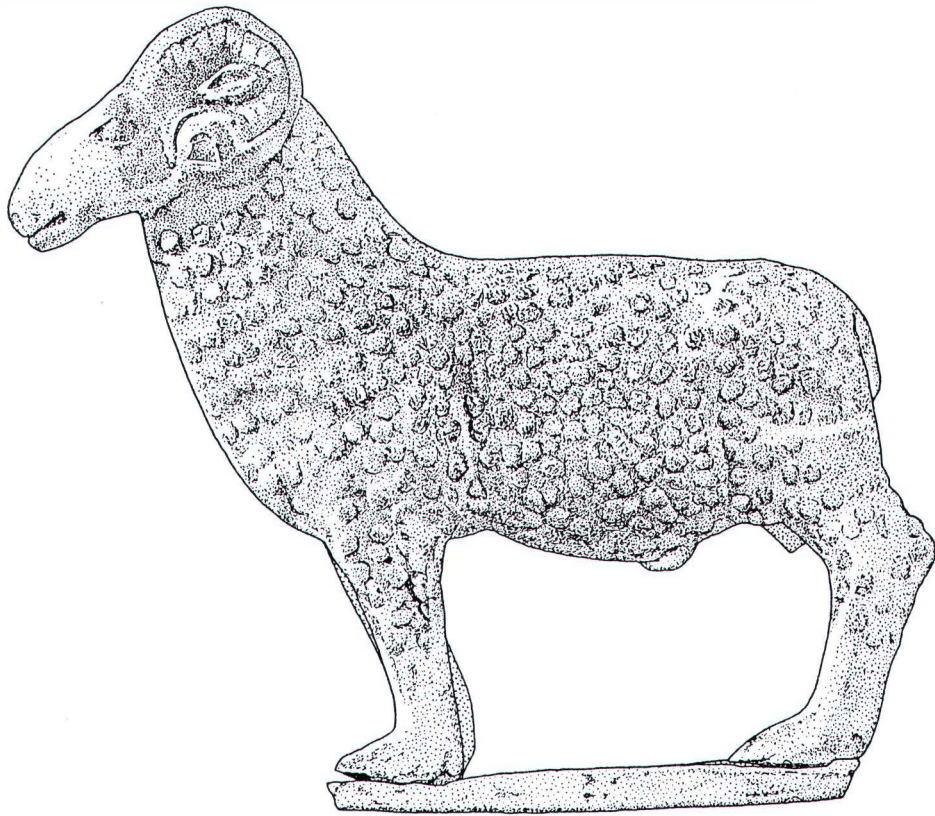


ARCHAEOLOGICAL TEXTILES NEWSLETTER



Editorial

Among the problems that confront the textile archaeologist one is universal: how to locate and gain access to the existing relevant published literature. No single institution, library or museum, national or international, has all that might be required, and key items, especially the older literature, can turn up in surprising places.

National libraries, at least in theory, acquire everything that is printed in the western languages, and much else besides. Most of them, however, are on closed access, and require items to be ordered in advance: they are a last resort. The library of the North European Symposium for Archaeological Textiles, now in the University of Freiburg, Germany (see *ATN* 34, 1) gathers publications relating to western and northern Europe, and it is in the interest of everyone that the flow of offprints, articles and books to Freiburg continues. There is no comparable collection, however, for other geographical areas of the archaeological textile world. Until a solution is found – a major benefactor perhaps ? – textile archaeologists will continue to travel, both to study their material and to read about it.

From time to time the Editor of *ATN* begins to fret that the manuscripts to hand or promised will not be enough to fill the next issue. This is one such time: if you have a report or query or any type of matter that could be of interest to *ATN* readers, please send it to us now ! Promises, too, will be gratefully received. We publish in English, German or French – and we would welcome French contributions in particular, to maintain the balance.

John Peter Wild (Editor)
Felicity Wild (Editorial Assistant)
30 Prince's Road,
Heaton Moor,
Stockport SK4 3NQ
United Kingdom

e-mail: <j.wild@man.ac.uk>

Table of Contents

Editorial	1
Features	2
Fabric Width Control and Sett in Warp-weighted Loom Weaving	
Mittelalterliche Textilfunde aus Ladenburg am Neckar	
The Project Sea-silk	
A Preliminary Classification of Shapes of Loomweight used on the Warp-weighted Loom	
Reports	14
Textiles from the 2002 Excavation Season at Quseir al-Qadim, Egypt	
The Sheep Project	
Reviews	18
Industry and Commerce in Ancient Italy	
NESAT VIII, Łódź	
Early Textiles Study Group	
Textile Society of America Symposium	
Source Materials	22
Recent Publications	
News in Brief	25
Ancient Textiles, Lund and Copenhagen, 2003	
North American Textile Conservation Conference 2003	

Cover: Roman pipeclay figurine from Arrington, Cambridgeshire, of an 'improved' ram with a generalised medium or true medium wool fleece. (Drawing by G.Taylor, courtesy of A.Taylor)

Features

Fabric Width Control and Sett in Warp-weighted Loom Weaving

Introduction

Recent experimental work carried out by Lena Hammarlund in Sweden and Kate Banks at UMIST in the UK in the weaving of low-cover¹ fabrics on a warp-weighted loom have demonstrated a tendency for the selvages to move inwards as the weaving progresses. This occurs even if extra weft is placed in the selvedge zones, with the result that the fabric progressively becomes narrower. Two bands of higher sett (closer spaced) warp threads also form, somewhat inside the selvedge, which follow the narrowing tendency (Hammarlund, pers. comm.; Banks 1997). Attempts by the authors to understand and explain this phenomenon have led to a greater understanding of the process and to the proposal of a wider theory of quality and sett in warp-weighted loom fabrics.

Fabric geometry, width control and the modern loom

Many researchers have studied the geometry of woven fabrics amongst whom Pierce has made the first major contribution (Pierce 1937). As is the case with most geometry-based models, those of Pierce address the problem of maximum sett and derive equations which predict the maximum sett, using various estimates of effective yarn diameter within the fabric, under the compression forces that develop between the warp and the weft and between adjacent threads in the same system. For the modern weaver using horizontal power looms, as much as the user of modern hand-powered treadle looms, the establishment of maximum sett is a vital part of fabric design, as any attempt to weave a fabric with a warp sett higher than the maximum would lead to considerable problems as weaving progressed. If the maximum warp sett were to be exceeded, the fabric would progressively increase in width and this would lead to the development of abrasion and damage of the warp ends against the reed near the selvages and the ultimate breakage of these threads.

In a similar way the design of weft sett must be related to the take-up rate so that the position of the fell, (the line where the pick is beaten into the cloth), remains constant as weaving proceeds. For this reason the weaving of weft sett close to the maximum is seldom attempted as miscalculation can lead to the growth of the fabric towards the reed and 'banging-off,' i.e. the force between the fell and the reed exceeds a preset safe value and the loom is stopped, again with damage to the warp threads.

The modern power loom is ideally suited to the production of low-cover fabrics. The reed and temples ensure the maintenance of warp spacing and fabric width respectively, and the take-up and warp let-off, in combination with fixed position beat-up, maintain the weft spacing at a constant value and ensure the linearity of the weft system.

Fabric narrowing on the warp-weighted loom

In control terms the warp-weighted loom is a single parameter system with only warp tension subject to effective control. The remaining variables, fabric width, weft tension, beat-up position, weft spacing and warp spacing are either subjectively controlled by the weaver, e.g. weft tension, beat-up force, and thus weft spacing, or are subject to no external control, e.g. fabric width and warp spacing. It is therefore to be expected that variations in fabric width and weft spacing will occur under normal conditions. However, the experiments and observations that led to this discussion have revealed a mechanism that is characterised not by fluctuations in width about a mean value, but rather a 'dogged' tendency for the fabric to reduce in width, almost as if a hidden control system were operating, to steadily move the width towards a pre-defined value, despite all of the efforts of the weaver to resist it.

In order to probe this mechanism it is necessary to consider the controlling parameters at the start of weaving and examine how they change as weaving proceeds. In many different geographic locations at different times warp-weighted weaving started by the weaving of a starting border on a band loom, the double elongated weft threads in the border

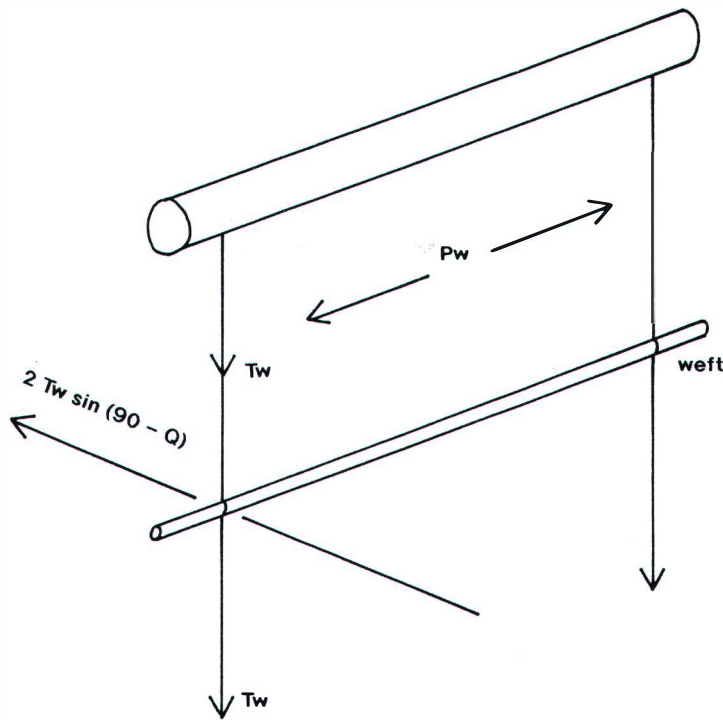


Fig.1 Fabric tension on warp-weighted loom

becoming the warp threads in the warp-weighted loom. The border was then laced to the top beam of the warp-weighted loom and the length of this border effectively defined the start-up width. Once secured the warp threads were grouped and weighted, with the (assumed) objective of achieving an even warp tension across the width. However, it is possible that with selvages involving grouped or extra warps a higher selvedge tension may have been engineered in an attempt to control fabric width. Once the counter shed/pattern sheds had been laced weaving could commence, and the first picks would serve to progressively split the paired warps arising from the starting border. By the time approximately 20 picks had been beaten up, the warp spacing would be relatively even, and at that point it is possible to analyse the forces acting in the fabric. The dominant external force is the warp tension, T_w (Fig.1). For low sett fabrics this force will tend to maintain the warp as a flat plane, P_w . Consequently the warp threads will develop negligible crimp,

as any warp curvature out of the plane of the fabric P_w would create high restorative forces at 90 degrees to the fell line, due to the horizontal resolute of the warp tension, $2T_w \sin(90-Q)$ (Fig 2), where Q is the angle of crimp. This horizontal resolute will tend to straighten the warp and force the weft into a crimped state. If we now consider the forces parallel to the fell, then the reaction forces, deriving from the bending deformation of the weft between the weft intersections, will only become significant as the warp sett tends towards a maximum, or in the very rare cases where the diameter of the warp yarns is much higher than the weft yarns. For low sett fabrics these forces will be low and there will be little if any force tending to keep the warps apart or maintain the warp spacing.

Finally we must consider the tension in the weft. This will be dependent on how the weft is inserted, and more significantly on how it is beaten-up. Common sense as well as iconographic evidence would suggest that

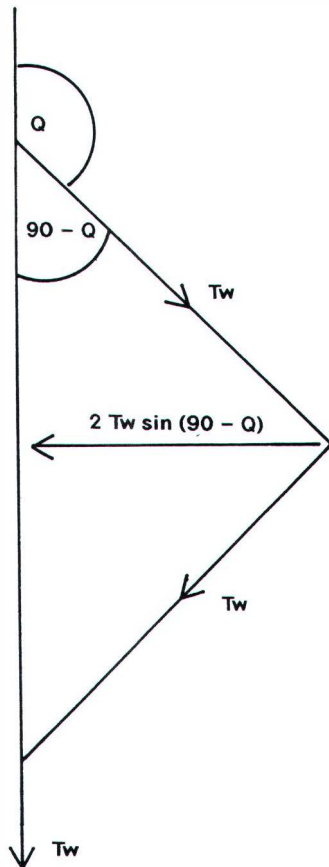


Fig.2 Resolution of warp tension

the weft was laid into an open shed and held high as the shed was closed and the weft trapped (Fig.3). The simplest way forward is then for the weaver to open the counter shed and beat the weft into the fell with a sword beater. If this method is adopted then the length of weft trapped will not be sufficient to provide for the development of the required weft crimp during beat-up, and the weft tension will rise. Even if extra weft is allowed to be drawn in during crimp development, it will only be drawn into the immediate selvedge zone nearest to the weft supply, as this yarn movement is resisted by the rapid build-up of frictional forces between the weft and the warp threads, and as a consequence the weft in the centre of the fell will develop a significant tension. Because there is no force in the weft or between the warps to resist this tension it will inevitably lead to a reduction in fabric width as the warp threads are drawn closer together. This process is clearly progressive as the length of the next pick, defined by the length of the fell between the selvedges,

will be shorter than the previous one and the reduction in fabric width will proceed. This mechanism provides an explanation for the observed 'dogged' tendency for the fabric to reduce in width as weaving progressed. This process of narrowing has a secondary effect on the fabric. The sideways displacement of the warp threads at either edge of the fabric causes bending in these warps in the plane of the fabric, Pw , at the fell (Fig.4). If the warp thread is displaced by an incremental angle P , this will generate a sideways reaction force, $Tw \sin P$, in the fabric plane, that tends to oppose the reduction in width, and will push the affected warps against one another.

As a consequence of these reaction forces a band of high warp sett (density) develops on either side of the fabric, corresponding in width to the warp threads that have been displaced sideways by the fabric narrowing. Under the combined influence of the weft tension tending to narrow the fabric and the warp tension in these two bands tending to push the warp threads sideways and outwards, the warp sett increases until a sett close to the maximum is achieved. The forces are then balanced and further consolidation prevented. Paradoxically the selvedges remain relatively low in sett because weft drawn into these areas during beat-up prevents the development of a high weft tension at the extreme edges. All these conditions were visible in the weaving

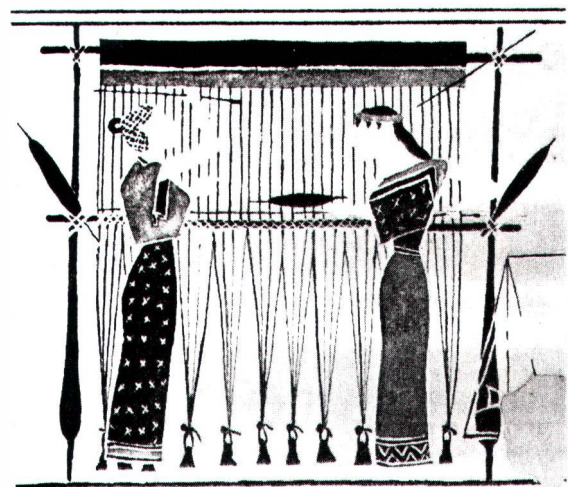


Fig.3 Warp-weighted loom, 6th century BC

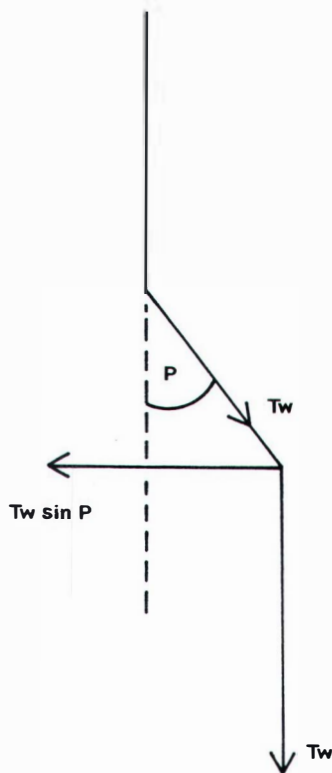


Fig.4 Lateral resolution of warp tension

carried out by Banks at UMIST in 1992-3 and by Hammarlund during her experimentation in 1996-97.

Prevention of the narrowing tendency

In order to prevent this narrowing process from developing and destroying the quality of the fabric piece there would seem to be two options. The first and most obvious procedure would be to constrain the selvages to remain at the same width by lacing them to the verticals of the warp-weighted loom. Whilst there is no doubt that this method would be effective in terms of maintaining the cloth width on the loom, the process describe above would still occur with respect to the weft tension in the middle of the fabric and this would lead to cloth with looser selvages and tighter warp sett in the middle portion. Furthermore the high weft tension would remain within the fabric if weaving proceeded rapidly, and when the selvages were unlaced to enable the take-up beam to be rotated, the fabric would contract in width. Alternatively, if weaving proceeded slowly, stress relaxation

would occur in the weft and the fabric would then 'store' potential shrinkage that would develop during scouring. An alternative and better procedure would be to weave in such a manner that extra weft is drawn into the fell across the full width of the fabric as the weft crimp develops. Clearly the friction on the weft yarn could be reduced by beating up against a closed but not crossed shed, thus making it easier for extra weft to be drawn in. Unfortunately this does not resolve the problem because the full weft crimp only develops as the weft is beaten up into the crossed shed, at which point it is immobilised and it is impossible to draw in the required extra length.

In her experimentation described in 1997, Hammarlund discovered, (rediscovered?) a method of preventing the narrowing process. She beat up the weft in narrow sections, starting from the selvage remote from the weft supply and progressively moving across towards the other selvage and feeding in the exact quantity of weft required to maintain the fabric width. This sequential beat-up of narrow sections prevented the weft from being trapped across the full width and enabled extra yarn to be fed into each section as it was beaten up. The weaving sword is not ideally suited to beating up in narrow sections. This process is much more easily carried out using a weaver's comb of approximately 5cm in width. Once the weft crimp has been developed by the sectional beat-up, the sword can be used to level the pick, and define the weft spacing.

With coarse fabrics an alternative to the weaver's comb might have been the 'pin-beater'. This implement which has been associated with warp-weighted weaving by other authors such as Guðjónsson (Guðjónsson 1983-84), may have enabled the weft to be pushed into the fell sequentially across the fabric, thus drawing in the necessary extra weft to prevent narrowing.

Conclusions

The force analysis described above explains the mechanism of fabric narrowing that has been observed when weaving low cover fabrics on warp-weighted looms. Hammarlund has described a method to counter this by beating-up the warp in

narrow sections with a weaver's comb. The method has one major disadvantage in that the beat-up becomes a slower more careful process with the additional need to straighten the weft with the sword beater as an after-process and in practice this would have reduced the rate of fabric manufacture significantly. Clearly for the production of low warp-sett fabrics the horizontal loom, with a reed to maintain warp spacing and temples to maintain the fabric width at the fell, made it possible to insert the weft as a single 'shot' and beat it into position across the whole width with the reed, without the problem of progressive narrowing. This must have made the horizontal loom much more attractive for the weaving of such fabrics and may have contributed to its rapid spread through the majority of European countries. Nevertheless despite its apparent problems the warp-weighted loom remained in use in Norway and Iceland until the 20th century.

The above analysis implicitly suggests a further solution to the problem of fabric narrowing on warp-weighted looms, namely the weaving of a fabric with a warp sett very close to the maximum. Under these conditions the narrowing process would rapidly lead to 'jamming' in the warp and the development of high inter-yarn forces between the warp threads which would resist the narrowing effect of the weft tension, limit the width reduction and eliminate the need for sequential beat-up.

In this way the weaving of very wide, high warp sett fabrics may well have been easier on the warp-weighted loom than on a horizontal loom and this could be one of the factors that has ensured its use until relatively recently. The questions that arise from this work are starting to be answered by the research that has taken place within the 'Seafaring Project' funded by the EU through the Raphael programme and this will form the focus of a separate publication.

Acknowledgements

The authors are grateful to the EU Raphael Seafaring programme for providing support for the work that enabled these studies to be undertaken.

References

Banks, K. 1997, MPhil thesis, UMIST.

Guðjónsson, E.E. 1983-84, 'Nogle bemærkninger om den islandske vægtvæv, vefstaður'. *By og bygd. Norsk Folkmuseums Årbok* 30, 116-128.

Pierce, F.T. 1937, 'The Geometry of Cloth Structure', *The Journal of the Textile Institute* 28, 45-96.

Footnote

1 Fabric cover refers to the extent to which the yarns in the fabric cover the 'footprint' of the fabric. In a high cover fabric the yarns are pressed closely together.

W.D. Cooke
Kate Banks
Department of Textiles
UMIST
Manchester M60 1QD UK

Lena Hammarlund
Orangerigatan 22
41266 Göteborg Sweden

Mittelalterliche Textilfunde aus Ladenburg am Neckar

Bei einer Ausgrabung in Ladenburg am Neckar wurde 1999 in der Wormser Strasse 37 ein Tongefäß mit Münzen gefunden. Zwischen den Münzen befanden sich auch Textilreste, die von der Ausgräberin Dr Britta Rabold vom Landesdenkmalamt Baden-Württemberg, Archäologische Denkmalpflege, Aussenstelle Karlsruhe, zur textiltechnischen Bearbeitung übergeben wurden. Sie stammen aus dem 12./13. Jahrhundert und befanden sich in einem zerbrochenen Tongefäß (Abb.5). Unter den Textilfunden befanden sich Garne, Schnüre, Bänder und Gewebe. Die Garn- und Zwirnfragmente dürften zur Schliessung von kleinen Beuteln gedient haben, in denen die Münzen verpackt waren. Ob dies auch für die schmalen gewebten und geflochtenen Bänder zutrifft, kann nicht mit Sicherheit gesagt werden.



Abb.5 Der Münzhortfund aus Ladenburg am Neckar. Maßstab 3:2 (Foto: Landesdenkmalamt Baden-Württemberg)



*Fig.6 Cap of sea-silk, 14th century. Musée d'art et d'histoire St Denis, France. Scale 1:2
(Photo: E. Jacquot, Unité d'Archéologie, F-St Denis)*

Die Gewebe, die die Münzen umwickelten oder mit diesen verbunden waren, sind alle in der einfachsten Binding, der Tuch- oder Leinwandbindung, gewebt worden. Es wurden für Kette und Schuß immer Garne in z-Drehung genommen. Jedoch liegen verschiedene Gewebequalitäten vor, nämlich feine und mittelfeine. Sie sind teilweise sehr dicht gewebt und teilweise schleierartig. Es sind Gewebetypen, die problemlos auf den im Hochmittelalter üblichen Trittwebstühlen hergestellt werden konnten.

Obwohl nur ein kleiner Beutel vollständig erhalten geblieben ist, dürften auch die übrigen Leinengewebe früher zu solchen Beuteln gehört haben.

Die Faseranalysen, die von Antoinette Rast-Eicher (Ennenda, Schweiz) durchgeführt wurden, ergaben, dass die Gewebe alle aus pflanzlichen Fasern – überwiegend Flachs/Lein – gefertigt worden sind. Die Zwirne und Bänder, deren Fasern mehr oder weniger stark zerfallen sind, bestehen dagegen aus tierischen Fasern. Es dürfte um Seide handeln.

Der Münzhortfund aus Ladenburg ist bisher der erste, der von uns bearbeitet wurde. Aus Polen liegt dagegen eine zusammenfassende Darstellung von Marta Pytlewicz (1998) vor. Die polnischen Münzhortfunde befanden sich wie die Funde aus Ladenburg in Tongefäßen.

Die Textilfunde aus Ladenburg werden im Rahmen des Ausgrabungsberichtes veröffentlicht.

Literatur

Pytlewicz, M., 1998, 'Polish Textiles from Coin Hoards of the 10th – Middle 17th Centuries', in: L. Bender Jørgensen, C. Rinaldo (Hrsg), *Textiles in European Archaeology: Report from the 6th NESAT Symposium, 7-11 May 1996 in Borås*, Göteborg, 265-270.

Klaus Tidow,
Zur Ziegelei 18,
D-24598 Boostedt,
Germany

The Project Sea-silk – Rediscovering an Ancient Textile Material

Sea-silk is the product of the *Pinna nobilis* L., the biggest shellfish of the Mediterranean sea. It has a length of up to one meter and fastens itself in the sand along the coast with a beard of very fine, strong filaments, the so-called byssus. These fibrous tufts – they have a length of up to 20cm – are the basic product for sea-silk. The tufts cut off the mussel have to be washed several times, dried, combed and spun like silk. The result is a most fine, very resistant yet very supple textile material, once famous and highly appreciated for its iridescent brown-golden colour.

This magnificent old textile material is still nearly unknown, both by historical and textile experts and this in spite of the most detailed and comprehensive study about the truth and myth and legends of 'Pinna and her silken beard', written by Daniel McKinley in 1998. One of the reasons may be that the term 'byssus' was and still is used also for fine ancient textiles in linen, cotton or silk. This has led to many misinterpretations when speaking about sea-silk. Another reason is that most of the sea-silk objects have been found in museums of natural history and not in textile collections – as one would expect. Many travellers on 'grand tour' in Mediterranean countries brought them back as souvenirs in their cabinets of curiosity – which later turned into museums. The third reason is simply that there probably never existed a large-scale industry, but only small-scale production in some families, convents and orphanages. The basic material was too rare, the process of production too complicated and so the product too expensive.

The Project Sea-silk started in 1997 at the Natural History Museum in Basel, Switzerland. Its three main goals are: 1. to trace the history of this almost forgotten textile material, its production and manufacture, trade and diffusion; 2. to compile an inventory of all objects in sea-silk still existing in museums and private collections worldwide; 3. to document the knowledge and remains of this cultural heritage in South Italy and the Mediterranean countries.

Clear evidence of small-scale manufacture of

sea-silk goes back to the end of the 18th century (we still find remains in Sardinia). Main places where Taranto in Puglia and Sardinia, proved are Sicily and Spain. This is documented by a list of over 40 objects found up to now. Yet many other places are mentioned in literature: Calabria, Corsica, the Dalmatian coast, Malta, Tunisia and even Normandy in France. Half of the list consists of gloves, but there are also caps, cravats, scarves, collars, children's clothing, a muff and several hangings, knitted or woven or unspun byssus used like fur, in plain sea-silk or mixed with other material. No stockings have yet been noted, although mentioned in nearly every article about sea-silk. Unique is a beautiful cap dated to the 14th century, found in 1978 during excavations near the cathedral of St Denis near Paris, France (Fig.6). It is knitted 'en jersey avec les filets retors "S" de deux bouts "Z"' and is nowadays part of the collection of the Musée d'Art et d'Histoire St Denis.

But what about sea-silk in antiquity? It existed, but from what date, and to what extent, we do not yet know. Proof of the reality of the use of sea-silk for textile production at least in late antiquity is a fragment of a woven textile of the 4th century. It was found in 1912 in a woman's grave in Aquincum (Budapest), at that time a Roman town at the north-east frontier of the empire. It was described in 1917 by F. Hollendonner and 1935 by L. Nagy. J.P. Wild mentions this fragment in his study of textile manufacture in the Northern Roman provinces (1970) and adds that it supports the assumption that the 'marine wool' of Diocletian's Price Edict meant sea-silk.

The joy was great when I found an article analysing textile artefacts from excavations in Pompeii mentioning byssus fibres of the *Pinna nobilis* L. (D'Orazio *et al.* 2000). Unfortunately and to my regret more detailed analysis at the Swiss Federal Laboratories for Materials Testing and Research in St. Gall, Switzerland, showed that the fibres cannot be sea-silk – they are supposed to be of a sort of sponge (results not yet published).

The Project Sea-silk is still at its beginning. One of the first things to do was the dissemination of an analytical identification of sea-silk, which is not difficult: in cross

section the byssus fibre has a clear elliptical shape (Montegut 1999; Maeder and Halbeisen 2001). More difficult are questions that need competence in and cooperation from different disciplines, as those of philologists, historians, orientalists, textile experts and many more. What about the so called 'abu qalamun' and the sea-wool in the time of the Arabs in Spain? Where is sea-silk in Byzantine times? Was sea-silk ever known in India? What about the diaphanous fabrics called 'tarantinidae'? What about sea-silk in the Phoenician heritage? And last but not least: where are all these objects mentioned in literature? And so on. So many questions, so few answers up to now! There is a wide field of problems waiting to be solved.

I would be grateful for any information – your help, on whatever scale, will be very much appreciated. Thank you in advance!

References

- D'Orazio, L. *et al.* 2000, 'Nature, Origin and Technology of Natural Fibres of Textile Artefacts Recovered in the Ancient Cities around Vesuvius', *J. of Archaeological Science* 27, 745–754.
- Hollendonner, F. 1917, 'Az aquincumi römái szövet anyaga', *Botanikai Közlemények* 16, 35–37.
- Maeder, F., M. Halbeisen 2001, 'Muschelseide: Auf der Suche nach einem vergessenen Material', *Waffen- und Kostümkunde* 1, 33–41.
- McKinley, D. 1998, 'Pinna and her silken beard: A foray into historical misappropriation', *Ars Textrina* 29, 9–223.
- Montegut, D. 1999, 'Moth or mollusc? A Technical Examination of Byssus Fibers', in: R.A. Rushfield, M.W. Ballard (edd.), *The Materials, Technology, and Art of Conservation*, New York, 186–203.
- Nagy, L. 1935, 'Aquincumi Múmia-Temetkezések ... Mumienbegräbnisse aus Aquincum', *Dissertationes Pannonicae Musei Nationalis Hungarici*, series 1, Fasc. 4. Magyar Nemzeti Múzeum, Budapest, 35–39 (deutscher Auszug).
- Wild, J.P. 1970, *Textile Manufacture in the*

Northern Roman Provinces, Cambridge.

Felicitas Maeder
Natural History Museum
Augustinergasse 2
CH-4001 Basel Switzerland
Phone: +41 61 271 57 70 (office)
Fax: +41 61 271 58 10

<felicitas.maeder@unibas.ch>

A Preliminary Classification of Shapes of Loomweight used on the Warp-weighted Loom

From time to time I have been asked to put together a list of the numerous different shapes of loomweight recorded at archaeological excavations and in museum storehouses. Now and then I get myself confused when authors try to describe what the shape of a given loomweight is like. Many different, subjective and vividly descriptive words have found their way into texts. Hence, if no supporting photograph or sketch is at hand, misunderstandings will obviously arise.

This problem is the reason why the present author has prepared a preliminary classification of loomweights (Fig.7) and a proposal for an easily intelligible terminology. The word *preliminary* should be emphasised !

The content of this short note is reproduced in more detail in the forthcoming volume of papers from the NESAT VII Symposium in Edinburgh in 1999. Originally the classification was set up and intended for my book *Kirkes Væv* of 1999 in which the loom-shapes are treated in a full chapter. It is to be hoped that a future student will have the inspiration to go on and develop this first classification, so that loomweights may then act as a new source of archaeological evidence.

A few lines about the basic facts of loomweights are appropriate, such as material, dimension, net weight, production and the question of trade. Materials include worked and unworked natural stones as well as clay and metal. Dimension and net weight range from a few centimetres to 15-21cm

and from 200 to 4000g. The terracotta and metal weights – as a rule decorated – are professionally made, whereas most clay weights appear to be homemade and undecorated. The shape and design of the loomweights may be known over wide areas – the weights themselves were hardly traded over long distances, at any rate not the homemade ones.

Shapes of loomweights – nine preliminary types

Type 1. Irregular shape

- a. hard natural stone, no hole;
- b. soft natural stone like soapstone, possibly reuse of potsherds, one hole in the most pointed part of the weight.

Type 2. Shape of a ball (clay)

This type ranges in shape from irregular lumps to pure balls, with no hole or one to two holes close to centre.

Type 3. Shape of a dome (clay)

- a. pure dome, one hole near top;
- b. slightly pointed top, one hole near top (there is a gradual transition from type 3b to the next type 4a).

Type 4. Shape of a cone (clay, metal)

- a. pointed top, slightly curved profile, one hole near top;
- b. truncated top, slightly curved profile, one hole near top;
- c. & d. pointed (c)(Fig.8) or truncated top (d), slightly curved profile, the lower part tapering, possibly from a point so high that the weight has the shape of a double cone, one hole near top.

Type 5. Shape of a pyramid (clay, metal)

- a. pure pyramid, bottom square with rounded corners, slightly curved edges, rounded top, one hole near

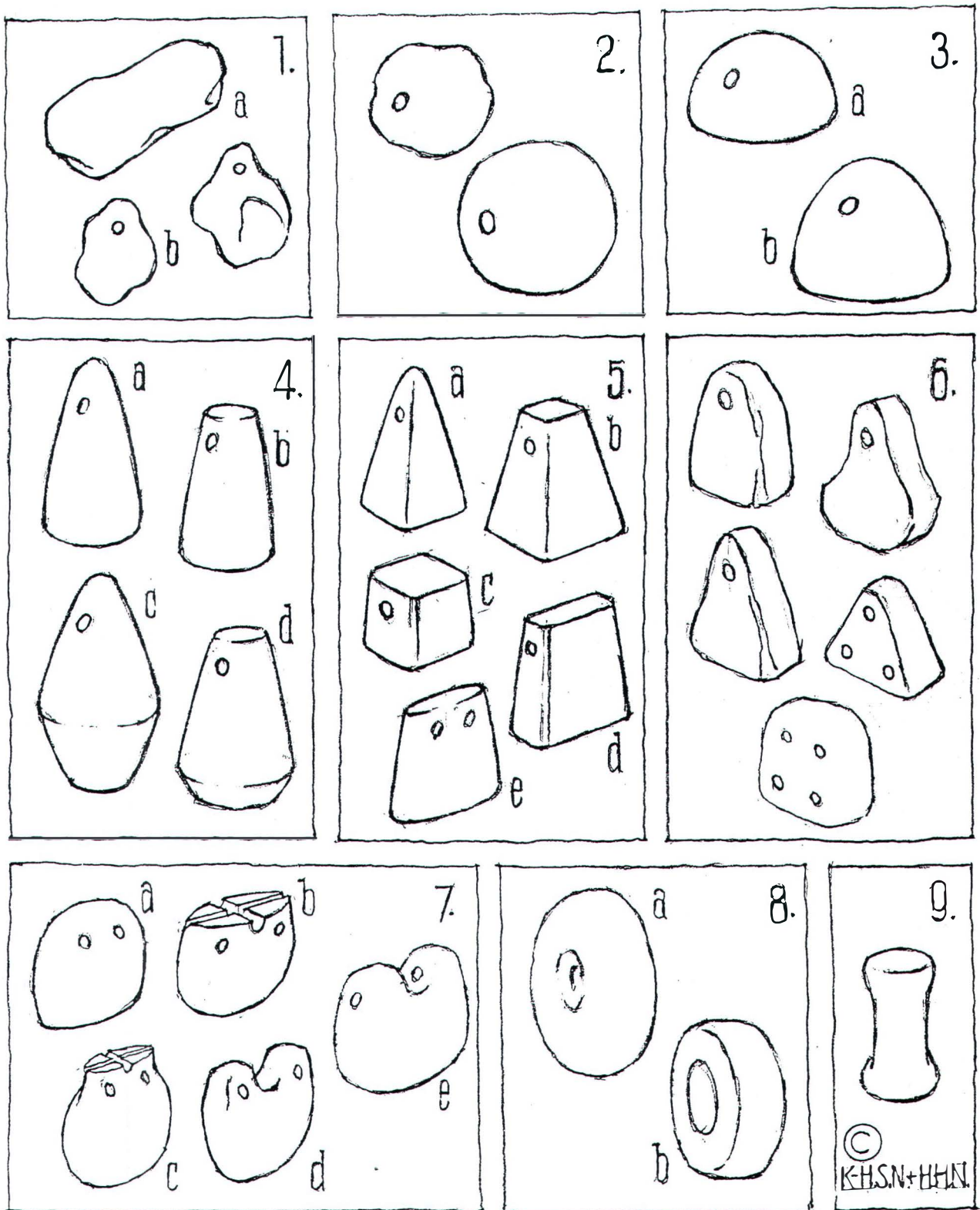


Fig. 7 Types of loomweights. (Drawing: K-H. Stærmose Nielsen and H. Holm Nielsen)

top;

- b. shape of a classical pyramidal loomweight, bottom square, smaller square flat top, almost straight edges, one hole near top;
- c. non-typical pyramid, flat square top nearly as large as the square bottom, straight edges (hence the nickname: 'box shape');
- d. variant of the classical shape type 5b, bottom rectangular, smaller rectangular flat top, slightly curved edges, near top one or two holes through the broad face or one hole through the narrow face;
- e. rounded variety of 5d.

Type 6. Shape of a slab (clay/terracotta, soapstone, metal)

Seen from the narrow face this group has the flat shape of a slab. Seen from the broad face type 6 has numerous forms that are not defined exhaustively yet. Commonly one hole, but up to four holes occur.

Type 7. Shape of a lens (clay)

The different subdivisions have a few common features: 1) the circle must be taken as a basic form only; 2) seen from the front face two holes are always present in the upper part.

- a. circle, sometimes flat bottom;
- b. circle, truncated top, traversed by a narrow and a wide groove, holes far from each other near the top;
- c. circle extended at bottom and top, the uppermost top is flat and has grooves like 7b;
- d. shape of a heart, cross-sections have rounded tips, from the broad face one hole drilled through each 'heart bow';
- e. shape of a heart, cross-section oval to almost round, one hole through each 'heart bow', but drilled from the narrow face.

(Some sickle-shaped objects with holes through the pointed tips have been discussed. If these *are* loomweights, they may have a certain kinship with 7b and 7c, and 7d and 7e as well because of the inexplicable grooves or gaps that characterise these types.)

Type 8. Shape of a doughnut (clay)

(The name refers to the well known American ring-shaped cake.)

- a. flattened ball, big hole drilled through the centre, both faces rounded or one face flat, edges slightly pointed or curved;
- b. sausage of clay, when wet turned round a stick, big hole, both faces flat, edges straight.

Type 9. 'Rochetti' (clay)

Rochetti (ital.) are considered by classical archaeologists to be rollers for thread. As cylindrical small weights, they seem inadequate for warp-weighted weaving, but they are most suitable for warp twining (see *Kirkes Væv*, 49, 52).

References

Davidson, G.R., *Corinth XII: The Minor Objects*, Princeton, 1952

Nielsen, Karen-Hanne Stærmosé 1999, *Kirkes Væv, Opstadvævens Historie og nutidige Brug* (The loom of Circe, the history of the warp-weighted loom and its use today), Historisk-Arkæologisk Forsøgscenter, Slange Alle 2, DK-4320 Lejre

*Karen-Hanne Stærmosé Nielsen
Ved Gærdet 7, Vinderød
DK 3300 Frederiksværk*

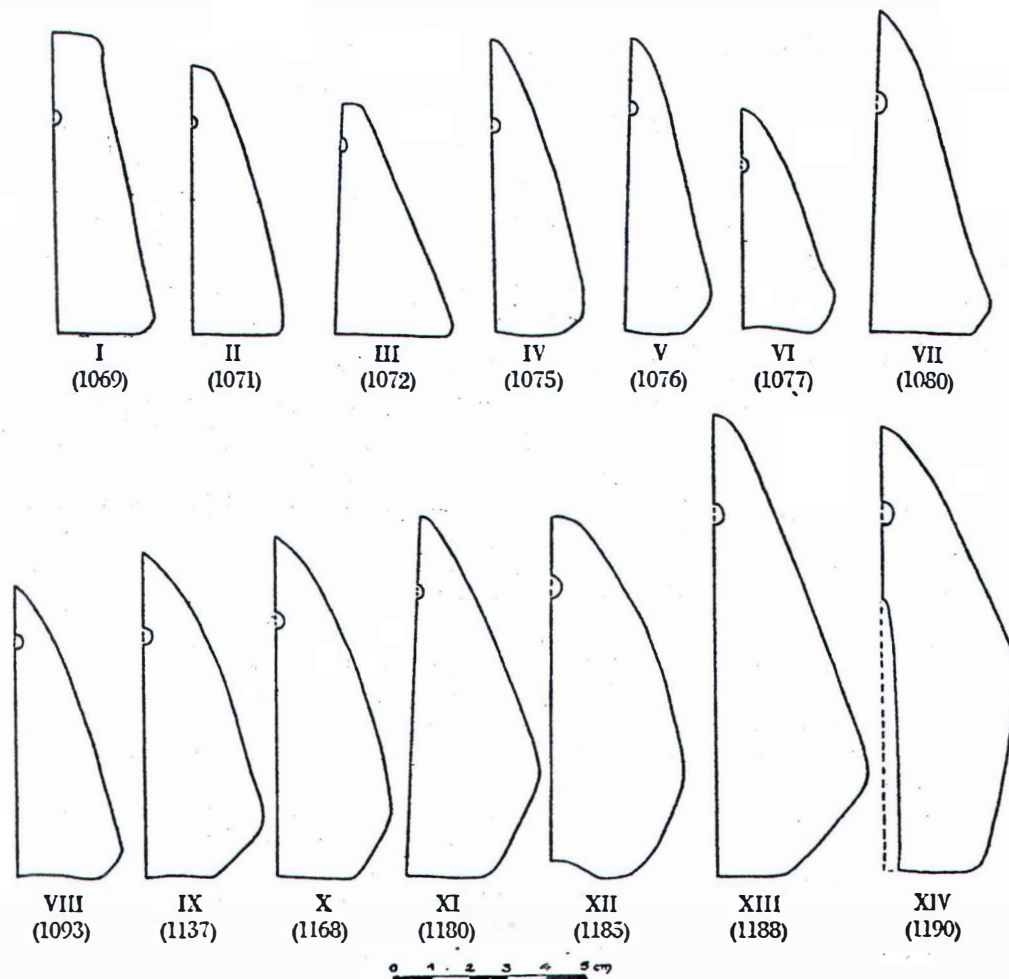


Fig. 8 Development of 14 profiles of the cone-shaped loomweight, type 4c, Corinth, 100-200 BC. (After Davidson 1952, fig. 23)

Reports

The Textiles from the 2002 Excavation Season at Quseir al-Qadim, Egypt

As in previous years, a large number of textiles were excavated at Quseir al-Qadim, the Red Sea port occupied during the Roman and Islamic periods (1st and 2nd, and 13th and 14th centuries respectively). 863 textiles were recorded from the 2002 season, 301 were Islamic, 555 were Roman and 7 could not be positively identified as one or the other.

Islamic Textiles

This year's Islamic textiles came mainly from the large Islamic *sebakh* excavated in trench 8. The most exciting find from this trench (and indeed from the whole excavation) is a bag of gold, silver and bronze coins and fragments which have allowed us to give the deposit in this trench

an earliest date of 1248. Luckily this context contained extremely well preserved organic material and 256 textiles were recorded. Most of the material is of domestic origin, though some, such as the large pieces of saddlery or packing, relate to transport. Two examples of a distinctly dark brown and yellow broad striped mat were found. They are not from the same textile so perhaps indicate someone's taste for this striking pattern. Also demonstrating the domestic nature of the deposit were several pieces of a twined, very open camel wool net that were too flimsy to take any weight, so may have served as light screens or curtains. Most notable in this trench was the discovery of half of a child's galabeya, which was sewn from high quality cotton using a well tailored pattern. The rather poor quality of the stitching perhaps reflects the fact that the galabeya would quickly become redundant as the baby grew. Another interesting garment is what is probably a winter hat, made from bright

yellow camel wool, with red (now faded to pink) and yellow stripes. The original structure has largely disintegrated, but still visible are long plied wool threads which stick out all over it, making what must have been a very striking hat! Also from this trench was the bag in which the gold and silver coins were kept. The notable feature of the textile is that it is in a very black soft goat's hair fibre. Only one other textile of similar type has been found at Quseir. Another brightly coloured piece of textile typical of the Islamic period is a fragment of slit tapestry in red, blue and green wool, the slits stitched over in red and white wool to create a series of chevrons. Other interesting finds were an example of a large piece of camel wool cloth, woven in two colours in a 'houndstooth' twill. This *sebakh* also produced an intriguing hemmed diamond-shaped fragment of blue checked cotton with the remains of a thin piece of wood sewn into the hem and a fragment of cord sewn into one corner. Amongst various suggestions for its use was that it may be a child's kite. A few examples of silk were found this year, including a very small piece of silk tapestry on linen warps. The pattern was created in green, red, dark blue and white silks, although it was too fragmentary to be able to decipher the larger pattern.

There were fewer examples of resist dyes found this year compared to previous years. One has a pattern of pink flowers on a blue background similar to fabrics found previously; another has a poor quality white design on an indigo background. It was found in a mixed Roman and Islamic context, and although it cannot be definitely identified as Roman, it resembles examples of resist dyed pieces found at Berenike of a Roman date.

Roman Textiles

The Roman *sebakh*-deposits were, as in previous years, exceptionally rich in textiles, with many examples of medium to heavy weight twills, which were probably cloaks, as well as textiles displaying the *clavus* stripes indicative of Roman tunics. This year two remarkable garments were found. The first is a child's sock, constructed in *nålebinding* technique and striped in yellows, reds, and browns. Despite the frequency of both socks and this construction technique at other sites in the Eastern desert such as

Mons Claudianus, this was the first time that an example has been found at Quseir. Also recorded this year was a large piece of Roman tunic. In previous years fragments of tunics re sewn into other items have been found. This is the first time that such a large piece has been found, identified as being the front of a tunic. There is a swastika decoration at the collar, and two vertical *clavi* which end in small arrow-head shapes running down the front. The area where the arms were sewn on, and the reinforcing stitches, are clearly visible. Other Roman garments include what appears to be a hat flap, which can be described as a half a crescent moon shape, ending in a tassel. One very attractive piece of Roman tailoring is shown in two fragments of fine yellow sheep's wool cloth joined along their warp selvages. Both edges were first sewn to thick green cords giving a 'piped' effect, before being sewn together, and a decorative row of running stitch on either side of the cord completes the effect. Another item associated with clothing is a strap of width 4cm in evenly woven wool which perhaps served as a belt. Several pieces this year demonstrate a tailoring technique seen in previous seasons, in which coarse fabrics are edged in a higher quality fabric. This appears as a way of creating a neat fray-free edge on fabrics that are too inflexible to be hemmed. An unusual construction technique for the Roman period is twining, and there is one example this year in thick red and yellow cotton threads which appears to be worked around a stick. A couple of intriguing finds are what seem to be the necks of 'draw-string' bags, one of which is lined with Z-spun cotton. Also of note were two fragments, possibly of the same fabric, which, although not of especially high quality, are brightly coloured. They are on a red wool warp with a red background, and have a stripe measuring 1.8cm of pale yellow, green, blue, brown, blue green and pale yellow, which is a distinctive Roman combination recognised as probably being of the 'shaded band' textile described in the *Periplus*.

Fiona J.L. Handley
Institute of Archaeology
London WC1H 0PY UK

The Sheep Project: finding out more about Medieval wool production

Wool was one of the main sources of England's prosperity in the later Middle Ages. Contemporary historical sources tell us about the value of wool production, taxes raised from wool, laws aimed at preventing exports of raw wool, and wool smuggling; and about the fortunes made from the wool trade, and the churches and houses it paid for. These sources say relatively little about how Medieval sheep were kept, and whether improvements in animal husbandry and in breeding selection were used to improve wool quality and yields.

The recovery and study of animal bones from Medieval sites has added a little to our understanding; but we still cannot answer basic questions about possible changes in husbandry and breeding selection because we know surprisingly little about the biology of sheep skeletons. For example:

1. We know that flocks of wethers were important in wool production in the seventeenth and eighteenth centuries; studies of modern wool sheep show that wethers produce larger yields of finer wool than rams or ewes. It seems very likely that wether flocks were an important part of Medieval wool production, and this may go back to the early Medieval period (or even earlier). We cannot test or confirm this from excavated animal bones because we do not know how to identify wether bones reliably.

2. We see at some sites that sheep bones from later phases are larger, on average, than from earlier phases (Fig.9). But we do not know whether this means that people were selecting genetically for larger size, or whether there are more wethers or rams and fewer ewes among the bones from the later phases, or whether the later sheep were larger simply because they were better fed.

A few years ago, we set out to try to answer some of these underlying questions in a project carried out in collaboration with the Scottish Agricultural College at Penicuik near Edinburgh. We chose sheep of the Shetland breed because they are relatively unimproved and so closer in type to Medieval sheep than modern English breeds

Some sheep have been kept at SAC on unimproved pasture, and are thus generally considerably fitter and lighter. Others kept on improved pasture are fatter and heavier. Skeletons of rams, ewes and wethers will be compared in order to provide better criteria for identifying wethers (and for separating rams and ewes); skeletons of sheep on unimproved and improved pasture will be compared in order to see how much effect differences in nutrition have on the sheep skeleton.

The project will also examine the effects of castration and differences of nutrition on the timing of tooth eruption and the fusion of the long bones. Relatively little is known about either, and they have considerable implications for the interpretation of bones from archaeological sites. If, for instance, castration delays fusion considerably without affecting tooth eruption, we may be able to use this as one way of detecting castration in the archaeological record (while needing to be more cautious about the use of fusion data to establish the ages at which animals were killed). If, as another example, differences in nutrition affect tooth eruption relatively little (as some evidence already suggests), detailed ageing may provide more reliable evidence about the season at which animals were killed, and give us better ways of testing whether earlier sites were seasonally occupied.

The recent completion of the skeletal preparation laboratory at the Centre for Archaeology has allowed us to start preparing the skeletons of animals collected for this project; we should have better answers for these questions within a couple of years, and this should allow us to get better information from Medieval bone assemblages.

*Sebastian Payne
Centre for Archaeology
Fort Cumberland
Eastney
Portsmouth PO4 9LD UK*

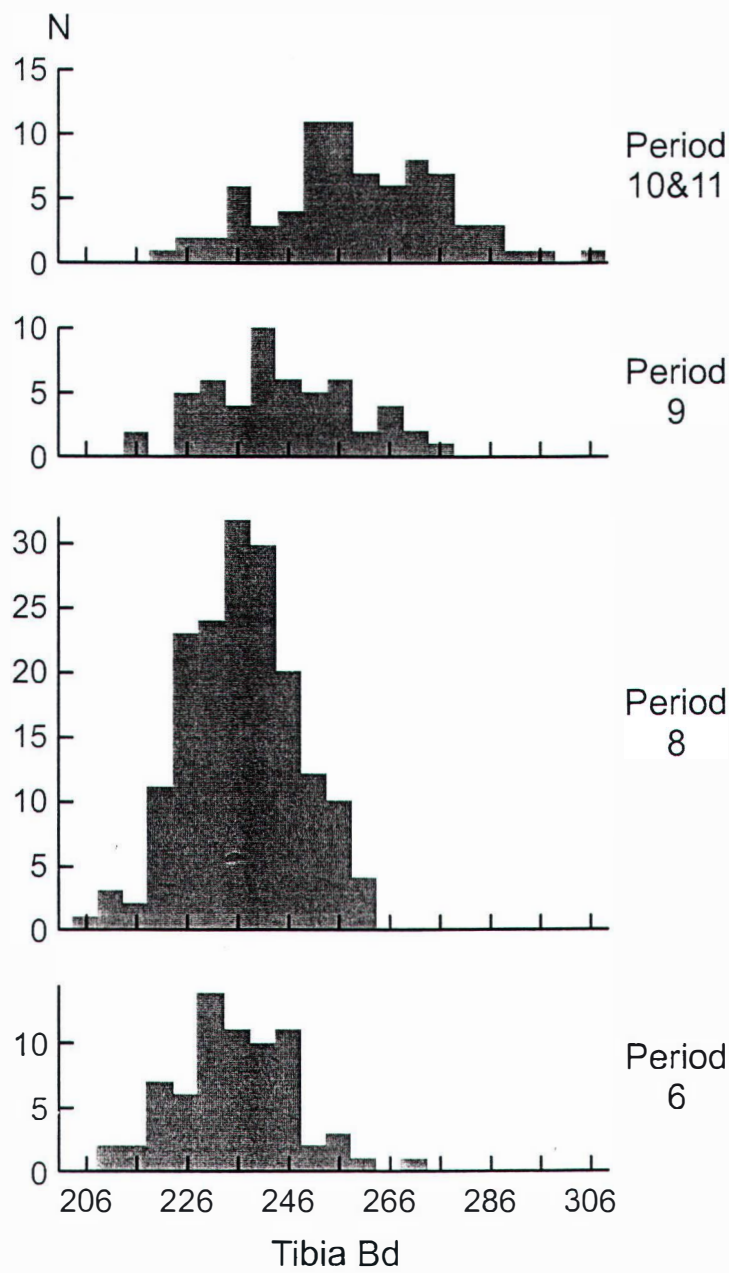


Fig.9 Sheep bones from Launceston Castle increase in size from the thirteenth century (period 6) to the nineteenth century (period 11)

Reviews

Archaeological Methods and Approaches: Industry and Commerce in Ancient Italy: Rome, 18–20.4.02

The conference, organized by Eric de Sena (American Academy in Rome) and H el ene Dessales ( cole Fran aise de Rome), was aimed at creating a forum for young scholars to discuss the current methodological trends in ancient Italian archaeology. The chosen theme, production and trade, attracted not only papers on the more traditional topics of metal and ceramic industries but also a number of presentations pertaining to ancient textiles. In fact, the conference opened with a session dedicated to textile production. The papers ranged chronologically from the Iron Age to late Roman period and covered a variety of issues. Margarita Gleba discussed the use of implements in reconstructing various aspects of textile production in Iron Age Italy. Laurent Hugot used iconographic evidence to argue a possible use in spinning of two cylindrical monuments found in Bologna. Christine Macheboeuf presented evidence for production and trade of purple in Sicily and Italy in Roman times. Martine Leguilloux used archaeozoological evidence to identify tanneries in Roman settlements. The last paper, by Jacopo Bonetto, Andrea Raffaele Ghiotto and Isabella Modugno, presented a new project initiated by the Archaeological Studies Group at the University of Padova, which uses archaeological, palaeobotanical and epigraphic evidence to study wool production and trade in Roman Venetia. This last project promises to increase significantly our understanding of the wool industry in ancient Northern Italy.

Discussion following the session demonstrated a wide interest in the topic among the field archaeologists and the necessity of further development of textile studies in Italy. The inclusion of textiles among other crafts at archaeological conferences that cover a wide variety of topics is a welcome trend, which, hopefully, will be continued in the future. The acts of the Rome conference will be soon published by the BAR International Series, Oxford.

Margarita Gleba
Bryn Mawr College

101 N. Merion Avenue
Bryn Mawr PA 19010 USA

<mgleba@brynmawr.edu>

NESAT VIII, Ł dź, Poland, 8–10.5.2002

The eighth triennial symposium of the North European Symposium for Archaeological Textiles (NESAT) was held in Ł dź in western Poland in May 2002. It was organised by Dr Jerzy Maik, Director of the Institute of Archaeology and Ethnology of the Polish Academy of Sciences, Ł dź branch, who was a founder-member of NESAT and attended its first meeting in Neum nster in 1981, the sole representative from Eastern Europe.

The formal lecture programme occupied the first two and a half days (8.–10.May) and was capped by a series of site visits in Ł dź itself. Theoretically the order of papers was chronological, but this was somewhat obscured by the number of speakers with a Medieval theme: the Migration Period was reached by lunchtime on the first day!

The symposium opened with an examination by Carol Christiansen of the pitfalls encountered in characterising a sheep's fleece solely from the yarns spun from it: a more cautious approach is required in future. Wool has rarely been found in Roman Spain, and Carmen Alfaro Giner described a significant group of metal-replaced fragments from a hoard of late Roman farm equipment found in northern Spain. Equally fragmentary material from a fourth-century grave in Jutland presented by Ida Demant opened up questions about the nature of the costume represented, while finds from a late sixth-century grave at Beerlegem (Belgium) included according to Chris Verhecken-Lammens exotica such as taquet  and a Coptic-style fabric with supplementary weft. Katarzyna Barska reported on her recent excavation of an alignment of loomweights in a Roman-Period *Grubenhau* at O zar w Mazowiecki and the interpretations to which they give rise.

Early Medieval dress, its character and context claimed the attention of the next

four speakers. Marianne Vedeler Nilsen discussed some wool twills from Norway with vertical pleats; Ulla Mannering looked at the costumes represented on the tiny wafer-thin gold plaques (*Goldgubber*) from Scandinavia, and Antoinette Rast-Eicher used the surviving textile evidence on brooches in Migration-Period graves in Switzerland to distinguish between local population groups. The tantalisingly fragmentary remains of gold and silver thread ornament in the Ladby ship-burial were examined by Anne Hedeager Krag in the light of knowledge of contemporary Byzantine finery. The day's work concluded with Milena Bravermanova's review of the tenth-century textiles from the reliquary casket of the Czech Saint Ludmila treated recently in the conservation workshops at Prague Castle. That was not the end of the day's events, however; for there followed a splendid conference dinner given by the sponsoring bodies which set the upbeat tone for the rest of the symposium

The second day revealed the sheer richness and variety of the Medieval textile scene – and the obtuse nature of some of the relevant sources. Elizabeth Heckett presented a curious tenth-century wool textile from Ireland which was originally arrayed with metal appliqués; Malgorzata Grupa's paper was devoted to a series of eleventh-century twills from Kaldus in western Poland; Susan Möller-Wiering discussed finds of rags and animal hair used as caulking in North European shipping; Lise Ræder Knudsen revealed how pattern books lay behind some of the finest Medieval tablet-woven braids; Eva Andersson (Gothenburg) examined the textile information to be gleaned from Medieval wills and bills of sale. By contrast a multidisciplinary Polish team then reported on some of the state-of-the-art techniques which they are developing and deploying to solve problems of dye analysis in ancient textiles. Katarzyna Urbaniak-Walczak discussed a Coptic taqueté now in Warsaw, and Klaus Tidow presented some new finds of loom components from thirteenth-century Braunschweig. Some fascinating detective work enabled Fabian Peise to follow the fate of a fifteenth-century embroidered chasuble from its creation in Lübeck until the Reformation.

Two further papers moved forward into

early modern times: Hanne Zimmermann spoke about her jigsaw puzzle, reassembling stockings and hose from a back-filled moat in sixteenth-century Groningen, and Anna Drażkowska described work on some curious backless silk funerary dresses from seventeenth- and eighteenth-century childrens' graves at Kostryń on the Oder. Experimental archaeology then took over, with papers by Gudrun Böttcher on her investigation and reconstruction of complex techniques in *naalebinding* (*Nadelbinding*) and a reconstruction by Barbara Klessig of the Viking honeycomb weave from York.

On the final day there were just three contributions. An analysis of the gold thread from a rich Migration-Period grave at Lauchheim in South Germany was presented by Britte Nowak, and Elizabeth Peacock discussed her on-going research into the post-depositional history of textiles and other organic materials in bog conditions. Last but not least, Eva Andersson (Lund) reviewed the place of current textile studies in the wider archaeological perception, emphasising the need to raise their profile.

If the success of a conference can be measured by the liveliness of the discussions after the papers, NESAT VIII can be highly rated; the chairman's problem was to halt rather than stimulate contributions !

Łódź was a leading textile manufacturing centre in the nineteenth and early twentieth century and many of its attractive cotton mills together with the 'palaces' of the entrepreneurs survive today. After the lectures were over, Dr Maik took the symposiasts to see the town's textile museum, housed in a well-maintained old mill. On the following day a more extensive tour on foot and by coach was arranged to visit some of the key groups of industrial buildings and the sumptuous villas erected by their owners, often cheek-by-jowl with the mill. In the tranquillity of a sunny May morning it was hard to conjure up the noise, bustle and pervasive dust of cotton production in Łódź at its heyday.

The time, effort – and stress – involved in conference organisation cannot be underestimated. Dr Maik and his band of helpers were warmly thanked and congratulated on the smooth running of NESAT VIII; but their task is not ended

yet. Speedy publication is promised. Watch *ATN* for details.

John Peter Wild

Tapestry Weaving Technique before 1500, Early Textiles Study Group, Manchester, 6–8.9.02

Ten papers were given at the biennial conference of the ETSG and subjects included early Peruvian tapestries, Pharaonic tapestries, examples from Coptic and Islamic Egypt and pieces of non-European origin found in Europe. Early European tapestries and techniques were also discussed. The speakers principally came from the UK but there were also representatives from France, Sweden, Israel and the United States

The main guest speaker was Ann Pollard Rowe from the Textile Museum, Washington who spoke about a group of tapestry-woven Peruvian textiles. These came from the site of Huari in the central highlands of Peru and covered a date range of about AD 650–850. She discussed aspects of the techniques involved, and was particularly interesting on the iconography and symbolism of both textiles and the ceramics found alongside them in burial grounds and the particular significance of images where no evidence of writing was found. The tapestries included finely woven interlocked tapestry tunics and headbands. Although Peruvian textiles are found in European collections they are much more numerous and wide ranging in collections in the United States and from this point of view as well as others, the talk was of great interest.

The Israel Museum in Jerusalem holds another significant collection of pre-Columbian tapestries from Peru, the techniques and iconography of which were discussed by Alisa Baginski, an independent textile consultant from Jerusalem. She emphasised their essential role in burial ritual, drawing attention to scenes of human transformation from life through death to the afterlife in which shamans, deities and supernatural beasts and birds appear.

Rosalind Janssen from University College, London gave a fascinating and lucid

exposition on the possible origins of the small number of tapestries found in Pharaonic Egypt of the period of c.1500 BC. She raised the question of whether tapestry was a foreign fashion, although the Egyptian word for tapestry, discovered by her in recent research, does not suggest a foreign origin. She examined tapestries from the tombs of Tuthmosis IV and Tutankhamun and others from the tombs of two high officials.

Another excellent paper, on the subject of the use of tapestry weave in Classical antiquity, was presented by Hero Granger-Taylor, an independent scholar, whose expertise on the subject of early textiles is well known. Her great enthusiasm for the subject was evident. Amongst areas covered by her talk was a discussion of the long history of narrative/pictorial representation in tapestry weaving.

Tapestry is also the best known decorative technique of Coptic Egypt, but attributing garments and soft furnishings bearing tapestry to specific workshops or workshop traditions has proved very difficult. Roberta Cortopassi from the Louvre argued cogently for a single workshop origin in the case of a now scattered group of linen tunics characterised by having looped pile on both sides as well as the tapestry decoration. Her paper marks an important step forward.

Although there was some dispute about the origins of two Medieval tapestry-woven textiles found in a reliquary bust of St Anastasius (d.304) in Split Cathedral, presented in a paper given by Professor Anna Muthesius, it was very interesting to see these two previously unknown tapestries (one with gold thread) from Croatia and the context in which they were discovered.

Professor Margareta Nockert from Uppsala University discussed tapestry weave in Scandinavia from AD 400 to 1200. The paper dealt with tablet-woven bands from the migration period with patterns in a 'tapestry-like' technique, narrow pictorial tapestries from the Norwegian Oseberg ship burial (AD 834) and the sole surviving Medieval tapestry of the late 12th century from Norway which can be related to Continental tapestry weaves.

The penultimate paper was given by Kay

Staniland whose research in the area of documentary evidence for her lecture 'Tapestries in fourteenth-century England' had revealed much detailed information about the role of tapestries in that period. She examined the Great Wardrobe accounts of Edward II and Richard II which provided fascinating evidence about what she describes as 'these lost tapestries', as only a very small number of 14th century European tapestries survive. Information about suppliers, designs, costs etc. made sense of the context in which tapestries provided status-enhancing hangings for kings and princes. Much new information was presented in this paper and I for one, would like to hear it again.

An afternoon visit to the Whitworth Art Gallery was organised by Frances Pritchard (who had also given a short introductory talk about the textiles), to see tapestries in the collections there from pre-Hispanic Peru and Medieval Islamic Egypt. The opportunity to see the wonderful, newly conserved Tree of Jesse Altar frontal made in Cologne in about AD 1470 was an additional treat.

The conference provided a forum for the discussion of known and unknown areas of early tapestry weave and raised some interesting questions. It also gave the participants and speakers opportunities to have informal discussions outside the context of the lecture hall and to re-establish direct links with old colleagues or make new contacts.

*Linda Woolley
Victoria and Albert Museum
South Kensington
London SW7 2RL UK*

Textile Society of America: Eighth Biennial Symposium, Smith College, Northampton, Mass., 26–28.9.02

The eighth Biennial Symposium of TSA took place at Smith College Northampton, Massachusetts from September 26th–28th 2002. About 280 participants joined in the three day programme of general papers, keynote addresses, specially arranged exhibitions and general discussion sessions. The theme of the Symposium was 'Silk

Roads, Other Roads' and was inspired by the history of the town in which it was held. Northampton has an unique history in New England as the site in the 1830s of a craze for cultivating silkworms and later of a considerable silk industry. Several organizations in and around Northampton arranged textile related exhibitions. One outstanding collection on view at Smith College was that of Deborah Garner and Jay Bommer of Burmese silk textiles; this was a visual treat of the highest order.

Keynote speeches were given by Francesca Bray, Professor and Chair of Anthropology, University of California, Santa Barbara, who spoke on women as silk weavers in Imperial China; Daryl Hafter, Professor of History, Eastern Michigan University, who discussed 'Women, Cloth and Politics in Lyon's Eighteenth Century Silk Industry' and Madelyn Shaw who, as curator, previewed the upcoming Smith College Museum of Art Exhibition of 'Silk in New England Society, 1730–1930'. The Northampton Silk Project, a study of silk and sericulture in this area was discussed in a panel framework. This community programme has resulted in exhibitions, a web site, lectures and a middle school curriculum.

Among the papers of interest to students of archaeological textiles was that by Nettie K. Adams on 'Silk in Ancient Nubia: One Road, Many Sources'. Elizabeth Barber presented a most interesting proposal on the pre-history of band weaving, 'Ribbons Around the Silk Road – Before Silk (Towards a Pre-History of Band Weaving)', exploring how such finds from the Tarim Basin may be related to later Persian silk textiles and to the earliest known weaving in Europe and Turkey. Cynthia Finlayson who has been excavating in Syria discussed 'The Women of Palmyra: Textile Workshops and the Influence of the Silk Trade in Roman Syria'. Irene Good presented her current research on early archaeological silks from Europe, the Mediterranean and South Asia. Her biochemical analyses of silk specimens identify the silkworm species in use, thus demonstrating the nature and extent of early sericulture. Cathy Ostrom Peters spoke on 'The Silk Road Textiles at Birka: An Examination of the Tablet woven Bands'. Stephen Wagner presented his work on 'The Impact of Silk in Ottonian and Salian Illuminated Manuscripts'; he showed the

influence that Byzantine silks had on the creators of the manuscripts. He proposed that in the manuscripts two prestigious art forms coalesced into innovative and decorative programmes in manuscript painting.

Excursions were arranged during and after the Symposium. These included walking tours of historic Northampton. Since these were on a sunny afternoon in this historic town they were especially pleasant. Outings to the Museum of Fine Arts and the Gardiner Museum in Boston provided an opportunity to savour the textile collections of the former, and to enjoy the special atmosphere of the latter. We were received with heart-warming hospitality wherever we went.

Smith College provided a very special atmosphere and backdrop for the Symposium. All the staff and students involved in running the event were totally committed to ensuring its success. They succeeded brilliantly and the participants commented on how easy it was to share common interests and concerns. The two Symposium co-chairs, Pam Parmal and Marjorie Senechal, had put an enormous amount of work into planning and organization so that the gathering was very successful, and earned the thanks of everyone who attended.

Elizabeth Wincott Heckett
Department of Archaeology
NUI Cork Ireland

Source Materials

Recent Publications

Bacharach, J.L. (ed.), *Fustat Finds: Beads, Coins, Medical Instruments, Textiles and other Artifacts from the Awad Collection*, American University in Cairo, 2002.

Dreyspring, B., 'Textiltechnische Untersuchungen an einer frühchristlichen Sarkophagbestattung aus St. Maximin in Trier' in: S. Martius, S. Ruß (edd.), *Historische Textilien: Beiträge zu ihrer Erhaltung und Erforschung*, Germanisches Nationalmuseum Nürnberg, 2002, 9–24.

Helmecke, G., *Byzantinische und Orientalische Seidenstoffe: Grabfunde aus der Sepultur der Bamberger Domherren*, Bamberg Diözesanmuseum, 2001.

Hofmann, U., 'Zwei koptische Leinentuniken aus den Sammlungen des Badischen Landesmuseums Karlsruhe' in: S. Martius, S. Ruß (edd.), *Historische Textilien: Beiträge zu ihrer Erhaltung und Erforschung*, Germanisches Nationalmuseum Nürnberg, 2002, 25–42.

Kemp, B.J., G. Vogelsang-Eastwood, A. Boyce, H. Fairbrother, G. Owen, P. Rose, *The Ancient Textile Industry at Amarna*, EES Excavation Memoir 68, London, 2001.

Maik, J., 'Wolna tkanin wykopaliskowych jako źródło do badań ras owiec' ('The wool from excavated textiles as a source in research on sheep bones'), *Studia i Materiały* 4/2001, 311–326.

Makkay, J., *Textile Impressions and Related Finds of the Early Neolithic Körös Culture in Hungary*, J. Makkay, 2001.

Martius, S., S. Ruß (edd.), *Historische Textilien: Beiträge zu ihrer Erhaltung und Erforschung*, Germanisches Nationalmuseum Nürnberg, 2002.

Rogers, P.W., 'Textiles' in: P.M. Stead, 'Archaeological investigations at Tavistock Abbey 1997–1999', *Devon Archaeological Society Proceedings* 57, 1999, 149–203, esp. 184–190.

Rogers, P.W., 'Gold thread' in: M. Hicks, A. Hicks, *Archaeology of Canterbury NS II: St. Gregory's Priory, Northgate, Canterbury: Excavations 1988–1991*, Canterbury, 2001, 284–287.

Rogers, P.W., 'Textiles' in: I. Roberts, *Pontefract Castle: Archaeological Excavations 1982–86*, Yorkshire Archaeology 8, Wakefield 2002, 308–314.

Schrenk, S., 'Die "topographischen" Friesen auf den Behangfragmenten mit Danielszene und Petruszene in Berlin' in: *Hairesis: Festschrift für Karl Hoheisel zum 65. Geburtstag*, Jahrbuch für Antike und Christentum Ergänzungsband 34, Münster, 2002, 72–83.

Shamir, O., A. Baginski, 'Textiles and Cordage from 'Avdat - the Cave of the Saints', *'Atiqot* 42, 2001, 243-260.

Shamir, O., A. Baginski, 'Medieval Mediterranean textiles, basketry and cordage newly excavated in Israel' in: Y. Lev, *Towns and Material Culture in the Medieval Middle East*, Leiden, 2002.

Sipos, E., M. Dagi, 'Report on the conservation of Coptic textiles in the Department of Greek and Roman Antiquities (1999-2000)', *Bulletin du Musée Hongrois des Beaux-Arts* 94, 2001, 65-82.

Spies, N., *Here be Wyverns: Hundreds of Patterns Graphed from Medieval Sources*, Arelate Studio, 2002.

Sumner, G., *Roman Military Clothing 1: 100 BC - AD 200*, Oxford, 2002.

Tidow, K., 'Tuchherstellung in Neumünster von der Mitte des 17. bis zur Mitte des 19. Jahrhunderts. Informationen aus den Amtsbüchern der Neumünsteraner Tuchmacher' in: K.-J. Lorenzen-Schmidt (ed.), *Quantität und Qualität: Möglichkeiten und Grenzen historisch-statistischer Methoden für die Analyse vergangener Gesellschaften. Festschrift für Ingwer E. Momsen zum 65. Geburtstag*, Neumünster, 2002, 93-103.

Vicari, F., *Produzione e commercio dei tessuti nell'Occidente romano*, British Archaeological Reports S916, Oxford, 2001.

Vogelsang-Eastwood, G.M., *An Introduction to Qajar Era Dress*, Rotterdam, 2002.

von Eles, P. (ed.), *Guerriero e sacerdote. Autorità e comunità nell'età del ferro a Verucchio. La Tomba del Trono*, Firenze, 2002. (Textiles by A. Stauffer, L.R. Knudsen).

Wild, J.P., 'Textiles et activités relatives au textile sur le monument d'Igel', *Annales de L'Est*, 2001 (2), 83-92.

Wild, J.P., 'The Textile Industries of Roman Britain', *Britannia* 33, 2002, 1-42.

Müller, Mechthild, *Die Kleidung nach Quellen des frühen Mittelalters, Textilien und Mode von Karl dem Großen bis Heinrich III*, Reallexikon der Germanischen Altertumskunde, Ergänzungsbände 33, Berlin + New York 2002, 337 Seiten, Glossar, 20 Tafeln auf Kunstdruckpapier mit 80 Abbildungen, davon 40 in Farbe, ISBN 3-11-017219-4

Ziel des Buches ist es, das bisher unerforschte Thema der Kleidung der Menschen in den Jahren zwischen 750 und 1050 auf der Basis der literarischen, bildlichen, archäologischen Quellenüberlieferung und unter Berücksichtigung praktischer Überlegungen aufzuarbeiten. Katharina Colberg (Historisches Seminar, Hannover) übersetzte die mittellateinischen Texte möglichst wortgetreu und unter strikter Beachtung der Fachausdrücke. So konnten viele neue Einsichten gewonnen werden. Die Arbeit gliedert sich in sechs Teile. Im ersten Teil wird der aktuelle Forschungsstand behandelt. Die Bearbeitung der kostümgeschichtlichen Literatur ergab, dass sich die Ansichten, die Mode sei zwischen dem 8. und dem Beginn des 11. Jahrhunderts verhältnismäßig konstant geblieben, auf Untersuchungsergebnisse aus der zweiten Hälfte des 19. Jahrhunderts stützen. Die Analyse hat gezeigt, dass damals benutzte Text- und Bildquellen zeitlich nicht zueinander passten und es deshalb zu falschen Zuordnungen kommen musste.

Der nächste Teil stellt die verschiedenen Quellen vor. Über 2000 zeitgenössische Bilder wurden untersucht; erwähnt werden im Text Illustrationen aus 88 Handschriften und 24 Einzelobjekte, die Entscheidendes zur Lösung anstehender Fragen beitragen können. Es gibt viele Bilder, die bei großer Übereinstimmung mit literarischen Quellen, eine Realitätsbezogenheit vermuten lassen. So konnte ich nachweisen, dass die Form der als singulärer Fund erhaltenen Viborg-Tunika mit einem zeitgenössischen Bild und einer zeitgleichen Schriftquelle übereinstimmt. Als wichtig stellte sich heraus, die Bilder im Kontext zu betrachten: historisierend gemeinte Arbeiten dürfen nicht als unmittelbare Quellen verstanden werden und Bildwerke aus ottonischer Zeit können eine Symbolsprache mit doppelbödigem Realität beinhalten. Beides

wird anhand von Beispielen erläutert. Eine Vielzahl von Hinweisen wurden in den Literaturquellen zum Thema Kleidung gefunden. Neben Personenbeschreibungen und vollständigen Kleiderlisten sind es verstreut in den Texten vorkommende Bemerkungen, die zu einem besseren Verständnis in Fragen der Mode beitragen. Ferner geht die Autorin darauf ein, dass es kaum archäologische Textilfunde aus dieser Periode gibt; in Fragen der technologischen Entwicklung ist davon auszugehen, dass vorhandene Kenntnisse weiterhin genutzt wurden. Deshalb werden Randgebiete des Reiches einbezogen und Funde der vorangehenden Zeit mit erwähnt.

Ein wichtiger Teil der Arbeit befasst sich mit der Vorstellung der Kleidungsstücke und den Tragegewohnheiten: dies wird im Einzelnen in den Kapiteln zur Männer-, Frauen-, Kinder-, Mönchs- und Klerikerkleidung erläutert. Ludwig der Fromme setzte 816 eine Dreiständeordnung innerhalb seines Reiches durch, nach der die Bevölkerung in die Stände der Kleriker, Mönche und Laien unterteilt werden sollte und Ludwig verfügte, dass sie sich in ihrer Kleidung unterscheiden mussten. Um die Jahrtausendwende wurden der Kleriker- und Mönchsstand zum Stand der Betenden zusammengefasst und der Laienstand wurde unterteilt in den Stand der Krieger und der Arbeiter. Während sich die Zweiteilung des Laienstandes bis um 1050 in keiner Kleiderordnung bemerkbar machte, änderte sich der Habit der Mönche und wurde dem der Kleriker sehr ähnlich. Aus Aachen (816) und Farfa (kurz nach 1000) sind genaue Vorschriften erhalten, die das im Einzelnen beurkunden. Die Maßangaben in Farfa (es orientierte sich an Cluny) arbeiten mit Finger-, Daumen- und einem dreiteiligen Ellenmaß, denn jeder Mönch sollte passgenaue Kleidung tragen. Ein bisher vermuteter Trachtgegensatz zwischen den beiden Reformrichtungen Gorze und Cluny konnte widerlegt werden. Allein der Kaiser scheint sich nun sowohl dem Stand der Beter wie dem der Krieger zurechnen zu wollen. Mit der offiziellen Einführung der langen Tunika in den Königsornat übernahm er für seine Person die Tunika der Kleriker, mit der *clamis* (*sagum*) blieb er dem Kriegerstand verbunden.

Eigene Kapitel sind den Tuniken gewidmet, die sich, wie die Bilder verdeutlichen, im

Untersuchungszeitraum deutlich ändern. In karolingischer Zeit ist eine Änderung innerhalb eines Zeitrahmens von 20 Jahren ablesbar. Dagegen ist eine ähnliche Entwicklung in ottonischer Zeit im Augenblick nicht nachzuvollziehen, denn die neuen Diskussionen um die Datierung der Handschriften und Objekte verlaufen zu gegensätzlich; hier bleibt nur eine generelle Beschreibung der inzwischen deutlich veränderten Silhouetten der Tuniken. Auch die Frauenmode bringt Neues, vor allem der Formenreichtum der Ärmelmoden lässt den Betrachter staunen. Alles dies macht die Auswertung hoch interessant. Die Untersuchung der Herrschertuniken zeigt, dass es sich hierbei um politisch motivierte Kleidung handelt; dies wird auch in den Originaltexten immer wieder betont und begründet.

Weiter befasste sich die Autorin mit historischen Fakten. Das fränkische Reich, das sich von Friesland bis Süditalien, von der Atlantikküste bis zur Elbe erstreckte, ist nicht isoliert zu sehen. Angehörige römischer Senatorenfamilien mit Besitz in Gallien waren in den fränkischen Adel übergewechselt. Wollene Umhänge für das fränkische Heer kamen aus Mercia und Friesland, Fernhandelsstraßen und Wasserwege führten bis nach China. Irische und angelsächsische Missionare und Gelehrte unterwiesen in ihren Bildungsanstalten Angehörige der Herrscherschichten, Mönche besuchten ägyptische Klöster oder reisten in das heilige Land. Da die Klöster eigene Wirtschaftsorganismen waren, blieben ihre Äbte auch offen für Fragen nach technischen Innovationen. In ottonischer Zeit wurden diese Kontakte noch verstärkt. Untersuchungen der Urbare aus Fulda, Werden, Prüm und der *Notitia de Areis* von Saint-Maur-des-Fossés brachten sehr interessante Ergebnisse über das *opus textile* der Handwerkerinnen bzw. der Arbeit in den einzelnen Haushalten. Die praxisnahen Kapitel über Rohstoffe, Farben, Weben, Webhäuser und Webstühle sollen auch Vertreter anderer Disziplinen über die damals bekannten Ressourcen und Techniken informieren. Das Kapitel über die Zuschneidekunst, Nähtechniken und Rekonstruktionsversuche zeigt die Bandbreite der zur Verfügung stehenden Möglichkeiten und widerlegt die Vorstellung einer nicht zugeschnittenen, sackartigen Kleidung.

Kleidung spielt heute eine anerkannte Rolle für unsere Identität wie bei unseren Beziehungen zu den Mitmenschen. Dies wurde von der Bevölkerung im frühen Mittelalter genau so gesehen und erlebt, auch dies ist ein Ergebnis der Untersuchungen. Es gilt für die Laien, die keine Beschränkungen durch Kleiderordnungen kannten, wie für die Mönche und Kleriker, die bewusst damit lebten.

Mit diesem Buch sollte in erster Linie ein Gesamtüberblick vorgelegt werden. In Zukunft müssen vorhandene Lücken geschlossen und Details verändert oder ergänzt werden. Das kann nur auf breiter Diskussionsgrundlage geschehen und die Autorin möchte alle Interessierten einladen, sich an dieser Aufgabe zu beteiligen.

Mechthild Müller
Schumacherstr. 42
D-30826 Garbsen
Germany

News in Brief

Ancient Textiles: Production, Craft and Society: 19–23.3.03, Lund and Copenhagen.

The above conference, organised jointly by Marie-Louise Nosch (Institute of Aegean Prehistory), Ulla Mannering (Copenhagen University), Eva Andersson (Lund University), Brendan Burke (American School at Athens) and Carole Gillis (Lund University), will take place in Lund, Sweden (19–21.3.03) and Copenhagen, Denmark (22–23.3.03). It will cover textiles from the Neolithic period to the Middle Ages, concentrating primarily on Europe, but also including the Near East and the New World. Its aim, bringing together scholars from different disciplines working with textiles, is to increase our knowledge of textile technology and industry on a regional and global basis, comparing the southern European tradition of textile research based largely on documentary and iconographic evidence with that of northern Europe based upon surviving textile and clothing remains.

Rather than concentrating on specific areas or techniques, broad topics will be viewed from as many different aspects as possible. Key speakers will be Lise Bender Jørgensen (Trondheim University), John Peter Wild (Manchester University), Eva Andersson (Lund University), Lise Raeder Knudsen (Vejle Amts Konservering, Denmark), John Killen (Jesus College, Cambridge) and Elisabeth Barber (Occidental College, California). For further details, contact Marie-Louise Nosch, Nyelandsvej 71, st. th., 2000 Frederiksberg, Denmark. <106477.1447@compuserve.com> after 1.1.03.

Conference website:

<http://www.lu.se/klass/textiles>

Tales in the Textile: The Conservation of Flags and Other Symbolic Textiles: North American Textile Conservation Conference 2003. 23–25.10.03, Albany, NY, USA.

Call for Papers

Textiles have served many functions, from practical to decorative to symbolic. Symbolic textiles can present unusual preservation challenges in their treatment, handling or display. The fourth biennial North American Textile Conservation Conference will focus on textiles as symbols – whether it be as patriotic, cultural or religious emblems, or as signs of wealth or status.

Conservators, curators, conservation scientists and others working with these textiles are invited to submit proposals for presentations on topics that may include : conservation treatments (past, present and/or under development), analysis, and/or conservation, curatorial and management issues raised by the preservation of such textiles. One day of this symposium will focus on the conservation of flags.

As always for NATCC symposia, papers recognizing the collaboration needed for textile preservation are particularly welcomed. Papers are also solicited for a session on new developments in the field of textile conservation. These papers need not be relevant to the main conference theme.

Abstracts up to 250 words in length must be submitted by November 1, 2002. Proposals for posters should also be submitted by this date.

Speakers will be notified by December 15, 2002 if their submissions are accepted. Papers, which will be published by NATCC as pre-prints and made available for general sale after the conference, will be due by July 1, 2003. All submissions should consist of the speaker's name, address, e-mail address, telephone and fax numbers, a short one-paragraph biography, the title of the submission and a 250 word abstract. If possible, submit abstracts via e-mail (with abstracts attached in RTF format). Paper submissions will be given equal consideration.

Submit abstracts to: Susan Schmalz: <sschmalz@lacma.org> or at: Conservation Center, Los Angeles County Museum of Art, 5905 Wilshire Blvd., Los Angeles, CA 90036 USA.

For all other questions or information about the 2003 North American Textile Conservation Conference contact Deborah Trupin:

<Deborah.Trupin@oprhp.state.ny.us>

Subscription

ATN has a 2-year subscription term (4 issues). Subscription rate is £20 (private individual) and £30 (institution) per term.

Subscription payment should be sent to:

Felicity Wild
30 Prince's Road
Heaton Moor
Stockport SK4 3NQ
United Kingdom

Payment is accepted in **pounds sterling (£)**. Payment must be made in the form of an international bank cheque or draft and should be made payable to: **J.P.Wild – ATN**. (NB: Eurocheques in £ sterling are no longer accepted in the UK.) Alternatively, payment may be made in **Euros** to: **J.P.Wild – ATN**. (Eurocheques drawn in Euros are acceptable.)

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). (An accompanying disk in Word would be welcomed.) 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.

Submissions should be addressed to:

John Peter Wild
30 Prince's Road
Heaton Moor
Stockport SK4 3NQ
United Kingdom

(tel: (+44) (0)161 432 2460)

Disclaimer

The views expressed by authors in articles printed in the *Archaeological Textiles Newsletter* are not necessarily those of the Editorial Board, and are the responsibility solely of the individual contributors.

Copyright

Copyright in text remains with the individual authors. Copyright in artwork remains with the originating source.

The *Archaeological Textiles Newsletter* is published at the Ancient Textile Unit in the University of Manchester.

Editorial Board: L.Bender Jørgensen,
E.Wincott Heckett, J.Banck-Burgess,
J.P.Wild

Editor: John Peter Wild
Editorial Assistant: Felicity Wild

Publication dates: twice yearly, Spring and Autumn.

ISSN 0169-7331