

Catalogue of textile remains from West Heslerton cemetery  
(1979 excavation)

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These textiles have all been mineralised by their contact with the corrosion products of the metal artifacts, and in only two cases has it been possible to identify fibres (graves B8 and B10). The terms system 1 and system 2 have been used where warp and weft can not be identified. S and Z indicate the direction of spin of the yarn. Where the remains are less than one centimetre square, the thread count has been estimated.

Grave A12

iron spearhead

Found in association with spearhead, but not adhering to it, 1.5 x 1.0cms of 2/2 twill. In system 2, two S-spun threads alternate with two Z-spun.

system 1: 11 threads per cm / Z-spun / 0.8mm diameter

system 2: 9 " " " / Z- and S-spun / 0.8mm diameter

On one side of spearhead, patches of the same twill, covering a total of 4.0 x 2.5cms. On other side, a further 1.0 x 0.5cms of 2/2 twill; the four system 2 threads visible are all S-spun.

system 1: 10 / Z / 0.8mm

system 2: approx 11 / S / 0.6mm

Grave A17

bronze annular brooch

On back of brooch, close to hinge of pin, 2.0 x 1.0cms of tabby (plain weave).

system 1: 10 / Z / 1.0mm

system 2: 9-10 / Z / 1.0mm

On front of brooch, near tip of pin, and over the iron pin itself, are other remains of textile of similar yarn, probably also tabby.

1459 bronze annular brooch

Two areas of 2/2 twill, the first, 1.5 x 1.2cms, on the back of the brooch, over the hinge and looping round to the front over the iron pin; the second, 1.0 x 0.8cms, on the back at the opposite end of the pin, also looping over the front of the pin.

system 1: 9-10 / Z / 0.9mm

system 2: 9-10 / Z / 0.9mm

1461 iron objects\*

On surface of both objects, Z-spun threads, 0.8-0.9mm diam.

Grave A31

2 iron object

On one side of object, 3.0 x 0.8cms of 2/2 twill.

system 1: 9 / Z / 0.6mm

system 2: 8 / Z / 0.7mm

*Suggest drawing or photograph of these remains*

3. iron object

On one side of object, 3.5 x 0.8cms of 2/2 twill; 1.2 x 0.8cms and 0.8 x 0.4cms of same on other side.

system 1: 8-10 / Z / 0.9mm

system 2: 9-10 / Z / 0.9mm

4. iron object in three fragments

On each fragment, one surface only, 1.3 x 0.8cms, 2.0 x 0.8cms and 2.5 x 0.8cms of 2/2 twill. When the fragments are pieced together, it is clear that the twill covers at least 2.5cms without a reverse in the diagonal.

system 1: 9-11 / Z / 0.6mm

system 2: 10 / Z / 0.9mm

5. bronze cruciform-headed pin

On front at head of pin, decayed remains of Z-spun threads, possibly from tabby.

Grave A34

iron buckle

Along one edge of buckle, both Z- and S-spun threads, 0.8-1.0mm diameter, possibly from 2/2 twill.

Grave A50

bronze cruciform brooch

On back of brooch over hinge, 3.5 x 3.0cms of a ribbed tabby. System 2 is mostly obscured by system 1.

system 1: 20 / Z / 0.4mm

system 2: 14 / S / 0.5mm

Overlying this (i.e. further away from brooch and therefore closer to body), 2.5 x 3.0cms of 2/2 twill.

system 1: 10 / Z / 1.0mm

system 2: 10 / Z / 0.9mm

Two ends of a cord, 3.5mm diameter, 3-ply from Z-spun yarns, emerge from between the tabby and the twill, one end pointing towards top of brooch, the other at right angles to it.

Grave B8

iron buckle

On one side of buckle, a folded piece of tabby, 2.5 x 0.5cms.

system 1: 22 / Z / 0.4mm

system 2: 20 / Z / 0.5mm

Some double threads in system 2.

bronze tweezers

On one side of tweezers, three areas of ribbed tabby, the largest 5.0 x 1.0cms. System 1 partially obscures system 2.

system 1: 12-16 / Z / 0.5-1.0mm

system 2: 8-9 / Z / 0.5-0.8mm

Some fibres, stained or dyed red, have survived and are recognisable as vegetable, possibly flax.

More of the same tabby adheres to the ring at one end of the tweezers. Over this ring are also three or four stitches of paired Z-spun threads, 0.5mm diameter.

iron knife from chatelaine  
On one side of blade, 1.0 x 0.2cms of ?tabby.  
system 1: approx 20 / Z / 0.4mm  
system 2 not visible.

linkage from iron belt to south of knife, in three pieces  
On two fragments, 1.2 x 0.8cms and 0.7 x 0.3cms of ribbed  
tabby. System 1 partially obscures system 2.  
system 1: 20-22 / Z / 0.3-0.4mm  
system 2: 12-14 / S / 0.4-0.5mm

chatelaine: bag 1, iron object  
On one side, 0.5 x 0.2cms of ?tabby.  
system 1: 20 / Z / 0.3mm  
system 2: ? / S / 0.4mm  
A few threads the same on the other side.

bag 2, iron object  
small area, probably the same as in bag 1.

bag 3, iron S-shaped links  
Small area, probably the same as in bag 1.

bag 4, iron links  
Z-spun thread, 0.4mm diameter.

#### Grave B10

235 bronze annular brooch  
On front of brooch at hinge end, two areas, 2.5 x 1.5cms  
and 1.5 x 1.5cms of ?tabby. Several weakly twisted threads  
obscure the surface of the weave in places: these may be  
the remains of a piled fabric.  
system 1: 12-14 / Z / 0.5mm  
system 2: 14-16 / Z and S / 0.5mm  
System 2 appears to alternate two Z-spun with two S-spun  
threads. Some fibres were still intact and identified as  
fine wool.

On front of brooch, over pin tip, several Z-spun threads,  
0.4mm diameter, possibly part of a plied cord.

On back of brooch, behind tip of pin, 1.2 x 1.1cms of  
folded or pleated ribbed tabby. System 1 weaves round  
system 2, partially obscuring it.  
system 1: 14 / Z / 0.5mm  
system 2: 10 / Z / 0.7mm

Found with the brooch but not adhering to it, 2.2 x 1.2cms  
of ?tabby with extra threads on the surface, possibly  
from a piled weave, as on front of brooch.  
system 1: 12 / Z / 0.5mm  
system 2: 14 / Z / 0.6mm

240 iron knife *label says bone & tabby*  
Approximately 1.0 x 1.0cms of ribbed tabby. System 1 partially  
obscures system 2.  
system 1: 10-12 / Z / 0.7mm  
system 2: 8 / Z / 0.5mm

Grave B15

bronze annular brooch

Covering large areas of front and back of brooch, curving round over top edge ( i.e. hinge end) and in folds at pin, grey-brown tabby.

system 1: 18 / Z / 0.3-0.6mm

system 2: 10 / Z / 0.5mm

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The metal finds from grave HE 46 preserved several small areas of textile remains. These were on the two annular brooches, two of the wrist clasps, the cross brooch and a folded bronze object. Plain weave (tabby), 2/2 twill, tablet weaving, a fringe and two narrow braids were identified.

#### Catalogue

Almost all the remains are mineralised and it is therefore difficult to identify the fibres. Thread counts have been extrapolated to counts per centimetre for comparative purposes; as this may be misleading, the number of threads actually present is also given. Z and S are used to indicate clockwise and anti-clockwise spinning respectively.

#### Annular brooch HE 46 GV

A. A folded piece of dark brown 2/2 twill covers half of the back of the brooch:

system 1: 14 thr.p.cm / Z-spun / 0.5mm diameter (from 12 threads)

system 2: 13 thr.p.cm / Z-spun / 0.3mm diam. (from 8 threads)

There are also larger areas of 'skeletal' remains (where only the core fibres of the original yarn are present) from a similar cloth in the debris around the brooch.

B. Overlying A is a small area of tablet weaving worked with 2-hole tablets, the odd number tablets being turned alternately with the evens. Five of the pairs of warp threads have been turned anti-clockwise, but one pair at either side has been turned clockwise. The remains have been coloured green by the corrosion products, but one of each pair of threads is clearly coarser and darker than the other, producing a chevron pattern in the piece studied.

warp: 10 pairs per cm / weak Z / 0.4 and 0.6mm diam. (from 7 pairs)

weft: only two visible in cross-section, probably 9 or 10 threads per cm.

C. A second piece of 2/2 twill overlies B. Although this is ~~nt~~ similar to A, the yarn is coarser and more tightly spun.  
system 1: 10 thr.p.cm / Z-spun / 0.5mm diam. (from 10 threads)  
system 2: 10 thr.p.cm / Z-spun / 0.7mm diam. (from 9 threads)

#### FIG 2

X. A two-ply cord and two plaits follow the line of the tablet weaving, B, onto the front of the brooch, and may be a finishing fringe for a tablet woven braid. The cord is 1.0mm wide, being S-twisted from two Z-spun threads of approximately 0.5mm diameter. The plaits are worked in a similar yarn, using four strands each; they are both about 2.0mm diameter. There are other small remains and impressions of cords and plaits, all lying parallel to those described, being wrapped diagonally over the iron pin.

#### FIG. B

Y. Round the outside edge of the brooch there is more 2/2 twill, probably the same as C.  
system 1: 9-10 thr.p.cm / Z-spun / 0.75mm diam. (from 6 threads)  
system 2: 8-9 thr.p.cm / Z-spun / 0.75mm diam. (from 3 threads)

#### Annular brooch HE 46 GW

On the front of the brooch, where the iron pin touches the edge, there is a grey fragment of plain weave. Although the fibres are mineralised, the general appearance is of vegetable fibre.

system 1: 13 thr.p.cm / Z-spun / 0.5-0.6mm diam. (from 8 threads)  
system 2: 9 thr.p.cm / Z-spun / 0.75mm diam. (from 7 threads)  
There are similar Z-spun threads at the hinged end of the brooch, but the cloth is folded, so that the weave is not clear.

#### Cross brooch HE 46 GT

There are several Z-spun threads on the catch and a 'skeleton' of woven threads, probably plain weave, along the line of the pin.

#### Folded bronze object HE 46 GY

Z-spun threads, approximately 0.4mm diameter, lie along the inside of the fold. Over this piece of metal and covering the bronze wire near it were more Z-spun threads, probably from a twill.

Wrist clasp HE 46 GP

Remains of a 2/2 twill covered the whole of the back of the wrist clasp, although only a small area was preserved enough to study:

system 1: 10-12 thr.p.cm / Z-spun / 0.75mm diam. (from 4 threads)

system 2: 9 thr.p.cm / Z-spun / 1.0mm diam. (from 5 threads)

Wrist clasp HE 46 GR

This is the best preserved of the textile remains, and the largest. A dark brown 2/2 twill covers most of the back of the wrist clasp and measures 4.0 by 3.5cm.

system 1: 10-12 thr.p.cm / Z-spun / 0.8mm diam.

system 2: 7-8 thr.p.cm / Z-spun / 1.0mm diam.

Sandwiched between the twill and the clasp are two pieces of narrow braiding, 3.0cm and 1.5cm long; they have both been tied with overhand knots, with the yarn frayed out below the knot. Each braid is approximately 3.5mm wide; they are worked in a lighter and finer yarn than the twill, Z-spun, 0.5mm diam.

The construction of these braids is difficult to identify due to their fragile and mineralised state. Attempts to reproduce them using tablet weaving were unsuccessful, although 2-hole techniques produced a similar appearance. It is possible that they are in fact tubular plaits which have been flattened by the wrist clasp; the surface pattern is exactly that of a four strand chain plait (also known as a four strand sinnet with right and left crowning). This is difficult to work in fine yarn, but the identification seems more probable when one realises that the four strand chain plait is a straightforward development of the simple four strand plaits on annular brooch 6M.

FIG 3

FIG 4

This wrist clasp was found without its partner in the pelvic region of the skeleton, the body already being furnished with a pair of wrist clasps at either wrist.

## Discussion

The published studies of early Saxon textiles found in this country deal mainly with material from sites in southern England and East Anglia; these East Yorkshire finds are therefore valuable in extending geographically our knowledge of Pagan Saxon textiles.

Most of the weaves are closely paralleled by the finds in the south. Four-shed twills of this relatively coarse type are generally found to be wool, and seem to have been regularly used for woollen outer garments such as tunics and cloaks (Crowfoot, 1966, p29). The plain weave, at 13 x 9 threads per cm, is coarser than most linen plain weaves, but one piece from Little Eriswell (Crowfoot, 1966, p30, grave 4) with a count of 11 x 11 thr/cm was identified as vegetable fibre, and another from Laceby, Lincolnshire, (Crowfoot, 1956, p189) at 14 x 14 thr/cm may have been linen. Plain weave of a similar thread count was found in two graves at Swaffham, also on the upper surfaces of shoulder brooches, as here; it was interpreted as either part of a shroud, or a head veil hanging over the shoulders (Crowfoot, 1978, p29).

Tablet weaving is also a common find on Saxon sites, but this piece is unusual in that it combines 2-hole tablet weaving with a technique which involves turning first the odd number tablets, throwing the weft and then turning the evens. This method of turning alternate tablets separately was used on a Saxon (Late Pagan) braid from St John's Cricket Field, Cambridge (Crowfoot, 1951, p28-29), but this was worked on 4-hole tablets. A closer parallel is to be found amongst the sixth century finds from Snartemo in Norway, where a woollen band was found to have been worked on 2-hole tablets, with some of the alternate tablets turned separately (Ledekam, 1924-5, p42-45). A similar chevron pattern was produced, but adjacent tablets must have been turned together in the centre of each chevron, as the meetings of the diagonals are in the form of a V; in the west Heselton braid, where no adjacent tablets were turned together, the meeting is in the form of a Y (see fig 1).

The braid may have been finished by working the warps into a corded and plaited fringe. A corded fringe was identified at Little Eriswell (op.cit. p32, grave 33), also in association



with 2-hole tablet weaving, but this appears to have been a fringe of wefts. Simple 4-strand plaits have been found at Birka in Sweden (Geijer, 1938, pl00) and at Krogens Mølle Mose, a peat bog in Denmark (Hald, 1950, p243, fig 237) but neither is of quite the same construction as here; the Birka finds are flat plaits, while the Danish plait although similar, has an extra twist as the threads cross each other.

Tablet weaving was often worked as an integral part of a length of cloth, forming a firm border; however the complexity of the weave here makes it improbable that this piece is a constructional feature of woven cloth. Crowfoot and Hawkes, in their study, Early Anglo-Saxon Gold Braids have shown that decorative braids were used for belts, baldrics, fillets and bracelets, and for borders sewn onto garments at hems, neck edges and cuffs. The West Heslerton braid, coming as it does from a brooch found below one shoulder, may have edged the neck of a tunic, or a cloak fastened below the shoulders by the annular brooches; if a cloak, the fringe would suggest that it was a corner being held in place.

The braids found in the pelvic region (with wrist clasp Gh) are more unusual. If they are tubular plaits as has been suggested (see catalogue), they have no exact parallel either in the Danish finds studied by Hald or among the many different plaits from Birka. However several other complex plaits are known from the Saxon period in England, and one found between two layers of textile on a disc brooch from Grave 845 at Mucking, Essex, may have been of the same construction (Crowfoot, pers.comm.), although, again its oxidised state prevented definite identification. Whatever their construction, the position of the braids on the body suggests that they are the ends of a narrow belt hanging down below the place where they tied at the waist.

The piecemeal nature of the evidence of these textile remains makes an accurate reconstruction of the clothing impossible, but the remains of twill at the shoulder, wrist and in the region of the pelvis, suggest that a sleeved twill garment covered at least the upper part of the body. This was probably tied with a plaited belt whose knotted ends hung down loose. A second piece of twill, present below the left shoulder, may be from a cloak or some other outer garment. A decorative tablet woven braid formed some part of the clothing, perhaps a border to this cloak. A plain weave garment was also worn, possibly a linen veil.

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## Acknowledgements

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Fig. 3: Simple 4-strand  
pleit



Fig. 4: 4-strand chain pleit, or  
4-strand sinnet with right and  
left crowning.

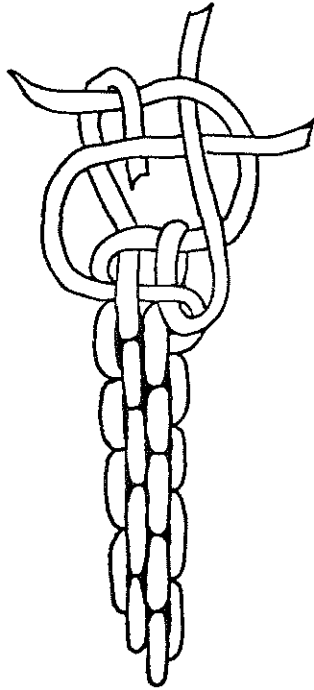


Fig. 1: diagrammatic representation of  
tablet weaving on annular brooch NE 46 27

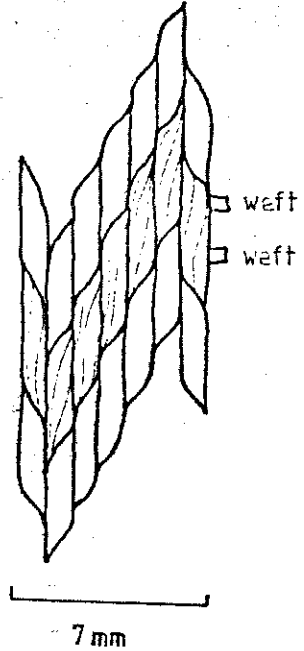
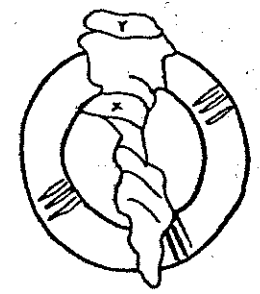
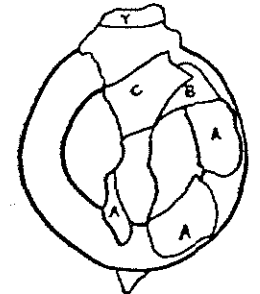


Fig. 2: Textile remains on annular brooch



front



Back

to be reduced