The Textiles from the Mummy 1770

by

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Introduction

Large quantities of ancient textile material have survived in Egypt, but comparatively little of it has been adequately published.* Understandably perhaps, the lion's share of attention has been paid to the decorated textiles woven by the Copts in late antiquity; for the bulk of earlier material has little artistic appeal and offers, to a superficial observer at least, few points of technical interest.

The importance of the wrappings and padding associated with the Manchester mummy 1770 stems from the fact that they have yielded an average C^{14} date of A.D. 380 (see p. 146). The upper and lower limits within which they were woven are A.D. 323 and A.D. 441 — securely within the Roman period.

Examination of the material suggests that only three textiles were used in the wrapping. Since the bandages and layers of padding had to be cut from the body piecemeal, it was impossible to recover any single item intact. Theoretically therefore many separate webs of cloth could have been employed; but the character of the yarns, the count of threads and the weave are so consistent among the fragments which I have assigned to each of the 'fabrics' described below that I feel reasonably confident that only three textiles were used. If the mummy had been re-wrapped during the Roman period, as has been suggested (p. 146), then this would not be unexpected.

Characteristics of the Textiles

(a) *Fabric 1* The cloth is a fine plain weave (pl. 2 D: warp runs top to bottom):
System (1) warp, S-spun, *c.*32 threads per cm, close set.
System (2) weft, S-spun, *c.*16 threads per cm, well spaced out.

The quality of the yarn is fine and regular and the spin is not hard. The largest surviving piece measures 25 cm in the warp direction, at least 50 cm in the weft direction (1770/447).

Selvedges were found in three samples (1770/334: 5 cm long; 1770/335: 10 cm; 1770/447: 5 cm), confirming that the closer-set thread-system is the warp. The selvedges are plain.

In 1770/447 remains of a *hem*, *c.*10 cm long, parallel to the weft, were noted; two identical hems in 1770/335 and 447 were sewn together. Analysis showed that the raw edge of the cloth had been turned over once or possibly twice and neatly tacked down by a series of stitches (*c.*5 stitches per cm) visible on the outer surface of the cloth (**1**). The hems were brought together and seamed with well concealed running stitches (*c.*4 per cm). The sewing thread was Z-plied from 2 S-spun yarns of the same weight as the yarn in the warp.

The large piece of Fabric 1 in 1770/447 exhibits 4 pairs of self-bands. They are at intervals of 1.5 cm, 9 cm and 5.5 cm, and in each case the bands consist of 5 weft-threads in the same shed. In three of the pairs the bands are in successive sheds, but in one case the two bands were separated by two single shots of weft. Fragments of self-bands were also recorded in 1770/127.

Fabric 1 may be summed up as a fine plain-weave warp-faced (repp) textile with plain selvedges, measuring at least 50 cm wide. Parts of it were decorated with self-bands. Neither starting nor finishing borders survive. When in use the fabric was hemmed and seamed.

(b) *Fabric 2* The cloth is a medium-fine plain weave (pl. 2 A: warp runs right to left):
System (1) warp, S-spun, *c.*22 threads per cm, close set.
System (2) weft, S-spun, *c.*9 threads per cm, well spaced.

The largest single fragment (1770/441) measures 70 cm in the warp direction, 40 cm in the weft. In 1770/552 the weft survives to a width of 45 cm.

Lengths of plain selvedge (1770/388: 4 cm; 1770/432: 60 cm; 1770/437: fragment) allow the identification of warp and weft.

The large fragment in 1770/432 (64 cm in the warp direction, 44 cm in the weft) carries not only one plain selvedge (the opposite edge is cut), but also a *fringed border* (**2**).

The border consists of 4 groups of weft-threads immediately adjacent to the main body of the cloth. Each group contains 4 separate weft yarns (laid in and not plied) which, to judge by the single preserved selvedge, return into the next shed in a straightforward manner. Each pair of adjacent warp-threads forms a loop (**2**), which projects about 4 mm beyond the edge of the woven cloth. Each loop was Z-twisted two or three times to make a very short fringe.

It is unfortunate that only one corner showing the junction of selvedge and border is preserved. In it the warp was at first crowded together by the weaver who pulled the weft groups through the shed too tightly; but as soon as a single shot of weft was used for the main web, the warp was correctly spaced out at the edge.

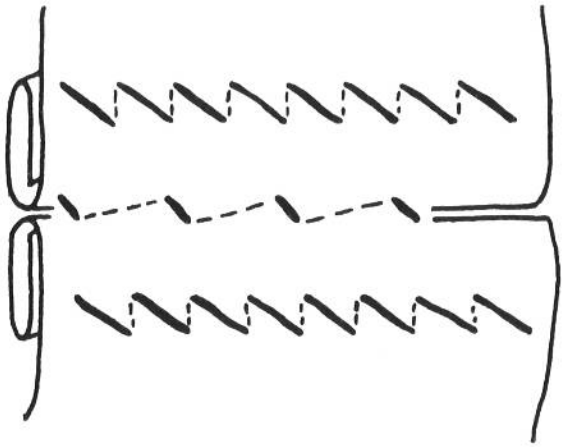
A narrow strip of cloth (1770/438), probably cut from Fabric 2, has a fringe — possibly a terminal fringe — in the warp (**3**). It is composed of single loops of adjacent warp-threads, *c.*2.5 cm long: each is Z-twisted together.

* I am grateful to Dr R. David for giving me the opportunity to record this material.

The last shot of weft at the edge of the cloth is a pair of threads.

A fringe is also a feature of the large fragment in 1770/441. It is in the warp, but consists of cut ends (not loops), *c.*9 cm long. A pair of self-bands runs through the weft *c.*3.5 cm from the base of the fringe; but they do not give any further clue to its character. There is no proof that the fringe represents an original selvedge.

The large fringed fragment in 1770/432 carries a pair of adjacent self-bands, 7 cm from the end of the fringed border (**4**). Each band is a group of 5 individual weft yarns, laid in and not plied. The five may be regarded as the single weft-thread of the ground-weave, plus two extra pairs. In the band nearer to the border it can be seen at the selvedge that the single weft-thread passes normally from the last shed into the shed of the band, and that the two pairs of extra weft-threads are in fact a single pair, which comes out of the band-shed, round the outermost warp-thread and then back into the same shed to make up the total of 5 threads. The ends of the 4 extra weft-threads can be seen in the second self-band where they approach to within *c.*1 cm of the selvedge before being eliminated. At this point they seem to form a loop and two loose single ends of thread. It may be that the extra weft is a single yarn, folded double to make a pair and double again round the outer warp-thread in the selvedge to make 4 parallel extra weft-threads running through both self-bands.



(**1**) Structure of the hems and seams on Fabrics 1 and 2

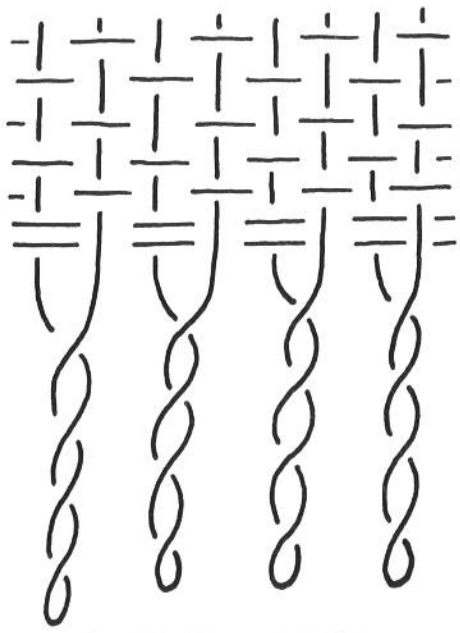
(**2**) The border on Fabric 2

Self-bands occur on four more fragments of Fabric 2. In 1770/441 there is a single pair; in the other three 2 pairs of bands are found separated by varying intervals (1770/437: 1.5 cm; 1770/556: 8 cm; 1770/557: 1 cm). In every case the self-band contains 5 weft-threads.

In 1770/437 what may be a fault recurs at irregular intervals. Three weft-threads instead of one are taken into the same shed. The selvedge unfortunately is in a poor condition and the precise course of the weft at that point is not clear. It seems evident, however, that the extra weft yarns are not carried through to the point where the fault next occurs.

Hems, and in one instance a seam between two hems, were noted in several fragments parallel to the weft. The raw edge was rolled back twice to give a hem *c.*5 mm wide (in 1770/434 31 cm long, in 1770/449 10 cm long). The structure of the seam (1770/449) was identical with that recorded for Fabric 1 above (**1**). The hem showed 2 stitches per cm in thread Z-plied from 2 S-spun yarns.

Fabric 2, in sum, is a moderately fine warp-faced plain weave with plain selvedges and at least one, and probably two, fringed borders in the warp. It measured at least 45 cm wide and its only decoration is several pairs of self-bands. Sections of the cloth were hemmed and seamed.



(**3**) The fringe on Fabric 2

(c) *Fabric 3* A basket weave (pl. 2 B: warp runs top to bottom):
System (1) warp, doubles, both S-spun, *c.*18 pairs per cm, close set.
System (2) weft, doubles, both S-spun, *c.* 7–8 pairs per cm, well spaced out.

The main technical details can be established from the largest extant piece (1770/446), which measures 60 cm in the warp direction, 50 cm in the weft direction. The single plain selvedge which it carries (*c.*26 cm long) permits identification of warp and weft.

A curious 'fault' is present in the same fragment. In one shed 8 threads (4 pairs) were introduced, but only for a distance of *c.*6 cm measured from the selvedge. Thereafter the extra threads were progressively eliminated. Damage to the selvedge prevents proper analysis and understanding of this feature.

Fabric 3 may be summarized as a warp-faced basket weave with a plain selvedge and no decorative features.

Discussion

Analysis of the samples by G. G. Benson, S. R. Hemingway and F. N. Leach (p. 131) suggests that all the textiles are linen. Flax was Egypt's leading fibre and was the only fibre ritually acceptable for mummy wrappings, as Herodotus tells us.[1]

The yarns in all the fabrics are spun in the S-direction (left-hand spin). S-spin was almost universal in Egypt and in the eastern Roman provinces and may reflect the fact that bast fibres, when moistened, rotate naturally to the left.[2]

The weaves can be readily paralleled in Egypt and the Levant. Plain weave ('canvas weave' or 'linen weave'), as in Fabrics 1 and 2, was the norm in Egypt. A higher thread-count in warp than in weft was a standard feature throughout the region.[3] Basket weave (Fabric 3), although rarer, is also found throughout the eastern Roman provinces.[4]

The wrappings have no form of decoration except the modest self-bands. These take the form of pairs of raised ribs crossing the cloth in the weft direction. Each band contains 5 weft-threads, and the evidence of Fabric 2 shows how the bands were constructed (**4**). An extra weft-thread, doubled and then redoubled, was added to the single shot of ground-weft. Self-bands are relatively common in ancient linen, particularly towards the beginning and end of the web; but I cannot find a published parallel to the construction technique noted in Fabric 2.

The simple fringe in 1770/441 may be the remains of another decorative technique in which a few centimetres of bare warp are left by the weaver towards the beginning and end of a fabric.[5]

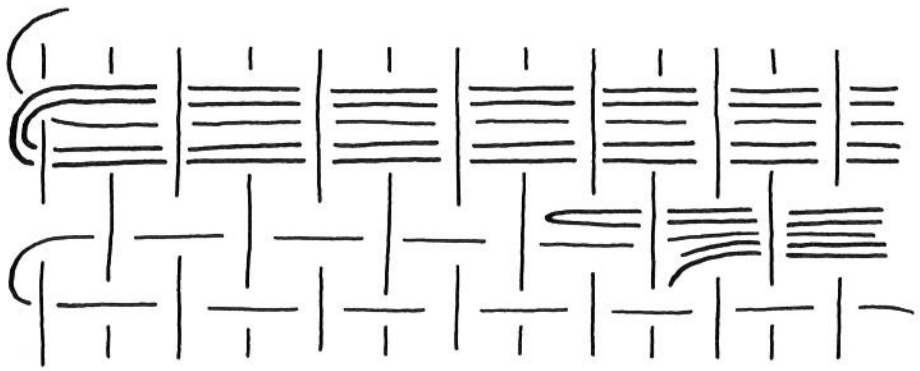
The selvedges in all Fabrics are plain, in accord with Egyptian linen weavers' normal practice. They do not seem to have regarded reinforced selvedges either in plain weave over warp-groups or with wrapped weft as necessary.[6]

The weaver of Fabric 2 began (or, less plausibly, ended) his work with a border of unusual interest (**2**). Indications that it is a starting-border are: (1) the long fringe with closed loops in the warp (**3**), which seems to belong to Fabric 2, is more naturally taken as the finishing border of the cloth web; (2) the technique employed to anchor the extra weft in the self-band nearer the border (**4**) suggests that this was the first of the two self-bands to be woven and that the border itself was where the weaving began.

This starting-border, however, is not the well-known starting-border associated with the warp-weighted loom. Such borders — almost always with paired warp and often with a cross between the border and the main web — are found in northern Europe and also in the Near East.[7] In fact no exact parallel for its structure can be cited from the published literature, although a number of borders on textiles from the Nile Valley come fairly close to it.[8]

The border has a very short (*c.*4 mm) fringe with loops through which some form of heading cord might once have passed. The loops were probably too small to admit a wooden rod.[9] While it would be very useful to know on what type of loom Fabric 2 was woven, the structural evidence of the border is far from conclusive. Warp arranged at the start of work on a horizontal ground-loom may have been looped over a heading-cord securing it to the cloth beam;[10] but speculation is probably pointless at present.[11]

It is evident that the textiles in which the mummy 1770 was wrapped were household items in secondary use. This was normal practice in Egypt and in inhumation burials throughout the Roman world.[12] (The re-use of linen towels (*sabana*) was so prevalent that the loanword *sabanum* was taken by the Slavs to mean 'shround'.)[13] The Fabrics 1 and 2, in view of their hems and seams, may originally have been parts of tunics. The basket weave of Fabric 3 on the other hand, to judge by the parallels outside Egypt, suggests that it may once have been sacking.[14]



(**4**) Scheme of the self-bands in Fabric 2

The quality of the cloth in general is striking. Spin and weave are good and regular, and few faults can be picked out. The standard of hemming and seaming is first-rate.

There is abundant papyrological evidence for textile technology in Egypt and a matching wealth of surviving remains.[15] The situation is without parallel in antiquity; but full publication of the archaeological evidence is now essential, if we are to understand and appreciate the achievements of the Egyptian spinners and weavers.

References

[1] A. Lucas, *Ancient Egyptian Materials and Industries*, 4th ed., London, 1962, 142 ff.; Herodotus, II, 81, 86.

[2] J. P. Wild, *Textile Manufacture in the Northern Roman Provinces*, Cambridge, 1970, 38; R. Pfister, L. Bellinger, *The Textiles*, *The Excavations at Dura-Europos: Final Report*, IV, Ann Arbor, 1945, 1 ff.; Y. Yadin, *The Finds from the Bar Kokhba Period in the Cave of Letters*, *Judaean Desert Studies*, Jerusalem, 1963, 177 ff.

[3] G. M. Crowfoot, 'The linen textiles' in D. Barthélemy, J. T. Milik, *Qumran Cave* I, *Discoveries in the Judaean Desert*, I, Oxford, 1955, 19, 22; E. Crowfoot, 'Textiles', in P. W. Lapp, N. L. Lapp, 'Discoveries in the Wâdī ed-Dâliyeh', *Annual of the American Schools of Oriental Research*, XLI, 1974, 64; Yadin (1963), 253 f.; Lucas (1962), 143 f. with literature; M. A. Murray, *The Tomb of Two Brothers*, Manchester, 1910, 68.

[4] Crowfoot (1974), 73; Yadin (1963), 193, 254; Pfister, Bellinger (1945), 4; Wild (1970), 46.

[5] G. M. Crowfoot, 'Linen Textiles from the Cave of Ain Feschka in the Jordan Valley', *Palestine Exploration Quarterly*, 1951, pl. IV, fig. 1.

[6] Yadin (1963), 200, fig. 67. The late Roman textiles from Karanis in Bolton Museum demonstrate the range of reinforced selvedges in both wool and linen.

[7] M. Hoffmann, *The Warp-Weighted Loom*, Oslo, 1964, 151 ff.; 253; Crowfoot (1974), 61; M. Hald, *Olddanske Tekstiler*, Copenhagen, 1950, 160 ff.; M. Hald, 'Ancient Textile Techniques in Egypt and Scandinavia: a Comparative Study', *Acta Archaeologica*, XVII, 1946, 49 ff.

[8] Hald (1946), 57, fig. 5, 6; I. Bergman, *Late Nubian Textiles*, *The Scandinavian Joint Expedition to Sudanese Nubia*, 8, Lund, 1975, 29, fig. 22, type A3.

[9] As on the sprang from Tegle: Hoffmann (1964), 169, fig. 81; cf. Murray (1910), 68.

[10] H. Ling Roth, *Ancient Egyptian and Greek Looms*, Halifax, 1951, 4, fig. 2 (if this is not merely an inaccurate drawing).

[11] J. P. Wild, 'The tarsikarios, a Roman linen-weaver in Egypt', in C. Préaux (ed.), *Hommages à Marcel Renard*, Brussels, 1969, 816 ff., for an attempt to identify the warp-weighted loom in Egypt; cf. Bergman (1975), 29.

[12] Murray (1910), 67; Wild (1970), 95 f.

[13] *Journal of Roman Studies*, LX, 1970, 130; A. Walde, J. B. Hofmann, *Lateinisches Etymologisches Wörterbuch*, Heidelberg, 1938, s.v. *sabanum*.

[14] Yadin (1963), 259 ff.

[15] E. Wipszycka, *L'Industrie textile dans l'Egypte romaine*, Warsaw, 1965.