherlands, object no. 33-373. It must be stressed, however, that this date may not be correct, since it is based not on radiocarbon but on associated finds.
372. Fries Museum, Leeuwarden, Netherlands, object no. 35B-48. As with the hat from Aalsum, this date may not be correct, since it is based not on radiocarbon but on associated finds.

This last hat was sewn with great care, using the same decorative stitch as the pillbox cap from Leens and the headdress from Dokkum–Berg Sion (fig. 6.13). This decorative stitch was probably of a deeper red color, making it a contrasting and attractive decoration.

There are few contemporary finds of male or female hats or headdresses from elsewhere in Europe, which is remarkable since pictorial evidence shows that it became customary for women and girls to cover their heads after the conversion to Christianity. Historical sources suggest that in the seventh century, the hair on the forehead was still visible, but from the eighth century onward, female hair was covered completely by a headdress.[373] In Leens, several fragments of a textile that might have been used for such headdresses have been found: known as *Schleiergewebe,* this is a very fine and open tabby, woven out of naturally white wool. Comparable weaves have been found in England,[374] Germany,[375] and Denmark.[376]

In Toornwerd (province of Drenthe), remains have been found of a netlike hair-covering made in a loose tabby weave from plied horsehair with a wool repp starting border.[377] This fragment, however, cannot be assigned to a specific period in the early Middle Ages.

Tenth- to eleventh-century art depicts women with covered heads and necks, with either a veil or a shawl wrapped around the head and neck. A coif or fillet is also depicted in combination with a veil. Archaeological finds indicate that Viking women in Britain frequently covered their heads. In York, remains of three silk caps have been found. These Viking-age caps resemble coifs with seams on the outside.[378] Comparable silk finds are known from Lincoln and London.[379]

In Dublin, the remains of 13 headdresses made out of wool or silk have been found, as well as the remains of 14 rectangular scarves with fringes. These scarves may have been used as headdresses as well.[380]

Lastly, there are the excavations in Greenland, where several pillbox caps have been found dating from the twelfth to fifteenth centuries. These hats were found in graves of men and boys.[381]

Given the evidence from the Roman period and Middle Ages, the pillbox cap from Leens fits well in a long tradition. The hat is comparable to the Pannonian cap known in the Roman period. The fifth-century Spong Hill pot lid probably shows a similar hat as well, and even in the twelfth to fifteenth centuries, this type of hat was frequently worn by men and boys in Greenland. Nowadays the hat from Leens (51 centimetres in circumference) could only be worn by a boy, but sizes may have been smaller in antiquity.[382] If worn at the back of the head as in Roman times it may have fit a small man's head. Furthermore, the Leens hat is only slightly smaller than the one found in Mons Claudianus, which is most certainly a military context, making it likely that both hats were worn by grown men.

The headdress of Dokkum–Berg Sion seems more likely to have been worn by a woman. No distinct parallels are known so far, but the headdress bears resemblance to several headdresses mentioned above. When worn with the side flaps folded back, there is some resemblance to the stone head from Dumfries, Scotland. Tied closely around the head, as in the first example in figure 7.7, the headdress looks quite similar to a coif, which may have been worn independently or under a veil.

373. Owen-Crocker 2004, 159.
374. Walton Rogers 2007, 68.
375. Settlement of Hessens; see Tidow 1995, 367.
376. Mammen; see Hald 1980, 102–11 and fig. 97.
377. Bender Jørgensen 1992, 47 (fig. 57), 221.
378. Walton 1989, 360–67; Walton Rogers 2007, 165.
379. Pritchard 1982, 196–97.
380. Wincott Heckett, 44–75.
381. Østergård 2004, 132, 219–20.
382. Carol van Driel-Murray has pointed out that in the Roman period in the Netherlands and Germany, shoe sizes were smaller than nowadays. Sizes for most adult men varied from 37–40 (UK sizes 4–6½). Larger shoes up to size 43 (UK 9) have been found as well. Van Driel-Murray 2007, 360.

## 7.7 COLORS AND DECORATIVE STITCHES: A SIGN OF WEALTH?

Although very different in size and shape, the artifacts from Leens and Dokkum–Berg Sion share a distinctive decorative stitching. This same stitch appears in the hat from Oostrum.

Somewhat simpler versions of this stitch have also been documented on a pillow cover from the ship burial of Sutton Hoo (Mound 1) in Suffolk, in York, and on a presumed cushion from the tenth-century princely burial at Mammen in Denmark.[383] Dye analysis of the hat from Oostrum and the headdress of Dokkum–Berg Sion has made it clear that the decorative bands were sewn in contrasting dyed threads, making them stand out clearly from the fabric. No dye analysis has been done on the hat from Leens, but the sewing thread used in the hem of this hat is even nowadays of a lighter color than the fabric, making it likely that this hat was sewn with contrasting dyed thread as well.

Hats and headdresses seem often to have been dyed. As mentioned above, the pillbox cap from Mons Claudianus was dyed green, and the hat with crown and earmuffs from this same site was made out of pieces of red, green, and yellow fabric.[384] The Roman bonnet of the Neumagen sculpture is painted in yellow, and the lines of the hairnet covering the bonnet are painted red.[385] The lines on the sandstone head from Dumfries, Scotland, may be interpreted as seams that were clearly visible as well. This effect may have been obtained by using differently colored threads or decorative stitching, making the seam stand out against the texture of the fabric as in the headdress from Dokkum–Berg Sion and the hat from Oostrum. Several of the Viking Age caps were colorful as well: traces of madder and lichen purple have been found, suggesting a rich use of dyestuffs.

The stitching present on the Dutch headdresses must clearly have been a popular way to sew and embellish garments. A reconstruction project of both artifacts has shown that it is a quick-to-learn and useful sewing technique, but also rather time-consuming. Seven hours were necessary to sew the headdress from Dokkum–Berg Sion, whereas with simpler needlework it would have taken less than half that time. The Dutch items that were dyed and sewn using this technique were clearly superior in quality compared with the majority of the textiles found in the *terpen* region. Therefore they are probably an indicator of wealth or status. The high-status burials in Sutton Hoo and Mammen fit this interpretation, suggesting that decorative needlework must have belonged to the higher spheres of society. However, one should not forget that many textiles found in the Dutch *terpen* probably functioned as household textiles, which did not need to be embellished and are inevitably of lower quality. However, the fact that three out of the six (known) headdresses in the Netherlands are sewn with the same decorative stitch may also be considered as a sign of standardization in making these objects. Because of this standardized and time-consuming production process, these headdresses might have been made by specialized craftspeople working in textile workshops.[386] It is clear that the similarities of the needlework on the various finds in the North Sea region reflect the intensive contact within this area. Did these contacts merely cause this popular sewing technique to spread in the region, or did they enhance trade in ready-made garments as well? With the data now available these questions can unfortunately not be answered.

## 7.8 CONCLUSION

The two headdresses discussed in this article provide detailed information about the construction and sewing techniques used to make such items in the sixth to ninth centuries. The hats were carefully sewn using small and often decorative stitches. Although the shape of the two items is very different, there are similarities in the way they have been constructed. In both cases the edges of the separate panels were first hemmed to prevent fraying, and after this the

383. Hald 1980, 110, fig. 296, shows the raised fishbone stitch observed in the Mammen textile. In this case the stitch loops through the fabric twice, while in the Dutch examples the loop goes behind the braid but not through the fabric; Crowfoot 1983, 420–22; Coatsworth 2005, 6 and 14.
384. Mannering 2006, 155–56.
385. Wild 1968a, 220; Wild 1968b, 69.
386. Brandenburgh 2010a, 75.

panels were sewn together. Both headdresses showed decorative stitching in contrasting-colored thread, making the seams stand out against the fabric. This specific stitch has also been observed on another Dutch hat from this period as well as on textiles from the burials in Sutton Hoo and Mammen.

The pillbox cap from Leens was most probably worn by a man. The hat fits in a long tradition which goes back to at least the Roman period, where a similar hat style has been named the "Pannonian cap" by archaeologists. Finds from Greenland show that this type of hat stayed in use far into the Middle Ages. The headdress from Dokkum–Berg Sion probably belonged to a woman and may have been worn in any of several ways. The decorative stitching on the inside of the side panels suggests that these panels were folded outward, but the headdress could also be tied closely around the head. When worn that way, the headdress resembles a coif, which may have been worn under a veil.

Pictorial and archaeological evidence shows that hats and headdresses were often colorful. This is certainly true for the headdress from Dokkum–Berg Sion, which was dyed and sewn with contrasting-colored thread. Furthermore, the decorative stitching is of a quality not often found in the archaeological record. Since this specific stitch was also found in rich burials of Sutton Hoo and Mammen, it is likely that the colorful hats sewn in this technique were considered of superior quality by their owners as well. The similarities of these high-quality items, found in different countries around the North Sea, underlines the intensive contacts in this region. These contacts may have enabled specific sewing techniques to spread throughout the North Sea region. It is, however, also possible that the items themselves travelled, as opposed to the techniques to make them. This would imply an international trade of finished garments in the North Sea region.