

Ancient Monuments Laboratory
Report 29/89

TEXTILES: BURTON FLEMING, NORTH
HUMBERSIDE, LA TENE BURIALS.

Elisabeth Crowfoot

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Summary

Textile remains from an important La Tène burial site (c.200 BC) include among mineralised fragments from cloaks one elaborate striped border, which has small areas clearly added by needle, perhaps the earliest attempt at embroidery so far known from England.

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Textiles from La Tène Burials

Elisabeth Crowfoot

In the textiles from the Burton Fleming burials the fibres are mineralised, the oxide from the rusting of metal goods (here almost entirely of iron) has been laid down on the fibres, in most cases completely replacing them but leaving their original form. The only exception, a few degraded fibres still adhering to a brooch (218, Gr.FR 14) were identified as animal, and it is clear from their general appearance that most of the fabrics would have been of wool. Their condition varies; in many, though the spinning direction in the coarse threads is frequently clear, the weave may not be identifiable; but in one important fabric every detail of the yarns, weave and decoration is clear in the mineralisation (228, Gr.FR 2).

The spinning is predominantly Z in warp and weft (twenty-two textiles) but thirteen examples have mixed spinning, Z in one system, S the other; it is impossible to tell in any of these cases which is warp and which weft. Selvedges, in the form suggesting starting or ending borders, are only present on Z-spun textiles. The yarns are coarse, and in some cases very uneven; in only one fabric does the thread count rise above 10 per cm.

The identifiable weaves present are tabby (plain weave), eight examples, and four-shed 2/2 twills, probably twenty-six, three of which show reverses in one or both systems, i.e. chevron or broken diamond pattern, though in only one of these is the construction clear (228, fig. 1.A.). The popularity of twill in northern weaving, apart from the obvious attraction of the diagonal patterns, is in its warmth, given by the double lie of the threads, particularly when one system is heavily preponderant, as in much of the weaving on the warp-weighted loom. The use of mixed spinning, Z/S or S/Z, in which all the fibres lie in the same direction when woven, has two other advantages - it is easier to raise and mat the fibres to give a thick napped surface; and it is also said to be thorn-proof and rain-repellant. None of these textiles show any sign of matting or teasing, but the surface is often deteriorated; their presence in brooches, in both male and female graves, probably indicates that all were heavy cloaks or blankets, pinned in position on the bodies.

Extended tabby, single threads over a paired system, is used in the edge borders, and in decorative stripes in the weave 228. Small fragments preserved in five graves were probably from narrow borders

of the type seen clearly only in 227 (Gr.FR 4, fig. 1.D) - a few (in that piece six) coarse or plyed wefts over paired warps, only the edge loops missing, the ends of the border threads clearly tied in a simple finger-knot and cut short. On four possible borders this knot is the clearest surviving evidence.

Border with stripes Far more elaborate decoration, in which details must have been needle-inserted, is clearly preserved on the broken fragments of a long-bow brooch in Gr.FR 2 (228, Plate , figs. 1.A, B). The main weave is a broken diamond twill, with mixed spinning; the yarns are surprisingly uneven, particularly in the S system. The broken edge of the best fragment (Pl. .a) is decorated with a stripe of which eleven threads survive, fine hard-spun wool, closely packed (repp) to hide the paired threads of the ground weave, followed by an area of the main twill weave (c.1.1 cm wide), and a second stripe, eighteen threads wide; this has a pattern of narrow lines, indicated by changes in the spinning direction, 4S,4Z,2S,4Z,4S. Clearly the broken stripe - 4S,4Z,2S,1Z surviving - would have been completed in the same order, and perhaps only the last seven threads and the edge loops are missing. At intervals between the two stripes S and Z threads of similar quality yarn are dashed across the twill area, the spinning again forming the same pattern lines. That these threads were added by needle, not somehow inserted during the weaving, is clear where the other side can be seen (in (a) and in another small piece (m)); the distinctive threads of the cross-stripe only occasionally come through to the back of the twill, and little lumps of yarn show in two places where the embroidery thread returns after being run a short way into the stripe. Though the width of the inserted areas is narrower than those of the twill, the effect, if continued throughout, would have given something like a chequered border (fig. 1.E). Traces that probably indicate the start of another group of inserted threads across the twill below the second stripe on (a) perhaps suggest that the border was wider, with a series of stripes.

The brooch is broken into thirteen fragments, all of which show textile. One (i) only shows the twill, but all the rest have remains of the stripes, and three also part of the inserted patches (j,k,m). Of these twelve, seven seem to have the S threads of the twill in the paired system of the stripe, the other five the Z threads, which can be taken to indicate that the cloak must have had borders decorated in this fashion on at least two, and probably all four sides.

Even with a possible third stripe, and allowing for the shrinkage that takes place during mineralisation, this border might have been only

5.0 cm wide. It could of course have been extended with further stripes and cross-patches to any width the weaver fancied. The care with which the S and Z lines have been repeated in stripes and embroidery suggests that these must have been in strongly contrasting colours; even so, though it was certainly pinned by the brooch, it is rather a delicate border for a large garment like a cloak.

Contemporary English material from the nearby site of Wetwang Slack (areas VI, VII and VIII) has the same characteristics, Z-spinning (S threads in only two possible cases) and only twills identifiable, though again weaves are difficult to see clearly. In the small textile group recently excavated there from three chariot burials, the spinning is similar, but the weaves different - four tabby weaves, three with mixed spinning and one Z-spun twill - nearer to the early La Tène material from the Dürrnberg, four twills only out of twenty-one textile fragments, but again Z-spinning, with mixed spinning only in two of the twills (Hundt.1974.135-140). But these and the chariot textiles are obviously finer, many possibly of linen.

There is no sign of the Bronze Age preference for S and Sply thread, which continued in much Scandinavian weaving into the beginning of the Roman period (Hald 1980.140-142; Bender-Jørgensen 1986.294-298). Hald's tables show that the question of which spinning is used for warp and which for weft in textiles with mixed spinning changes continually, and can only be settled if borders are preserved, or other internal weaving evidence - the very uneven spinning of the S system in Burton Fleming 228 ought perhaps to suggest that this should be the weft, since the lumps and variations would be tiresome in a warp.

The earliest northern examples of the broken diamond twill weave are still the cloak from Gerumsberg in Sweden, and a bog-find from Karlby in Denmark, both possibly late Bronze Age to early Iron Age (Hald 1980.45-47,153; Hoffmann 1964.191-193). The weaving in both is a little erratic, and the pattern varies. The broken diamond of 228 is a variety favoured in Roman weaving in the northern provinces, less popular in later material (Wild 1970, figs.24,38; 1977, nos.29, 30,32,35,37,38,48).

One feature of the border of 228, the repp stripes, have a long history - in the richly varied textiles of the Halstatt culture, c.8th-5th C.B.C., in weave edges and for bands (Hundt 1970.53-71), and the stripes characteristic of Roman garment decoration (Wild 1970. 54,90-91,105); on twills, possibly of the 1st.century A.D. or earlier (Ullemeyer and Tidow 1973,87-90; Hald 1980.83,85). As far as can be seen these stripes are all simple colour contrasts, with no changes

of spinning direction.

Opinion is divided on the question of 'spin-patterns' in Scandinavian and North German textiles. The use of different spin-directions for groups of threads produce patterns visible to the eye, and in photographs, particularly in twill weaves, but no change in colour is visible or found in dye-tests (Bender-Jørgensen *op.cit.* 155-160). The practice has a long history, from early Halstatt (Hundt 1959.71f.) and the Late Roman Iron Age in Denmark (Hald *op.cit.* 88-91,94) to German and Austrian sites of the 6th-7th centuries, where the question of whether dye was also used has been raised (Hundt 1972.104; 1973.299). Even where actual fibres are preserved, samples may be too damaged to show variations in natural pigment, and many dyes are fugitive. The pattern effect is not clear in tabby weaves, and the quick changes in the 228 stripes do not even catch the eye; here it seems there must have been colour to make the trouble worth while.

This border is not an example of highly skilled weaving, in the class of the elaborately patterned and fringed cloak borders of later periods from Norway, Sweden and North Germany (Bender-Jørgensen, *op.cit.* 150-157; Dedekam 1924-25.Pl.II), but the labour of supplementing the weave with this simple stitching, though rather untidily carried out, must be one of the earliest attempts at embroidery from an English site.

There is very little to say about the other textile fragments. The only interesting feature has already been mentioned, the remains of narrow repp weave borders. This type of border has a long history, from the Danish Bronze Age blankets (Broholm and Hald 1940, 37-38, figs.40,121) and again the Halstatt textiles (Hundt 1970. figs.5,7). The rather untidy knots on the Burton Fleming examples probably indicate an end border; in two of these the border wefts are plyed (40,199), but tangled or plyed threads from other graves suggest perhaps end fringes (34,102,313).

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Burton Fleming: Textile Catalogue

<u>No.</u>	<u>Code</u>	<u>Grave</u>	<u>Sex</u>	<u>Lab.No.</u>	<u>Object</u>	<u>Measurement</u>	<u>Fibre</u>	<u>Spin</u>	<u>Weave</u>	<u>Thread count</u>	<u>Thread diam.</u>	<u>Borders</u>	<u>Comments</u>
2	FE/AP	FE. 2	M	681586	Bow brooch.C	L.c.3.0 cm	min.	?Z/S	-	c.6/?	-	-	traces all over, clear threads on pin
7	FE/BH	FE. 5	F?	681585	Invol.brooch.H	c.1.5 X 1.0	min.	Z/Z	-	5/?	-	-	deteriorated
13	FL/AM	FL. 2	-	-	Invol.brooch.F	2.0 X 1.5	min.	Z/S	2/2 twill	4-5/5	1.0-1.5mm	-	clear patch, open weave threads;grass impressions
22	FL/CX	FL.13	Fp	681582	Invol.brooch.F	-	min.	Z/?	-	-	-	-	
* 24	FN/BP	FN.14	Mp	736719	Sword	c.4.0 X 2.5(a)	min.	Z/S	tabby	6/4-5	1.5-2.0mm	-	below hilt, coarse fibres loose soft weave under (a), patches with imprint of (a)
						over L.c.18.0(b)	min.	-	(leather)	-	-	-	
27	FM/BM	FM. 3	F	705697	Invol.brooch.E	4.5 X 2.5	min.	Z/S	tabby	5/3	1.0-1.5mm	-	Z spin tight; double fold deteriorated
34	FM/CU	FM.10	C	705698	Bow brooch.C	L.c.6-7 mm	min.	Z/?	-	-	-	?fringe end	threads, lying side by side
35	FM/CG	FM. 6	C	705695	Invol.brooch.F	-	min.	Z/?	-	-	-	?border,end or starting	?knot, cut end, cf.227.
36	FM/DB	FM.14	F	705699	Invol.brooch.D	c.8.0 X 4.0	min.	Z/Z	2/2 chevron or br.diamond twill	5/5	1.3-1.5mm	-	both sides, round edges, in folds
37	FM/DG	FM.16	F?	705715	Invol.brooch.G	1.5 X 0.7	min.	S,Zply	threads	-	-	-	and area ?leather
38	FM/EH	FM.15	M?	705700	Invol.pin	c.2.0 X 0.7	min.	Z/Z	tabby	est.3/4	-	-	on ring of pin
39	FM/CV FM/CW	FM.12	M?	690703 705696	Bow brooch.A Invol.pin	c.1.0 cm L. -	min. min.	Z/Z Z	?twill ?	- -	- -	- -	and some Zply threads? threads wound round, possibly from weave
40	FM/DF	FM.11	M	705714	Invol.brooch.G	2.5 X 1.5	min.	Z/Z ?Zply	2/2 twill	c.7/6	c.1.0mm	?border	even weaves; knot,cf.227; finer threads, ?wefts of border
46	FB/BD	FB.19	Mp	715518	Invol.brooch.D	c.1.0 X 1.0	min.	Z/Z	?twill	c.5/4	-	-	traces much of surface

* indicates extended burial

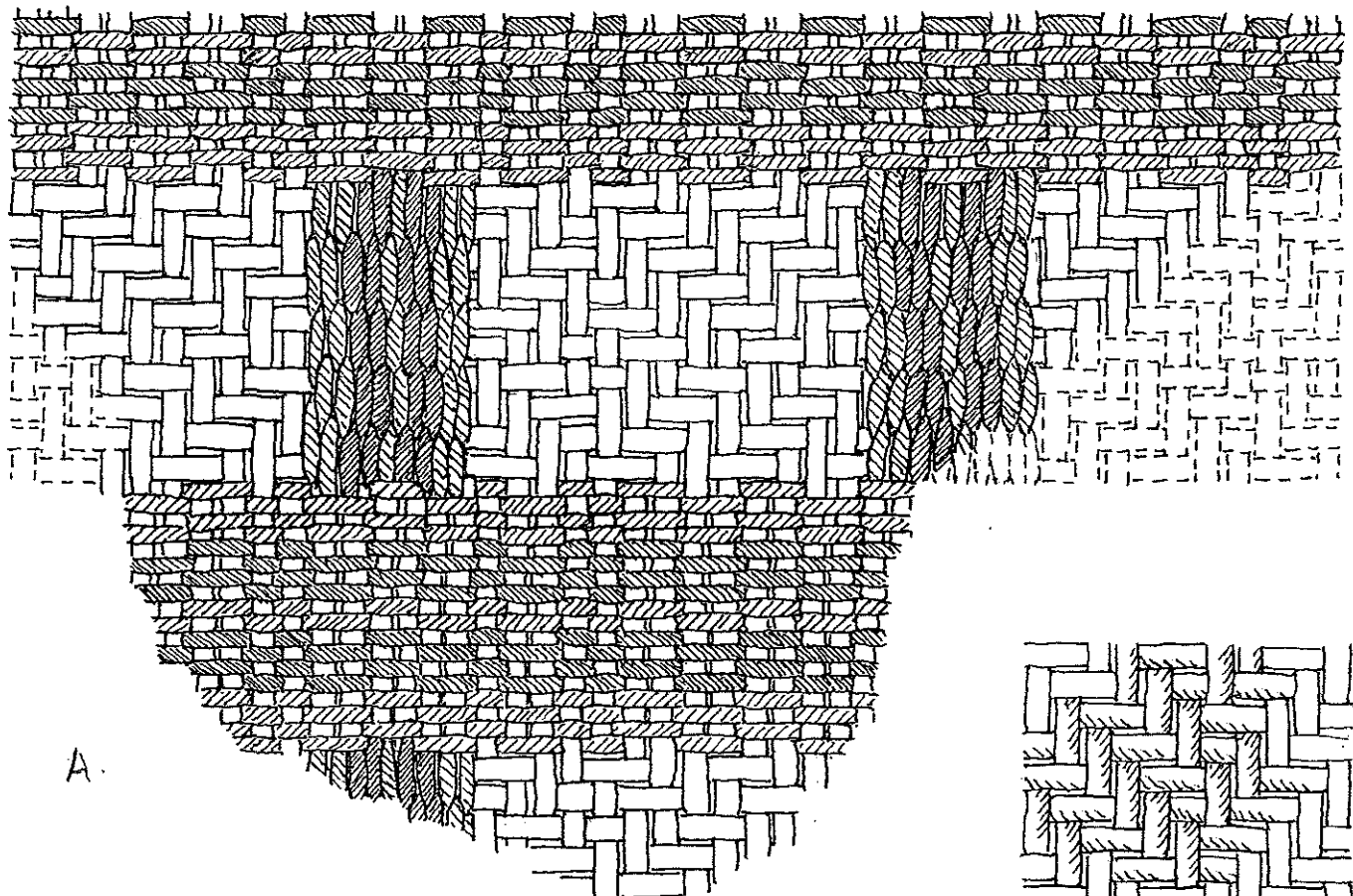
Burton Fleming. Catalogue.2													
No.	Code	Grave	Sex	Lab.no.	Object	Measurement	Fibre	Spin	Weave	Thread count	Thread diam.	Borders	Comments
60	FN/AC	FN. 5	F?	736701	Invol.brooch.E	2.5 X 1.2, 3.0 X 1.2	min.	Z/S	2/2 twill	-	-	-	deteriorated surface
69	FG/AD	FG. 1	F	715500	Invol.brooch.D	7.5 X 2.0	min.	Z/S	?	-	-	-	weave damaged
76	FG/AK	FG.10	F	715503	Invol.brooch.H	c.3.0 X 1.0	min.	Z/?S	?	3 5mm/?	c.1.0 mm	-	threads lying parallel, ?cord
77	FG/BL	FG. 5	Fp	715501	Invol.brooch.H	1.0 X 1.0	min.	Z/Z	?tabby	5/5	-	-	centre thread paired, ? 1 broken
82	FG/CK	FG.22	M	715510	Invol.brooch.E	1.3 X 0.8	min.	Z/S	2/2 twill	c.6/6 (3,5mm)	c.1.0/1.5mm	-	detached fragment; Z threads finer
83	FG/BR	FG.12	Fp	715504	Bow brooch.C	c.3.5 X 1.5	min.	Z/?S	?	-	-	-	surface deteriorated
84	FG/BV	FG.15	M	715508	Bow brooch.A	2.0 X 2.0, 3.0 X 2.0	min.	Z/?	?	-	-	-	surface deteriorated
91	FG/CF	FG.19	Fp	715509	Bow brooch.C	3.5 X 2.5, 2.5 X 4.0	min.	Z/?	?	-	-	-	deteriorated mass, some threads clear
97	FB/AY	FB.18	F	715516	Invol.brooch.D	-	min.	Z/Z	?	-	c.1.3 mm border,	end?	threads side by side, fringe or pile
102	FB/AR	FB. 9	M	715515	Bow brooch.B	c.2.0 X 2.5	min.	Z/Z,Sply	?tabby	4/2(plied)	c.1.2/ 2.0(plied)	border, end?	plied threads tangled, (see p. 4.)
106	FB/BF	FB.16	F	715519	Invol.brooch.D	c.2.0 X 1.5(a) - (b)	min. min.	- Z/Z	(leather) ?	- 6/6	- -	- -	at one end scattered, damaged
140	FD/CM	FD.30	M	750837	Invol.brooch.D	c.1.0 X 1.2	min.	Z/S	?	-	1.3 mm	?end border	threads side by side, ?border or pile
143	FA/CO	FA.34	M	748103	Invol.brooch.G	3.5 X 2.5	min.	Z/Z,S	2/2 twill	5-6/6	c.1.5mm	-	round curves; occasional thread one system S
*153	FD/CR	FD.24	C	750843	Dagger	-	min.	Z/?	?	-	-	-	leather from sheath; hilt, traces weave
*154	FD/BY	FD.23	Mp	75840-2	?Tongs	c.3.5 X 1.2, 3.0 X 0.7	min.	Z/Z	tabby	5/3	1.3-1.5mm	-	rather open weave; ?warp yarn finer,harder

Burton Fleming. Catalogue.3

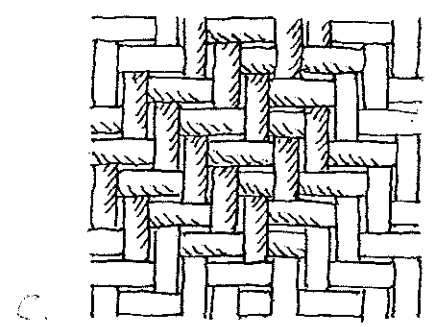
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174	FD/AO	FD. 2	M	750821	Spearhead	-	min.	-	-	-	-	-	?leather, probably bone
175	FD/AB	FD. 1	M?	750813	Brooch.K	0.7 X 0.7	min.	Z/S	tabby	c.6/8 (3/4 on 5mm)	c.1.5mm	-	patches pinhead; under catch, ?leather
178	FA/BH	FA. 7	Mp	748099	Bow brooch.A	1.7 X 2.0, 3.0 X 1.7	min.	Z/Z	2/2 twill	c.5/6	c.1.5mm	-	areas round top surface, broken threads
180	FA/AL	FA.10	F	748100	Bow brooch.C	7.5 X 1.7	min.	Z/Z	2/2 twill	c.4-6/5-6	1.2-1.5mm	-	all over one side and round pin, damaged
190	FH/BF	FH.18	C	790754	Invol.brooch.F	1.5 X 1.3, 1.5 X 1.0	min.	Z/S	2/2 twill	?/6	?1.75/1.5mm	-	loose, damaged; coarse Z threads round one loop
194	FH/AV	FH.11	Fp	790752	Invol.brooch.F	c.1.0 X 1.7	min.	Z/Z	2/2 twill	7/4-5	c.0.8-1 mm	-	all over curve, broken threads
199	FH/AT	FH.10	Fp	790750	Invol.brooch.E	2.0 X 1.1	min.	Z/Z;Z,Sply	tabby	-	-	?starting border	edge thread ?plied;damaged but like 227 (fig.(D.))
201	FH/AS	FH. 8	F	790749	Invol.brooch.J	2.8 X 1.7	min.	Z/Z	twill	-	-	-	deteriorated surface
202	FH/AU	FH. 7	M	790751	Invol.brooch.F	c.1.0 X 1.0	min.	Z/S	2/2 twill	-	-	-	surface distorted, flattened
206	FH/AA	FH. 3	F	790748	Invol.brooch.J	-	min.	Z/S	2/2 twill	4/4 5 mm	-	-	all over fragments, one clear scrap on Ae
209	FR/CO	FR.22	Fp	722776	Bow brooch.C	c.2.0 X 1.8	min.	Z/S	2/2 twill	7/6	1.2/1.5mm	-	folds on head, double layer under pin
210	FR/CS	FR.21	M	722777	Bow brooch.C	1.3 X 2.0	min.	Z/Z	2/2 twill	4/4 on 5mm	-	-	round pin deteriorated mass threads damaged
212	FR/BX	FR.18	?	722771	Bow brooch.C	2.0 X 1.5	min.	Z/S	?	-	-	-	coarse, weave deteriorated
213	FR/CC	FR.20	M	722772	Bow brooch.C	L.2.0 cm	min.	Z/Z	2/2 twill	c.4/5	-	?fringe	round pin, mass parallel threads
214	FR/CG	FR.17	F	722773	Bow brooch.C	4.0 X 4.0(a) (b)	min. min.	Z/S Zply	? threads	- -	- -	- -	on pin,deteriorated lump under ?bone

Burton Fleming. Catalogue.4

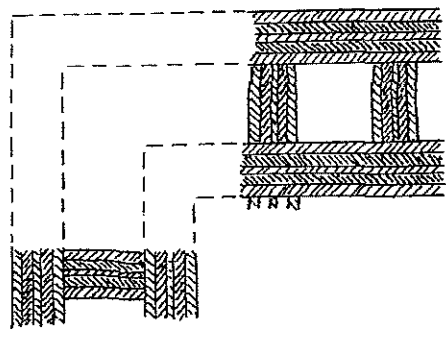
No.	Code	Grave	Sex	Lab.no.	Object	Measurement	Fibre	Spin	Weave	Thread count	Thread diam.	Borders	Comments
215	FR/BH	FR.15	M	722768	Bow brooch.C.	-	min.	Z/Z	?	-	-	-	deteriorated, over all surface
217	FR/BN	FR.13	Fp	722770	Bow brooch.C	c.4.0 X 1.8	min.	Z/Z	2/2 twill	4/4	-	-	patches all over
218	FR/BU	FR.14	F	722782	Bow brooch.C	1.5 X 1.5	animal	Z/Z	?twill	6/5	1.0-1.2mm	-	a few degraded fibres round head (HMA p.)
219	FR/BM	FR.12	Fp	722769	Bow brooch.C	-	min.	Z/?	-	-	-	-	deteriorated mass
221	FR/BD	FR.10	F	722767	Bow brooch.C	c.1.5 X 1.5	min.	Z/Z	2/2 twill	c.4/4 (2/2 on 5mm)	-	-	damaged. Z threads round pin
222	FR/AY	FR. 9	Mp	722766	Bow brooch.C	3.5 X 3.0	min.	Z/Z	2/2 twill	6/6	-	end or ?starting border	wefts ends tied knot, cf.227,fig. .
223	FR/AJ	FR. 8	?	722764	Bow brooch.C	c.2.5 X 1.3	min.	Z/Z	2/2 chevron or br.diamond	5/5	1.2,1.5mm	-	one reverse preserved (fig.1.C.)
226	FR/AO	FR. 5	Fp	722765	Bow brooch.C	-	min.	Z/Z	?	-	c.1.4mm	-	and traces leather?
227	FR/AD	FR. 4	Fp	722763	Bow brooch.C	2.3 X 1.7	min.	Z/Z	2/2 twill	5/5	c.1.0mm	end or starting border	(fig.1.D.)6 weft border, only loops broken
228	FR/AA	FR. 2	Mp	722762	Bow brooch.B (fragments)	c.4.5 X 2.6, 6.0 X 3.5, 0.8 X 0.9,2.4 X 1.8, 1.7 X 1.5, 1.5 X 0.9 2.2 X 1.5,1.8 X 0.8	min.	S/Z Z,S	2/2 broken diamond twill tabby(repp) (over pairs)	9-10/9, 10-11/10, 9-10/9 13-14 (on 5mm)	0.7-0.9(Z) 1.0-1.3(S) 0.5-0.6mm	-	(Pl. , figs. twill ground weave, uneven, ?mistakes, two repp stripes,7mm wide, spin 4S,4Z,2S,4Z, 4S; 1.1-1.4 twill;clear between; embroidered cross-bars, spin as in stripes,intervals 1.3cm
249	FZ/BF	FZ. 9	M	781841	Invol.brooch.E	5.0 X 2.0	min.	Z/Z	2/2 twill	c.6/?	c.1.0 mm	-	one thread 2.5mm round end
261	FZ/DK	FZ.37	?	781842	Bow brooch.C	3.5 X 0.5	min.	Z/?	?twill	-	c.1.75mm	-	threads weave, or wound round pin
264	FZ/CE	FZ.30	M	781839	Bow brooch.A	1.8 X 1.3	min.	Z/S	2/2 twill	-	-	-	surface damaged,patches



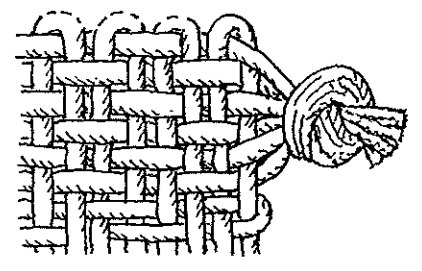
A.



C.



B.



D.

Burton Fleming. Textiles.

- Fig.1. A. 228 (a) weave with stripes and embroidered insertions
 B. 228. Possible reconstruction of weave borders
 C. 223. Fragment 2/2 twill with chevron reverse
 D. 227. End border with wefts knotted and cut