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Durham

Textiles

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The small group of textile material of the 10th and 11th centuries described here consists of pieces of seven woven fabrics, some scraps of felt, and fragments of unspun wool, human hair and horse-mane hair. The only English finds near to this date are the Anglo-Scandinavian textiles of the 10th century from York, which have been fully studied by John Hedges (1), and small fragments of the 11th century from the Brook Street area at Winchester (2), but it is a period that has produced a very considerable quantity of textile in northern Europe, particularly that published by Agnes Geijer at Birka (3) and by Janina Kaminska and Adam Nahlik in Polish and North Russian cities (4).

All the fragments preserved at Durham are of animal fibre; microscopic examination and identification was made by H.M.Appleyard, F.T.I. (Appendix, pp.6,7). In the catalogue, counts are given in threads to the centimetre; the letters Z and S indicate the direction the fibres are twisted in spinning the yarns. No selvages are preserved, but in most medieval textiles Z spun yarn is used for warps, and except where otherwise stated the Z count is placed in the first (warp) position.

Catalogue

SF 17. 1575.A.M.Lab.768410

11th century

Narrow cut strip, c.17.0 cm long, 0.4-0.5 cm wide, light brown, wool probably worsted (combed), but fibres too deteriorated for its quality to be clear. Spinning Z one system, S the other, both yarns regular; no selvedge; weave fine even three-shed twill (?2/1), count 20-22/18 (taken as 9 on 5 mm). Originally a good quality garment fabric.

SF 91. 1581. A.M.Lab.766463

10th-11th century

Two fragments, c.22.0 X 9.5 and 6.0 X 21.5 cm overall. Near-black wool, dyed (Appendix, p. 6), rather harsh. Spinning, Z warp, even worsted yarn, S weft, softer, very uneven with lumps; no selvedge; weave 2/1 twill, count 15/10. The two pieces are cut opposite ways of the fabric. There are remains of seams on the longest sides of both, edges turned under singly, only one stitch preserved, in double Z thread similar to that in warp; the direction in which the seams are turned under indicates that the warp-face (2/1) side of the weave was used as the front of the cloth. Pieces from garment.

SF 103. 1633. A.M.Lab.766464

10th-11th century

Two pieces, 4.0 X 6.5 and c.4.0 X 2.0 cm (fragmentary), grey-brown wool, soft. Spinning S one system, Z the other, both regular but Z yarn finer, deteriorated; no selvedge; weave three-shed (?2/1) twill, loose and open, count 9-10(S)/5-6(Z). At one edge of the larger piece, two rather finer dark brown S threads may be part of selvedge, or possibly a stripe. ?Blanket material.

SF 120. 1639.

10th century

This fragment was not available for study. A drawing showed it to measure c.4.3 X 5.0 cm, and sectional drawing suggested that it was probably a tabby weave.

SF 121. 1639. A.M.Lab.766465

10th century

Strip of coarse dark grey-brown wool, L.54 cm, width at widest point 2.0 cm, cut edges. Spinning Z one system, S the other, both yarns as far as can be seen even and similar; no selvedge; weave three-shed twill, count 6/4; fabric possibly fullled, but may be simply matted by use. One edge has been oversewn with double Z wool. The piece has a self-knot in it, and has probably been used as a cord; it may have been cut from a blanket to which the oversewn edge belonged.

SF 142. 1685. A.M.Lab.766466

10th century

Piece 17.0 X 12.0 cm, dark brown wool, rather harsh. Spinning Z warp, even worsted yarn, S weft, softer, very uneven (Cf.SF 91); no selvedge; weave three-shed (2/1) twill, very solid and even, count 11/7-8. Ragged piece from blanket or outer garment.

SF 172..1704. A.M.Lab.768414

?

Three fragments, c.6.5 X 7.0, 4.0 X 4.0, and 3.5 X 2.5 cm, wool worsted type. Spinning Z one system, S the other, both even; both systems include well preserved dark threads (naturally pigmented), and deteriorated lighter threads; no selvedge; weave three-shed (?2/1) twill, plaid formed by groups of threads in two colours in both systems, count 7(Z)/8(S). The pattern is difficult to decipher but the three clearest parts are shown in fig.1. The looseness of the weave is probably due to the deterioration of the lighter threads. Suitable fabric for cloak or blanket.

SF 179. 1744. A.M.Lab.768415

?

Fragment coarse grey-brown, c.6.5 X 4.0 cm, wool soft. Spinning S in both systems, ?warp fairly even, ?weft very coarse and uneven; weave three-shed twill, count 7/4. In one place a probable weft loop is curled as if at the selvedge, though broken before re-entering, and edge warp missing. Coarse cloak or blanket material.

SF 166. 1685. A.M.Lab.768413

10th century

Fragments of felt, dark brown, the largest 8.0 X 2.5 cm, made of wool of noticeably coarse fibres. Simple felt, no trace of spun fibres, and no fragments of thread in it.

It will be seen from the catalogue that all the cloth available for study was of the same weave, the three-shed twill (see fig.1.). The pieces are varied, but there are no clear differences between those dated to the 10th and to the 10th-11th centuries. Thus we have two fabrics with medium counts in which the warp is Z spun worsted, smooth and even, and the weft S spun, noticeably thick and variable (SF 91, 10th-11th C, SF 142, 10th C), and another coarse fragment with similar differing yarns but S spinning throughout, in soft wool (SF 179, ? date); fragments with even spinning and soft open weave (SF 103, 10th-11th C); a very coarse matted soft wool piece (SF 121, 10th C); a fairly coarse worsted plaid with two-colour checks (SF 172, ? date); and one fine fragment, probably worsted (SF 17, 11th C).

There is nothing here approaching the most striking of the Viking three-shed twills at York (5) and at Birka (6), fine worsteds with diamond or chevron patterns, high warp counts and Z spinning in warp and weft, a practice which throws into relief a surface texture pattern. Even SF 17, which in colour and quality must have been near to some of the York pieces, has mixed spinning, and as far as can be seen no pattern.

A few coarse unpatterned fragments both from Birka and York, nearer in quality to the majority of the Durham pieces, do also have mixed spinning. This usage is particularly suitable both for smooth finishes, where the threads binding the warps are not intended to catch the eye, and for fulled fabrics, where the similar lie of the fibres when the cloth has been woven makes them easier to raise. It is a usage that increases the later the date - from 30% of woven fabrics from Gdansk in the 10th century have Z,S spinning, and 95% in the 11th century (7), a rise that may be connected with the increasing use of fulling as a finishing process.

The most distinctive feature in any of the Durham textiles is the use of soft very uneven weft yarn with finer well-spun warp (SF 91, 142, 179); in these cases warp and weft are identifiable in spite of the lack of selvages, as the lumpy yarns would be totally unsuitable for use as a warp. This feature is often found in later medieval fabrics, but not apparently in the Viking material from York. Again, it is a practice generally connected with fulling. Such weft yarns mat easily, and when worked up give a close warm surface; this is frequently done in 14th and 15th century material from Baynard's Castle,

London. Kaminska and Nahlik, when the same combination of yarns appears in earlier fabrics from Poland (8), suggest that the weft face was used as the front of the material, raised to give a velvety finish that would have been a protection against wind and rain; but the arrangement of seams on garment fragments from Baynard's Castle indicate that here the weft face was worn inside, and the smooth warp face with unmatted threads and "satin" finish, was the side intended to be seen. The two pieces 91 and 142 present something of a problem. The style of warp and weft yarns obviously place them in this category, but in neither has there been any attempt to mat the weft face. Without any such finishing process, however, the combination still adds considerably to the thickness and warmth of the cloth, and it seems probable that the practice of using this type of coarse weft to back the fine warp face was introduced before the additional refinement of deliberately matting the under side of the fabric.

Plaid patterns are more common in four-shed than three-shed twills, but an 11th century fragment in this weave from Winchester has narrow stripes in one system (9) suggesting those in parts of SF 172. With so small a collection it is unwise to draw any conclusions as to the local preference for this type of weave, but it may be worth noting that the three-shed twill, which appears in some Roman finds in Europe (10), in the Iron Age moor-finds in Schleswig (11) and on Anglo-Saxon sites in England (12), increases in popularity from the 10th century onwards. Forming 32% of the textiles found at Birka (9th-10th centuries) and Gdansk in the 11th century, it rises to 62% in that town by the 13th century (13). Material of the 13th to 14th centuries in Swedish towns also shows a preponderance of coarse three-shed twills (14). This trend is no doubt connected with the general use of the horizontal loom with treadles, on which the weaving of an unbalanced construction like a three-shed twill presents no problem. On the evidence of weaving tools and loom parts, this loom was already in use in Poland in the 10th century (15). A much earlier date has been suggested by Kostrzewski (16); Kaminska and Nahlik however prefer to connect its appearance with changes in the political and social order resulting in the rise of urban centres, in which textile production became a trade, rather than a domestic occupation. It is to be hoped that tangible evidence, such as shuttles and pulleys, will eventually be found to demonstrate the period of its adoption in England.

Notes

- 1 John Hedges, "Textiles" in P.V. Addyman, The Archaeology of York v.17, pp. , 197 .
- 2 To be published in Winchester Studies, v.7, ed. Martin Biddle & Suzanne Keene.
- 3 Agnes Geijer, Birka III. Die Textilfunde, Uppsala, 1938.
- 4 Janina Kaminska & Adam Nahlik, "Études sur l'industrie textile du haut moyen âge en Pologne", Arch. Pol. III, Wrocław, 1960.
- 5 Hedges in Addyman (197), Table 1, Group 1, p. , figs.
- 6 Geijer (1938) pp.26-29, figs.5-8.
- 7 Kaminska & Nahlik (1960) pp.112ff., fig.20.
- 8 *ibid.* pp.106 ff.
- 9 Textile no.15, Brook Street.
- 10 J.P. Wild, Textile Manufacture in the Northern Roman Provinces, 1970, no.50, p.101, nos.79-84, p.117.
- 11 Karl Schlabow, Textilfunde der Eisenzeit in Norddeutschland, Gottinger Schriften zur vor- und Frühgeschichte, 15, 1976, pp.81, 83, 85, 86.
- 12 G.M. Crowfoot, "Anglo-Saxon tablet-weaving", Antiquaries Journal XXXII, nos.3,4, 1952, p.190; G.M. Crowfoot, "The textile remains" in Leeds & Shortt, An Anglo-Saxon cemetery at Petersfinger, near Salisbury, Wilts, 1953, p.61; E. Crowfoot, "The textiles" in P. Hutchinson, "The Anglo-Saxon cemetery at Little Eriswell, Suffolk", Proc. Camb. Ant. Soc. LIX, 1966, Grave 11; Rupert Bruce Mitford, The Sutton Hoo Ship Burial, vol. 1, 1975, pp.446, 450, SH 7, 8, 22; and unpublished fragments from many sites.
- 13 Adam Nahlik, "Tkaniny wsi wschodnioeuropejskiej, X-XIII W", Acta Archaeologica lodziensia, 13, Lodz. 1965, p.32.
- 14 Anne Marie Franzén & Agnes Geijer, "Textile finds from Excavations in Swedish towns 1960-66", Res Mediaevales III, 1968, pp.131, 133.
- 15 Kaminska & Nahlik (1960) p.94.
- 16 *ibid.* pp.100-101.

Appendix

Fibres

H.M.Appleyard, F.T.I.

Samples from textiles

- SF 17. These fibres are very badly degraded, some of them appear to have been badly eroded by bacterial action. However there are a few very small areas where some scale structure has survived. They are certainly animal and from what little scale structure there is probably wool. There is no pigment and all the fibres are badly stained.
- SF 91. Wool fibres dyed brown. These are well preserved and are of medium diameter, a few are medullated, no pigment visible.
- SF 103. In general these are well preserved wool fibres apparently from a double coated sheep. There are some very fine fibres and some coarse fibres with wide lattice type medullae. There is no pigment or dye.
- SF 121. Wool fibres. Some are fine and others are of medium diameter with fragmental medullae. There is no pigment, they look to be coloured light grey.
- SF 142. These are animal, probably wool, the scales are not very clear. They are mixed in thickness, some fine, some coarse with wide lattice type medullae. There is no pigment but they look to have been dyed.
- SF 172. (Dark threads from weft) These are very darkly pigmented. There are very fine fibres and some fairly coarse. Scale casts of these fibres had little success, but what scale pattern was found indicated wool.
 (Light threads from warp and weft) These are badly degraded animal fibres; no recognisable surface structure.
- SF 179. Wool fibres, fine to medium thickness, some with broken medullae. There is no pigment but they could possibly have been dyed.

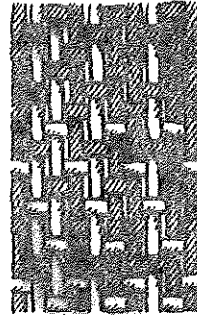
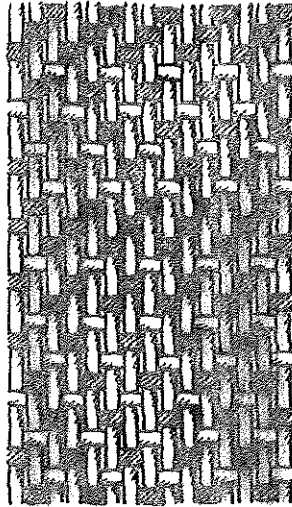
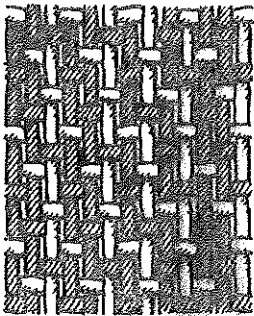
Felt sample

- SF 166. These could be wool, they are very badly degraded and there is a lot of debris about. They are certainly from a double coated animal having some fine fibres and some coarse with wide lattice type medullae. A few are pigmented.

Samples from unwoven fibres

- SF 97. 1627.A.M.Lab.768411 (10th-11th century) Dark brown lock, L.8.0 cm, curling, as cut from fleece. Undyed wool with some slight staining. A few fibres are medullated but there is no pigment.
- SF 119. 1639. A.M.Lab.768418 (10th century) Straight lock, cut end. These are very coarse straight animal fibres. They are pigmented, some very densely, others rather sparsely. From their cross-sectional appearance they have many of the characteristics of human hair; they have narrow medullae and the pigment is densest nearest to the cuticle.
- SF 165. 1685. A.M.Lab.768412 (10th century) Hair tied in knot. Very coarse straight animal fibres, some of them densely pigmented. The scale pattern seen in casts of the fibres and the cross-sectional appearance suggests that they could be horse mane hair.

- SF 186. 1743. A.M.Lab.768416. (date ?) Small broken lock, light grey brown. Wool fibres, some very fine. The fibres have a slightly yellow coloration.
- SF 191. 1753. A.M.Lab.768417. (10th-11th century) Very coarse and straight fibres that are very densely pigmented. These again have many of the characteristics in scale cast and in cross-section of horse mane hair.



Dartan. SF 172

Three-shed (2/1) twill with plaid pattern;
diagram of the three clearest areas preserved;
warp Z spun, weft S spun, in both colours.