

North European Textile Production and Trade in the 1st Millenium AD

– A Research Project

by LISE BENDER JØRGENSEN

Owing to the fact that an outstanding collection of prehistoric textiles has been preserved in the country, Danish archaeology has a long tradition of textile studies. At the National Museum in Copenhagen are preserved no less than seven complete costumes of the Early Bronze Age – something no other European museum can rival. In addition many Iron Age garments have been found in bogs, giving altogether an unequalled wealth of these highly perishable and therefore very rare objects. They are not only the best possible show-pieces, but also are an important source of information on prehistoric weaving and textile production.

The prehistoric costumes found in Denmark have been thoroughly published. No less than three volumes of the series *Nordiske Fortidsminder* are largely devoted to the description and evaluation of textiles (Broholm and Hald 1935, 1939; Hald 1950). The important textile collections of Sweden, Norway, and north Germany are in the same position (Geijer 1938, Hougen 1935, Schlabow 1976). Nevertheless our knowledge of the overall development of prehistoric cloth production and trade has been rather limited. The Egtved, Huldremose or Thorsbjerg costumes, to name only a few of the most famous, are beautiful and important pieces, but their value as archaeological sources is limited so long as we cannot relate them to the normal textiles of the time

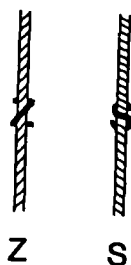


Fig. 1. S- and Z-spinning.



Fig. 2. The Huldremose peplos. National Museum photo.

and area. This defect is illustrated by the small importance attributed to textiles and textile production in most archaeological survey works. One often finds pictures of the complete garments used to illustrate how the people of the period looked, but that is usually all in spite of the fact that textile production must have been one of the most important industries of any pre-historic society.

In an attempt to supply the missing background material, the present author some ten years ago started to catalogue the many often very small textile remains that can be found encrusted on metal artefacts from inhumation graves. These pieces rarely give any information on the style of dress, but reveal much about the weaving technique, spinning, the number of threads per cm (i.e. the quality), and sometimes of borders and selvages of the fabrics. These tiny fragments have two major advantages – there are plenty of them, and they can usually be very closely dated as they are found in direct contact with brooches and other easily datable artefacts. By using this material, it has been possible to build up a textile chronology that in the Danish material extends from the Early Bronze Age to the Viking Age or from soon after 2000 BC to AD 1000, with only one badly illuminated area – the Late Bronze Age/Pre-Roman Iron Age, i.e. the 1st Millennium BC, when cremation graves predominated so that only a few textiles remain. All of the 1st Millennium AD, however, is solidly documented, and this material has recently been enlarged with a substantial comparative material from Sweden, Norway, Great Britain, Ireland, the Netherlands and North West Germany, so that the present paper is based on no less than 2000 grave finds from Northern Europe (1).

This large and well-dated material gives new possibilities of defining cloth types and studying their development and distribution, and in some cases even of outlining an early cloth trade. In the following pages a short summary of the main results will be presented.

During the Early Iron Age, i.e. the Pre-Roman and Early Roman Iron Age, two main cloth types can be distinguished in Northern Europe:

1) A Scandinavian type, called the *Huldremose type*, characterized by plain 2/2 twills of a medium quality (10–14 threads/cm) and the use of *S-spun yarn* in both warp and weft (cf. fig. 1). These fabrics never show any evidence of the use of the warp-weighted loom, as there

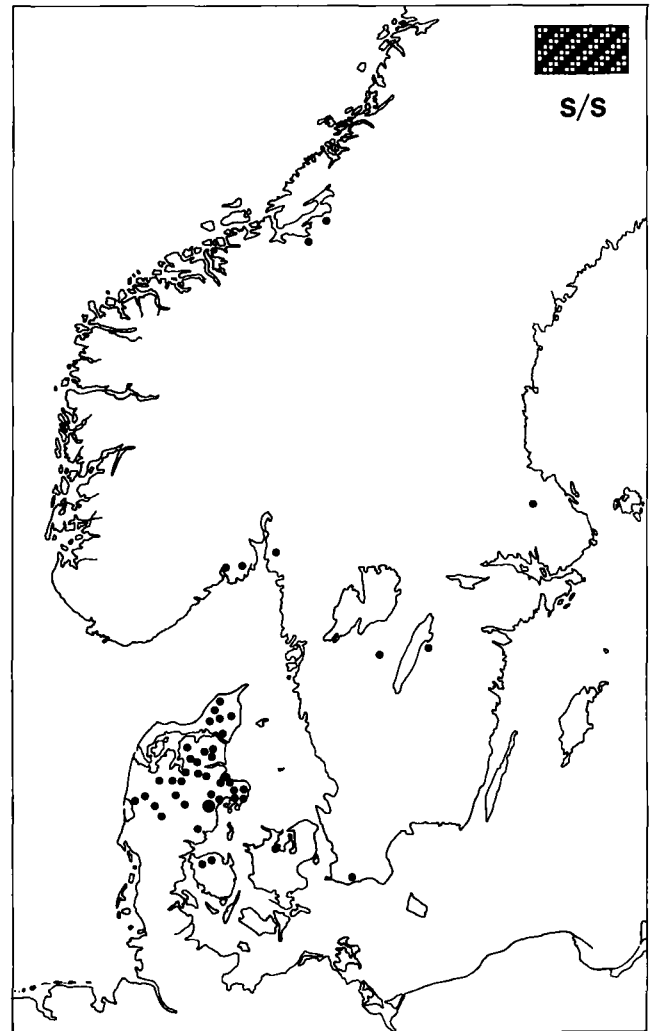


Fig. 3. Distribution map of the Huldremose type during the period 500 BC – AD 200.

are no starting borders, and furthermore no loom weights have been found in the many houses of the period excavated in Denmark – despite the very favourable conditions offered by some of the houses excavated by G. Hatt (1938). As some of the well-preserved garments belonging to this type (e.g. the Huldremose *peplos*, fig. 2) furthermore show definite evidence of the use of a *tubular loom*, we may conclude that this loom was in general use in Scandinavia during the Pre-Roman and Early Roman Periods, while the warp-weighted loom was unknown in this area (Hoffmann 1964).

2) A North German/South Jutish type, the *Haraldskjær type*, characterized by the same weave and quality as the Huldremose type, but with *Z-spun yarn* in both warp and



Fig. 4. Textile fragment of the Huldremose type from Borremose with warp-lock. Vesthimmerlands Museum photo.

weft (cf. fig. 1). Specimens of this type have starting borders, and as there are many finds of loom weights in the area (e.g. at the settlement Feddersen Wierde) we may argue that the Haraldskjær type was produced on a warp-weighted loom.

Thus two different textile traditions, or textile technologies, can be observed in Northern Europe during the period from 500 BC to AD 200 – the border between them running roughly between the Danish towns Vejle and Varde (compare figs. 3 and 5). This border is also observable in Pre-Roman Period pottery (Becker 1961, p. 249ff), and during the Early Roman Period the boundary between the predominance of inhumation graves and cremation graves runs approximately along the same line. A number of other differences can also be observed (see e.g. Hedeager & Kristiansen 1981).

During the late part of the Early Roman Period the Haraldskjær type was spreading northwards, and from the beginning of the Late Roman Period it had spread to all of Scandinavia, while the Huldremose type had disappeared. To this corresponds the sudden occurrence of loom weights in Late Roman Period settle-

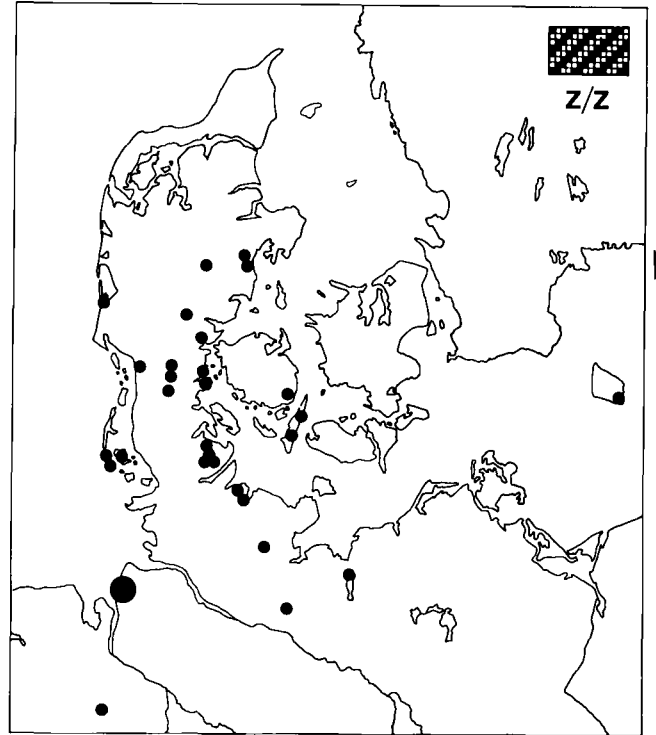


Fig. 5. Distribution map of the Haraldskjær type during the period 500 BC – AD 100.

ments, even if the house remains are more poorly preserved than those of the earlier period. We may conclude that a kind of technical revolution must have taken place, with the warp-weighted loom replacing the tubular loom in Scandinavia. After AD 170–180, S/S-spun fabrics are only seen as very rare exceptions in Scandinavian finds.

In addition to these two cloth types, both of which must be considered as local production, two or three other cloth types can be observed.

One of these, the *Virring type*, is characterized by either 2/2 twill or the twill variants herringbone or diamond twill, by generally being of higher quality than the two local types (i.e. 14–20 threads/cm), and by the use of mixed spinning, i.e. Z-spun warp and S-spun weft (fig. 7). Furthermore, these fabrics often have starting borders, which is evidence of the use of the warp-weighted loom.

Virring type fabrics show up in Scandinavia from phase 1 of the Early Roman Period, always in rich, sometimes even princely graves, and occur together with Roman imports like bronze or glass. They occur

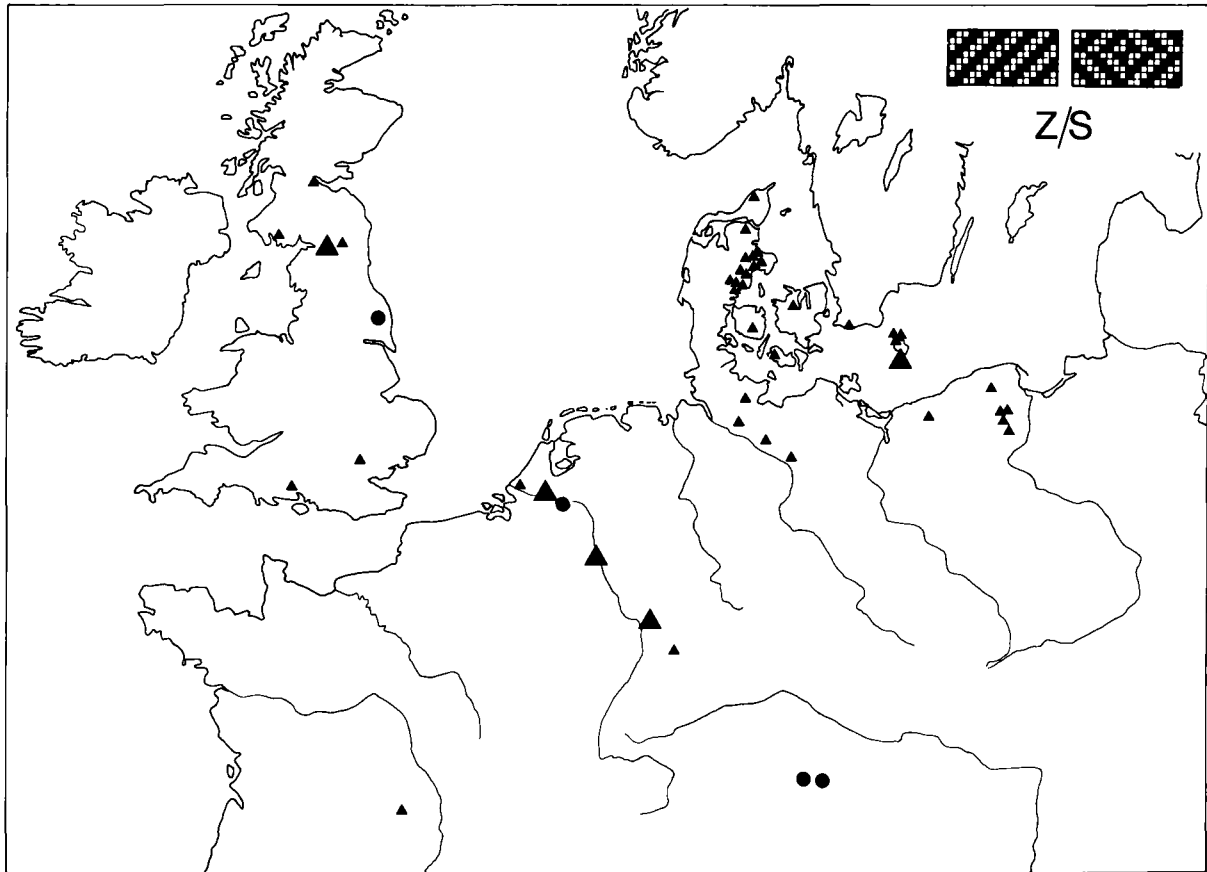


Fig. 6. Distribution map of the Virring type. Point: Hallstatt/La Tène. Triangle: Roman Period.

first in eastern Denmark, Zealand, Funen and East Jutland, then on the island of Bornholm, in Scania and Lolland and after the beginning of the Late Roman Period they are known in all of Scandinavia. This means that these fabrics, which are clearly produced on a warp-weighted loom, are found first in the area of the Huldremose type, i.e. where it was just argued that the tubular loom was used, a thing which emphasises their foreign character. Furthermore, they disappear totally from Scandinavia after the end of the Roman period and are unknown in the 5th and 6th Centuries AD.

Outside Scandinavia, fabrics closely corresponding to the Virring type are found along the Roman frontier, in Germany, the Netherlands and Britain, and also in several finds from behind the frontier, e.g. in a grave near Clermont-Ferrand in France (fig. 6). Moreover a small group of finds seems to show that corresponding fabrics can be traced back into the Hallstatt and La Tène Periods, suggesting that this cloth type may origi-

nally have been Celtic (2). It is well known both from contemporary sources and from more recent research that the Gallic cloth industry was well developed at the time of the Roman conquest, and that the Romans soon started to use the products of the Gallic weavers (3).

It is therefore tempting to argue that the fabrics of Virring type were produced in the former Celtic, Northern Roman Provinces, and when found in Scandinavian graves may be considered Roman imports along with the terra sigillata, glass, and bronzes which also to a great extent were produced in the Northern Provinces. This interpretation is emphasized by the fact that this type continues in the former Roman provinces during the 5th, 6th, 7th, 8th and 9th Centuries, while, as said, they disappear from Scandinavia during the Migration Period, only returning in very limited quantities in the 7th–10th Centuries.

Another cloth type found in Scandinavia during the Late Roman Period is characterized by the use of spin

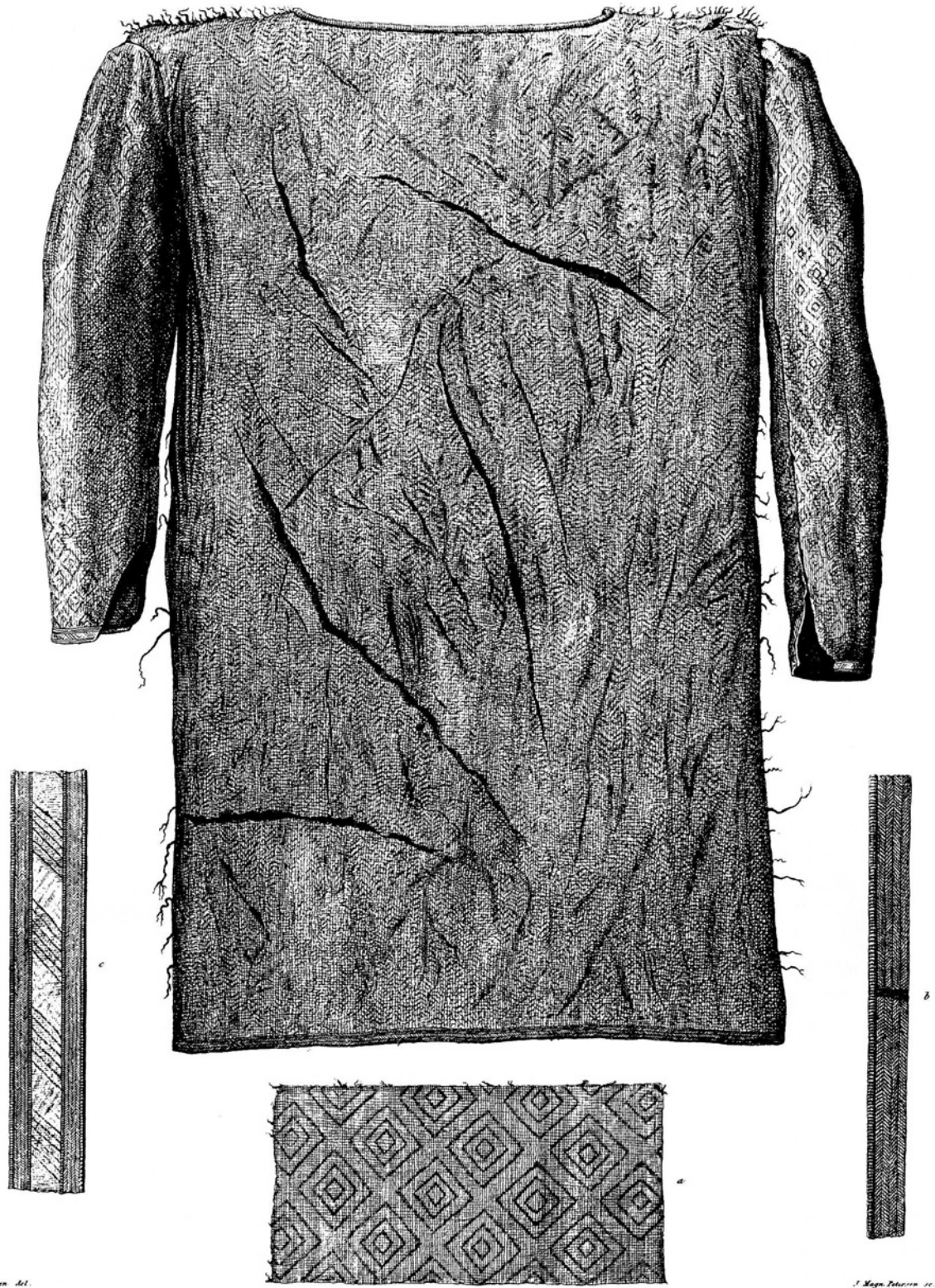


Fig. 7. The Thorsbjerg tunic, a sample of the Verring type (after Engelhardt 1863 Pl. 1).

patterns, i.e. patterns obtained solely by the use of differently spun yarn. The most common variety is called *dog's tooth twill* (fig. 8), and show a distinct West Scandinavian distribution (fig. 9). The origin of this type cannot at the present stage of research be safely determined – arguments can be adduced both for a local and for a foreign origin. So long as virtually no comparative material from this period (3rd and 4th Centuries) is known outside Scandinavia, especially in NW Europe, any interpretation is hazardous. Like the Virring type, the dog's tooth twills disappear from Scandinavia after the end of the Roman Period.

During the Early Iron Age, we can thus distinguish 3 main areas each with their characteristic cloth types: Scandinavia, South Jutland/North Germany (The Jastorf Culture), and Central Europe (Hallstatt/La Tene, later the Northern Roman provinces). Some of these cloth types can be followed into the Late Iron Age, i.e. the Migration/Merovingian Periods.

During the Migration Period (here used of the 5th/6th Centuries, or Early Germanic Iron Age) virtually only one cloth type is found in the Scandinavian graves, namely the Haraldskjær type, which constitutes almost 90% of all textiles of this period. Only from the beginning of the Late Germanic, or Merovingian, or Vendel Period, do other cloth types show up in Scandinavia.

In the former Northern Roman Provinces, which soon were transformed into the Frankish Kingdom, a series of cloth types are found, some of these going back into the Roman, or as argued above, even into the Celtic Period. Five main cloth types can be listed: 1) Plain Z/Z-spun tabbies, often in linen, which are found all over the area and which as a type had existed since the Hallstatt Period. – 2) Spin patterned tabbies, which also often have been shown to be linen. These fabrics are mainly found within the borders of present-day Germany. There are only a few finds from the eastern Netherlands, and they are seemingly rare in North Germany as well. No finds from the present DDR have been published, so no border can be drawn to the east. This type seems to be new in the Migration Period. – 3) Fabrics of a type called *Rippenköper*, established by H.J. Hundt in a number of Alamannic graves and only very rarely found north of the river Main (fig. 11). Also this type is new in the Migration Period. 4) Plain Z/Z-spun twills like those of the Scandinavian Haraldskjær type, but usually a little coarser, with a count of 8–10 threads/cm. This type, like type 1), is found all over the Frankish

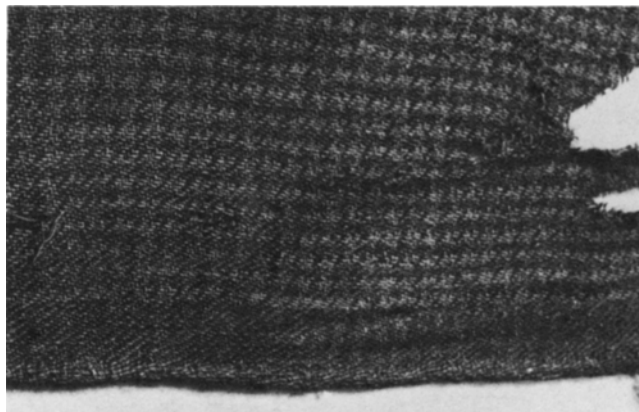


Fig. 8. Dog's tooth twill from Donbæk, North Jutland. National Museum photo.



Fig. 9. Distribution map of dog's tooth twill.

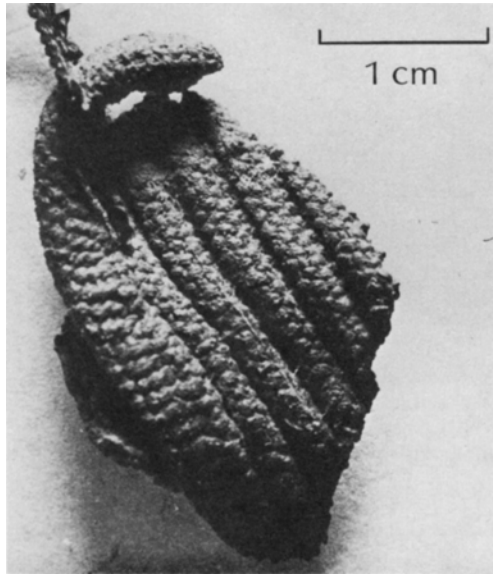


Fig. 10. Rippenköper from Bækkegård, Bornholm. LBJ photo.

area and likewise goes back to the Roman and Celtic periods. – 5) Z/S-spun diamond twills with the pattern unit 20/18, closely corresponding to the Verring type of the Roman Period. This type is found all over the Frankish area, and in the big settlements along the coast (like Hessens & Elisenhof) this type usually constitutes the most common cloth type. It is also found in southern England, while northern England, like Scandinavia, mostly favoured simple Z/Z-spun twills of the Haraldskjær type. The Verring type (or Hessens/Elisenhof type as it may be called in this late context) is found in 3 general qualities: a coarse one of around 10 threads/cm, a medium one of some 16 threads/cm, and a luxury quality of 25–35 threads/cm. The two first qualities are common, the last one is only found in a handful of graves – the most prominent being the ship burial of Sutton Hoo and the Princess's grave from the Cathedral of Cologne (4). Because it is found in the right areas and in several, seemingly standardized qualities, it is

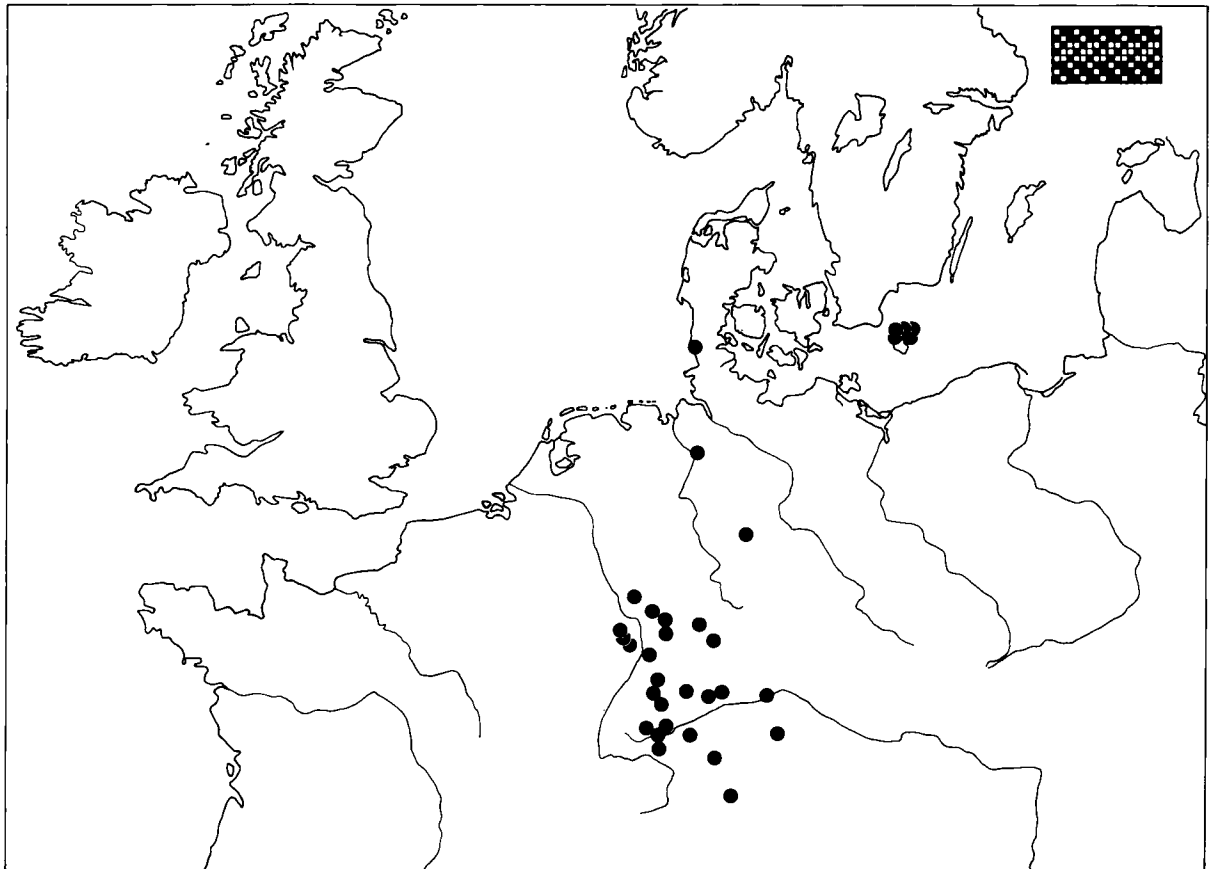


Fig. 11. Distribution map of the Rippenköper (5th–7th centuries).

tempting to identify this cloth type with the *pallium fresonicum* or Frisian cloth mentioned in several contemporary sources (5) (fig. 12).

In Scandinavia, the transition between the Early and Late Germanic Periods is emphasized by a major change in the cloth types, i.e. by a general change of fashion. Instead of the plain, woollen twills of the Haraldskjær type, suddenly (and almost for the first time) linen tabbies appear in Scandinavian graves, after being a very common feature in Central and North West Europe for centuries. The change is so definite that the Haraldskjær type almost totally disappears, at least from the Danish material, and in the Viking Age it is only found in Norway and on Gotland. Instead plain Z-spun tabbies make up about 75% of the Viking Age textiles from Denmark, and 40–50% of the Swedish and Norwegian material. Along with this change a number of characteristic Frankish cloth types are now found in Scandinavia, especially along the Baltic. This goes for

spin patterned tabbies, *Rippenköper* and a few other patterned fabrics (6) which are found in a group of 7th Century graves on Bornholm (fig. 10), and at the Vendel and Valsgärde cemeteries in Uppland. In one of these graves, Valsgärde 7, a piece of Z/S-spun diamond twill 20/18 was found, i.e. the Verring type, in the same luxury quality as that from Sutton Hoo and Cologne cathedral. From the 8th–10th Centuries, only a few of the Frankish cloth types are found in Scandinavia, except for plain Z/S-spun twills which become a fairly common feature of Scandinavian Viking Age graves.

During the 8th–10th Centuries, a characteristic cloth type can be traced in a large number of Scandinavian graves. This type, a fine worsted diamond twill Z/Z-spun and with a standard pattern unit of 20/10, was first demonstrated in the textile material from Birka, and may thus be called the *Birka type*. In her original presentation of the Birka material, A. Geijer suggested an identification with the *pallium fresonicum* (Geijer 1938, p. 46). Later, this identification was questioned, and ori-

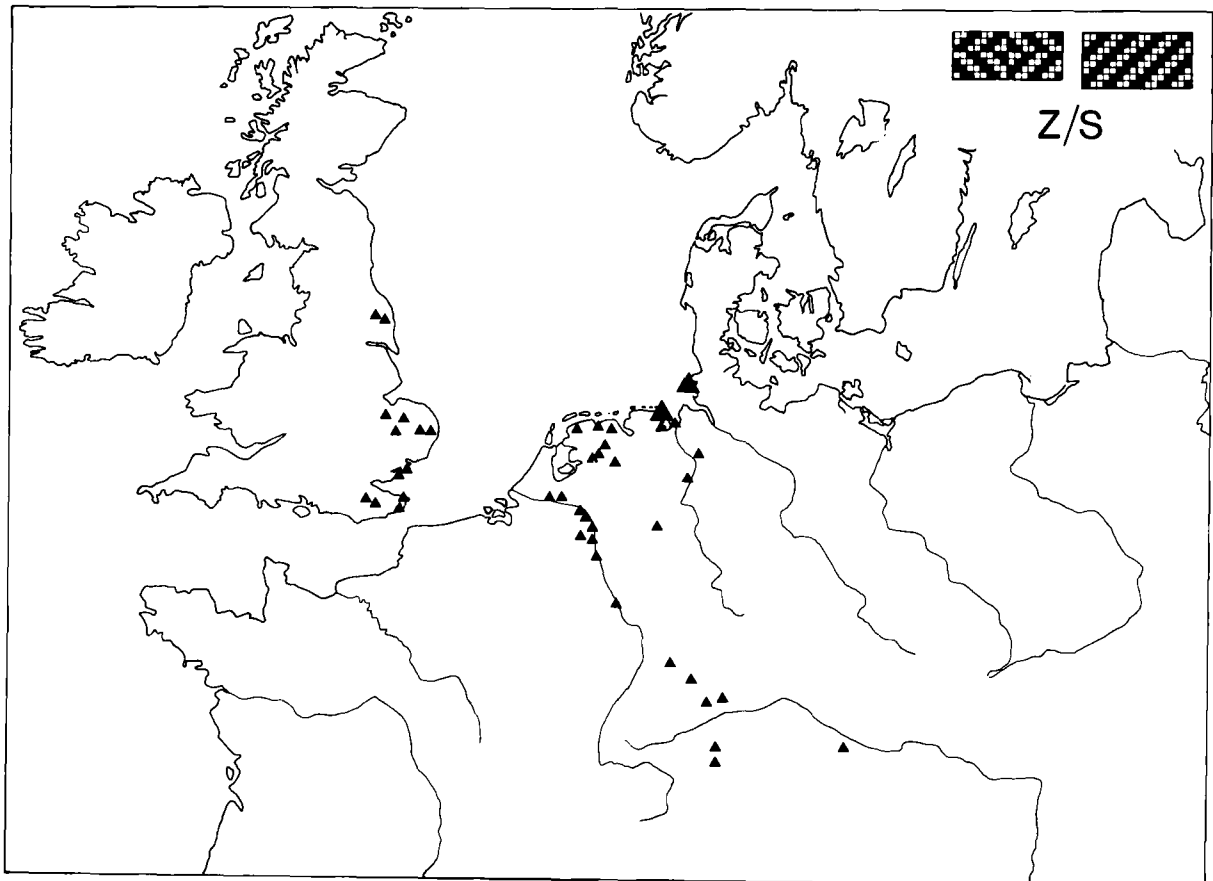


Fig. 12. Distribution map of the Verring or Hessen/Elisenhof type in the post-Roman period (5th–8th centuries).

gins as different as Syria and England/Ireland have been suggested (Hald 1950, p. 202–03, Hoffmann 1964 p. 229–57, Geijer 1965, Carus-Wilson 1969, Ingstad 1979). Now, for the first time, a large body of North European grave finds with textiles can be used in this discussion. The distribution map, fig. 13, based on 149 Danish, 83 Swedish and 136 Norwegian Viking Age Graves (to which can be added the large material from Birka) show a marked concentration in the trading centres Birka, Hedeby, and Kaupang, in the Norwegian Royal graves, and especially along the Norwegian West Coast, while only very few Danish, Swedish and East Norwegian graves contain this cloth type. Outside Scandinavia, only a few graves from the cemetery of Dunum in Ostfriesland (Tidow & Schmid 1979) and a single, undated piece from Orkney (Henshall 1954) can be listed. This distribution seems to exclude all the interpretations listed above, and instead suggests a West Norwegian origin for these fabrics. A Frisian origin is excluded because the Birka type is almost unknown in the Frisian area and indeed in the whole Frankish realm. As argued above, another cloth type with some of the same main characteristics, but with distinct differences, is abundant in these regions and consequently fits far better to the title *pallium fresonicum*. The theory of Syrian origin is based on only 4 fabrics which are half a millenium older, and which furthermore as Z/Z-spun are uncharacteristic of the East Mediterranean area where the textiles usually are S/S-spun – and if the Birka type really were of East Mediterranean origin we would expect to find it in the Frankish area as well. An Anglo-Irish origin seem unlikely as a body of 32 viking graves with textiles, found in Scotland and Ireland, did not contain a single piece of the Birka type (7). Finally an East European origin must also be considered unlikely, as it would leave unexplained the strong concentration in West Norway opposed to the scarcity of these fabrics in Sweden outside Birka. Several arguments favor a west Norwegian origin of the Birka type. Firstly, the strong concentration in this area (one out of every three graves with textiles); secondly the existence of 3 qualities of the Birka type in western Norway but only the better two of them in Birka; and thirdly the fact that Norwegian women usually were buried with a complete loom (loom weights, weaving sword, wool combs), something that suggests that one of the housewife's most important tasks was weaving.

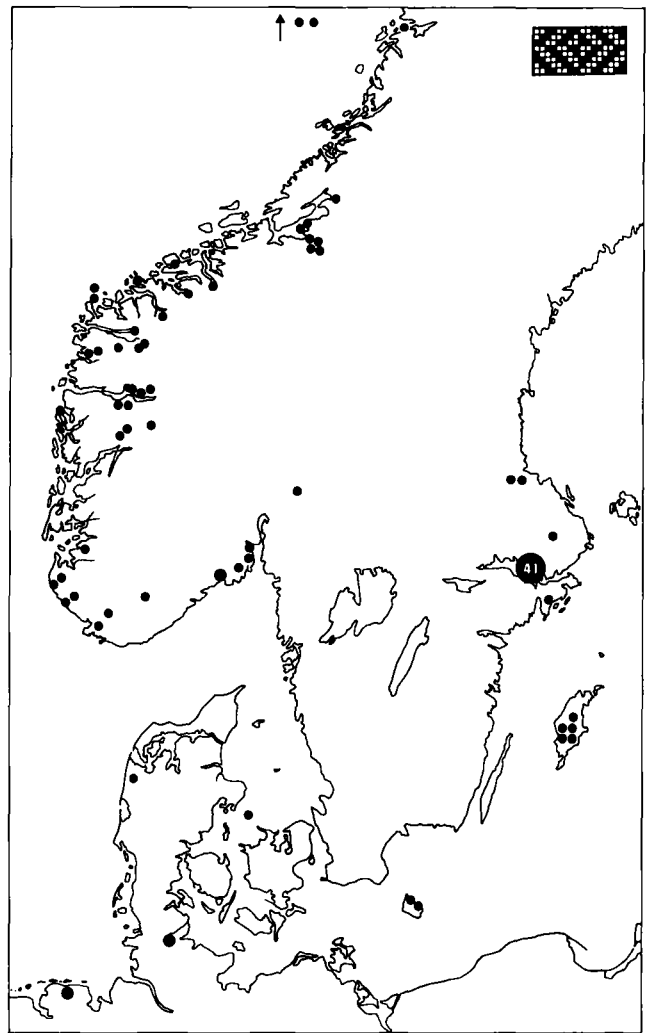


Fig. 13. Distribution map of the Birka type (Viking Age).

From this short summary of the conclusions that can be reached from a quantitatively collected textile material it is evident that textiles, like any other group of archaeological artefacts, can be sorted into types with distinct distribution patterns. As shown above, most of the cloth types can be attributed to certain cultural groups like the Jastorf culture, the Hallstatt/La Tene culture etc, and thus it is possible to distinguish between local production and imported cloth. The evidence of the textiles from the Roman Period suggests a well-developed cloth trade at this early stage. Indeed a few pieces, like the typical Hallstatt fabric found in a grave at Haastrup on Funen and dated to the Final Bronze Age (Albrechtsen 1951, Munksgaard 1974), or an equally

typical Hallstatt fabric from a *ciste a cordoni* found at Luttum in Niedersachsen (8), suggest an even earlier cloth trade. Textiles are well suited for long-distance trade: they are light and fairly solid, and just as today must be considered among the most important status symbols. In the Middle Ages wool and cloth were among the most important trade items – e.g. the British lord Chancellor is still sitting on a wool sack to remind everybody of what was the foundation of the British Empire, and it seems a safe assumption that cloth production and cloth trade also in Prehistory was a very important feature.

The investigation of prehistoric textiles presented here started with a relatively small body of Danish Roman Period textiles (Bender Jørgensen 1980), which already at that stage showed interesting features. The far larger material now studied has clarified many of the problems that could not be safely explained at that time, but many problems still remain. The author has up to now studied material in Scandinavia, the British Isles, the Netherlands and northwestern Germany. Next step is DDR and Poland, which would complete most of the *Germania Libera*, and among other things might answer the question whether there are differences between Frankish and Slavonic cloth types. Other questions, that would require similar registration work in central and southern Europe and in the Near East, would be to determine which cloth types are North European and which belong to the Mediterranean area – and in what manner these cloth types occur in the different periods as a result of political developments such as the Roman conquests, the rise of the Frankish and Arab empires, etc. Only when this work is done, for both the Prehistoric and the Medieval material, will we have the necessary background to write the history of European textiles.

Lise Bender Jørgensen, Institute of Prehist. Archaeology, University of Copenhagen, Vandkunsten 5, DK-1467 Copenhagen.

NOTES

1. The following museums have been visited:

Denmark: The National Museum, 1st Dept., Copenhagen. Bornholms Museum. Lolland-Falsters Stiftsmuseum. Fyns Stiftsmuseum. Langelands Museum. Vendsyssel Historiske Museum. Aalborg Historiske Museum. Museet for Thy og Vester Hanherred. Vesthimmerlands Museum. Kulturhistorisk Museum, Randers. Viborg Stifts-

museum. Holstebro Museum. Ringkøbing Museum. Silkeborg Museum. Forhistorisk Museum, Moesgaard. Haderslev Museum.

Sweden: Lunds Universitets Historiska Museum. Statens Historiska Museum, Stockholm.

Norway: Universitetets Oldsaksamling, Oslo. Arkeologisk Museum, Stavanger. Historisk Museum, Bergen. Videnskabselskabets Museum, Trondheim.

Great Britain: The National Museum of Antiquities of Scotland, Edinburgh. York Archaeological Trust. The Yorkshire Museum. The Ashmolean Museum, Oxford. The University Museum of Archaeology and Anthropology, Cambridge. Dept. of Medieval & Later Antiquities, The British Museum, London. Museum of London. Ipswich Museum.

Ireland: The National Museum of Ireland, Dublin.

The Netherlands: Groninger Museum. Drents Museum, Assen. I.P.P., Amsterdam. Velouws Museum Nairac, Barneveld, Rijksdienst voor Oudheidkundig Bodemonderzoek, Amersfoort. Rijksmuseum van Oudheden, Leiden.

Germany: Schleswig-Holsteinisches Landesmuseum, Slesvig. Niedersächsisches Landesmuseum, Hannover. Westfälisches Museum für Archäologie, Münster. Römisch-Germanisches Museum, Köln. Erzbischöfliches Diözesan-Museum, Köln. Rheinisches Landesmuseum, Bonn.

The author wishes to thank the directors and staff at all the visited museums for their practical help and permission to study the textile material. The financial foundation for the research project here presented has been secured by a Research Fellowship at the University of Copenhagen. The many travels have been paid partly by the University of Copenhagen, partly by *Dronning Margrethe II's Arkeologiske Fond*. The author is greatly indebted to both these institutions for their generosity.

2. Z/S-spun twills and diamond twills corresponding to the Vurring type have been found at the following sites:

Hallstatt/La Tène Periods: Dürrnberg, Hallein (Hundt 1974), Hallstatt (Hundt 1960), Oss, Noord Brabant in Nederland (Rijksmuseum v. Oudheden inv. no. K 1933/7,19). Burton Fleming, Yorkshire (unpublished report by Miss Elisabeth Crowfoot).

Roman Period: Mainz (Wild 1970, B 53, 57, 76, 77, 78), Limeskastell Walldürren (Hundt 1978), Köln (Schleiermacher 1982, kat.no. 17, 22, 23, 25, seen by the author 1983), all from Germany. Valkenburg, Zuid Holland (I.P.P. X, 3882/55, seen by the courtesy of drs. S.Y.Vons-Comis) in the Netherlands. Les Martres-des-Veyre (Audollent 1923) in France. Vindolanda (Wild 1977), Corbridge (Wild 1970, A48), Verulamium (Wild 1970, A49), Balmacellan (Wild 1970, A45), Camelon, Stirlingshire (National Museum of Antiquities of Scotland FX 362–66) and Lankshill (Crowfoot 1979), all in Great Britain.

3. The Roman author Strabo says in his Geography (IV: 197) of the Gauls: "Their flocks of sheep ... are so very large that they supply an abundance of the *sagi* (i.e. Gallic cloaks) ... not only to Rome, but to most parts of Italy as well." For more recent research, see Wild 1970, 1977, 1982.

4. The textiles of both Sutton Hoo and the Cathedral of Cologne are as yet unpublished. The Sutton Hoo textiles are being published by Miss Elisabeth Crowfoot, but through the kindness of her and of Mrs. Leslie Webster, the British Museum, the author has been able to examine the fabric in question (SH 1). The textiles from the

Cathedral of Cologne were investigated by the author in the Erzbischöfliches Diözesan-Museum, Köln, through the kindness of Pater Dr. Schulten. The textiles are going to be published presently in the Kölner Domblatt.

5. *Pallium fresonicum* is first mentioned by Ermoldus Nigellus in the late 8th Century. He tells that Frisian merchants in Elsass traded cloth and amber for wood, wine and corn. The Monk from St.Gallen mentions it several times: first as one of the gifts that Charlemagne sent to Harun al-Rashid, later that Louis the Pious gave his courtiers of highest rank valuable foreign clothes, those of second rank cloaks of coloured Frisian cloth. *Pallium fresonicum* has been the subject of discussion among both historians and archaeologists for almost a century. An excellent survey of the discussion can be found in A.S. Ingstad 1979.
6. E.g. fabrics with a weft-float pattern like honeycomb-weave (or as H.J. Hundt calls it: Wabengewebe), see Hundt 1980, and Arwidsson 1954, p. 101.
7. The 32 Viking graves have been examined by the author in the National Museum of Antiquities of Scotland, and in the National Museum of Ireland.
8. Inv.no. 5458 in the Niedersächsisches Landesmuseum, Hannover.

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