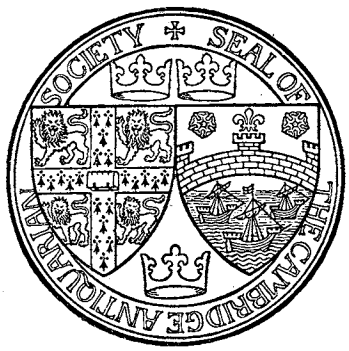
PROCEEDINGS
OF THE
CAMBRIDGE ANTIQUARIAN SOCIETY



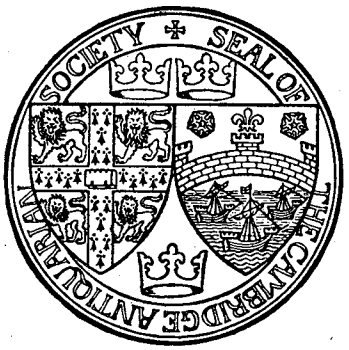
VOLUME XLIV

JANUARY 1950 TO DECEMBER 1950

CAMBRIDGE
BOWES AND BOWES
1951

PROCEEDINGS OF THE CAMBRIDGE ANTIQUARIAN SOCIETY

PROCEEDINGS
OF THE
CAMBRIDGE ANTIQUARIAN SOCIETY



VOLUME XLIV

JANUARY 1950 TO DECEMBER 1950

CAMBRIDGE
BOWES AND BOWES
1951

Published for the Cambridge Antiquarian Society
by Bowes & Bowes Publishers Limited
Cambridge

Printed in Great Britain at the University Press, Cambridge
(Brooke Crutchley, University Printer)

CONTENTS

TEXTILES OF THE SAXON PERIOD IN THE MUSEUM OF ARCHAEOLOGY AND ETHNOLOGY

GRACE M. CROWFOOT

Drawings by E. G. CROWFOOT

I. REMAINS OF TWO WOOLLEN TEXTILES FROM SAXON WRIST CLASPS

(Plate V and fig. 1)

THE textile remains were found on a pair of bronze wrist clasps which, with one from a second pair (see Plate V, nos. 1 and 2), are in the Museum of Archaeology and Ethnology, Cambridge (Museum numbers 48.3438 A, B). The only information about their provenance comes from a label assigning them to Mildenhall, Suffolk. Similar clasps in the same Museum come from Lakenheath (1899.102) and Barrington.

These clasps come under 'straight types' in the classification suggested by T. C. Lethbridge.[1] They consist of two rectangular plates of bronze, size 3·2 cm. × 1·5 cm., one with a slot cut in it, and the other with a curved projection to hook into the slot. Of the three plates here preserved *a* and *c* have slots and *b* a projection; each is provided with two holes for sewing to the clothing, and is adorned with repoussé work. Clasp *a* has been slightly cleaned so as to show the ornament. Clasps *b* and *c* both had textile in position on the underside when found and clasp *c* in addition had sewing threads present in both holes. There are also traces of textile on the upper side of both *b* and *c*. The textile in clasp *b* is in bad condition and difficult to examine, but it appears to be in layers of the same kind as those studied from clasp *c*.

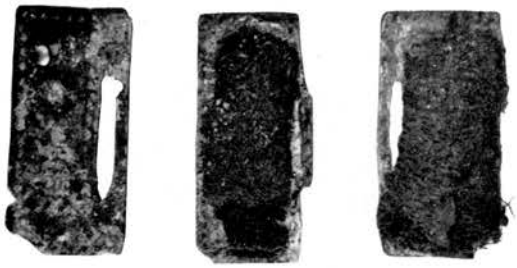
The textiles on clasp c. When first examined it was apparent that there were two or more layers of textile on the clasp, the upper layer being a twill folded close to the slot (Plate V, no. 5). It took much careful work to separate the layers, and when at last it was possible to lift the twill and turn it over (Plate V, no. 6) the textile underneath was found to be quite different in character, being part of a tablet woven band.

The twill fragment was so small and so distorted that it was difficult to make out the exact weave while it was still folded and sewn in position, so it was removed and spread out until sufficiently flattened to reveal a 2 × 2 twill (Plate V, nos. 3 and 4). The tablet weave was then cleaned in part and one of the sewing threads turned on

[1] T. C. Lethbridge, F.S.A., *Recent Excavations in Anglo-Saxon Cemeteries.* Cambridge Antiquarian Society: Bowes and Bowes. 1931. Pp. 78–9. See especially fig. 13, C. 2 (Grave 46); fig. 17, B. 5 (Grave 53); fig. 19, A. 1 (Grave 83); all from Holywell Row.

a *b* *c*

No. 1



a *b* *c*

No. 2

No. 3

No. 4

No. 5

No. 6

No. 7

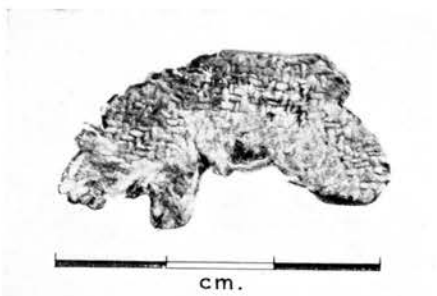
Textiles on Saxon wrist-clasps from Mildenhall

No. 1 *a*, *b*, *c*: bronze wrist clasps, front, natural size. No. 2 *a*, *b*, *c*: the same, back, natural size. Nos. 3 and 4: twill textile from clasp No. 1 *c*, front and back, much enlarged. No. 5: clasp No. 1 *c*, with textiles in position as found, much enlarged. No. 6: the same, with upper textile, twill turned back, much enlarged. No. 7: the same, with twill removed, showing tablet weave, much enlarged.

a. Braid on a strap-end from St John's College Cricket Field, Cambridge, now in the University Museum of Archaeology and Ethnology, Cambridge

b. Strap-end from Fakenham, now in the Castle Museum, Norwich

Front



Back

c. Fragment of crystal twill in linen from Barrington Cemetery

one side before the photograph on Plate V, no. 7, was taken; in this the tablet twists, forming chevrons, can be clearly seen.

Material. In both textiles the material is wool; according to the report kindly sent by the Wool Industries Research Association, all specimens examined are of 'fine wool fibres'.[1]

Thread. The thread of the twill weave is Z-spun, well twisted both in warp and weft; and that of the tablet weave is also Z-spun, but weakly, and is used two-ply, Z-twisted. The sewing thread, large and blackish, is Z-spun, very loosely.

The 2 × 2 twill textile. There is nothing to indicate warp and weft, so the warp is taken here to be vertical and the weft horizontal on the illustration, Plate V, nos. 3 and 4. The count is 5 × 5 threads per 5 mm. = 10 × 10 per cm.

The tablet weave. The tablet weave is in four-hole technique, threaded right and left to give chevrons. There are twelve tablet twists per centimetre in the best preserved part. No edge is present, but from what remains, the band must have been nearly as wide as the clasp, at least 3 cm. broad. This width would have needed 36 tablets, the total number of warp threads being 144.

Traces of textile on upper side of clasps b and c. These are impressions of a twill textile, thread Z-spun, of about the same quality as the twill textile found inside: the weave may be 2 × 2, but this cannot be certain.

Restoration of sleeve cuff. The wrist clasps may be thought of as fastening the opening of a sleeve just as the buttons fasten a man's sleeve to-day, and the textiles inside them would be those forming the cuff. If this is accepted, then the twill weave, being that lying uppermost inside the clasp, must have been the sleeve, and the innermost textile, the tablet weave, must have formed a band on the cuff edge. Fig. 1 is a drawing by Miss E. G. Crowfoot, showing a restoration of the possible position of the two textiles on the cuff.

The garment. It is probable that the garment was a tunic, for which the fine woollen twill would be very suitable. The impression of a twill textile on the upper side of the clasps may have come from the sleeve if it was sufficiently voluminous to over-wrap, but more probably from a cloak. These clasps of the Straight type occur in graves of women and children.

Dating. Speaking of these Straight types Mr T. C. Lethbridge says: 'These simple objects persist right through the period and cannot be used for dating purposes.' A pair was found in the early grave, Holywell Row No. 69 (i.e. early sixth century), and another in the very late, No. 70 (seventh century).

The class is particularly common in eastern England.

Comparisons. A case of wrist-clasps of another type in which remains of textile are preserved is recorded in *Archaeologia*, vol. LXIII, p. 186, fig. 17, from Mitchell's Hill,

[1] Report on fibres from Saxon Wrist Clasp; Wool Industries Research Association, Torridon, Leeds. 'The fibres from all four samples were examined microscopically; all the fibres are very badly damaged and brittle. Some of the fragments show evidence of scales, but there does not appear to be any signs of medulla; this may be due to the fact that the fibres are extremely brittle and wear down very easily. On the other hand, the absence of medulla points to the fibres being fine wool and not hair. All the fibres, therefore, are fine wool fibres.' Investigator: A. B. Wildman. 22 August 1949.

Icklingham. In Norway remains of textiles in tablet weave have been found on wrist clasps of the sixth century. These clasps, somewhat like the early straight type shown from Holywell Row (Grave 48, fig. 12.5), are covered over with the textile which is fastened by ornamental studs.[1]

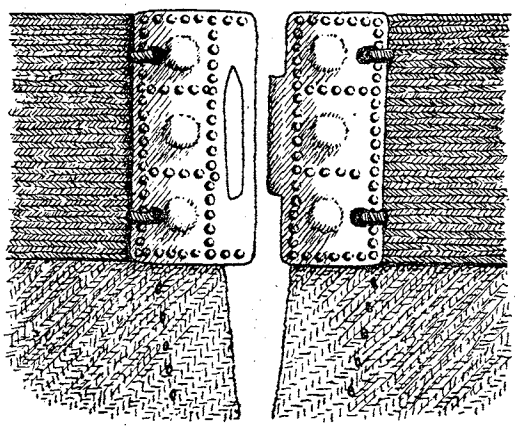


Fig. 1. Restoration of sleeve cuff.

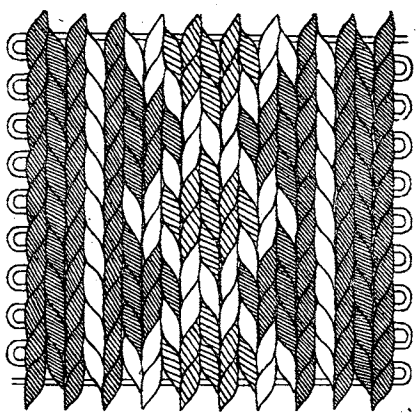


Fig. 2. Restoration of weave of braid on strap-end from St John's College Cricket Field, Cambridge.

II. TABLET WOVEN BRAID ON A BRONZE STRAP-END FROM ST JOHN'S CRICKET FIELD, CAMBRIDGE. SAXON, LATE PAGAN

(Plate VI*a* and fig. 2)

Size. Fragment of braid, 1·5 × 1·1 cm. at broadest part.

Material. Probably flax. The Report from the Shirley Institute, 14 January 1947, on specimens from the Museum, says: 'All the fibres appear to be bast fibres and No. 1 [the braid described here] has dimensions and cross markings which indicate that they may be linen.'

Thread. The warp thread shows no trace of spinning direction except in two places where the thread is split and an S-twist can be seen; this may, however, indicate that the thread is really two-ply, Z-spun and S-doubled, which would be suitable for tablet weaving, but this cannot be proved. The weft can be seen at the edges, but in such a frayed condition that the twist cannot be observed.

Weave. The thickness of the braid suggests a tablet weave, and the presence of a weft supports this, but the piece adhering to the metal is very small and cannot be dissected or even turned over to show the other side, so that any reconstruction of the weave has to be made from study of the surface only. On examination it appears to be very different from a normal tablet fabric. There is, indeed, an appearance of chevrons, as when tablets are threaded right and left in pairs, but instead of the

[1] Hans Dedekam, *To tekstilfund fra folkevandringstiden.* Bergens Mus. Aarbok 1924–25, figs. 25–29, pp. 49–54.

typical V there is a Y, a meeting of the 'stitches' half-way. According to my experiments such a texture can be produced by the following procedure: the tablets are numbered, and instead of turning the pack as a whole, only half the tablets are turned at a time—the odd numbers, say, are turned first and a weft throw made, then the even numbers and again a weft throw made, and these two turns repeated. This gives the plaited or twilled effect seen on the surface.

Pattern. The surface of the braid is tinged very pale bluish green; the warp may have been dyed in parts, possibly with indigo (woad?), or this colouring may have been caused by bronze oxide staining from contact with the strap-end: the weft is of a brownish colour. The pattern shows clearly on the fragment as a repeat of diamonds, one complete in the centre, part of one preserved above and a smaller part of a third below. The design seems to be carried out in three shades of colour; the diamonds are outlined in white, and there is a white line down each side, while the centre of the diamonds appears to be in a paler shade than the half diamonds at the sides. To obtain this pattern the tablets have to be threaded with colours in a definite order, as is usual in all tablet pattern weave. The following formula has been used to make replicas of the braid, one of which can be seen in the Museum.

Thread eighteen four-hole tablets right and left in pairs with thread of three shades, say, Blue (B), Pale Blue (PB), and White (W), as follows:

	/	\	/	\	/	\	/	\	/	\	/	\	/	\	/	\	/	\
Tablet nos....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Hole no. 1	B	B	B	W	B	W	W	PB	PB	PB	PB	PB	W	W	B	W	B	B
,, 2	B	B	B	W	B	B	W	W	PB	PB	PB	W	W	B	B	W	B	B
,, 3	B	B	B	W	B	B	B	B	W	W	W	B	B	B	B	W	B	B
,, 4	B	B	B	W	B	B	B	W	W	PB	W	W	B	B	B	W	B	B

Directions for weaving: Number tablets from left to right. Turn forwards in $\frac{1}{4}$-turns away from self. (1) Turn odd numbers, then throw weft. (2) Turn even numbers, then throw weft. Continue with (1) and (2). The pattern repeats on 8 throws of weft. The turning can be done either by separating the pack into two halves, setting them one behind the other, or by keeping the pack together and turning the tablets individually as required, a tedious proceeding but safer.

Comparisons. I have so far found only three other instances of this weave. In the Early Saxon period I can quote nothing more complicated than a plain four-hole tablet weave, e.g. the piece found on the wrist-clasp from Mildenhall, see p. 27 and Plate V, No. 7. Among the early Norwegian pattern weaves there is an instance of two-hole weave in two colours in which half the tablets stand while the others are turned in a definite order giving a twill, but there is nothing identical with this braid weave. The closest comparison is with a fragment of braid from a stirrup-shaped buckle from Felixstowe, possibly early medieval, in Norwich Museum; this is also in a plant fibre, probably linen, and has a chevron pattern in two shades of brown; the back, here happily visible, shows the pattern in reverse. I know of two more cases in exactly the same kind of weave but without pattern; one is a braid with gold brocading among the Walter de Cantilupe relics (Worcester) of the thirteenth

century, and the other is a broad braid in silk and gold, possibly part of a stole, in the Bock Collection (V. and A., 1270–1864), believed to be Sicilian in origin.

The strap-end. The small piece of metal to which the braid still firmly adheres is no doubt part of a simple and well-known form of strap-end; a complete specimen of this type from Fakenham (Norwich Museum No. 107,831, Saxon, sixth century) is shown on Plate VI*b*. The belt or braid was fastened in between the blades at the broad end by one rivet; in our specimen, the metal is broken off just below this rivet. At the other end of the belt was probably one of the small buckles of the period, usually fastened on with two or three rivets on the plate below the buckle. It is supposed that the belts were commonly of leather, traces of which have been found; the clever method of holding the leather belt ends firmly was equally well adapted to holding the thick ends of tablet woven bands.[1]

Dating. The cemetery in St John's Cricket Field was one of mixed urns and inhumations;[2] this braid is said to have been found in a cinerary urn, which, if correct, would place it early in the period, but there is no trace of firing on the piece. Whichever type of burial it came from, however, this fragment of braid is the earliest piece of Anglo-Saxon tablet weave in pattern that has yet been found; and it is also of interest as the first known Anglo-Saxon instance of the use of a textile material for a belt.

III. FRAGMENT OF BROKEN DIAMOND OR CRYSTAL TWILL IN LINEN, FROM BARRINGTON CEMETERY. SAXON, LATE PAGAN

(Plate VI*c* and fig. 3)

Size. Fragment measures 3 × 1 cm. at broadest part.

Material. Linen. A sample was examined at H.M. Norfolk Flax Establishment by Major G. O. Searle, who reports: 'The Saxon specimen from Barrington is very definitely flax to my mind. In fact the fibres seemed very little degraded, and gave perfectly clear examples of the S-twist fibrillar structure and twirled round clockwise quite merrily on drying, indeed they were as good as new specimens. The fibres seemed to have a good deal of other cellular tissue adhering to them, so I should guess the yarn had been made from unretted green flax.' There is no indication of dyeing; the surface is tinged with green bronze oxide staining owing to contact with some metal object.

Thread. The warp and weft, which, in the absence of selvedge or other indication, could not be distinguished, are very similar; both vary in thickness; both are Z-spun. The count is about 16–18 × 16–18 per cm.

Weave. A reconstruction of the weave is shown on Fig. 3. It is a broken diamond twill, in a four heddle weave, based on 2 × 2, repeating on 20 throws of weft. The design is not complete on the small fragment preserved, and the difficulty of restoring

[1] For examples of small buckles, see T. C. Lethbridge, *Recent Excavations in Anglo-Saxon Cemeteries* (1931), fig. 14, and for strap-ends, fig. 2, no. 8 and fig. 9, no. 2, both from graves of women.

[2] Fox, *Archaeology of the Cambridge Region*, p. 242.

it was increased by the large size of the diamonds. In the photograph, Plate VI*c*, the upper half of one diamond can be clearly seen in the centre above, and part of a second is present below on the right (front), though this is very confused. These certain portions, combined and extended, gave the design as shown on Fig. 3. It appears to come under a class of twill broken and reversed in counterchange well known for its good wearing qualities, but there does not seem to be any special English name for it. In Denmark, however, similar diamond twills are sometimes called 'Krystalkiper', and I have translated this literally, 'crystal twill', and used this name throughout.

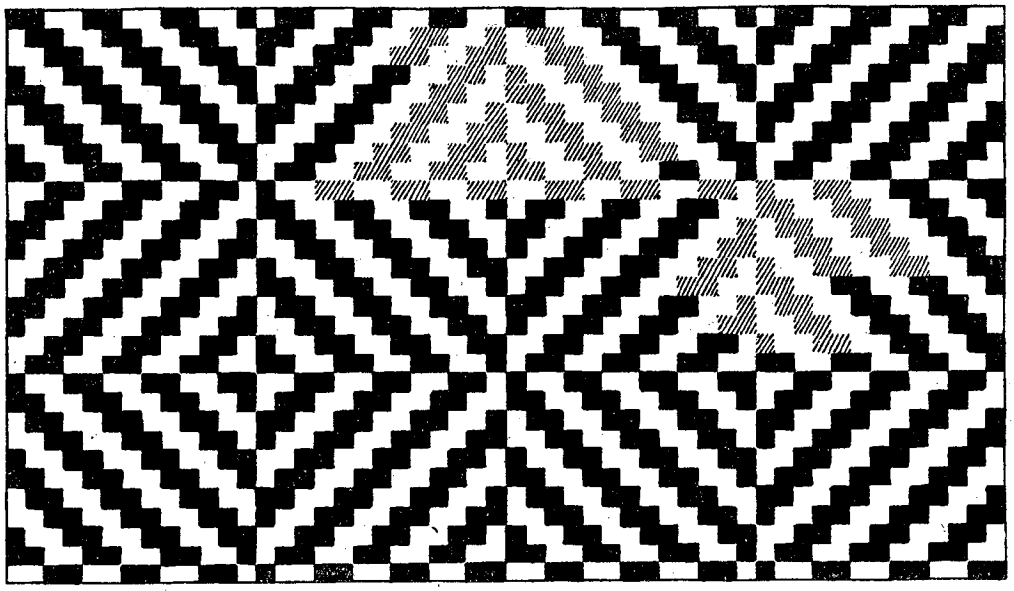


Fig. 3. Diagram of crystal twill from Barrington. Hatching indicates the perfectly preserved portions on the fragments (Plate VI*c*) from which the design was reconstructed.

Conclusion. This fragment is of interest both on account of its material and its weave. The definite determination of the flax fibre here is most welcome. The use of linen is as characteristic of the Germanic people as of the Egyptians, and might therefore also be expected of the Saxons, but it is difficult to prove it from existing remains; there are, however, many literary references to it. When I asked Professor Bruce Dickins if this fragment could possibly be of local origin, he most kindly sent me the following reply: 'Already in the first century A.D. Pliny and Tacitus record that the Germanic peoples were growing flax and weaving it into linen, and in the late Anglo-Saxon period the duties of a discreet reeve included the sowing of linseed in spring. Flax and hards are mentioned in the eighth century Corpus Gloss and several compounds of *fleax* and *līn* are recorded in later documents. You need not hesitate to assume that flax was being grown and woven into linen in the centuries immediately following the settlement. For the seventh century there are specific references to linen cloth in Bede, *Hist. Eccles.*, III, 10, and IV, 19.'

As far as the linen is concerned, therefore, the fragment might be of home production. It remains to consider the weave, which is even more surprising than the material. So far I can find no contemporary parallel for this complicated twill in linen; the nearest is a fragment, possibly also a crystal twill, from Søllested in Denmark, which dates from the first half of the tenth century.[1] In wool, however, this variety is known much earlier. The only example I know from these islands is the broken diamond twill from Balmaclellan, found with a hoard of Celtic bronzes, and believed to be not later than the second or third century A.D.,[2] but there are several early examples from Denmark[3] and Norway.[4] Twills appear as a novel type in the former country early in the Iron Age, and in so perfect a form (e.g. the crystal twill of Karlby) that Miss Hald believes it is probable 'that the technique was handed down to us at a more advanced stage by cultural communications with other peoples. We must, in other words, turn to our neighbours. In finds from Salzkammergut, Dürnberg and Kleinrössen, there have been found fragments of twilled fabrics dating back to the Late Bronze Age.'[5]

This new knowledge of the early development of twills, and especially of this variety, the crystal twill, makes it seem reasonable to regard the Barrington example as woven in this country. Which loom, however, was used to weave it cannot be certain. There is no evidence for the introduction of the treadle loom as early as this period; the twills mentioned from Denmark were produced either on a warp weighted loom, or on a vertical type with two beams (Roman), both of which must have been known to the Saxons. Four rod heddles, or three heddles and a shed rod can be used on both these simple types. The Barrington piece seems a fine one to produce in this primitive way, but even finer broken twills in wool dating from the Viking period have been found in Sweden,[6] some with 55×16 threads to the centimetre, in a thread so fine and evenly spun that the pattern stands out clear. The more we know of these early textiles, the more we can but be amazed at what was accomplished by skilful hands with such slight aids.

[1] Margrethe Hald, *Olddanske Tekstiler* (Copenhagen, 1950), fig. 89. It is interesting to note that the thread of this twill, like that of our fragment, is Z-spun; so too, is the linen of Lousgaard (seventh to eighth century), unlike the Swiss Lake Village linen, which is all S-spun.

[2] Grace M. Crowfoot, 'Two textiles from the National Museum, Edinburgh', *Proc. Soc. Antiq. Scot.*, vol. LXXXII (vol. X, 7th ser.), 1947–8, fig. 1 and Pl. XLII, *a* and *b*.

[3] Margrethe Hald, op. cit. Examples of Rudekiper or Krystalkiper are recorded from Karlby, figs. 27, 28, and Vejen Mose, figs. 48, 49, 50 (Bog finds of the Early Iron Age), from Hjørrings Praestemark, fig. 70, third century A.D., and Vrangstrup, figs. 78, 79, fourth century A.D.

[4] Bjørn Hougen, *Snartemofunnene* (Oslo, 1935). Broken diamonds are shown from Gjeite, Pl. X, 5 and fig. 13, fourth century A.D.; Veien, fig. 16 and Pl. XII, 1, *c.* 400 A.D.; and Vemestad, fig. 19 and Pl. XVII, 3, fifth century A.D. In the last case the diamond is larger even than that of Barrington.

[5] Margrethe Hald, op. cit. (English summary), p. 436.

[6] Agnes Geijer, *Birka III* (Uppsala, 1938), pp. 22–9.

PROCEEDINGS OF THE CAMBRIDGE ANTIQUARIAN SOCIETY

VOLUME XLIV
JANUARY 1950 TO DECEMBER 1950
15*s. net.*

CONTENTS