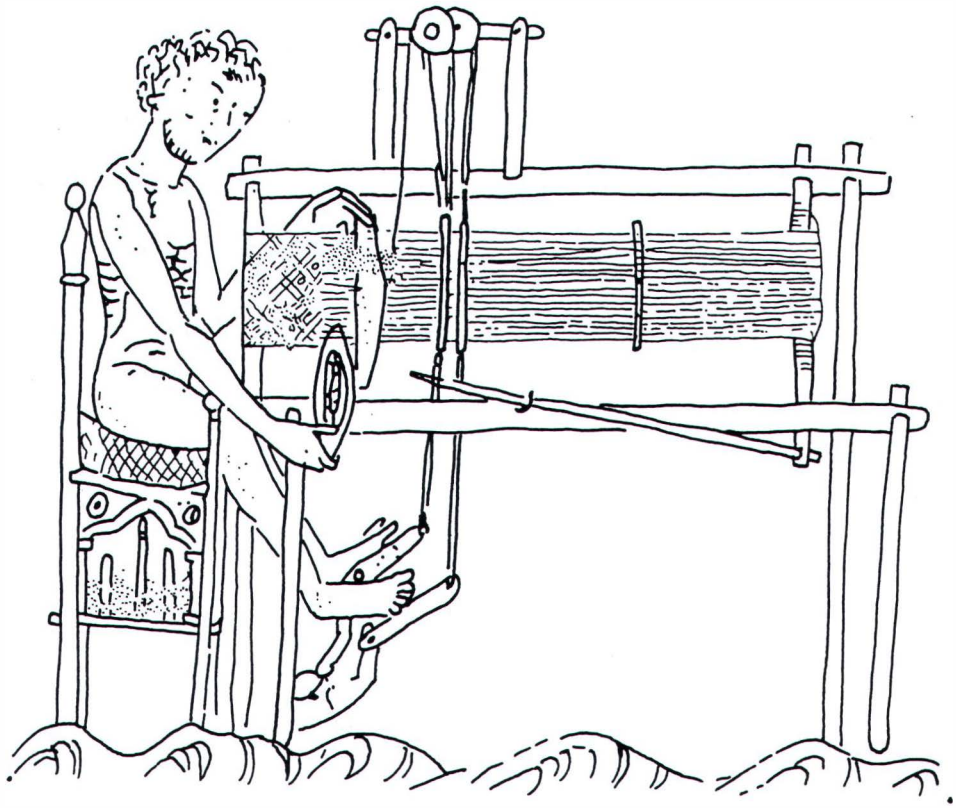
ARCHAEOLOGICAL TEXTILES NEWSLETTER



NUMBER 28 SPRING 1999

Editorial

ATN was saddened to learn of the recent death of Ro Bailey, whose characteristically lively discussion of the interpretation of the weaving combs of Iron Age Britain we print below. She combined the talents of a practitioner with the ability to apply them to elucidate the problems of ancient technology, a valuable gift.

As promised in the Editorial to *ATN* 27, a Euro-account has now been opened to receive subscriptions to the Newsletter. Its functioning in practice, however, has proved problematic, and the Editor should be given advance warning if subscribers intend to (try to) make payments to it.

Once more the Editor is indebted to Jane Batcheller for her help in downloading text for this number of *ATN*.

John Peter Wild
Ancient Textile Unit
Dept of Art History & Archaeology
University of Manchester
Manchester M13 9PL GB

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Cover: Weaving on the horizontal loom: a vignette from a manuscript probably illuminated at St Albans in *c.*1250 to show an episode in the Alexander Legend.

Features

A Cotton-like Fibre from Hallstatt

The interesting report by Penelope Walton Rogers about cotton in a 5th century burial in Germany (*ATN* 27,1998,12) prompts me to report some cotton-like fibres of the mid first millennium BC from the salt mines at Hallstatt in Austria. Only a few plant bast fibres have been identified in the textiles from this site which I have been investigating for over ten years (Ryder 1990). The object in question came in a more recent group of samples and comprised some cord (No.90.138) in which the fibre turned out to be a seed fibre like cotton. The overall range of fibre diameter was from 8 to 26 microns with a mean of 16.6+/-4.0. This falls within the range of 14.5 to 22 microns for the mean fibre diameter of modern Indian cotton (Anon. 1965), but it does not appear to be typical of cotton, and so might be some quite different seed fibre. I have not reported it before because I have not yet been able to obtain an independent identification of the fibre. Table 1 gives other cotton fibre measurements for comparison, notably those from the Xinjiang examples reported by me in *ATN* 26,1998,20.

As one goes further and further back into prehistory, it is almost certain that much plant material was used, notably in cordage and rope, no doubt at first as plant stems as exemplified in the grass cape of the Neolithic frozen man in the Alps. It is emerging that flax, hemp and cotton were just a few of the fibres used in textiles: note the use of nettle bast fibre. Kirby (1963) describes scores of plant fibres in use, mainly in the tropics; but the study is not helpful on what this seed fibre might be, if it is not cotton.

On the other hand, silk has been claimed to have been found on Hallstatt sites in Europe (and I have more recently identified what appears to be silk in a textile from Dürrnberg, another Iron Age salt mine in Austria) and so it might be just possible that this 'cotton' came from the East by the same route as silk. But one would need more samples to confirm such an introduction.

References

Anon. 1965, *Identification of Textile Materials*, 5th ed., The Textile Institute, Manchester

Kirby, R. H. 1963, *Vegetable Fibres*, London

Ryder, M. L. 1990, 'Skin and wool textile remains from Hallstatt', *Oxford Journal of Archaeology* 9,13-19

Michael L.Ryder
4 Osprey Close
Lord's Wood
Southampton SO16 8EX GB

TABLE I

Identity	Fibre diameter range	Mean+/-sd	Mode
Hallstatt 90.138	8 - 26	16.6+/- 4.0	16
Niya XIV iii 007b	8 - 28 38	17.7+/- 5.3	20
Lou-Lan LB I 0019	8 - 28	17.5+/- 4.3	20
Miraan Fort MI. xxii. 007	10 - 32 36	20.7+/- 5.5	20
Cotton warp in 16th century Persian carpet for comparison:			
CP14386	10 - 26 34	17.6+/- 4.6	20

Other unpublished measurements of mine of cotton in Persian carpets have given means as low as 15 microns.

Anon. 1965 quotes means of modern cotton: Egyptian 12 to 14.5 microns; and Indian 14.5 to 22 microns. The Xinjiang samples are moderately uniform and correspond to Indian values as does the Hallstatt sample.

Report on the Fibres from a Tapestry in Saragossa Cathedral, Spain

Seven yarn samples were received from the Crucifixion tapestry during conservation work by the Belgian tapestry firm of De Wit. The tapestry is dated 1420-1430 and is one of the most important tapestries of the period. Two samples were requested from the warp, which was of one colour and apparently of only one kind of wool and ten samples from the weft, which was thought to have two kinds of wool. In the event only seven samples were received, with no indication whether they were warp or weft.

Each yarn sample was cut up and the fibres were separated to make a whole-mount microscopic preparation. The diameter of 100 fibres in each sample was measured using the International Wool Textile Organisation's standard method with a projection microscope at a magnification of x500. The fleece types were defined from wool fibre diameter distributions (Ryder 1982). Also noted were the percentage of fibres with a central medulla, which provides an indication of hairiness, and the percentage with natural pigment (Table 2).

Results and Discussion

Gross observations made at the time of mounting indicated that the wool was of 'medium' quality, i.e. it was not of the finest clothing wool nor of the coarse type used in carpets. The yarns ranged in thickness from about 0.5mm to about 1mm and had a Z-spinning twist. All except one yarn had been plied, with an S-twist. In another yarn one 'ply' was blue and the other white. Two samples were so loosely spun that the fibres conveniently fell apart on the microscope slide. In contrast another sample was so tightly spun that the fibres could not easily be separated.

The cream colour of one sample was seen to be the natural cream colour of undyed wool under the microscope. The fibres of a maroon sample had a red dye under the microscope. The brown colour of another sample appeared pale pink under the microscope. In contrast the brown colour of two samples was seen from pigment granules within the fibres to be the natural (undyed) colour, and this accords with the Hairy-medium fleece type of these two samples (see below). The fibres of a blue sample had a blue dye under the microscope. The white colour of the undyed ply (above) was not typical of the natural colour of wool and the fibres appeared lustrous.

On mounting the fibres separated easily and under the microscope this and the blue-dyed ply were seen to be silk. The fibres were unspun, and comprised twisted continuous filaments.

Two samples were of Hairy-medium type, representing the first type of fleece, which was developed in the Bronze Age and which was common until after the Middle Ages (Ryder 1982; 1983). Pockets of unimproved breeds with this type of fleece survive in various parts of Europe. The remaining four wool samples were of 'modern' type, which became common only after the Middle Ages. Samples 007 and 018 were designated Medium fleeces, although the Medium type has mean fibre diameter values of 30 microns and over. Samples 010 and 012 were first thought to be of Semi-fine type although that type usually has mean fibre diameter values around 25 Microns. In fact all four lie on the borderline between the Semi-fine and Medium types, but I have decided to regard them as fine versions of the Medium type. All biological material shows continuous variation and it is sometimes difficult to decide in which of two categories a fleece should be placed.

What is remarkable is the small variation in the mean fibre diameters of the four samples. First, the experimental error of the method is of the order of one micron and so one might expect repeat measurements on the same sample to vary by about one micron. Secondly, these wools were selected by eye during the fifteenth century and the eye cannot detect differences in the mean fibre diameter of less than three microns. But coarser wools are longer, and so these may have been selected on staple length rather than directly on fibre diameter.

Too few wool samples of this date from the continent of Europe have been investigated for the breed of sheep to be suggested, but the wools do not appear to be typical of the more recent breeds of Spain, which are either of fine-woolled, Merino type or of

Table 1
FIBRE DIAMETER MEASUREMENTS IN MICRONS

Identity	Diameter Range	Mean +/- s.d.	Mode	Medulla %	Pigment %	Fleece
015	14 - 42 50 60	26.1 +/- 8.0	20	1	97	Hairy-medium
016	18 - 52 56 60	29.6 +/- 9.6	20	1	99	Hairy-medium
007	14 18 - 54	29.9 +/- 8.5	30	2	0	medium
018	18 - 48 52	29.9 +/- 7.7	32	0	0	medium
010	14 - 52	28.4 +/- 8.3	28	0	0	medium
012	12 16 - 52 58	28.4 +/- 8.8	28	0	0	medium
021 nat	6 - 20	12.9 +/- 3.4	10	n/a	n/a	silk
blue	6 - 20	14.0 +/- 4.0	14	n/a	n/a	silk
15th C Scot.	6 - 18	12.3 +/- 2.9	13	n/a	n/a	silk (1)
16th C China	8 - 26	12.4 +/- 3.9	12	n/a	n/a	silk (2)

One micron = .0001 mm; s.d. = the statistical Standard Deviation; the mode is the most frequent diameter; fibre diameters outside the main range are listed separately;
(1) From Ryder and Gabra-Sanders (1992)
(2) Ryder, unpublished measurements.

coarse-woolled carpet type. This might suggest either that the tapestry was not made in Spain, or if so that the wools were imported from elsewhere in Europe. The Semi-fine and Medium fleece types became prominent in Britain after the Middle Ages.

It is not usually of interest to report fibre abnormalities in historical material, but it could be of use to future research to record that nearly all the wool samples had a number of fibres with local swellings or constrictions. Such abnormalities are not uncommon, but the exact cause during the growth of the fibre is not known and so it is not possible to indicate the significance in this context.

In comparison with wool, hardly any measurements have been made of old silk fibres so there is virtually no evidence of the extent of variation, but the fineness of the fibres and small amount of variation within the samples almost certainly identifies the silk as cultivated rather than wild. The very small difference between the two yarns could be experimental error (see above), but if real, merely reflects batch variation rather than two kinds of silk. In order to allow comparison two previous measurements have been added to Table 1, one from a sixteenth-century Chinese carpet, and another from a medieval braid excavated in Scotland. The latter fibre is thought to have come from Italy and so the Saragossa silk could have come from Italy.

References

Ryder, M. L. 1982, 'European wool types from the Iron Age to the Middle Ages', in: L.Bender Jørgensen, K.Tidow (edd), *Textilsymposium Neumünster: Archäologische Textilfunde 6.5.-8.5.1981,* Neumünster, 224-238

Ryder, M. L. 1983, *Sheep and Man,* London

Ryder, M. L. 1987, 'The evolution of the fleece', *Scientific American* 255 (1), 112-119

Ryder, M. L., T. Gabra-Sanders 1992, 'Textiles from Fast Castle, Berwickshire, Scotland', *Textile History* 23, 5-22

Michael L.Ryder
4 Osprey Close
Southampton SO16 8EX GB

Those Weaving Combs - Yet Again

In his article in the *ATN* 25,1997,16 M.L Ryder mentioned my work with a warp-weighted loom (WWL), and my discussions with him concerning the use of combs. I would like to follow that up and explain my suggestions.

The question at issue is whether the narrow bone and antler combs were used for weaving (Fig.1). They are exclusively found in North European Iron-Age contexts, and the assumption has been that they are weaving tools (Henshall 1950). This assumption, however, has been questioned because of the shape of the comb (Ling Roth 1916-18; Tuohy 1990), and because the weft on the WWL was beaten upwards with swords or pins, not combs, as demonstrated by Norwegian weavers to Marta Hoffmann (1964). The combs found are worn and damaged, which ought to give clues to their use; but none of the discussions has so far provided an acceptable solution.

Taking the combs from the hillfort of Danebury as an example, it seems important to explain the following:

1. The narrow width of the tool, 4-5cm, consistent over time and place.

2. The sett of the teeth, also fairly consistent, about 6-10 on each comb, average 7.9.

3. The shape of the teeth (pointed, more or less square in section, 3cm long as manufactured), and dents (also frequently pointed).

Pointed tips to the teeth are quite hard to make with a saw and a knife. Was it important to have pointed tips to the comb? If so, why ? What process can have worn some teeth down to stumps, still leaving them pointed ?

The dent ends are sometimes U-shaped, but most are pointed; the ends are often extended in sharp surface cuts, as though

wear was obliquely out of the channel on to the top surface. A few apparently new specimens have square-cut dents, as manufactured. Some have teeth carefully cut to the same length, others are all irregular. So I conclude that neither length nor shape mattered, and, if the worn-down combs were worn down in use and still in use in that condition, then the length of the teeth did not matter either.

4. The convex/concave shape of the tool in section, if it existed when made. Could this have been intended, accidental, or useful?

5. The observable wear patterns.

5.1. The tips are worn - indeed, quite a lot of the teeth on the Danebury combs have been worn down to pointed stumps; they tend to have worn round in section; the neat edges and corners are rubbed off; there are ridges and cuts across inside the dents and quite sharp incised lines across the convex upper side of the teeth, often but not only at their base. However, since one does not usually beat with the tips of the teeth, it is hard to visualise the action that could so shorten the points.

5.2. Where outer teeth are not worn down, they are often broken. Of the 12 specimens from Danebury with some but not all teeth broken, 15 outer teeth are broken, 9 to the left, 6 to the right; as many as 8 combs have at least two outer teeth missing. Three have both outer pairs missing. Although outer teeth might break first if the comb were dropped, trodden on, or otherwise misused, it looks as though the outer teeth were particularly vulnerable in use. Used as a beater, given the curve of the tool, it would be the middle teeth that would take the strain; the outer ones would hardly ever make contact.

In a competition between bone and wool, the victim is not going to be the bone but the wool. If the bone is worn at all, the wool must have been treated quite roughly. How? It takes several years of regular use for wool to mark the flyer of a spinning-wheel, and that is continually moving greasy yarn, sawing at the wood in the same place. Whatever it was used for, the use of the combs was prolonged and quite violent.

6. Was a loop necessary? If so, use of the comb must have been intermittent and it had to be always ready to hand for when the need arose. Perhaps we can eliminate use for the preparation of skins.

The handle extension seems to have been a later characteristic of combs, so perhaps it was a practical improvement suggested by users.

7. They are decorated; someone has taken trouble over them. Their manufacture took time and care. But they were not mere gifts and tokens - they were well-used and battered personal tools and were still valued even when very worn, to the point of being re-cut.

I made a copy in wood of a typical comb as found at Danebury and tried to use it for weaving on a WWL.

My conclusions are:

1. The comb *could* be used to organise the weft before beating, moving the line of weft into place. However, although possible, it is not necessary, since a pin beater is simpler, quicker to make and almost as good; a pin beater can be put into one of the holes on the loom uprights when not in use, or behind the weaver's ear. There is nowhere on the WWL to 'park' any tools; but many combs found at Danebury have enlarged butt-ends with a hole, presumably for a thong to hold or hang them by.

It would take a very long time of such gentle use to produce any wear on the teeth and dents.

2. The combs are not the right tool for beating-in wefts:

2.1. The WWL is wide from side to side. These combs are only about 4cm wide and would have to be used, withdrawn and reinserted about 30 times across a one-metre warp (many warps were wider.) I had some difficulty in maintaining a straight fell, even with a sword beater, and it would be very much harder using a narrow comb. Because of the curved section of most combs, not all the beater is in contact with the new weft, and the beaten area would be even narrower than the beater-width.

Only tapestry weavers use narrow beaters.

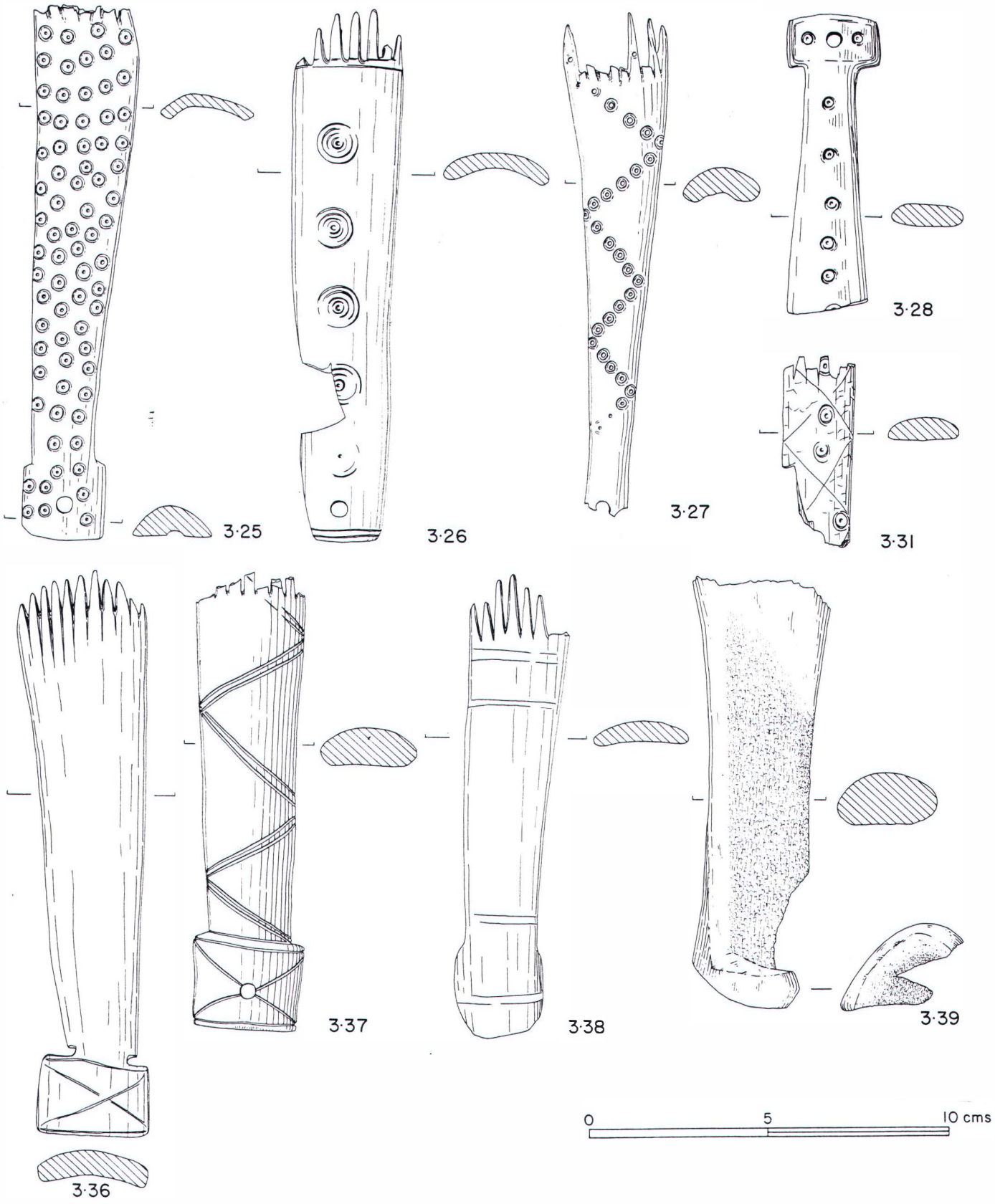

Fig.1 A selection of bone and antler weaving combs from the Iron-Age hillfort of Danebury, Hampshire. After: B.Cunliffe, Danebury, *1984.*

The Greeks are known to have made pictures on their WWLs; but finger manipulation for small areas of colour is very difficult with the wide and open shed of the WWL. Thus I doubt if weavers would want to work in the small areas for which a comb might be useful, and if they worked the picture-wefts horizontally across the loom with each shed-change, like intarsia knitting, a narrow beater would have no advantage.

For cloth-weaving, a wider fork would have been much more useful, and an obvious design development. One would expect to find at least a few such, made perhaps from shoulder-bones. But all the combs are narrow.

2.2. The WWL shed is very wide from back to front, and permanent - this loom has no closed position with all warps in one plane. Even when the shed has been changed and there is a cross beneath the last weft, only a centimetre or two below the fell the shed is still wider than the comb teeth are long. The teeth go readily enough between the front warps, but do not reach the back set of warps, and so the teeth make a mess of the latter as the comb is pushed upwards. They may not even reach the weft that is supposed to be beaten in. If the weaver forces the comb to reach the back warps, the front set would be caught in the pointed end of the dent, resulting in destructive wear.

Many combs seem to have been used with broken and worn teeth, some with drastically shortened teeth. So they cannot have been in use for WWL weaving then, even if they were when new.

2.3. On a WWL, the crossed warps hold each new weft in place after a change of shed, against gravity. It is the *cross* which needs to be beaten upwards. This had not been understood when Ling Roth wrote in 1916. The sword beater is designed to beat up the cross from inside the (changed) open shed; as the cross is shoved upwards, the weft is pushed into place and supported on the crossed warps. The outward pull from the wide shed keeps it in place. The control maintained when beating upwards is a pleasant surprise.

A comb beats the weft itself while avoiding the warps. Comb-beating would in effect leave the new cross to look after itself. But if the cross is untouched, the new weft will simply fall down again. The web would be clumsy and fine control difficult.

2.4. It has been suggested that the comb was inserted into the shed, wedged, and the sword used to knock it upwards. This sounds implausible to a weaver. There are too many unnecessary hand movements per weft shot. The ideal weaving process is rhythmic and economical, and over the years improvements tend to increase speed and economy, even while increasing the weave complexity. This idea offers no rhythm, and no economy.

The combs would show signs of such abuse. The comb, moreover, would not wedge inside the shed without damage to the warps. It is not clear what would be achieved; for the force would not be delivered at the cross or at the weft where it is needed, but instead the beat would be concentrated on the warps themselves, intended presumably to drag the cross upwards indirectly by pushing the warp halves apart. There could be no accuracy or precision in placing the weft and the cross below it. Damage to the warps, such as a broken thread, is the last thing a weaver wants.

As Ryder suggests, it would be difficult to stop the comb from falling out, and how would the weaver hold it in place while beating ?

2.5. The combs have about 2.5-3.5 teeth per cm. Warps were sett at 8 to 80 per cm. For coarse cloth 3-4 ends would lie between each pair of teeth, but for many fabrics there might be up to ten warps all bunched up into those narrowing dents. Even beating plain weaving would be difficult.

2.6. Wear caused by warps sliding up and down the dents would tend to smooth them, without giving us the observed clear cuts across the teeth; the yarns would widen the dent downwards until there is a U-shaped or even keyhole-shaped end. Only a few of the Danebury combs have smooth U-shaped dents; even some well-worn specimens have sharp V-shaped ones.

2.7. Held in the hand, the thumb or first

finger would rest on the top surface near the teeth, and the fingers curl round the edges. It is not a comfortable working position. As a tapestry beater, however, beating downwards, the comb would work. This idea of a comb-as-beater may have come from the days when it was not understood that the beat on a WWL was upwards (see Ling Roth 1916,133).

2.8. Nowhere in the drawings and records of antiquity, as researched by Dr Hoffmann nor in the demonstrations given to her in Norway, are combs mentioned as an accessory. Nor are combs referred to among the swords and spears in the known Saxon riddles referring to textiles.

2.9. I note that unless the dents are narrower than most, the concavity of the comb section does not cause a problem in practice; the dents are usually wide enough for the warp to sit straight in them whatever the curve of the comb in section. Yet this has been the point of much of the controversy, from Ling Roth onwards. When the warps jam in the dents it is because of their number, not because of the radiating angles of the dents in section.

3. If not for weaving, then what was the function of the combs ?

3.1. Hair comb/fashion accessory. But unless the hair were strong and often badly tangled, the wear marks, especially at the tips are not explained.

3.2. For de-hairing skins, prior to tanning, as suggested by Ling Roth (1916,138). But that was continuous use, not intermittent, and would probably have needed a stronger, fiercer tool, with shorter, sharper clawed teeth. It would explain the worn-down tips and broken teeth, but not the other wear-patterns, nor the persistent use of unevenly worn combs. And I find it unlikely, too, that a tool for an ugly and smelly job should be so treasured and decorated.

3.3. As a hand-held hackle, for combing tangles from the locks of wool before spinning. Many craft spinners today keep handy a metal-toothed dog-comb, or a purpose-made metal-toothed hackle. I do. The size of the Danebury combs, both width and length, is just right for flick-combing individual locks. Teeth need to be about 3cm long, but less will do, and the sett is not critically important - 23 per cm is fine. The action is quite violent, and the fibres could cut into the teeth at any point, and particularly across the convex faces of the teeth, and inside the dents. The shape of the end of the dent does not matter, and its final shape would reflect the spinner's personal technique.

The convex shape of the tool makes it easy to grip. The tooth tips need to be pointed and would tend to wear down; the outside ones would take a lot of the wear, especially on the outside of the outer tooth which it could easily break. A right-handed person, holding the tool as is most comfortable with the left thumb in the concavity and pulling the lock towards the body, would put more outward strain on the unsupported right teeth as seen from the inner, concave, face.

A larger handle-end would improve grip and action; and a strap around the wrist or to the waist would also improve leverage as well as keeping the tool handy. A spinner would prepare only a small amount of fleece before spinning because it is not easily kept in perfect condition.

Flax distaffs or forks were made and given as love-tokens in European tradition - why not woolcombs? Textile craftspeople care about their tools.

Using the combs to comb locks of wool before spinning is a practical possibility. It is an attractive but not original solution; for Adrian Rance made it already in his unpublished report on the finds at Mere. It works for modern Shetland fleece very well, although it might be less helpful for shorter Loughtan fleece or the bulkier Down breeds.

Ro Bailey
Southampton

References

Henshall, A.S. 1950, 'Textiles and Weaving Appliances in Prehistoric Britain', *Proceedings of the Prehistoric Society* NS 16, 130-162

Hoffmann, M. 1964, *The Warp-Weighted Loom,* Oslo

Roth, H.L. 1916-8, *Studies in Primitive Looms,* Halifax (reprinted 1977, ed.R.Bean)

Ryder, M.L. 1993, 'Wool at Danebury: A Speculation using Evidence from Elsewhere', *Oxford Journal of Archaeology* 12 (3), 305-319

Ryder, M.L. 1997, 'Fleece Types and Iron-Age Wool Textiles', *ATN* 25, 13-16

Tuohy, T. 1990, 'Weaving Combs - Curved or Straight ?', *ATN* 11, 6-8

Embroidery Terminology II

A draft scheme on embroidery terminology was proposed in *ATN* 22,1996,22. Thanks are due to all those who made comments upon it, especially Santina Levey. The current version is as follows:

1. SURFACE DECORATION OF EVENLY WOVEN OR NETTED FABRICS

a. Canvas-work

b. Counted-thread work
   1. Blackwork
   2. Pattern Darning
   3. Cross Stitch

c. Net embroidery

2. SURFACE DECORATION OF OTHER FABRICS

a. By the addition of stitchery
   1. Hand surface embroidery
   2. Machine stitches
   3. Tambour work

b. By the addition of fabric
   1. Appliqué
   2. Inlay

c. By the addition of metal threads
   1. Laid work
   2. Purl

d. By the addition of beads etc
   1. Bead work
   2. Mirror work
   3. Tambour beading & sequins
   4. Canvas bead work
   5. Sequin work
   6. Stones & Jewels

e. By the addition of padding
   1. Surface padding (raised appliqué)
   2. Raised work (Stump work)

3. DECORATION ADDED FROM THE BACK OF THE FABRIC

a. Shadow work
   1. Shadow work embroidery
   2. Shadow quilting

b. Quilting
   1. False or flat
   2. Corded
   3. Wadded

4. NEGATIVE SPACE TECHNIQUES

a. By pulling holes
   1. Open work
   2. Eyelet work

b. By drawing either the warp or weft threads
   1. Pulled fabric or drawn fabric work

c. By cutting and drawing threads in both warp and weft
   1. Pulled fabric or drawn fabric work

d. By cutting spaces
   1. Cut work
   2. Eyelet embroidery

e. By building with cut spaces
   1. Lace stitches

5. CONSTRUCTION TECHNIQUES

a. By pleating
   1. Smocking
   2. Shirring

b. By piecing
   1. Insertion
   2. Patchwork

c. By using thread alone
   1. Cords
   2. Fringes
   3. Tassels
   4. Braids
   5. Needlemade laces (needlepoint)
   6. Teneriffe Lace

7. Bobbin Lace
8. Macrame

6. MISCELLANEOUS

a. Edgings
b. Hems
c. Buttons
   1. (Dorset) crosswheel button
d Decorative seams
e. Fastenings
f. Piping
g. Braidwork
h. Patching, mending and darning

To complete the work we need to quote supporting literature in which the term/technique is described and illustrated. Information is almost certainly to hand on each of the entries: it needs to be extracted and re-presented in the order set out above.

If any one is willing to help with this work, they should contact either the Editor of the *ATN,* J.P.Wild, or the undersigned.

Professor Anne Morrell
119 Berwick Avenue
Heaton Mersey
Stockport SK4 3AT GB

A Set of Roman Clothing from Les Martres-de-Veyre, France

Some time around AD 180 a young woman died at Les Martres-de-Veyre, Central Gaul. Unusual conditions ensured the preservation of this and certain other nearby burials, but on opening the coffins in the 19th century, the actual bodies crumbled away, leaving the clothing, shoes and slippers, and even the the hair intact. These are unique assemblages, all the more so because they can be quite closely dated by means of the footwear: both the shoes (Fig.2) and the slippers were popular all over the Roman Empire in the later 2nd/very early 3rd century. The clothing thus belongs to persons of known sex, geographical location, social context and date, and forms a corrective to the more popular image of provincial Roman clothing provided by Ubian and Pannonian dress. These are essentially Iron Age survivals, while the textiles from Les Martres-de-Veyre would seem to represent the more widespread 'Gallic robe'. Although studies are in progress (Desrosiers, Lorquin 1998), I needed to make a set of Provincial Roman clothing for teaching purposes and could, therefore, only use the information available in A. Audollent's publication of 1923. Despite these limitations, the results of the attempted reconstruction will, I hope, confirm the validity of experiment and stimulate renewed interest in this type of clothing. It is certainly not before time: so unexpected was my interest in the finds that the staff at Musée Bargoin, Clermont-Ferrand, called in the police!

Although this appears to be a complete ensemble, making the clothing according to the measurements specified by Audollent threw up several problems. The shoes are roughly size 30, but the wide and shapeless woollen stockings are clearly intended for a larger foot (28 cm, size 36, a normal adult male size in the Roman period) and for someone with a longer leg. As it is, they tie above the knee, but in wear they continually slip down and a fastening just under the knee would seem to be more sensible and also more in accordance with surviving examples of leggings found with bog bodies in Northern Europe and Roman depictions of leg bindings worn (visibly) by men. At the top of one of the stockings are embroidered the initials PRI. As only male Roman citizens bore the tria nomina, and it is unlikely that these crude stockings were made by a professional tailor, we must perhaps conclude that this girl wore her husband's or brother's socks when it was cold. Or was she in fact fitted out with clothing considered appropriate, but not necessarily her own?

It was not my intention to make an exact replica, only to approach the original as closely as possible using modern materials, limited finance and, in my case, even more limited sewing skills. At present there are still too many unknowns for a true replica to be feasible: the type of stitching used for seams, the form of the neck opening and whether it is finished off or reinforced in any way, the exact method of sleeve attachment and the finish of the cuffs. All this requires more detailed study.

The original colour of the fabrics is unknown: the robe is the usual soil-stained

Fig.2 Shoes of the Les Martres-de-Veyre type, based on researched examples from Welzheim. Made by: P.de Haas, AHA-Productions, Alphen a/d Rijn.

brownish colour but a record made at the time of discovery mentions traces of an elaborate pattern in blue, which faded rapidly. Modern analysis might be able to pick traces up, but at present we cannot tell whether these were painted (or stencilled?) or whether there were regular woven-in plaid-like designs. Amongst other fragments from Les Martres-de-Veyre, Desrosiers and Lorquin (1998) mention a tapestry woven gamma-shape, which presumably would have been coloured, and also note the presence of silk and gold on the slippers: the clothing may be ordinary, but it is not poor! The stockings and belt are light and probably of undyed wool.

Although surviving 'Coptic' tunics and the Reepsholt robe seem to indicate a common tradition of weaving garments to shape, the Les Martres-de-Veyre robe is constructed of three pieces, on a different, much simpler, principle. Contrary to what I would have expected, the fabric of the body is not draped 'vertically', but is made of a piece some 180 cm long, folded so that the selvedges, some 140 cm apart, form the top and bottom edges of the robe. There is, therefore, only one side seam, and no actual hem. This arrangement immediately explains the crude and ugly flounce in the middle which takes up the skirt some 16 cm. While the reluctance to cut the fabric to the correct length is understandable, one would expect the fold to have been hidden on the inside, instead of being so horribly obvious as here, and this may be yet another indication of hasty alterations made to clothing that was too large to fit this girl at her laying-out. The belt is crudely made of a strip of rather fine tabby, 430 cm long and 12 cm wide, but apparently only one edge has a selvedge, so the strip must have been cut from a larger fabric. The ends are teased out into fringes some 20 cm long and here and there some coloured threads to provide additional decoration. The finder's report states that the belt was found at the waist, and creases on the robe do suggest it had been tied, though contemporary reliefs invariably depict such robes as unbelted (and without flounces). This does not, of course mean that belts were not used to adjust such 'horizontal' garments. The rich, who erected

Fig. 3 The Gallic robe from Les Martres-de-Veyre with stockings and belt, reconstructed. (The late second/early third century shoes do not belong to this assemblage.)

grave stones may also have been able to have such fabrics made to the correct width (i.e. shoulder to hem), while others made do with standard widths which - as always in peasant dress - they would alter as little as possible.

Even with the present constraints, making a replica illuminated certain technical features (Fig.3). Contrary to what might be expected, the 'horizontal' fabric hangs elegantly, and the belt enables the drapery to be further controlled. The left sleeve can be fitted easily into the side seam, but the right is more complex. A slit must have been cut in the fabric on the fold and there seems to be some kind of gusset under the arm, though I was unable to register details. The neck is downright ugly. Some sort of edging is to be expected and a reinforcement across the shoulder seams is essential to prevent them pulling out. The front gapes uncouthly, but a fibula works wonders and this must surely be the purpose of the small circular or animal fibulae which dominate the 2nd and 3rd century repertoire. It would be useful to inspect the neck of the robe for appropriate damage. The woollen robe is ample and the wide sleeves draughty, though in cold weather extremely useful (and attractive) as hand covering. An undergarment, presumably of linen, would have been necessary for purposes of hygiene and comfort, though nothing seems to have survived. Tomb sculpture from Gaul frequently depict plain or fringed undergarments peeping out below both men's and women's robes and in a second version of this ensemble I used a plain linen fabric, draped vertically so that fringes could be knotted from the warp threads. The form of this undergarment is, of course, entirely hypothetical.

The robe seems to share elements with both the Reepsholt single-piece robe and a series of (men's) tunics from Northern Europe. Although constructed on a completely different principle, the Reepsholt tunic is also positioned 'horizontally' so that the selvage forms the bottom edge. The garment is - like Reepsholt and 'Coptic' tunics, equally - and seemingly impractically - wide (Hald 1980, Fig.405). On the surviving clothes this gives an ugly and awkward form (particularly noticeable on photos of the Les Martres-de-Veyre robe), but the replica revealed that in use, the fabric hangs evenly with smooth pleats in unbelted form, while the great width of the garment contributes to an elegant swing of drapery in movement. The value of such observations is, of course, dependent on the use of fabrics similar in quality to the original. Fortunately, the robe is made of a moderately fine plain weave (tabby), with 10 threads per cm, and weighing *c.*1.4gr per $10cm^2$, which can be matched quite easily in modern pure wool fabrics. Unlike the Reepsholt (and surviving 'Coptic') tunics, the sleeves are attached separately. The basic form thus resembles the sleeveless tunics from Obenaltendorf and Marx-Etzel (Hald 1980, 336), both of which are made of a folded strip of cloth, with a single side seam and a slit for the arm cut into the fold, as at Les Martres-de-Veyre. In contrast, the sleeved tunic from Thorsbjerg is well-tailored and made from 4 separate panels of cloth. In sum, however, I would consider any resemblance between Martres-de-Veyre and other garments as superficial, largely fortuitous and entirely dependent on the limited nature of survivals.

The stockings from Burial D are made in two sections: a tube of cloth sewn up the back to which a semi-circular foot-covering is attached with an ill-fitting and uncomfortable seam running under the foot and leaving an awkward protuberance at the toes (Hald 1980, Fig.393). Short socks apparently found with another burial are made differently, resembling socks and certain leather shoes from Coptic Egypt, and are more suitable for use with close-fitting Roman footwear.

Even if the individual items of clothing were not worn by this particular girl at any one time, the ensemble was considered appropriate for the burial of a woman at this date. However detailed the contemporary depictions, nothing can match the actual survival of the robe, stockings and shoes with which an individual was equipped to face a winter journey into the underworld.

My thanks to Miriam de Boer, who so gleefully posed in the garments, showing their elegance and practicality to full advantage

References

Audollent, A., 1923, *Les Tombes Gallo-Romaines à Inhumation des Martres-de-Veyre (Puy-de-Dôme), Mémoires présentés par divers savants à l'Académie des Inscriptions et Belles-Lettres (Inst.de France),* XIII, 1923, 275-328

Desrosiers, S., A.Lorquin 1998, 'Gallo-Roman period archaeological textiles found in France', in: L.Bender Jørgensen, C.Rinaldo (edd), *Textiles in European Archaeology: 6th NESAT Symposium,* Göteborg 1998, 53-72

Hald, M., 1980, *Ancient Danish Textiles from Bogs and Burials,* Copenhagen 1980

Carol van Driel-Murray
Institute of Pre- and Protohistory
Nieuwe Prinsengracht 130
1018 VZ Amsterdam NL

Obituaries

Anne Stine Ingstad

When Dr Anne Stine Ingstad passed away on Nov 6 1997, only three months before her eightieth birthday, Norwegian Archaeology lost yet another of its prominent ladies. Anne Stine (Fig.4) was born in 1918 in a family which was the focal point of intellectual and artistic activities at Lillehammer, 170 km north of Oslo. As a very young woman she married the lawyer Helge Ingstad who already had a reputation as a tough explorer. After the Second World War the couple settled in Oslo and Anne Stine began her studies in archaeology. Her thesis for the Magister Artium degree in 1960 on a study of the Neolithic settlement at Rognlien in Telemark was in many ways a pioneering work which pointed ahead. But when her husband and daughter discovered the settlement of L'Anse aux Meadows in the same year, Anne Stine left the Neolithic for the late Viking Period. Helge Ingstad had for many years searched for the Vinland described in the Icelandic Saga of Erik the Red and only archaeological excavations could verify the ethnic affiliation of the site found. For seven seasons Anne Stine led the excavations in Newfoundland and thereby demonstrated beyond doubt that this was a Norse settlement. The publication The *Discovery of a Norse Settlement in America* earned her the degree of Doctor Philosophiae at the University of Oslo.

Anne Stine Ingstad's textile research began late in life when her former professor Bjorn Hougen left her the responsibility for publishing the 'everyday textiles' from the Oseberg grave find. During the years excavating in Newfoundland she had looked forward to this task and it occupied her for the rest of her life. At the first NESAT symposium in Neumünster in 1981 Anne Stine for the first time gave a paper on this exciting material which had been stored for so long. The full publication will appear in 1999 in Volume IV of *Osebergfunnene* (The Oseberg Finds). She also worked on the textile fragments from the excavations of the Viking trading port of Kaupang (in press), and at the second NESAT symposium in Bergen in 1984 she presented a. comparison between textile types from Oseberg, Kaupang and Birka. The last time she took part in a NESAT symposium was in 1996 in Borås, Sweden.

Anne Stine Ingstad was a kind and considerate person with a strong personal integrity. In spite of repeated attempts from colleagues to denigrate her work she fulfilled the tasks she had taken upon herself and several national and international distinctions were conferred upon her. In fact, at her death she was the most renowned Norwegian archaeologist.

The last time I met Anne was in May 1996 at the opening of the Vikingland theme park east of Oslo. She looked thin and frail in her Viking-inspired garment, but her personal strength and the warmth of her beautiful smile was felt by everyone present.

Bente Magnus
Stockholm Sweden

Märta Lindström

The former Lund museum curator and textile conservator Märta Lindström died on the 12th of April 1997. She was nearly 80 years old. Märta (Fig.4) was born in Katrineholm, south of Stockholm, but spent

most of her professional life in the province of Scania in South Sweden. She qualified between 1934 and 1939 as a textile- and art-teacher at the Tekniska skolan (present-day Konstfack) in Stockholm. In 1950, after several years as an art-teacher, she was employed as a conservator at the Kulturhistoriska Museet (Kulturen) in Lund, Scania.

At Kulturen Märta became an expert on the rich vernacular textile art of Scania. Over the years she expertly curated the Museum's collection of costumes, tapestries and embroideries. In 1960 construction of Kulturen's textile gallery began. Now a curator in this department, Märta worked on the catalogue of the textile collection and acted as the Museum's expert advisor on textiles. The following year she coordinated the design of the permanent gallery. Her choice of contents, reflecting the broad scope of the Kulturen collection, undoubtedly contributed to the reputation of the textile gallery far beyond Sweden. Märta further introduced the public to the collection through temporary exhibitions and articles in the Museum's yearbook.

Märta also worked on finds of archaeological textiles from medieval Lund. Thanks largely to her work, Kulturen now holds a large and unique collection of medieval textiles. Parts of this corpus have been published in the final report on the PK-Bank excavation (1976) and in *Medieval Textile Finds from Lund* (Lund 1970). Märta also began a study of textiles from later periods and continued her research long after retirement.

Through her contacts with the educational world Märta annually accepted textile students, providing them with museum experience during the Summer vacations. She was an acknowledged authority within the traditional Swedish crafts scene (Hemslojden). Her knowledge of folk and archaeological textiles, which she generously shared throughout her life, was appreciated by scholars of ethnology and archaeology. Märta had many good contacts with textile scholars both within and outside Sweden, and she took part in several NESAT-conferences. Among her colleagues at Kulturen she was regarded as a worthy ambassador of the Museum's textile collection. Märta Lindström is fondly remembered for her loyalty and her generous spirit.

Gertrud Grenander Nyberg
Stockholm Sweden

Eva Andersson
Arkeologiska Institutionen
Sandgatan 1
S-223 50 Lund Sweden

Translation: Märit Gaimster

Reports

The Mons Claudianus Textile Project

Excavation at Mons Claudianus in Egypt's Eastern Desert (Fig.5) was conducted in 1987-93 by an international team of philologists and archaeologists, headed by Professor Jean Bingen, Brussels, and under the aegis of the Institut Français d'Archéologie Orientale in Cairo. The excavations have provided us with amazing, detailed information on the workings of an Imperial Roman quarry that are now in the process of being published (Bingen *et al.* 1992, 1997; Bülow-Jacobsen 1996; Peacock, Maxfield 1997). They have also supplied a huge collection of Roman textiles that have made it necessary, and possible, to create a special Mons Claudianus Textile Project. Early reports on the Mons Claudianus textiles have been presented in the *ATN* 10,1990,10 and 12,1991,8-9. Now the time is ripe to give a brief report on how work has progressed since then, and on the establishment and proceedings of the Textile Project.

Twelve large metal boxes crammed with textiles from Mons Claudianus are now deposited at the store of the Egyptian Antiquities Service in Quft. Together, they take up something like 1.25 cubic metres. This large mass of textiles made it necessary to limit recording and analysis to samples. The remaining textiles were cursorily examined, to pick out any unusual pieces. This method has resulted in the recording of a limited number of pieces but spanning a wide range of Roman textile design and textile technology, and a selection of Roman garments and soft furnishings.

Fig.5 Map of Roman roads and sites in the Eastern Desert of Egypt. Note Mons Claudianus (centre, top) and Berenike (bottom right).

The inhabitants of Mons Claudianus consisted of several different groups: free craftsmen (quarrymen), imperial slaves and freedmen, and a number of soldiers including officers. To these may be added a few women and children. Some were native to Egypt, others came from different parts of the Empire. This meant that the site had a population of widely different ethnic, social and legal status and that was presumably reflected in their clothing and other textile belongings. Furthermore, quarrying at Mons Claudianus was hard, physical labour under extreme climatic conditions, very arid and with temperatures in winter varying between 0° and 30°C between sunrise and noon, in summer rising to 50°C. Clothing should thus protect the bearer against cold, heat, dust, and dehydration. This is reflected by the textiles found, ranging between thick, felted woollens, thin dustproof fabrics, and light, veil-like materials.

Roman Clothing: Form and Use is one of the issues to be addressed by the Mons Claudianus Textile Project. Among the others are Craftsmanship and Technology in Roman Textile Production, and Roman Colours: Design and Meaning. To do this, a group of scholars has been established, combining the skills of textile archaeology and textile craftsmanship and spanning three Scandinavian countries: Dr Lise Bender Jørgensen of the Dept of Archaeology at the Norwegian University of Science & Technology in Trondheim, Norway; Ulla Mannering M.Phil. of the Dept. of

Archaeology, the University of Copenhagen, Denmark; handweavers Lena Hammarlund and Martin Ciszuk of the Textile Departments of the Göteborg University and the University College of Borås in Sweden; and Lena Larsson BA of the Dept. of Classics at Göteborg University.

Up to now, work has been done on several issues considered to be basic for a wider understanding of the Mons Claudianus textiles. One such study by Lena Hammarlund has been aimed at developing concepts and methods to describe the 'Fourth Dimension of Textiles'. This is the tacit knowledge of craftsmanship, exemplified in the skill employed in selecting raw materials, tools and method of work to obtain a certain type of fabric. Hammarlund's model, the pentagon, is focusing on the interaction of yarn, weave, warp-density, weaving and finishing. Martin Ciszuk has studied the 6 taquetés or weft-faced compound tabbies from Mons Claudianus. He has succeeded in constructing weaving patterns of these complicated weaves, showing that Roman textile technology was more advanced that we knew. In a study on the Gammas and other woven decorative features from Mons Claudianus, Ulla Mannering has established a useful platform for her future work on the garments from the site.

The Textile Project has been funded by the G.E.C.Gad's Fond (Denmark) 1991-94, VKR's Familiefond (Denmark) 1991, Novo's Fond (Denmark) 1991, the Swedish Research Council for the Humanities & Social Sciences 1995-96, and the Stiftelsen Agnes Geijer's Fond för Nordisk Textilforskning (Sweden) 1996. A generous grant from the Joint Committee of the Nordic Research Councils for the Humanities for 1999-2001 secures the conclusion of the project. The final publication is planned in the series *Survey and Excavation: Mons Claudianus 1987-1993*, Institut Français d'Archéologie Orientale, Documents de Fouilles de l'IFAO.

Lise Bender Jørgensen
Dept of Archaeology
NTNU Vitenskapsmuseet
N-7034 Trondheim Norway
e-mail: lise.bender@vm.ntnu.no

References

Bingen, J., A.Bülow-Jacobsen, W.E.H.Cockle, H.Cuvigny, L.Rubinstein, W.van Rengen 1992, *Mons Claudianus, Ostraca Graeca et Latina* I (*O.Claud.*1-190), *DFIFAO* XXIX, Cairo

Bingen, J., A.Bülow-Jacobsen, W.E.H.Cockle, H.Cuvigny, F.Kayser, W.van Rengen 1997, *Mons Claudianus, Ostraca Graeca et Latina* II (*O.Claud.*191-414), *DFIFAO* XXXII, Cairo

Bülow-Jacobsen, A. 1996, *Organisation, administration og teknik i et romersk stenbrud fra kejsertiden*, København

Peacock, D.P.S., V.A.Maxfield 1997, *Survey and Excavation: Mons Claudianus 1987-1993* I: *Topography and Quarries*, *DFIFAO* XXXVII, Cairo

Bibliography on the Mons Claudianus textiles

Bender Jørgensen, L., 1990, 'Mons Claudianus', *ATN* 10,1990,10

Bender Jørgensen, L., 1991a, 'The Textiles from Mons Claudianus, recorded in 1991', *ATN* 12,1991,8-9

Bender Jørgensen, L., 1991b, 'Textiles from Mons Claudianus. A Preliminary Report', *Acta Hyperborea* 3,83-95

Bender Jørgensen, L., 1997, 'Romersk tekstil i Egypts orken', *Spor* 1997 (2),6-9

Hammarlund, L.,1997, 'Tekstilenes fjerde dimensjon - handverkerens kunnskap og redskap', *Spor* 1997 (2),26-29

Unpublished reports to the funding bodies by Ciszuk, Hammarlund and Mannering.

For a complete bibliography on Mons Claudianus, see http://adam.igl.ku.dk/~bulow/Welcome.html

Human Hair Mats and Bindings from Nubia

The William S. Webb Museum of Anthropology at the University of Kentucky has acquired a collection of textile specimens from two cemeteries in Sudanese Nubia. They are located at Kulubnarti, a village in Upper Nubia, roughly 75 miles south of the border with Egypt, and at the head of Lake Nubia, created by the Aswan High Dam. The two cemeteries are contemporaneous, dating to the Nubian Early Christian Period, *c.*AD 650-900. The most unusual feature of this collection is the amount of human hair which has been found. Three mats are made entirely of human hair. They are not small, so they represent a lot of hair. For two of them we have complete dimensions: 106 x 69cm and 135 x 77cm. For the third mat we have a complete width: 126cm, and an incomplete length of 86 cm. The ratio of width to length of the two complete mats is roughly 6 to 10. If the same proportions were followed for the incomplete mat, its length would have been about 2m.

The hair yarns for all three mats are spun in the S direction. Two of them are made in simple plain weave, while the third one has paired wefts throughout. Thread counts per centimeter are: 6 warps to 7 wefts; 4 warps to 10 wefts; and 4 warps to 5 weft pairs. All of the selvedges have two warp cords each. On one mat the selvedges are reinforced, in which the weft passes over the warp cords a second time before travelling to the other side. Another mat has simple selvedges, and the third has one selvedge of each type. The edges of each are finished off in some way: on one the warp ends at each edge are neatly twisted into a small cord; another has twisted loops at one end, and a knotted fringe at the other. The incomplete mat has a short knotted fringe on the finished edge. There is no decoration on any of them, but one mat has a band of very slightly lighter colour. Another mat has an area 10 x 13cm which has been darned with doubled human or goat hair yarn.

There are a number of bindings which were used to secure the cloth wrappings around the bodies. These occur in five different forms: multiple threads, strings, cords, braids, and tapes. Although some bindings are made of wool, cotton and flax, most of them, especially the strings and cords, are made of human hair. The initial twist is always S, and the resulting yarn is no more than 1mm in diameter. Strings are made from several yarns - from two to thirteen - twisted together in the Z direction. Cords have two Z elements S-twisted together. The texture of the hair has been described by the analyst as varying from straight, to curly to kinky, thus matching that of the present-day Nubian population.

Many hundreds of textile specimens from the Early Christian period are known from Qâsr Ibrim, a townsite located farther downstream in Lower Nubia. Nothing like this use of human hair has been found there, although no Early Christian graves have been excavated at Qâsr Ibrim. So it is possible that the mats and bindings were for funerary use only, although the darned mat suggests that it had use before it went into the grave.

Several present-day Nubians have responded to my queries about the human hair mats and bindings. None has any knowledge of hair being used in this way, but they have mentioned a number of traditions relating to human hair among the Nubian people. Putting it all together, it is clear that human hair is symbolically powerful for both good and evil. My tentative hypothesis at the moment is that the bindings and mats were used as a form of protection against evil in the future life. I don't know if Coptic thought allows for the presence of evil in the life-to-come, but it is an avenue to be explored.

In the meantime, I would be grateful if anyone is familiar with parallels, either in the literature or in collections. A large number of Christian graves have been excavated in Nubia, but if wrappings were present, they were merely mentioned. And no scientific fibre identifications were done in the early days of the Nubian archaeological campaigns. But I am hoping that somewhere, laid away in a long-ago acquired textile collection, will be found a mat or a string or a cord from Nubia made from human hair.

Nettie K.Adams
Webb Museum of Anthropology
University of Kentucky
Lexington, KY 40506-0024 USA
e-mail: wadams@pop.uky.edu

Abb.6 Rand der Münze aus Martigny. Foto: A.Rast-Eicher. Massstab: 5.5:1.

Kleine Fragmente - kleine Fundgruben

Winzige Textilfragmente scheinen manchmal für Archäologen und Restauratoren ziemlich nutzlos. Dass dem nicht immer so ist, zeigt ein kleines Textilfragment an einer römischen Münze aus Martigny (Kanton Wallis). Das Leinengewebe ist nur 1 x 0.7 cm gross und haftet am Rand der Münze (Abb.6) . Da es auch an der Kante zu sehen ist, können wir einen Beutel vermuten. Ungewöhnlich an diesem Textil ist die Fadendrehung: beide Fäden sind s-gesponnen, eine- wie wir mittlerweile wissen - im römischen Reich für Aegypten und Syrien normale Spinnrichtung, für Mitteleuropa jedoch nicht üblich.

Das römische Martigny (Octodurus/Forum Claudii Vallensium) liegt an der Passstrasse zum grossen St. Bernhard, einer der wichtigsten Alpenübergänge. Römische Importe ins Wallis, nicht zuletzt auch die berühmten Seiden aus Conthey, zeugen von regem Handelsverkehr mit nahen und fernen Gebieten. So erstaunen Textilien wie das kleine Fragment an der Münze nicht, von denen wir vermuten können, dass sie nicht nördlich der Alpen hergestellt wurden. Es gibt uns ein Puzzlestück mehr zu den römischen Textilien, von denen wir in der Schweiz wegen den sonst nördlich der Alpen üblichen Brandbestattungen leider nur wenige finden.

Publikation mit freundlicher Genehmigung von F. Wiblé, Kantonsarchäologe.

Grabfund (My 90-5301-1), münzdatiert in die Zeit des Tiberius (22 - 30 n.Chr.)

s/s: Fadendurchmesser: 0.7-0.8 mm; 10 - 12 F./cm, Lein.

(z.B. L.Bender Jørgensen, *North European Textiles until 1000 AD*, Aarhus 1992, 128)

Antoinette Rast-Eicher
Kirchweg 58
8755 Ennenda Switzerland

Berenike 1998

A year has already passed since study of the material from the 1997-98 seasons at the Roman port of Berenike on the Red Sea coast of Egypt was undertaken, and the full interim report is currently in the press. A further 800 textile fragments were added to the corpus. (For earlier seasons see *ATN* 18/19,1994,15; 20,1995,8; 22,1996,20-21.)

The most significant outcome of the season was positive evidence to suggest an Indian origin for the large group of Z/Z cottons of previously unknown provenance (*ATN* 20,8; 22,20). Two further pieces of resist-dyed cotton were recorded, one (Fig.7a) showing a pattern of dot rosettes of a type paralleled on Indian printed cottons of the Mediaeval period (Barnes 1993, 39, cat.no.7). A closely similar fragment was found on the Silk Road, at Yutian, Xinjiang, dating to the early 5th century AD and therefore roughly contemporary with the Berenike piece (*The Silk Road - Textiles from the Han and Tang Dynasties,* 1973, cat.no.18; *The Genius of China*, 1973, 131, cat.no.252), The other fragment (Fig.7b), carrying a fragmentary motif with a hatched triangle, had been neatly patched with a piece of matching plain blue Z/Z cotton, in Z-plied S-spun linen thread: a repair presumably carried out on site.

A high proportion of the Z/Z cottons consist of medium weight tabbies, badly degraded and impregnated with salt. The largest fragment had two strips of a similar fabric sewn onto it, with the edges turned in to form bands *c.*25mm wide, crossing each other at right angles. A small square patch had been sewn firmly onto the main fabric in single Z spun cotton, to repair a small hole. In view of the trading connections of the site, together with finds of teak, including planks interpreted as recycled ships' timbers, it seems plausible to interpret this find as a fragment of sailcloth, from a square sail reinforced with a grid pattern of additional strips, of the type commonly depicted in Mediterranean art. A number of other examples of reinforcing strips were recorded: up to 300mm long, often sewn end to end with others, with the edges turned in to form a band *c.*35mm wide. Two pieces of stout Z/Z cotton webbing with plied warp, *c.*35mm wide, may have served a similar function. Pieces of cotton string were associated with some of the reinforcing strips. The site also produced four brailing rings, one with similar cotton string through its holes.

The majority of the fragments excavated in 1998 came from two rubbish deposits, one datable from the associated pottery to no later than AD 70, the other to the late 4th - 5th century AD. The early dump contained *c.*300 textile fragments, with a high proportion of 'utilitarian' (as opposed to domestic) textiles. With the exception of the largest piece, described above, it contained all the pieces tentatively identified as sailcloth, together with textile amalgams, probably saddle padding, made up largely of medium to fine S/S woollen tabbies sewn through with goat-hair thread. Other, heavily patched, pieces may have been from sails or tarpaulins. The late deposit contained much greater variety in both quality and decorative techniques. All the resist-dyed fragments were from late contexts. Interestingly, the early deposit contained no S/S cottons, though a few scraps were securely identified from a test-pit of early date in 1996. It did, however, contain a strip of fine weft-faced compound tabby, the earliest reported stratified find of its type.

Bibliography

Barnes, R. 1993, *Indian Block-Printed Cotton Fragments in the Kelsey Museum, The University of Michigan*, Kelsey Museum Studies 8, Ann Arbor

The Genius of China, 1973, Times Newspapers Ltd, London

The Silk Road - Textiles from the Han and Tang Dynasties (*Sī chóu zhī lù hàn táng zhī wù*), 1973, Beijing

F.C. and J.P. Wild
30 Princes Road
Heaton Moor
Stockport SK4 3NQ. GB

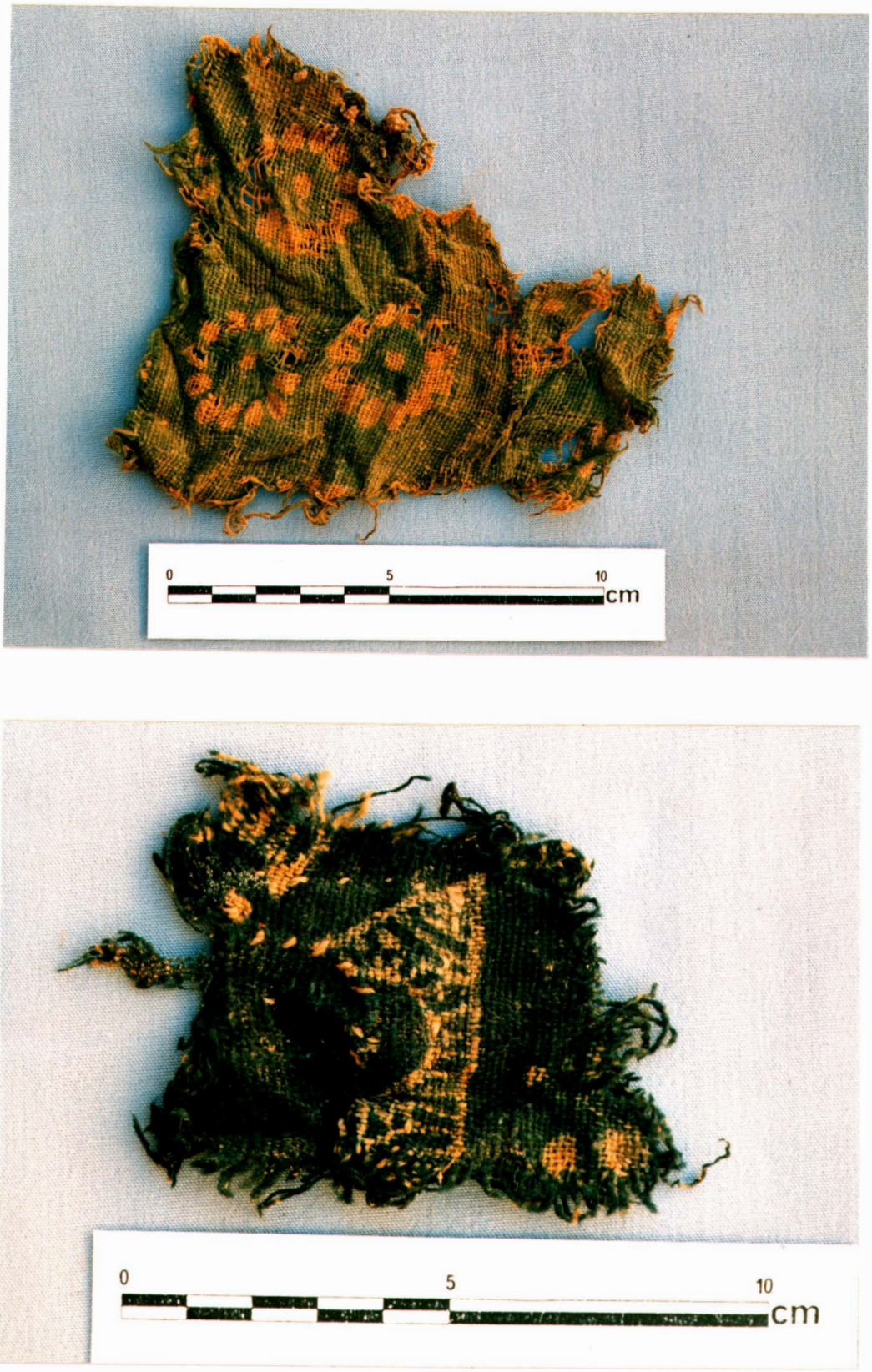

Fig. 7 Indian resist-dyed cotton fragments from Berenike: a. (above) with rosette decoration, b. (below) with triangular motif.

Reviews

7th NESAT Symposium, 5th-7th May 1999

The Symposium was held in the Royal Museum of Scotland Edinburgh, for a three-day period (Fig.8). The papers presented were grouped into related topics spanning a time period from the Bronze Age to the 18th century AD, covering such subjects as clothing (including reconstructions), technology and production, seafaring textiles and specialised products. Twenty-nine papers were presented and three posters displayed. Fifteen different countries were represented, the most easterly delegates from Poland and the most westerly from the United States of America. A list of the papers presented is appended, and almost all will appear in the published proceedings.

An interesting development in textile studies was described by Lise Bender Jørgensen and Carol Christiansen. This is the EU sponsored research into early seafaring textiles, specifically wool sails as used by Viking-Age ships. Here cooperation in research between England (University of Manchester Institute of Science and Technology), Denmark, Norway, Germany and Scotland (Royal Museum) is producing very worthwhile results. In 2001 it is planned that a reconstructed vessel with its authentic sails will visit all the countries involved in the project.

It was a pleasure to hear of developments in the Czech Republic when Milena Bravermanová described the new facilities for textile conservation now installed in Prague Castle. Dr Bravermanová then gave a fascinating insight into the treasury of textiles held there.

One of the strengths of a NESAT meeting is the new material presented. Participants focus on current finds and research; the depth and breadth of the conclusions reached by textile scholars have developed strongly over the last years. The use of scanning electron microscopy techniques in fibre analysis, for example, has moved these studies into a new realm. The meticulous 'excavation' and study of grave finds in a laboratory setting have also revolutionised the analysis of dress by clearly identifying the position of textiles in relation to the corpse.

The smooth running and great success of the Symposium was due to the excellent arrangements made by the organisers, Thea Gabra-Sanders (in chief) with much help from Frances Pritchard and John Peter Wild. The Royal Museum of Scotland made everyone feel most welcome, not only during the Symposium, but also by hosting an evening reception in the new Museum. Participants also enjoyed the hospitality of Burberrys of London at an evening reception which including visiting the Tartan Museum. The Symposium ended with dinner in an old Edinburgh building, the relaxed atmosphere of which gave great opportunities for conversation and discussion.

An extra dimension was given to the Symposium by the elections for the first Scottish Parliament for 300 years taking place on 6th May, so that history was being made around us ! The newly opened Museum of Scotland with its lively displays of the material culture of the earlier inhabitants provided a stimulating counterpoint to the electioneering on the streets and gave a real sense of the country's past. All the participants in NESAT VII were most appreciative of the welcome extended by Mark Jones, the Director of the Royal Museums of Scotland, and for the use of the Museum's conference facilities.

Papers presented:

M.L.Ryder, 'The human development of different fleece types in sheep and its association with the development of textile crafts'

K.Hanne Nielsen, 'A preliminary classification of shapes of loomweights'

Chr.-H.Fischer, 'Farbrekonstruktion an Moortextilien durch chemische Analyse'

F.Drögemüller, 'Das Mädchengrab der Fallward'

S.Y.Comis, 'Prehistoric garments from the Netherlands'

A.Malmius, 'Textiles from Valsgärde and Gamla Uppsala, Sweden'

A.Hedeager Krag, 'Denmark - Europe: Dress and Fashion in Denmark's Viking Age'

E.Andersson, 'Textile manufacture at Birka: household production or industry ?'

P.A.Henry, 'Who produced the textiles ? Changing gender roles in late Saxon textile production - the archaeological and documentary evidence'

E-M.Pfarr, 'Handwerk oder Industrie: Erfahrungen bei der Herstellung eines hochmittelalterlichen Wollgewebes auf dem Gewichtswebstuhl'

A.Rast-Eicher, 'Frühmittelalterliche Gewebetypen aus der Nordschweiz'

L.Vanhaecke, Ch.Verhecken-Lammens, 'Textile pseudomorphs from a Merovingian burial ground at Harmigries, Belgium'

M.Bravermanová, 'The archaeological textiles at Prague Castle'

E.Østergård, 'The Greenlandic Vadmál'

K.Tidow, 'Textilfunde aus dem 13. bis 17.Jahrhundert: neue Funde - neue Erkenntnisse'

J.Maik, 'Stand und Notwendigkeit der Forschungen über die mittelalterliche Wollweberei auf dem südlichen Gebiet der Ostseeländer'

G.Grenander Nyberg, 'Remarks concerning some details of early spinning wheels'

M.Grupa, 'The Thorunian citizens' womens' garments in the light of archaeological sources'

A.Drazkowska, 'Einflus der westlichen Mode auf die Kleidung der Thorner Bürger im 17. und 18.Jahrhundert'

H.Zimmerman, '16th century textile finds from two sites in Groningen, The Netherlands'

S.Möller-Wiering, 'The role of textiles in transport'

L.Bender Jørgensen, 'Textiles of seafaring: an introduction to a research project'

C.A.Christiansen, 'The structure of Viking sails'

C.Alfaro Giner, 'Gold textiles in a Roman burial in Munigua, Seville'

S.Desrosiers, 'Two Gallo-Roman graves recently found in Naintré, Vienne'

H.Granger Taylor, F.Pritchard, 'A fine quality 'insular' embroidery from the late 9th/early 10th century crannog at Llangors near Brecon, Wales'

L.Raeder Knudsen, 'Brocaded tablet-woven borders: deceptive appearances'

N.Spies, 'Production and patronage of medieval brocaded tablet-woven bands'

Elizabeth Wincott Heckett
Dept of Archaeology
University College
Cork Ireland

Source Materials

Recent Publications

Aspris, M., 'Ein zyprischer Teller mit der Darstellung eines Webstuhls', *Bonner Jahrbücher* 196, 1996, 1-10

Baginski, A., O.Shamir, 'Textile remains in the Umayyad hoard', in: M.Piccirillo, E.Alliata, *Mount Nebo: New Archaeological Excavations 1967-1997,* Jerusalem 1998, 565

Banck-Burgess, J., 'Goldtextilien', in: H.Beck *et al.*, *Reallexikon der Germanischen Altertumskunde,* Berlin 1998, 387-92

Barber, E.J.W., 'Minoan women and the challenges of weaving for home, trade and shrine', in: R.Laffineur, P.P.Betancourt (edd), *TEXNH: Craftsmen, Craftswomen and Craftsmanship in the Aegean Bronze Age,* Liège 1997, 515-20

Barber, E.J.W., *The Mummies of Urumchi,* London 1999

Baumstark, R., (ed), *Rom und Byzanz: Schatzkammerstücke aus bayerischen Sammlungen,* München 1998

Blakolmer, F., 'Textilkunst und Wandmalerei in der frühen Ägäis: Ikonographische Evidenz aus dem Haus der Damen in Akrotiri, Thera', in: T.Lorenz, G.Erath *et al., Akten des 6.Österreichischen Archäologentages,* Graz 1996, 27-29

Blanck, H., 'Die *instita* der Matronenstola', in: G.Erath, M.Lehner, G.Schwarz (edd), *Komos: Festschrift für Thuri Lorenz zum 65.Geburtstag,* Wien 1997, 23-25

Burke, B., 'The organisation of textile production on Bronze Age Crete', in: R.Laffineur, P.P.Betancourt (edd), *TEXNH: Craftsmen, Craftswomen and Craftsmanship in the Aegean Bronze Age,* Liége 1997, 413-24

Cameron, E. (ed), *Leather and Fur: Aspects of Early Medieval Trade and Technology,* London 1998

Cardon, D., *La Draperie au Moyen Âge,* Paris 1999

Cardon, D., 'Textiles archéologiques de Maximianon-Al Zarqa et Didymoi: exemples précoces de teinture par réserve sur laine'. *Bulletin du CIETA* 75, 1998, 14-20

Collingwood, P., *The Techniques of Ply-Split Braiding,* Bellew Publishing, London 1998

Fleury, M., A.France-Lanord, *Les Trésors Merovingiens, St. Denis,* Gerard Klopp, Paris 1999

Fluck, C., 'Die Textilien aus dem Vorbesitz des Ägyptischen Museums Berlin', in: *Die Textilien des Museums für Spätantike und Byzantinische Kunst Berlin, Bestandkatalog* 1, Wiebaden 1999

Fluck, C., 'Die Textilien von Carl Schmidt', *ibid.*

Giner, C.Alfaro, 'Fragmentos textiles de la necropolis de Mirmad (Argin-sur, Nubia Sudanesa)', in: P.Sáez, S.Ordóñez (edd), *Homenaje al Profesor Presedo,* Sevilla 1994, 13-34

Guillou, A., 'Inscriptions byzantines d'Italie sur tissu', in: I.Sevčenko, I.Hutter, *ΑΕΤΟΣ: Studies in Honour of Cyril Mango,* Leipzig 1998, 172-76

Jirousek, C.A., 'The End of the Silk Road: Implications of the Decline of Turkish Sericulture', *Textile History* 29 (2), 1998, 201-225

Kubarev, G., 'Silk finds from ancient Turkic burials in the Altai region', *Circle of Inner Asian Art Newsletter* 8, 1988, 21-2

von Kuzinsky, K., 'Dreieck, Haken und Mäander. Ein reich verziertes Gewebefragment aus dem Dürrnberger Salzbergbau', in: C.Dobiat, T.Stöllner, 'Siedlungs- und Wirtschaftsgeschichte des Dürrnberg bei Hallein: Vorbericht zu den Gelände- und Laborforschungen des Ausgrabungsjahres 1997', *Archäologisches Korrespondenzblatt* 28, 1998, 555-574

Linscheid, P., 'Die Textilien von Theodor Graf, vormals im Besitz des Kunstgewerbemuseums Berlin', in: *Die Textilien des Museums für Spätantike und Byzantinische Kunst Berlin: Bestandkatalog* I, Wiesbaden 1999

Maik, J., 'Sukiennicy elbląscy w XIV i XV wieku', ('The clothes of Elbląg in the 14th and 15th centuries'), *Archaeologia Historica Polona* 7. 1998, 197-212

Martiniani-Reber, M., *Textiles et Mode Sassanides: Les Tissus orientaux conservés au Département des Antiquités Egyptiennes, Musée du Louvre,* Paris 1998

Merz, S., 'Die Textilien von Theodor Graf, vormals im Besitz der frühchristlich-byzantinischen Sammlung Berlin-Dahlem', in: *Die Textilien des Museums für Spätantike und Byzantinische Kunst Berlin: Bestandkatalog* 1, Wiesbaden 1999

Monthel, G., M.Schoefer *et al.,* 'Les tissus gallo-romains de Chalon-sur-Saône: étude pluridisciplinaire', *Bulletin du CIETA* 75, 1998, 21-36

Morrell, A., *Guide to Structural Sewing: Terms and Techniques,* Sarabhai Foundation, Ahmedabad, 1998

National Sheep Association, *British Sheep,*

9th ed., London 1998

Rogers, P.Walton, 'Textiles and Costume', in: G.Drinkell, M.Foreman, *The Anglo-Saxon Cemetery at Castledyke South, Barton-on-Humber,* Sheffield 1998, 274-79

Sagona, C., 'Silo or vat ? Observations on the ancient textile industry in Malta and early Phoenician interests in the island', *Oxford Journal of Archaeology* 18 (1), 1999, 23-60

Schick, T., *The Cave of the Warrior: A Fourth Millennium Burial in the Judaean Desert, Israel Antiquities Authority Report* 5, 1998

Seefelder, M., *Indigo,* Landsberg 1994

Tidow, K., 'Gewebe', in: H.Beck *et al., Reallexikon der Germanischen Altertumskunde,* Berlin 1998, 36-43

Wild, J.P., 'The Textiles', in: C.Johns, *The Snettisham Roman Jeweller's Hoard,* London 1997, 47-49

Wild, J.P., 'The Textiles', in: H.E.M.Cool, C.Philo (edd), *Roman Castleford: Excavations 1974-1985* I: *The Small Finds, Yorkshire Archaeology* 4, Wakefield 1998, 346-7

Wild, J.P., 'Clothing and Textiles', in: M.J.Aldhouse-Green, *Pilgrims in Stone: Stone Images from the Gallo-Roman Sanctuary of* Fontes Sequanae, *British Archaeological Report* S754, Oxford 1999, 64-6

Wild, J.P. and F.C., 'The Textiles', in: S.E.Sidebotham, W.Z.Wendrich (edd), *Berenike 96: Report of the Excavations at Berenike (Egyptian Red Sea Coast) and the Survey of the Eastern Desert,* CNWS, Leiden 1998, 221-236

News in Brief

Center for the Study of Regional Dress UCLA

Textiles of the World

The Center for the Study of Regional Dress, an endowed research facility consisting of offices and a laboratory within UCLA's Fowler Museum of Cultural History opened officially on 6th June 1993. Its current emphasis is on the refining of a method for reconstructing the often sparsely documented histories of cultural groups through clues that exist in their clothes. The Founding Director, Dr Patricia Rieff Anawalt, is pleased to announce that ancient Mediterranean textiles and contemporary West African textiles will be the topics of two undergraduate courses offered in the course series *Textiles of the World* facilitated by the Center's Visiting Scholars Program and funded by UCLA's Office of Instructional Development.

Dr Elizabeth Barber, a faculty member of the Dept of Linguistics in Occidental College, will teach 'Textiles of the Ancient Mediterranean' in Winter 1998. Dr Rachel Hoffman, Assistant Professor of Black Studies at Portland State University, will teach 'West African Textiles' in Spring 1998. She will highlight a range of African cultures, including the Asante of Ghana.

Center for the Study of Regional Dress
UCLA Fowler Museum of Cultural History
Box 951549
Los Angeles, CA 90095-1549

Georgian Textile Group
2nd International Textile Symposium

Caucasian Textile Route

The Group's Second International Textile Symposium will be held at Tbilisi, Georgia, on 14-18th September 1999 with the title 'Caucasian Textile Route'. The programme includes academic papers and visits to textile studios and factories and is to be followed by a tour of the Caucasus (18th-23rd September).

International Felt Seminar

Prior to the Symposium there will be an International Felt Seminar (2nd-12th September 1999) in Tbilisi and Omalo, Georgia. The seminar programme will be a mixture of workshops, study visits and trips.

Nino Kipshidze
Georgian Textile Group
54 Rustaveli Avenue,
Tibilisi
380006 Georgia
e-mail: gtg@manuscr.acnet.ge
website: http://www.opentext.org.ge/textile

Fiber Perishables Interest Group

The Society for American Archaeology has created a new interest group within its organisation. Members of this *Fibre Perishables Interest Group* now meet yearly at the SAA's Annual Meeting to share news, problems and solutions related to the identification, analysis and interpretation of archaeological materials composed of or including plant or animal fibers. The Group's goals include fostering communication among fiber researchers, functioning as a resource for information about fiber-perishable artefacts to the archaeological community, and stimulating interest in and increasing the knowledge and recognition of these artefacts.

Official meetings of the FPIG took place in Seattle in 1998 and in Chicago in 1999, when the Group sponsored a well-attended symposium 'Inferring Textile Production from the Archaeological Record', organised by Lynn Teague and Laurie Webster. Many members also attended and participated in the 1998 Visiting Scholar Conference 'Fleeting Identities: Perishable Material Culture in Archaeological Research, organised by Visiting Scholar Penelope Drooker at Southern Illinois University's Center for Archaeological Investigations. The next gathering will be at the Annual Meeting of the SAA in Philadelphia in April 2000. Members often communicate by e-mail and a website is under construction which will eventually include a bibliography of publications suggested by members. Workshops dealing with fiber perishable analysis are also contemplated.

For further information on this vital new group contact FPIG Organiser Jill Minar (c/o Department of Anthropology, University of California, Riverside, CA 92521 USA; e-mail: cjminar@ix.netcom.com).

Dee DeRoche
155 East High Street
Carlisle, PA 17013-3018 USA

Late Antique to Early Islamic Headcoverings

Currently I am researching into Late Antique and Early Islamic headcoverings in the Near East for a PhD at the Byzantine Institute of the Freie Universität, Berlin. Based on the records of original caps, bonnets, hats, hoods, hairnets, veils and scarves found in excavations or kept in collections and belonging to the period *c.*AD 200 to 800, I want to draw up a typology. Furthermore, the spread, chronology, textile features and context of each type of headgear will be examined.

I would like to make contact with researchers and students interested in exchanging ideas and knowledge about Late Antique to Early Islamic headcoverings in the Near East. I would be especially grateful for any information or references which might further this research, in particular references to unpublished or recently discovered material.

Petra Linscheid
Zehdenickerstr.5
D-10119 Berlin Germany
(e-mail as of summer 1999: plinsch@zedat.fu-berlin.de)

The NESAT Library

The Library of the North-European Symposium for Archaeological Textiles (NESAT) moved recently from the Textilmuseum, Neumünster, to the Institut für Ur- und Frühgeschichte, University of Freiburg i.B. Plans to computerise it, possibly even making it available over the Internet in the future) are still in early stages of being processed. It is, however, an important resource, since publications on

textile archaeology are so widely scattered, particularly in the periodical and serial literature across Europe and the USA.

The current Keeper of the Library would appreciate the sending to her of a copy of all newly published articles and (ideally) monographs that deal with archaeological textiles and textile production. Separata (offprints) of articles are at a special premium; for they are very hard to track down, even when they are known about. If original separata cannot be supplied, a photocopy would be an excellent substitute.

Johanna Banck-Burgess
Institut für Vor- und Frühgeschichte
Universität Freiburg
Belfortstr.22
D-79098 Freiburg im Breisgau Germany

Research Project on Alamannic/Merovingian Textiles

The Deutsche Forschungsgemeinschaft has recently agreed to finance a five-year research project on Alamannic and Merovingian textiles. It will be based in the Institut für Vor- und Frühgeschichte, Freiburg i.B., and directed by the undersigned.

Johanna Banck-Burgess
Institut für Vor- u.Frühgeschichte
Universität Freiburg
Belfortstr.22
D-79098 Freiburg im Breisgau

Subscription

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John Peter Wild
Ancient Textile Unit
Dept of Art History & Archaeology
University of Manchester
Manchester M13 9PL GB

Payment is accepted in **pounds sterling** (£) only. Payment must be made in the form of a bank/cashier's cheque and should be made payable to: **J.P.Wild - ATN**.

Guidelines for Authors

The *Archaeological Textiles Newsletter* aims to provide a source of information relating to all aspects of archaeological textiles. Archaeological textiles from both prehistoric and historic periods and from all parts of the world are covered in the *ATN*'s range of interests.

1. Contributions can be in English, German or French.

2. Contributions may include announcements and reviews of exhibitions, seminars, conferences, special courses and lectures, information relating to current projects and any queries concerning the study of archaeological textiles. Bibliographical information on new books and articles is particularly welcome.

3. Accounts of work in progress. This general category includes research/activities related to archaeological textiles from recent excavations or in museums/galleries. Projects may encompass technology and analysis, experimental archaeology, documentation, exhibition, conservation and storage. These contributions can be in the form of notes or longer feature articles.

4. Please send submissions in hard-copy, typed, form (lines not justified). References should be in the Harvard system (eg Smith 1990), with bibliography at the end.

5. Line drawings and photographs are accepted, but must be originals of high reproduction quality. Artwork should not be mounted or incorporated into text. Captions, please !

6. The Editorial Board reserves the right to suggest alterations in the wording of manuscripts sent for publication.

7. The deadline for contributions for the Spring issue is April 30th, for the Autumn issue October 31st.

Submissions should be addressed to:

John Peter Wild
Ancient Textile Unit
Dept of Art History & Archaeology
University of Manchester
Manchester M13 9PL GB

Fax: (44) 161 275 3331
Tel: (44) 161 275 3019

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