

# *European Textiles in Later Prehistory and Early History*

## A Research Project

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In volume 3 of this journal a research project concerning North European textiles in the 1st millennium AD was presented (Bender Jørgensen 1984). Since then, the project has continued, thanks to generous grants particularly from the Carlsberg Foundation, and by now all of Europe north of the Alps has been included in the investigation. Chronologically, the project ranges from the Mesolithic to the Viking Age, i.e. more than 5,000 years.

A main result of the textile research project is that it has proved possible to define a number of cloth types, which can be attributed to geographical and/or chronological groups, in most instances are well-known archaeological cultures, like the Jastorf culture, the Hallstatt culture, etc. In 1984, a survey of the cloth types found in Scandinavia and NW Europe was given; today this can be extended to all of Europe north of the Alps, except the Soviet Union. Due to lack of space, however, this paper will focus on two periods, the Pre-Roman Iron Age and the Post-Roman Period (the Merovingian and Carolingian Periods), where a large body of Central European textiles recorded in 1987 has shed new light on textile history and on ethnic and cultural differences in the textile material.

### THE PRE-ROMAN IRON AGE

As far as the technology of making textiles is concerned Pre-Roman Iron Age Europe falls into a number of regional groups: Scandinavia forms one region, whose southern border can be traced across Jutland between the towns of Vejle and Varde. This region is characterised by having a textile technology based on the tubular loom, s-spun wool yarn, and the weaves tabby and 2/2 twill. The common cloth type, 2/2 twill s/s, has been named the Huldremose type (Bender Jørgensen 1984, 1986, 1987b). A second group is region occupies the North European Lowlands. Here z-spun yarn is the rule, flax as

well as wool is a commonly used fibre, and starting borders and loom weights indicate the use of the warp-weighted loom. The common cloth types are Haraldskjær twill (2/2 wool twill z/z), Haraldskjær tabby (wool tabby z/z), and the Weyhausen type (linen tabby z/z, very open, veil-like weave). This group is closely related to the Jastorf culture (Bender Jørgensen 1988, and forthcoming).

In Central Europe, the Hallstatt and La Tène cultures also each have their characteristic cloth types. Up to now, the works of H.-J. Hundt have been almost the sole source of knowledge of these textiles, and have been directed mostly at three groups of discoveries, princely graves of Hallstatt date in south Germany, textiles from the salt mines of Hallstatt, and textiles from the saltmines and cemetery at Dürrnberg, all three in Austria. The material from the salt mines is mainly of Hallstatt date, while the cemetery of Dürrnberg mainly contained textiles of the La Tène period (Hundt 1959, 1960, 1961, 1962, 1963, 1967, 1969, 1970, 1974a, b, c, 1981, 1985). It is now possible to add a substantial number of finds from Czechoslovakia, Hungary, Austria, the former duchy of Krain (now Slovenia in Yugoslavia), Switzerland and France to what is recorded by H.-J. Hundt; and even in Germany, several unrecorded textile remains of Hallstatt or La Tène date have now been located. This new material not only indicates that there are differences between the Hallstatt and La Tène textiles (which H.-J. Hundt has already shown), but also that there are considerable regional differences, especially between eastern and western Central Europe.

In the West Hallstatt area, i.e. South Germany and parts of France, the most characteristic feature is the use of wool fabrics with plied yarn in one or both systems (fig. 1). The most common cloth type of this group is 2/2 diagonal twill Sz/z, i.e. the warp consists of two-ply yarn, the weft of single yarn. Around one third of all Hallstatt Period fabrics from South Germany and France belong

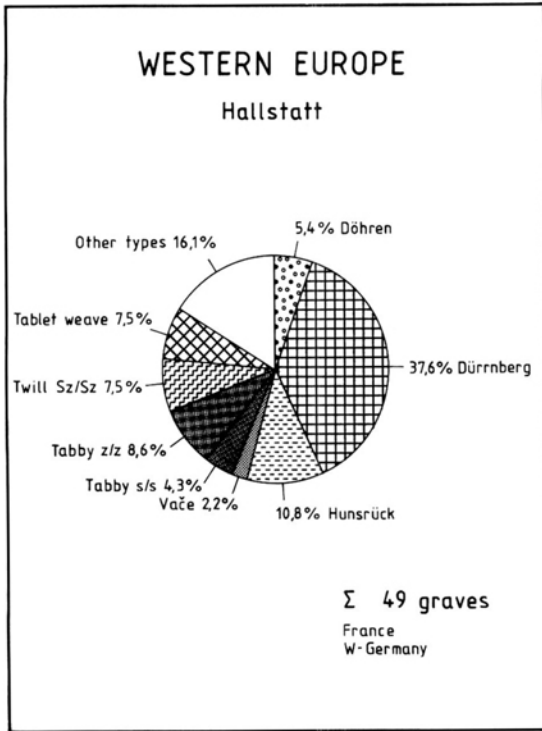


Fig. 1. Pie Diagram of main cloth types in west Central Europe in the Hallstatt Period.

to this type, which has been named the Dürrenberg type. A variant of this is diamond twill Sz/z, found once, and diagonal twill Sz/z,s, i.e. with spin-patterned weft, of which four pieces are found. Tabby Sz/z has been found in some 10% of the finds of this group; as the majority of this group derives from graves of the Hunsrück-Eifel culture, this type has been named the Hunsrück type. Tabby Sz/Sz, i.e. with plied yarn in both systems, has been found in 5 pieces (5.4% of the material); this has been named the Döhren type, and is also known from a Hallstatt grave in the Netherlands, two Polish sites, one Spanish, and possibly a Belgian and a French site. It too is represented at the salt mines of Hallstatt and Dürrenberg. Finally 2/2 twill Sz/Sz should be mentioned; however it has only been found at one site in the Hunsrück-Eifel. Taken together this means that more than 60% of all finds of textiles of Hallstatt Period South Germany and France are made with plied yarn in one or both systems.

Plain tabby z/z, i.e. wool or linen tabby in single z-spun yarn, only makes up 8.6% of the textiles in South Germany and France; to this can be added another 4.3% consisting of tabby s/s, a small but significant group to which

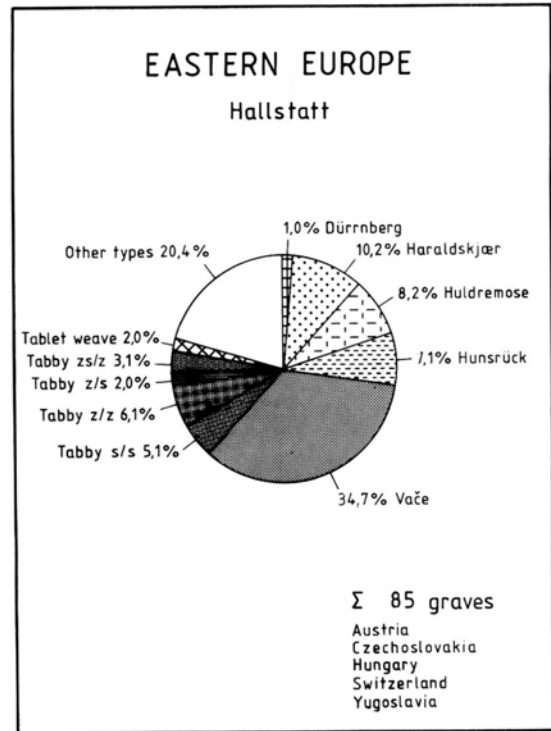


Fig. 2. Pie diagram of main cloth types in east Central Europe in the Hallstatt Period.

we shall return later. Tablet braids have been found at several sites in this area, most notably the princely grave of Hochdorf, which contained several very elaborately patterned examples of tablet weave, the best parallels of which are more than a millennium later (Hundt 1985).

The Vače type is diagonal wool twill z, s/z, s, i.e. single yarn, but arranged in groups of s- or z-spur yarn so that a subtle shadow- or spin-pattern is established. The vače type is only represented in a few specimens from South German and French Hallstatt graves. As we shall see below, this pattern changes drastically in eastern Europe. Finally a number of fabrics are termed "other"; they are mainly indeterminable as to weave and/or spin.

In East Central Europe, i.e. Czechoslovakia, Hungary, Austria, Switzerland and Krain/Slovenia, the Hallstatt Period textiles show a quite different range of cloth types than are found in South Germany and France (fig. 2). The textiles summarised here are all from graves, i.e. the fabrics from the salt mines of Hallstatt and Dürrenberg are not included. In eastern Europe, the Dürrenberg, Döhren and Hunsrück types together make up less than 10% of the material, and instead fabrics of single yarn

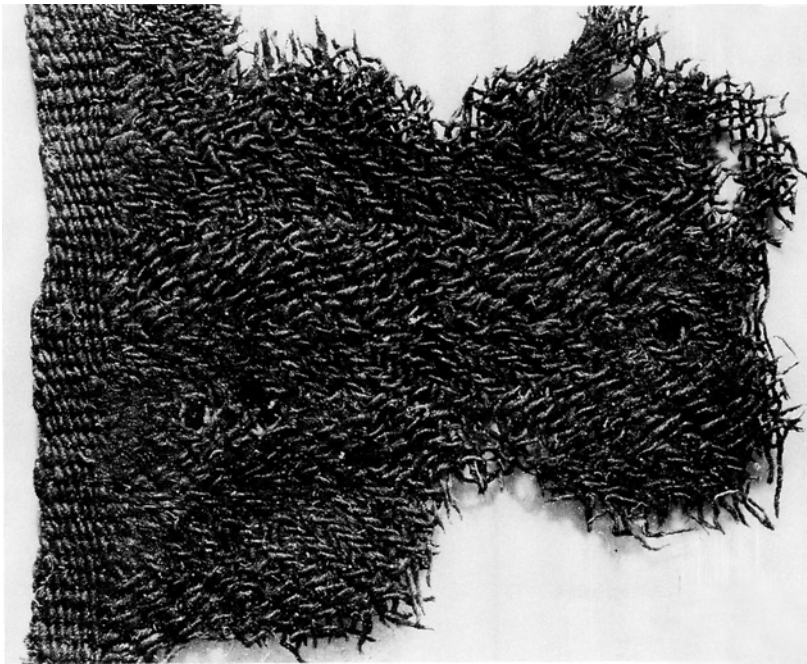


Fig. 3. A sample of cloth of the Vače type, found in a grave at Haastrup, Funen, dated to the final Bronze Age (Montelius phase VI). The fabric is imported from the East Hallstatt culture.

form the great majority, particularly the spin-patterned twills of the Vače type, which comprise more than a third of the material. Tabby of single yarn make up 16%; but this group must be divided into four sub-types: tabby z/z, z/s, z,s/z and s/s, each amounting to 2–6%. Diagonal twill (z/z, the Haraldskær type, and s/s, the Huldremose type taken together) make up 18,4%, the two almost equally represented. Diagonal twill z/s was only found once, and is counted with the group “others”. Tablet weave was found twice, and finally the group “other” includes 5 basket weaves and 3 half-basket weaves, which also deserve some consideration, along with some indeterminable fabrics.

The picture offered by the two groups of Hallstatt textiles from South Germany/France and from Czechoslovakia/Hungary, Austria, Switzerland and Krain, clearly indicates that there is a marked difference between the western and eastern regions. In this respect textiles follow the general pattern of the Hallstatt culture, which falls into an *Osthallstattkreis* and a *Westhallstattkreis*. The border between the two textile groups seems to be around the site of Hallstatt itself.

In the west Hallstatt area plied yarn was a basic feature, either alone or combined with a single yarn weft; in the

east single yarns are the rule, and spin-patterned fabrics are an especially popular feature. Twill is the basic weave in both regions, the majority simple 2/2 diagonal twill, but a few examples are twill variants like diamond twill or 2/1 twill. Tabby is the second common weave in both areas, and tablet weave similarly appears both in the west and in the east.

Tabby s/s, and in east central Europe 2/2 twill s/s as well, form a small but important group. Generally, s-spin is a feature of Scandinavian textiles of this period, whereas z-spin is the basic feature of the European Continent. The group of Hallstatt fabrics s/s form almost the only exception to this rule; nevertheless, z-spin is clearly the most common form of Hallstatt Europe. The possibility exists that the s/s-spun Hallstatt textile remains may derive from spin-patterned fabrics, where by accident only the s-spun sections have survived; but few as they are, the 17 samples found are too many to allow this explanation. Another possibility, and probably the most likely interpretation of the s/s-spun Hallstatt fabrics is that they represent the last vestiges of the Central European Bronze Age wool textile technology. Only a handful of Bronze Age textiles have survived in Central Europe. Of these, a number are of flax, and are made of 2-ply yarn. A few

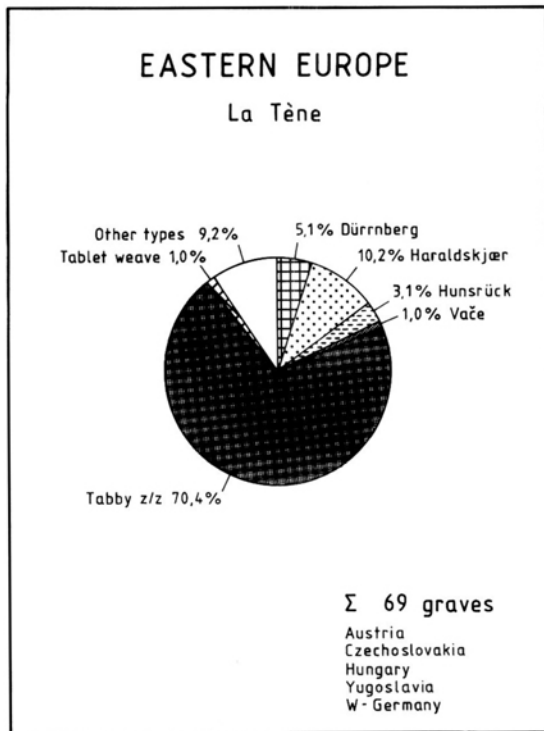


Fig. 4. Pie diagram of main cloth types in east Central Europe in the La Tène Period.

pieces, however, are of wool, and these are generally made of s-spun, single yarns.

Basket and half-basket weaves, which appears in small but distinctive numbers among the Hallstatt textiles, were until recently considered to be a Mediterranean cloth type, which only reached central and NW Europe with the Roman conquest. The eight samples found among the east European Hallstatt Period textiles indicated that this type of cloth, with paired warp and/or weft, was known in central Europe from the beginning of the Iron Age.

In Denmark, a single sample of the Vače type has been found in a grave from Haastrup, South Funen, dated to Montelius' period VI of the Bronze Age (Albrectsen 1951, Munksgaard 1974, Jensen 1965). In the same grave was found a glass bead which has close parallels in the Balkans, i.e. in the area which must be considered the homeland of the Vače type (Jensen 1965, p. 59). Fig. 3.

In the La Tène Period the recorded material shows marked changes compared to that of the Hallstatt Period described above; regional differences are distinct, but do not follow quite the same boundaries as in the Hallstatt

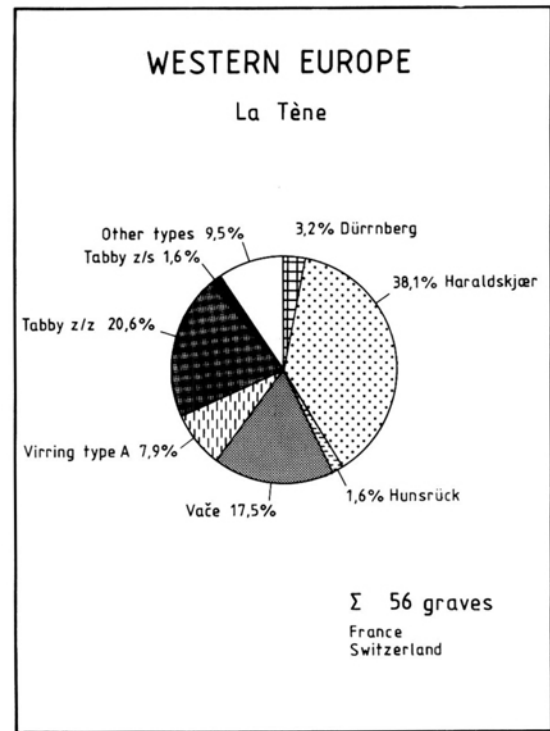


Fig. 5. Pie diagram of main cloth types in southwest Central Europe in the La Tène Period.

Period. In the La Tène Period the main regional difference is between Switzerland (and France), which form one block, and the rest of Central Europe, i.e. Czechoslovakia, Hungary, Austria, Slovenia and Germany, which are treated as another block.

In East Central Europe (fig. 4), tabby z/z is by far the most common cloth type comprising around 70% of the total material. The group tabby z/z consists of two main types, wool and tabby. No clear distinction between the two types has as yet been made, but both have been frequently found. There is perhaps a tendency that the finer fabrics are flax, the coarser wool. In Slovakia, some fine linen tabby with traces of embroideries in red wool deserves special mention (Furmanek & Pieta 1985).

Compared to the Hallstatt Period the strong proportion of tabby z/z in the La Tène period is very striking; in the Hallstatt Period, only about 6% of the East European textiles belong to this type. Linen tabby had been common in Central Europe since the Neolithic (Vogt 1937), but both the Neolithic and the Bronze Age linens were woven from 2-ply yarn; perhaps the large proportion of tabby z/z indicates that with the Iron Age it had become

possible to weave fine linen cloth in single yarns.

Other cloth types of the east and central European La Tène Period are among others the Haraldskjær type, 2/2 wool twill z/z, which makes up almost the same proportion of the material (c. 10%) as in the Hallstatt Period, and the Dürrenberg and Hunsrück types, i.e. twill and tabby with plied warp, single weft. These were the dominant types in Hallstatt Period Germany and France, and are still present in the La Tène material in more or less the same quantity as in Hallstatt period East Europe, i.e. some 8%. The dominant cloth type of the east central European Hallstatt period, the Vace type (spin patterned twill), has only been found in 1% of the eastern La Tène Period graves with textiles.

In Switzerland (and France) the pattern shown by the La Tène Period textiles is quite different (fig. 5). Here, tabby z/z only amounts to one fifth of the material, whereas the Haraldskjær type, wool twill z/z, amounts to more than one third and is the most common cloth type. The Vace type is the third most common type, with 17.5%, and thus the situation is quite different than earlier, when the Vace type was more dominant in eastern Europe. The Dürrenberg and Hunsrück types are rare, being less than 5% taken together.

#### THE POST-ROMAN PERIOD

Several regional groups can be observed among the textiles from the Merovingian and Carolingian Period graves in North and Central Europe. Scandinavia forms one such group; Anglo-Saxon Britain is a second group; on the West European Continent the Frankish area (i.e. modern France, Belgium, the southern Netherlands, the Rhinlands, Thuringia and South Germany) make up a third group; in North Germany Frisia and Saxony each forms a separate group; in eastern Europe a Slavonic area can be distinguished; finally in East Central Europe Avar and Magyar groups, and some Germanic ones like Gepids, Langobards etc. can be distinguished. In the following pages, a brief summary of the main trends will be given.

#### THE MEROVINGIAN PERIOD

Starting with 5th and 6th century Scandinavia, two thirds of all textiles from 5th and 6th century graves in Denmark belong to the Haraldskjær type (2/2 twill z/z), and

half of the remaining third are tablet braids (fig. 6a). In contemporary Norway and Sweden the picture is almost the same (fig. 6b). Few other cloth types are represented, and only in very limited numbers.

In 7th and 8th century Scandinavia this picture has changed. The Gerlev-Draaby type (tabby z/z) has gained much in importance, particularly in Denmark, where it is the most common type. A new type is the Birka type, a fine worsted diamond twill z/z, which appears in the 7th century and continues to the end of the Viking Age (fig. 6c-d).

In Anglo-Saxon England and Saxon Germany the textiles show some definite affinities to contemporary Scandinavia (fig. 7). The Haraldskjær type is a common cloth type, forming between 26.9% and 45.5% of the material. Tablet weave is also a major technical group in England; in Saxon Germany it is missing. The Gerlev-Draaby type (plain tabby z/z, mainly linen), which was only barely represented in the Scandinavian material, makes up between a quarter and one third of the Anglo-Saxon and Saxon textiles. The Hessens/Elisenhof C type (diamond twill z/s) is rare in Anglo-Saxon England, as it also is in Scandinavia; in Saxon Germany, it makes up 15% of the material.

In the northern Netherlands or Frisia (fig. 8) the importance of the Haraldskjær is dwindling, whereas the Gerlev-Draaby type constitutes a quarter of the material, much as in Saxon Germany and Anglo-Saxon England. Tablet weave is absent, but instead we may note the appearance of the Gudmingegaard type. This is a tabby with spin-pattern, i.e. differently spun yarns have been used to give a subtle pattern, normally stripes, but occasionally checks. Most noteworthy among the textiles of the northern Netherlands is the Hessens/Elisenhof C-type – diamond twill with z-spun warp and s-spun weft – which constitutes a quarter of the material. This marks the culmination of this type, which gradually declines in importance with distance from the northern Netherlands or Frisia. In the author's opinion, this type is a likely candidate for the title of *pallium fresonicum* or Frisian cloth; for further arguments see Bender Jørgensen 1986, 1987.

Next in line come the areas around the English Channel: Kent, the southern Netherlands (the Lower Rhine), Belgium and France (fig. 9a-d). The French material derives almost exclusively from Normandy. Here, it is striking that the Gerlev-Draaby type makes up about half of the material and is the most common type by far. Another noteworthy feature is the Hessens/Elisenhof C-type,

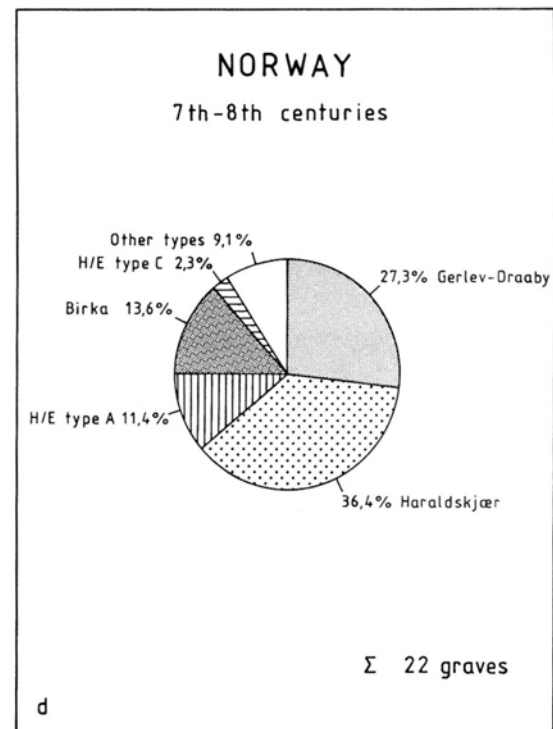
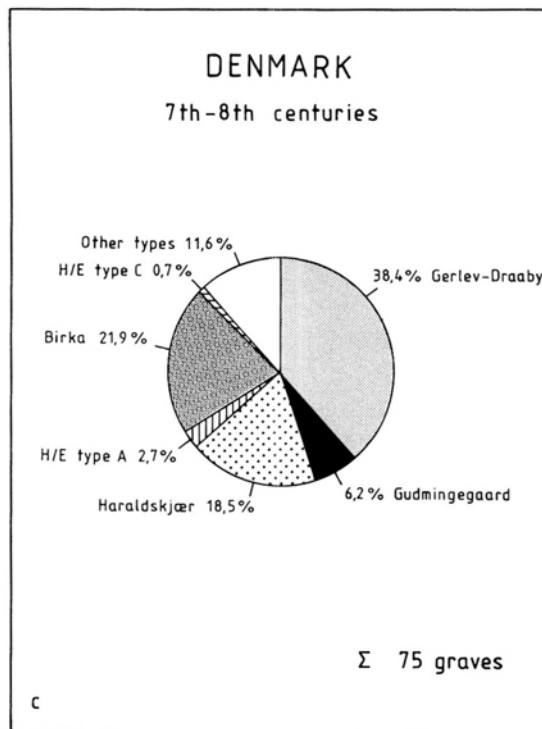
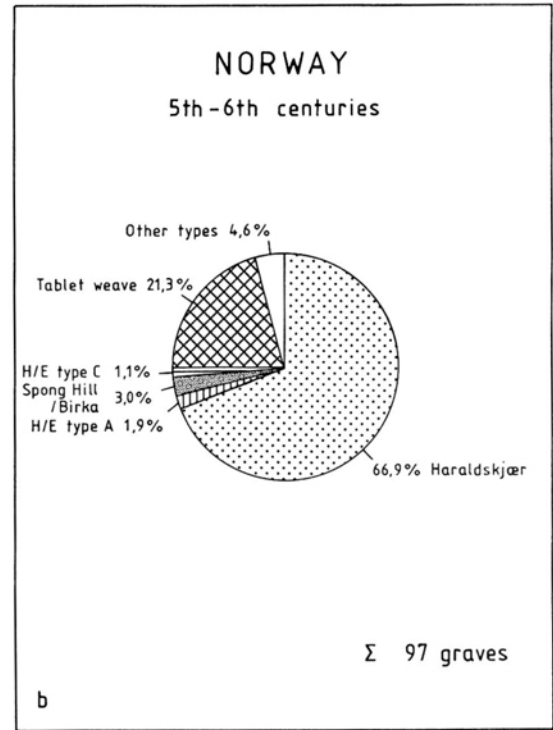
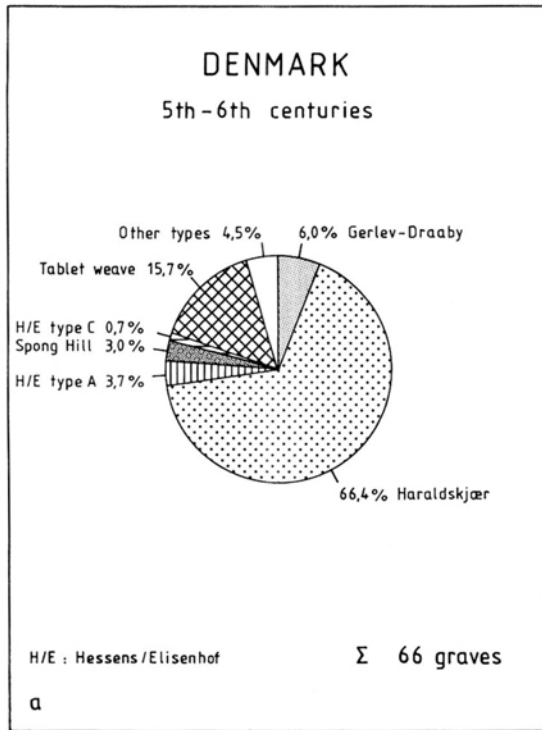


Fig. 6. Pie diagrams of main cloth types in Scandinavia in the 5th-6th and 7th-8th centuries AD.

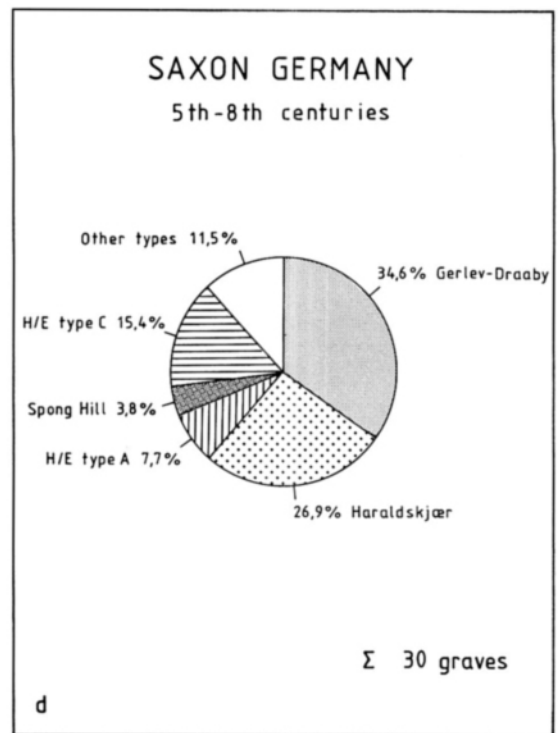
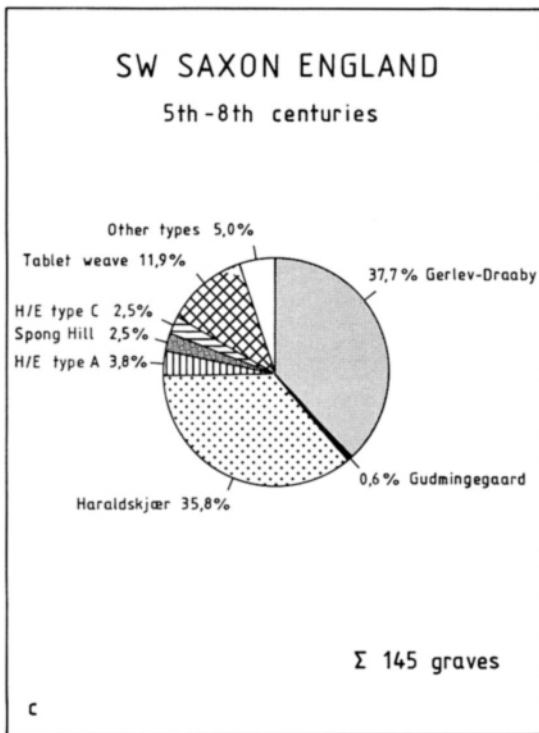
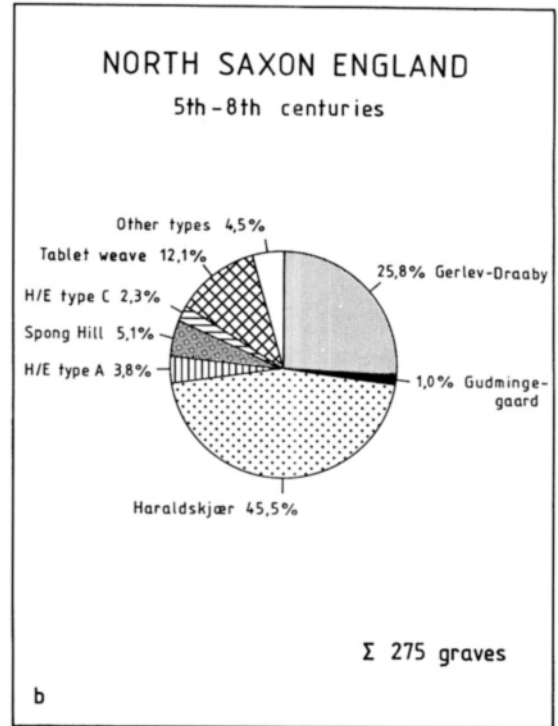
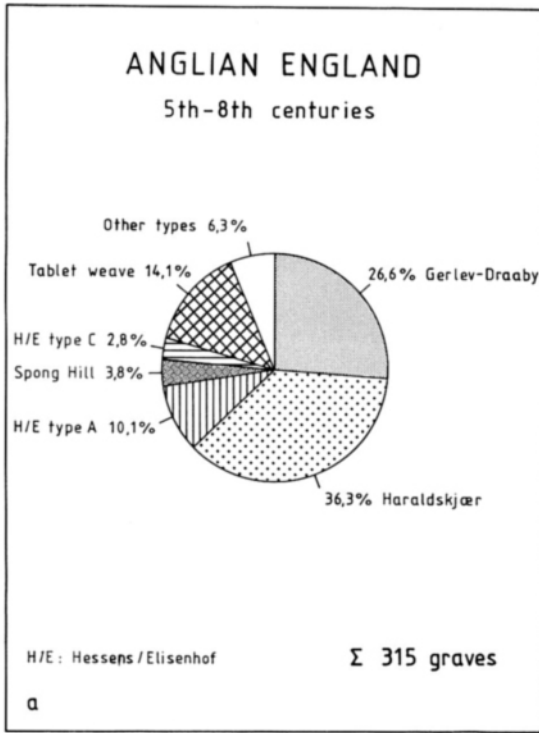


Fig. 7. Pie diagrams of main cloth types in Anglo-Saxon England and Saxon Germany in the 5th-8th centuries AD.

which makes up about 15% of the material on the continental side of the Channel and 10% in Kent, which is a quite substantial proportion and something that distinguishes Kent from the rest of England. However, Kent also has a good number of tablet braids (10%); these are generally lacking on the Continent. The spin-patterned Gudmingegaard type forms a minor proportion all along the Channel coast, except in Normandy.

In south and central Germany another pattern can be seen (fig. 10). In the Rhine Valley, i.e. the *Länder* of Nordrhein-Westfalen and Rheinland-Pfalz, the Haraldskjær type has fallen to 12%, the Hessens/Elisenhof C-type to 9%, while the Gerlev-Draaby type makes up one-third of the material. Two other features are particularly noteworthy: the Gudmingegaard type here constitutes 10%, and “other types” one quarter of the material (fig. 10a). In Baden-Württemberg, the Alamannic area, the pattern indicated in the Rhine Valley is emphasised: the Hessens/Elisenhof type has fallen to less than 5%, the Haraldskjær type makes up 15%, the Gerlev-Draaby type a quarter – but the Gudmingegaard type makes up no less than 22% and “other types” 21 1/2% (fig. 10b).

In Bavaria the proportion of the Gudmingegaard type has been reduced to 8%, but “other types” here constitute more than a third of the material. The frequency of the Haraldskjær, Gerlev-Draaby and Hessens/Elisenhof types is about the same as in the other South German areas (fig. 10c). Finally Thuringia has a higher proportion of the Gerlev-Draaby type than south Germany; the Hessens/Elisenhof type is more common. “Other types” make up a quarter, and the Haraldskjær and Gudmingegaard types are both rare (fig. 10d).

Summing up, in southern Germany a centre for the Gudmingegaard type is found in Alamannic Baden-Württemberg, exactly as one for Hessens/Elisenhof C type is found in the northern Netherlands and for the Haraldskjær type in Scandinavia and the Saxon and Anglo-Saxon areas. The Haraldskjær and Hessens/Elisenhof types both seem to be of less importance in southern Germany. The Gerlev-Draaby type provides a major proportion of the material here, but except in Thuringia definitely less than on the English Channel coasts.

The group “other types”, which forms between a quarter and a third of the material in South and Central Germany, comprises a range of different cloth types which are worth considering in some detail. Among them the most important are *Rippenköper* or ribbed twill, rosette twill, tabby with warpfloat pattern, honeycomb

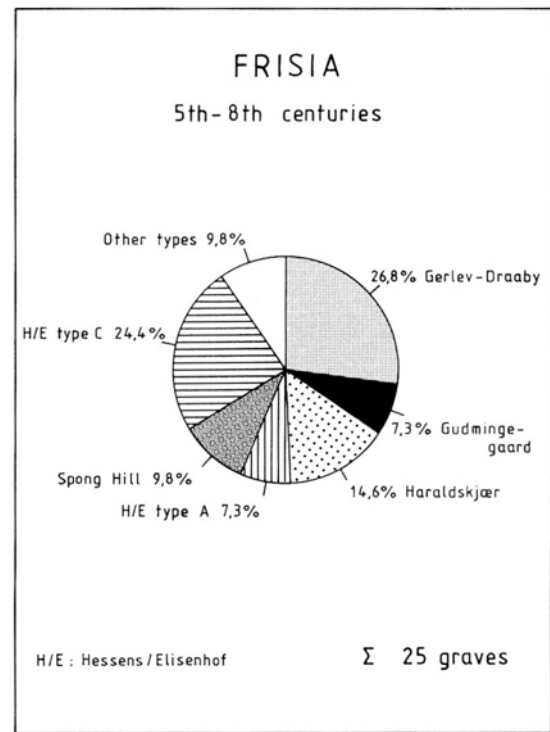


Fig. 8. Pie diagram of main cloth types in the northern Netherlands in the 5th-8th centuries AD.

weave, Coptic tapestry, and silk. *Rippenköper* is a type which was first noted by Hans-Jürgen Hundt, and in 1983 he presented a distribution map of this type and suggested that it was of Alamannic origin (Hundt 1983). The research here described has made it possible to put a few more dots on Hundt’s map, but the general tendency of having a centre in south Germany remains unaltered. Rosette twill, tabby with warp-float pattern and honeycomb weave were similarly first found by Professor Hundt (see e.g. Hundt 1978). The first two types follow the same pattern as *Rippenköper* – southern Germany forms the centre, and the scattered occurrences in northern Europe can probably be considered Alamannic/Frankish imports.

Honeycomb weave is more rare, and has a different distribution pattern. It has been found in one Frankish, one Saxon (Hundt 1980), one Slavonic (Bender Jørgensen 1988) and two Swedish graves (e.g. Arwidsson 1954), and once in Anglo-Scandinavian York (Walton 1989). The ethnic provenance of this type is therefore difficult to ascertain, although a technical relationship to tabby with warp-float pattern may indicate an origin similar to that of this cloth type.



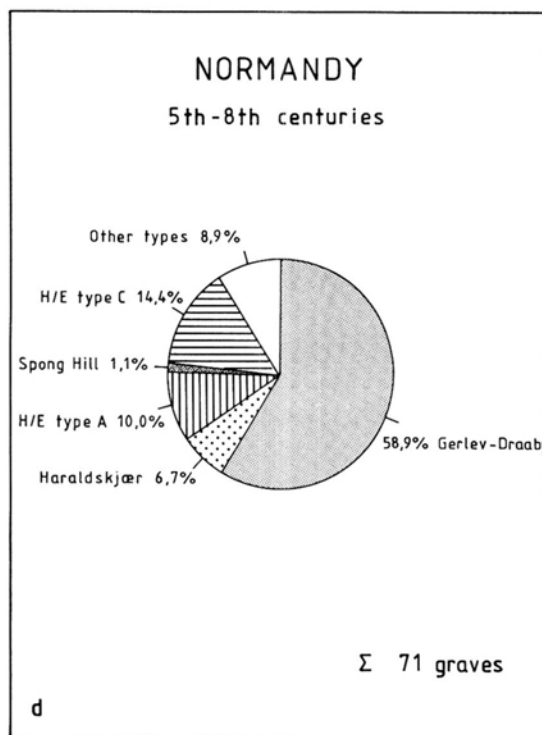
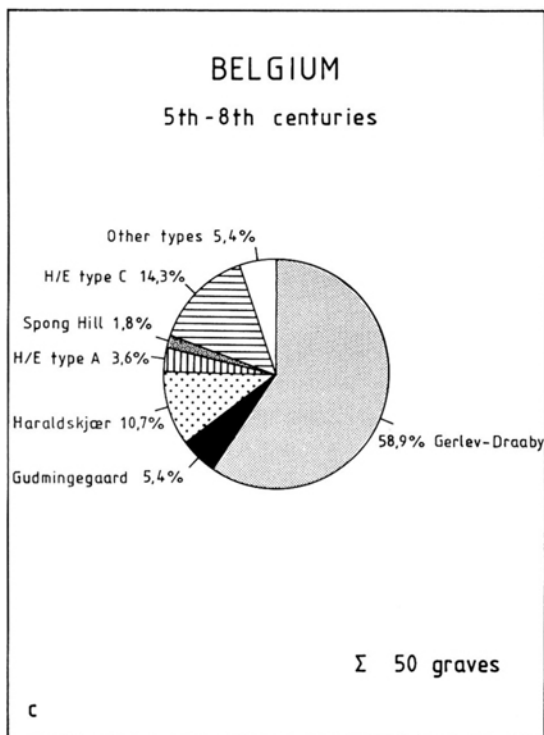
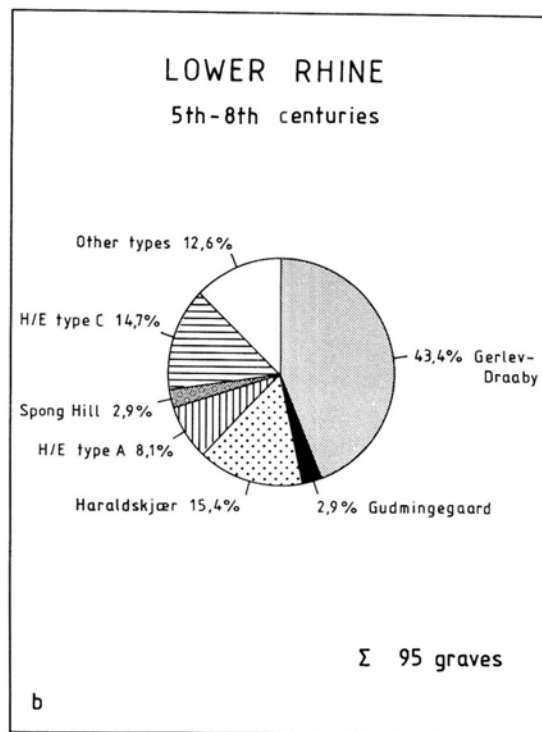
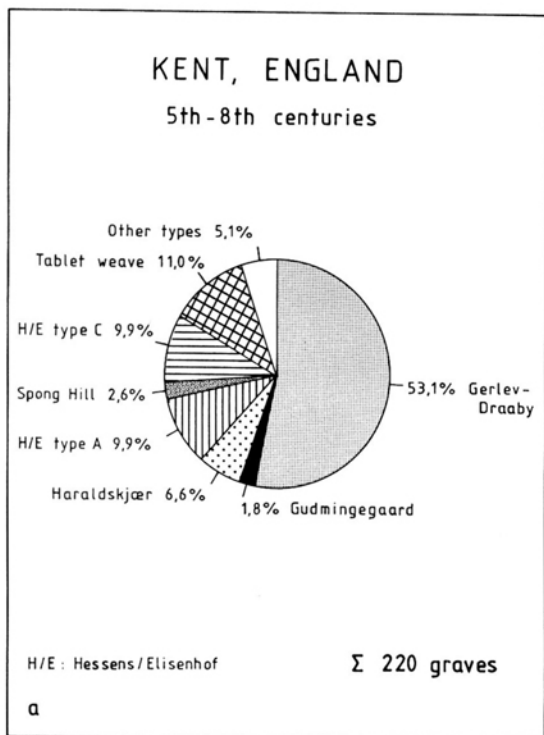


Fig. 9. Pie diagrams of main cloth types along the English Channel in the 5th-8th centuries AD.

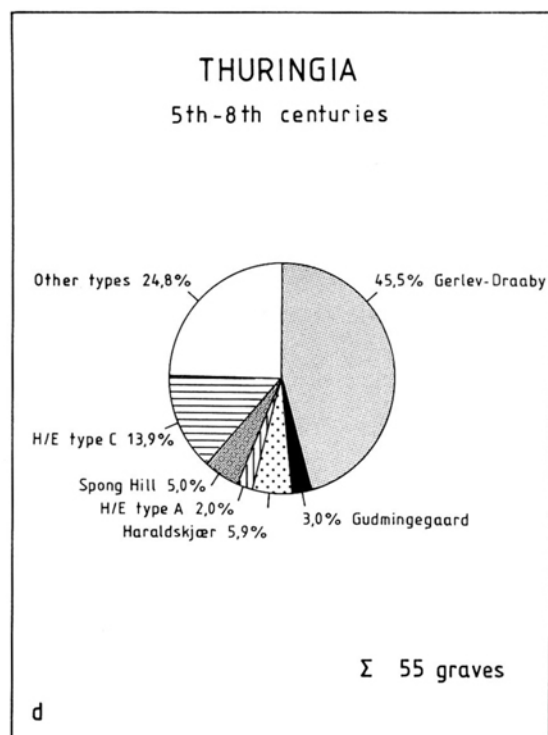
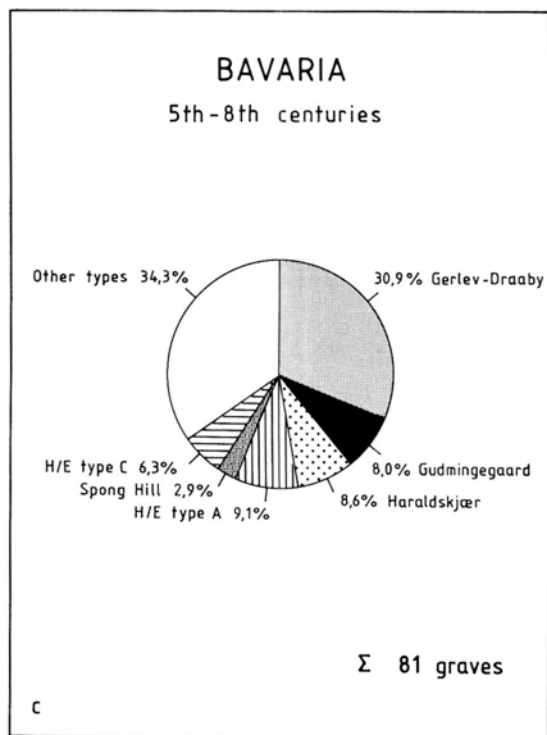
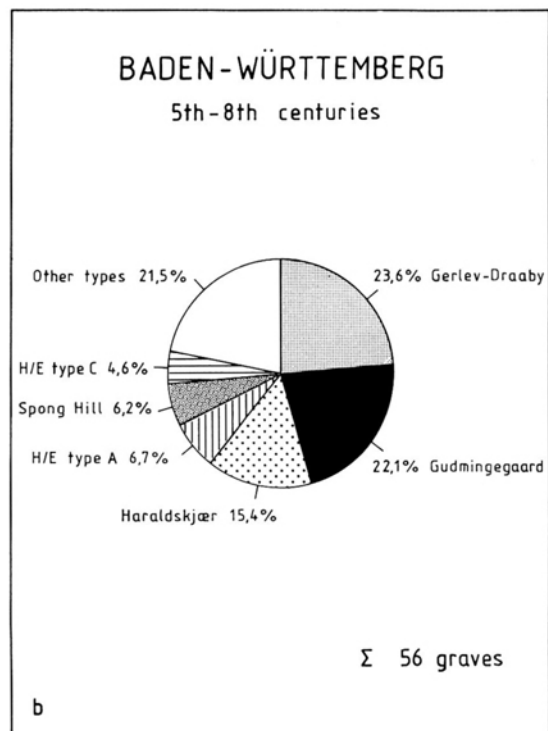
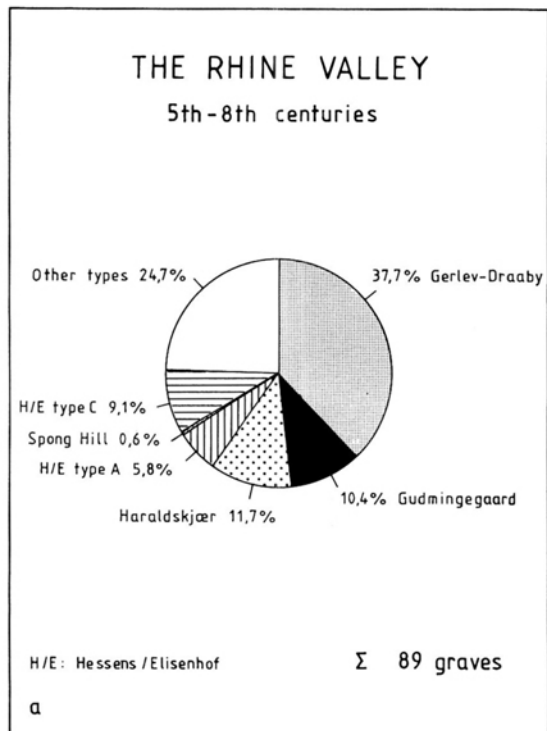


Fig. 10. Pie diagrams of main cloth types in west and south Germany in the 5th-8th centuries AD.

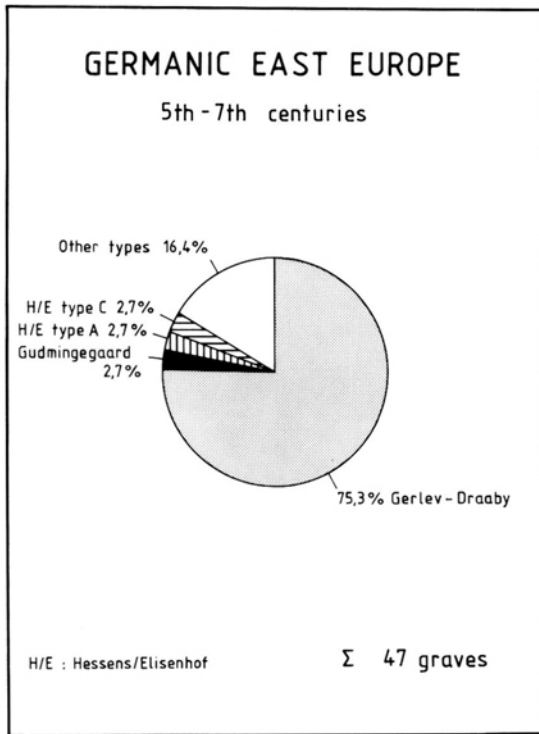


Fig. 11. Pie diagram of main cloth types in Germanic East Europe in the 5th-8th centuries AD.

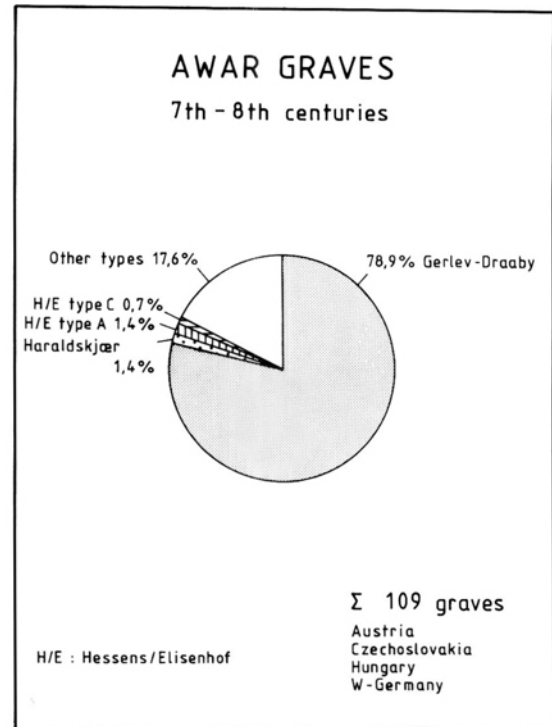


Fig. 12. Pie diagram of main cloth types in Awar contexts in east central Europe in the 5th-8th centuries AD.

Coptic tapestry has been found in a small number of graves in the Rhine valley (Bender Jørgensen 1987a). Silks similarly are rare; they seem to be limited to royal or princely graves, such as that of Queen Arnegunde in St. Denis, the Frankish Royal Lady's grave under Cologne Cathedral, and a number of male graves all containing a helmet, which according to Frankish law was a prerogative of only the highest ranks (Doppelfeld & Pirling 1966). The silks and Coptic fabrics have undoubtedly been imported from the East Mediterranean or from further east; but the other textiles may be considered to be of European origin.

East European textiles of the Merovingian Period fall into two groups: those from Germanic graves (i.e. Gepid, Langobard, Bajuwar etc.) and Awar graves (fig. 11-12). Both the Germanic and Awar textiles have the Gerlev-Draaby type (tabby z/z) as the most common type, providing about three quarter of the material. Other common types like the Haraldskjær type, the Hessens/Elisenhof C-type, and the Hessens/Elisenhof A-type (2/2 twill z/s) each provide only a small percentage of the material; the spin-patterned Gudmingegaard type is represented

among the Germanic textiles, but only sparingly; "other" types are mainly indeterminable fabrics.

The distribution patterns outlined here suggest that there were several textile-producing centres in Europe during the 5th to 8th centuries. Southern Germany seems to be the centre for spin-patterned linen tabby (the Gudmingegaard type) and for a number of patterned fabrics such as Rippenköper, rosette twill, tabby with warp-float pattern and possibly honeycomb weave. When fabrics of these types appear in the Baltic area in the early 7th century, as they do on Bornholm or in the princely burials at Vendel and Valsgärde, they must undoubtedly be considered as Frankish or Alamannic imports (cf. fig. 6c and d). Frisia seems to have been another area of textile production, with the Hessens/Elisenhof C-type as the most characteristic product.

#### THE CAROLINGIAN PERIOD

Carolingian Period textiles of North Europe, i.e. the 8th-10th centuries AD, are divided into four ethnic groups:

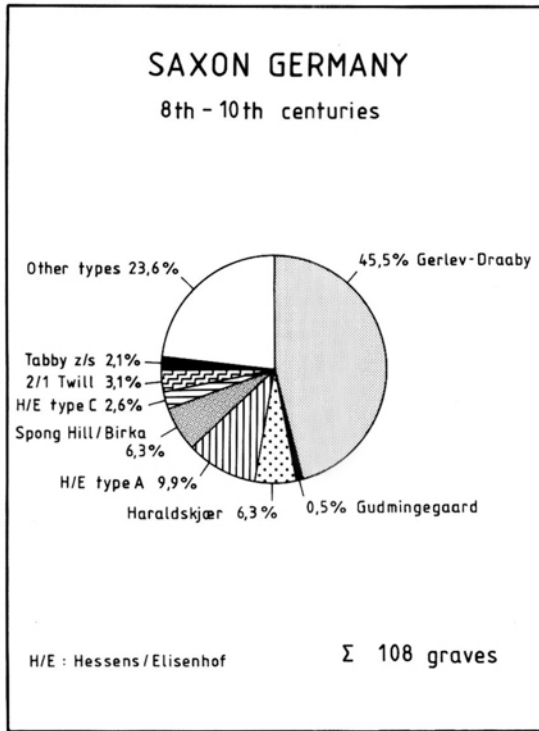


Fig. 13. Pie diagram of main cloth types in North Germany in the 8th-10th centuries AD.

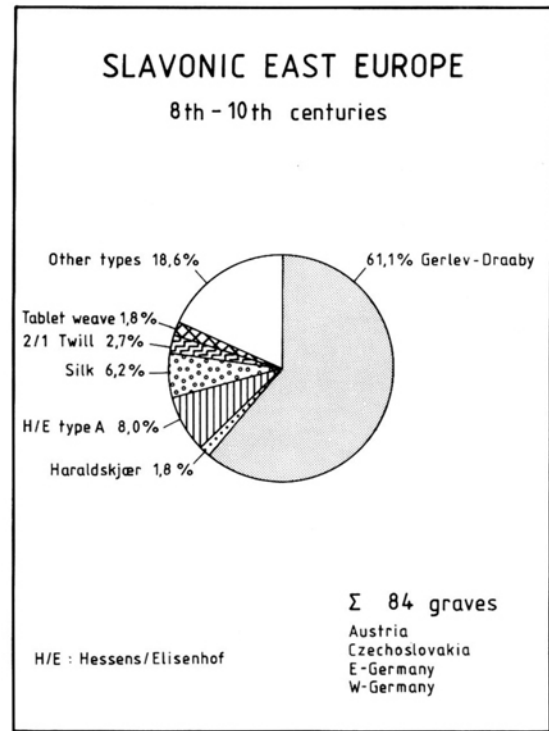


Fig. 14. Pie diagram of main cloth types in Slavonic East Europe in the 8th-10th centuries AD.

Germanic (mainly Saxon) North Germany, Slavonic eastern Europe, Magyar Hungary, and Scandinavia (figs. 13-16).

In all four groups, the Gerlev-Draaby type (tabby z/z) is a main cloth type making up between 38% and 61% of the material. In the Slavonic area, in the sense of Slavonic graves from the DDR, parts of the BRD, Czechoslovakia and Austria, the Gerlev-Draaby type amounts to 61.1% of the material; about 10% of the remaining fabrics are 2/2 wool twills, most of these the Hessens/Elisenhof A-type (2/2 twill z/s), whereas the Haraldskjær type (2/2 twill z/z) is rare; a noteworthy feature is that silk form an important new group, with some 6% of the material. Silk was known earlier, in fact since the Hallstatt Period, but only as singular pieces (Wild 1984). The Carolingian Period is the first where silk becomes so common that it constitutes a major part of the textile material found.

The Germanic material in many ways resembles that from the contemporary Slavonic graves. The Gerlev-Draaby type makes up almost half of the finds, the wool twills of the Haraldskjær and Hessens/Elisenhof A-type comprise 16% of the material, the Hessens-Elisenhof A-

type being the more common; the Hessens/Elisenhof C-type (diamond twill z/s), which had a strong hold on NW Germany and Frisia in the Merovingian Period, now is only 2.6%; diamond twill z/z is found in two categories – the Spong Hill type, which is of medium quality, and the Birka type, which is a very fine worsted. The 6.3% diamond twills z/z can be almost equally divided between the two types. Silk has been found only once, and is grouped with “others”.

In Magyar Hungary silk provides more than 40% of the material, where the Gerlev-Draaby type is only 38% and “others” 20%. The material consists of only 20 graves with 29 textile fragments, so it should be viewed with some caution.

The Scandinavian Viking Age textiles (9th-10th centuries) are illustrated in fig. 16. As there are marked regional differences in Viking Age Scandinavia, the diagram should be used with caution. It is shown here to put Viking Scandinavia into a European perspective.

Again, the Gerlev-Draaby type is the most common, some 44%, and there are some 30% diagonal twills; this latter group should be divided into several sub-types: the

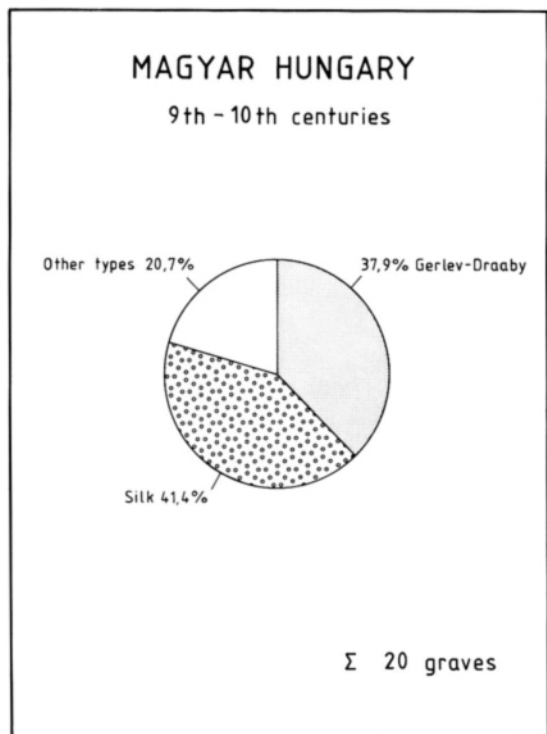


Fig. 15. Pie diagram of main cloth types in Magyar Hungary in the 9th-10th centuries AD.

Hessens/Elisenhof A-type, amounting to some 10%, and then the Haraldskjær, Veka, and Gotland types with together 21%. The Veka or Norway type is specific for Norway in the 7th-10th centuries, the Gotland type represent another regional type (Bender Jørgensen 1986, p. 186f./357 and Bender Jørgensen forthcoming); only a few fabrics can be termed the traditional Haraldskjær type. The Birka type (fine worsted diamond twill z/z) is the third most common type, but again, regional variations must be considered, as this type is much more common in West Norway than in the rest of Scandinavia. Silk has been found in 17 graves, and, as in east Central Europe, the 9th and 10th centuries are the period where silk is first found in Scandinavia. The princely boat grave cemetery of Valsgärde in Uppland, Sweden, is a good example of the sudden increase of silk. Throughout the period c. 550–1100 at Valsgärde one male of each generation was interred in his boat, and with rich furnishings including many textiles. The Vendel Period (7th-8th centuries) graves are among the richest of the whole series, and this also applies to textiles (Arwidsson 1942, 1954, 1977); but there are no silks. The Viking Age graves are much more poorly furnished, and textile remains are

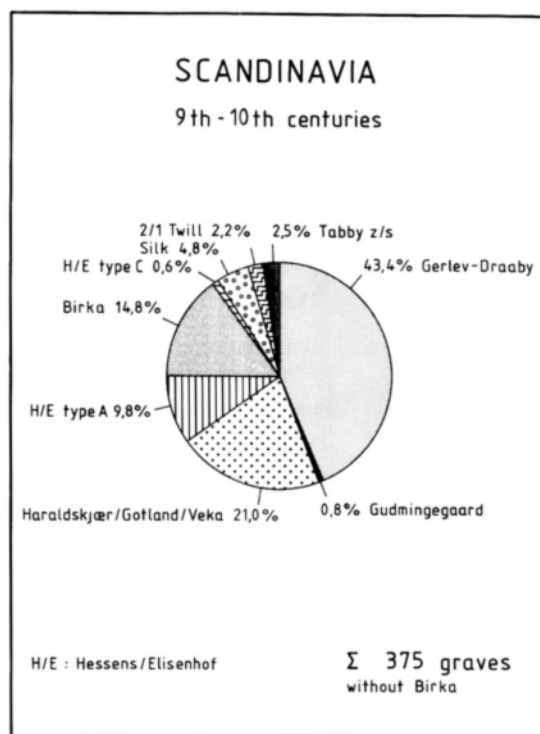


Fig. 16. Pie diagram of main cloth types in Viking Age Scandinavia.

fewer; but the few found are almost all silks. At the Viking Age trading centre of Birka in Mälaren, Sweden, silk has been found in no less than 45 graves (Geijer 1938, p. 58ff.); the Birka material is omitted from the diagram of Scandinavian textiles of the Viking Age as this material in many ways differs significantly in character from that in more ordinary graves.

The appearance of silk in Scandinavian Viking graves can probably be linked with the establishment of Scandinavian connections with the Byzantine world via Russia. Scandinavian graves have been found at many sites in Russia – at Staraja Ladoga, at Novgorod, and along the Dniepr and Volga. The earliest Scandinavian find in Russia dates to around 760, and many more are dated to the 9th and particularly the 10th century (Stalsberg 1988, Rjabinin 1985, p. 56f., Kirpicnikov, Rjabinin, & Petrenko 1987). However, as indicated above, it was not only in Scandinavia that silk became more common in the Carolingian Period (see also Pritchard 1988, Maik 1988, p. 198f.).

In this presentation of European textiles north of the Alps in the Pre-Roman Iron Age and the Post-Roman

Period only the main outline has been given. A detailed discussion of the origin of the various cloth types presented here, the reasons for their distribution pattern, and the information on textile technology etc. that can be extracted from them, fall outside the scope of this preliminary paper, but will be considered later, in a major study that is to emerge from the present research project.

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