

ARCHAEOLOGICAL TEXTILES NEWSLETTER

No. 12, May 1991

EDITORIAL

The editors of the *Archaeological Textiles Newsletter* feel extremely proud! The range of articles and notes which are being sent to the Newsletter without prompting, cajoling or otherwise black-mailing people, means that the *ATN* is working properly. It is now an established tool for those working on the history of textiles. This does not mean however, that people should feel complacent and refrain from sending their notes and comments. They are essential for the continuation of the *Newsletter*.

The range of subjects covered in the current issue ranges from textiles with bronze decorations from the Eastern Baltic to the various finds and recantations associated with the site of Mons Claudianus in Egypt. The article on the Baltic textiles is particularly welcome as it is on a subject which is rarely mentioned either in the *ATN* or in works about textiles in general. The site of Mons Claudianus is producing fascinating items, including a man's cap from the Roman period complete with ear pieces, and more unbelievable, an ostracon of the same date with a sketch of a man wearing such a cap. There are then three short papers on various finds from Israel including one on objects from En Rahel, another on

loomweights from the City of David (Jerusalem), and finally, a note on the discovery of loomweights from Tell Qasile which show blue striations. These marks are probably caused by the use of dyed yarns: an intriguing source of information about the early history of dyeing in this region. There are also three articles on current research. M. L. Ryder has sent a summary about his latest thoughts on the early history of fleeces. J. Wouter and A. Verhecken have sent an apt warning to museum curators about the dangers of unprofessional dye analysis. The third paper is by W. Wendrich, who discusses the reasons why baskets and textiles should be treated separately.

Finally, it is with great sadness that we have to inform our readers of the death of two well-known figures within the world of archaeological textiles: H. J. Hundt and J. Allgrove MacDowell. With the deaths of these two mainstays in the field of North European and Near Eastern textiles respectively, the study of archaeological textiles has been greatly impoverished. We have included obituaries for both H. J. Hundt and J. Allgrove MacDowell in this issue.

NOTES TO CONTRIBUTORS

The *Archaeological Textiles Newsletter* aims to provide a source of information for those who are studying textiles primarily as archaeological objects. Contributions to the *Newsletter* are welcome, and should be in accordance with this concept.

1. Contributions can be in English, German or French. If necessary, items in Russian will be accepted, but these will be translated into English.
2. Contributions may include short (!) references to recently published books, journals, articles and to forthcoming exhibitions, seminars, conferences, special courses, lectures, etc., information concerning work in progress (see note 3), and any queries concerning the study of archaeological textiles.
3. Work in Progress: this is a general category which includes, for example, work on archaeological textiles from recent excavations or in museums. Items in this section should contain information (if available) about the following: where the textiles were found; the relevant dates; who excavated the site and when; the range of textiles found; who is responsible for the cataloguing of the textiles and where they are to be published. These notes should not exceed a maximum of 750 words per item. Maps showing the position of the relevant sites would be greatly appreciated.
4. Line drawings will be considered, but photographs cannot be accepted at present.
5. The editors reserve the right to suggest alterations in the wording of items sent for publication.
6. The deadline for contributions is the 1st April and the 1st October, for the May and November editions respectively.

COLOPHON

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Logo: The logo is taken from the famous depiction on a Hallstatt urn, found at Odenburg/Soporn, Hungary. The original illustration shows three women who are spinning and weaving.

SUBSCRIPTIONS

Subscriptions are now due! As readers were warned in the previous issue, we have been forced to increase the cost of the *ATN* to twenty Dutch guilders per year. This is due to recent increases in bank charges.

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- . Eurocheques made out in either Dutch guilders or the equivalent in pounds sterling;
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Cheques made out in American dollars cannot be accepted unless there is an additional Dutch Fl. 12 included for bank charges. Nor can we accept subscriptions paid using credit cards.

CHANGE OF ADDRESS

Please note the following change of address:
 G. M. Vogelsang-Eastwood, Beatrixstraat 17, 2351 GP Leiderdorp, The Netherlands.

OBITUARIES

H.-J. HUNDT 1909-1990

Im November 1990 starb im Alter von 81 Jahren Prof. Dr. Hans-Jürgen Hundt, der langjährige Direktor der vorgeschichtlichen Abteilung und Leiter der Werkstätten des Römisch-Germanischen Zentralmuseums in Mainz (RGZM). Mit H.-J. Hundt haben wir Textilforscher einen unseren profiliertesten Kollegen verloren. Wer ihn gekannt hat, wird sich stets an seine engagierten und lebhaften Vorträge erinnern, in denen er immer wieder versuchte, seinen Zuhörern die Bedeutung alter Textiltechniken und frühgeschichtlicher Trachten deutlich zu machen. H.-J. Hundt kam 1954 an das RGZM, wo er bereits 1939 als Volontär tätig war. Er richtete dort u.a. die Restaurierwerkstätten ein, deren Leiter er bis 1974 war.

In den langen Jahren seiner wissenschaftlichen Tätigkeit hat H.-J. Hundt sich immer wieder intensiv mit frühgeschichtlichen Textilfunden befaßt, was sich auch in der langen Liste seiner Publikationen niederschlägt. Seine Beiträge sind von größter Wichtigkeit, da er einige der bedeutendsten Fundkomplexe ausführlich analysiert und auch vorbildlich veröffentlicht hat. Dazu gehören zum Beispiel die Gewebe aus dem Hallstätter Salzberg, die in 2 Aufsätzen (1967 and 1987) im Jahrbuch des RGZM mit allen textiltechnischen und trachtenkundlichen Daten veröffentlicht worden sind. Ebenso wichtig sind seine Untersuchungen über die Gewebereste von Hohmichele, einem späthallstädtischen Grabhügel in Süddeutschland. In diesem Beitrag befaßte sich H.-J. Hundt mit der Herkunft von vorgeschicht-

lichen Seidengeweben (Jahrbuch des RGZM 1969). Ein Schwergewicht seiner textilkundlichen Untersuchungen lag bei der Bearbeitung von Textilfunden aus alamanischen Gräbern des süddeutschen Raumes. Die Veröffentlichungen über diese Textilien in den 60er und 70er Jahren zählen zu H.-J. Hundt's wichtigsten Arbeiten. Doch hat H. J. Hundt auch Textilfunde aus anderen Ländern und Regionen bearbeitet u.a. frühmittelalterliche Grabfunde aus Norddeutschland, unter denen er seine bisher nur aus Süddeutschland bekannten Gewebebindungen "Wabengewebe" und "Rippenkörper" wiederfand.

Der größte von ihm bearbeitete Fundkomplex stammt jedoch aus der Wurt Elisenhof bei Eiderstedt in Schleswig-Holstein. Die Ergebnisse seiner umfassenden Untersuchungen legte H.-J. Hundt 1981 in dem Buch, *Die Textil- und Schnurreste aus der frühgeschichtlichen Wurt Elisenhof*, vor. Hans-Jürgen Hundt hat in Deutschland unter den Textilforschern eine Lücke hinterlassen, die nur sehr schwer geschlossen werden kann.

K. Tidow



JOAN ALLGROVE MCDOWELL 1928-1991

The untimely death of Joan Allgrove McDowell has come as a shock to all of us who know and admired her. Her kindness and helpfulness, especially to students, has been greatly appreciated by many people now scattered throughout the world.

Joan Allgrove McDowell (née Trott) was born in Bristol in 1928 and educated in Carlisle and at Reading University. She became Assistant Lecturer in Art History at Manchester University in 1962, and later the same year, was promoted to the Keepership of Textiles at the University's Whitworth Art Gallery.

In the nineteen years she spent at the Gallery, she ensured that the Textile Department gained an international reputation of excellence, extending its scope to cover the textiles of the Middle East and enhancing the Coptic holdings. Her breadth of interest and depth of knowledge can be seen in her choice of objects to be displayed: Coptic and Peruvian textiles; Islamic collections from Turkey, Central Asia, Iran and the Balkans; Oriental embroideries; Indian printed cottons; English embroidery, vestments and ecclesiastical embroideries, as well as items from the impressive collection of Islamic carpets.

Ill-health forced Joan Allgrove McDowell to take early retirement in 1981, but she continued to contribute through research, publications and lecturing, often showing great determination and personal courage in meeting these commitments.

TEXTILES WITH BRONZE ORNAMENTS OF THE EASTERN BALTIC REGION

At the end of the first, beginning of the second millennium A.D. the population of the eastern part of the Baltic region had a tradition of decorating their textiles with small bronze and copper elements: ringlets, spirals, tubes, plates, etc. Textiles decorated in this manner were typical for the Baltic peoples (Lettish, Semigallians, Selians, Lithuanians) within the territory of modern Latvia and Lithuania, and for the Finnish tribes (Livs, Estonians, Finns, Karelians) in the territory of modern Latvia, Estonia and Finland, and other Finns in the territory of Novgorod Land.

The earliest traces of this tradition, according to the archaeological material, go back to the 4th-5th centuries A.D. for the Lithuanians; to the 6th-7th centuries A.D. for the Lettish, Selians and Semigallians; to the 9th century A.D. for the population of Finland, and finally, to the 10th-11th centuries for the Livs, Estonians and Finns from Novgorod Land.

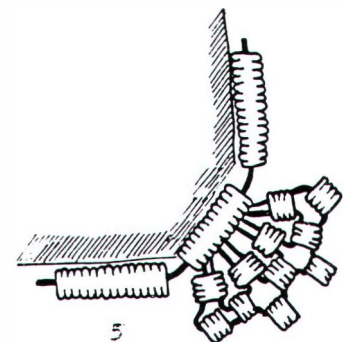
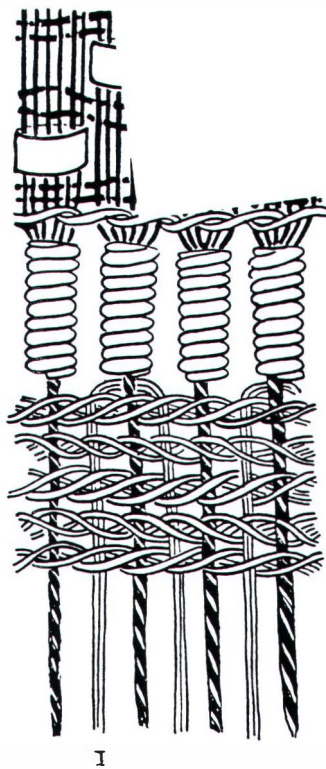
Every tribe had its own, typical technique of making such bronze ornaments, as well as in the forms used and the type of decoration. In the following account I wish to distinguish the main differences between the bronze ornaments of the Baltic and Finnish people. These differences we can see, first of all, in the manner of attaching the bronze elements to the textiles.

It was typical for the Balts to have separate bronze elements to be inserted into the fabric in a decorative manner. Finnish people used threaded ornaments which were sewn onto the clothes. The difference in the application of the ornaments had an influence on the type of the bronze elements

used by Finns and Balts, and on the general appearance of the ornaments themselves. The Balts, for example, used wide rings made of pieces of metal bands, spiral tubes and plates. Pieces of metal band were inserted into the fabric, and then bent into rings. Each ring enclosed 6-10 threads of the warp. The rings were arranged in staggered rows. They often formed triangular patterns. Long spiral tubes were used at the end of the patterns. Usually the warp threads were divided into groups of six. These groups ran through the long spiral tubes. The ends of the threads were then incorporated into the tablet woven braid (fig. 1)[1].

The Lithuanians used diamond-shaped plates for the decoration, which were attached to the textile with the help of wire rings. Other forms of plates were inserted into the fabric (fig. 2)[2].

The main decorative elements used by the Finns were variously shaped spirals and small rings made from wire. The spirals were strung in a certain order on string usually made from wool (occasionally horsehair or vegetable threads were used). The string itself formed a complex of twisted geometric ornaments [3]. Small loops were left at the end of the ornamental band. The loops were used to attach the ornamental band to the textile. Sometimes, for example, as with puttees (garters), the bands were attached with the help of rings to the hem of the fabric (figs. 4, 6). Very often a spiral necklet was sewn to the edges of a garment, while the corners of mantles and aprons were decorated with fan-like ornaments (fig. 5). In Finland both the ornamented bronze bands and the compositions were considered to be separate figures (fig. 3).



In general I want to stress that the origins of these differences in ornamentation go back to the ethnographical differences of the tribes. Each group had their own ornaments, which was something like "the mark" of the group.

N. Khvochtchinskaya
 Institute of Archaeology,
 Leningrad,
 USSR

[1] A. Zarubam, "Seno latgalu apgerbs 7.13.gs", *Riga* (1970), 62-98, 153, 156, 162-166.

[2] R. Volkaite-Kulikauskiene, *Lietuviai IX-XII amziai*, Vilnius (1979), 130.

[3] R.-L. Lehtosalo-Hilander, *Ancient Finnish Costumes*, Helsinki (1984), 22-25, 49, 60-63; N. Khvoschtchinskaya, "Dress of the Finnish population of the early second millennium A.D. in the western areas of the Novgorod Land", *Fenno-ugri et Slavi* (1983), ISKOS, 4; Helsinki (1984), 174-178; A. Zarina, "Libeesu apgerbs 10-13gs", *Riga* (1988), 31-37; S. Laul, "Viron muinaistekstiilit", *Kotiscutu 2*, Helsinki (1990), 66-72.

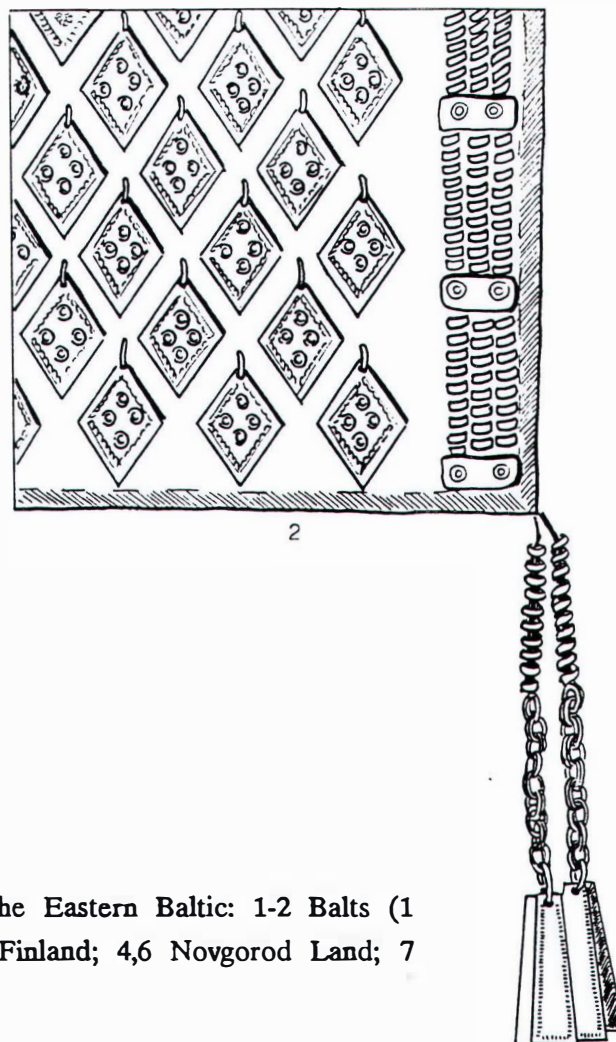
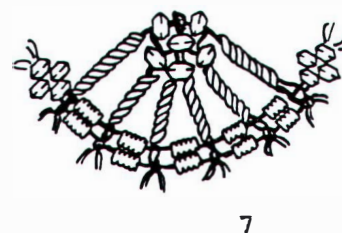
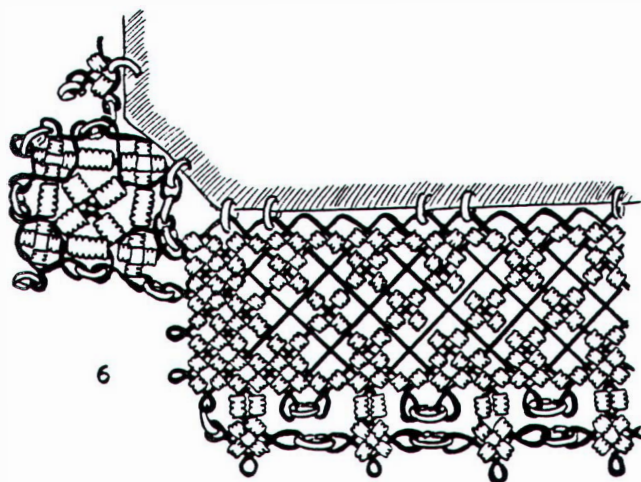


Fig. 1 Bronze ornaments on textiles from the Eastern Baltic: 1-2 Balts (1 Latvia/Lettish; 2 Lithuania), 3-7 Finns (3,5 Finland; 4,6 Novgorod Land; 7 Latvia/Livs).



**THE TEXTILES FROM MONS CLAUDIANUS,
RECORDED IN 1991**

A total of 971 textiles were recorded during the 1991 campaign. About 650 items derive from the 1987-89 excavations of the South Sebakh, while the remainder were found during the 1991 excavations.

The following recording method was used: First, ca. 450 pieces from the 1987-89 material were recorded in detail as a sample collection, to be compared with a similar amount of textiles from the 1990 campaign. The material from the South Sebakh is of Trajanic date (A.D. 87-117), while that from the 1990-91 campaigns are mainly from Antonine deposits (A.D. 138-161). A comparison between the two samples will make it possible to detect any changes in the textile technology.

The majority of the textiles consisted, as in 1990, of wool tabby cloth in a range of different qualities. The pieces are often decorated with *clavi*, purple, red, blue or green tapestry bands, and sometimes with gamma signs.

Wool twills are rare, but occur nonetheless in a number of varieties. A small, but noteworthy group is the "tight twills", always in the plain diagonal variety. The textiles from nearby Abu Sha'r, which are of a slightly later 3rd-4th century date, contain many tight twills" but these are mostly diamond or herringbone twill forms. The difference between the two sites is thus noteworthy and doubtless reflects a technological development.

Vegetable fibres are very rare in the 1987-89 material; only a few, rather coarse pieces in a bad state of preservation were recorded, suggesting that the conditions for the preservation of textiles in the South Sebakh were bad. The Antonine deposits contain a much larger quantity of vegetable fibres.

After the recording of the sample, the remaining textiles from the 1987-89 campaign, and those of the 1991 campaign, were sorted, and all unusual and/or decorated textiles were investigated. This method made it possible to obtain a complete overview of the range of textile techniques, weaves and patterns used at Mons Claudianus.

The most important find were 6 pieces of west-faced compound tabby. This weave, still used in Egypt today and known as "The Akhmim weave" makes it possible to make elaborate geometric designs. Hitherto the earliest example of this weave was from 3rd century Antinoë. The Trajanic samples from Mons Claudianus are thus an important addition to our knowledge of the history of this weave.

Another interesting group of fabrics are damask twills. One such piece was found in the Antonine deposits of 1990, and could be established as the earliest sample of this weave. The Trajanic deposits contained many 3/1 and 2/1 damasks, emphasising that this type was commonly used in Early Roman Egypt. 2/1 ribbed twills occur regularly in the Trajanic deposits. This type is well known from Migration Period Europe: the Mons Claudianus finds throw new light on the history of this weave, and show that its origin must be sought in the Near East.

A small group of resist dyed fabrics can be added to the samples found in 1990. Some are polychrome and have quite elaborate designs.

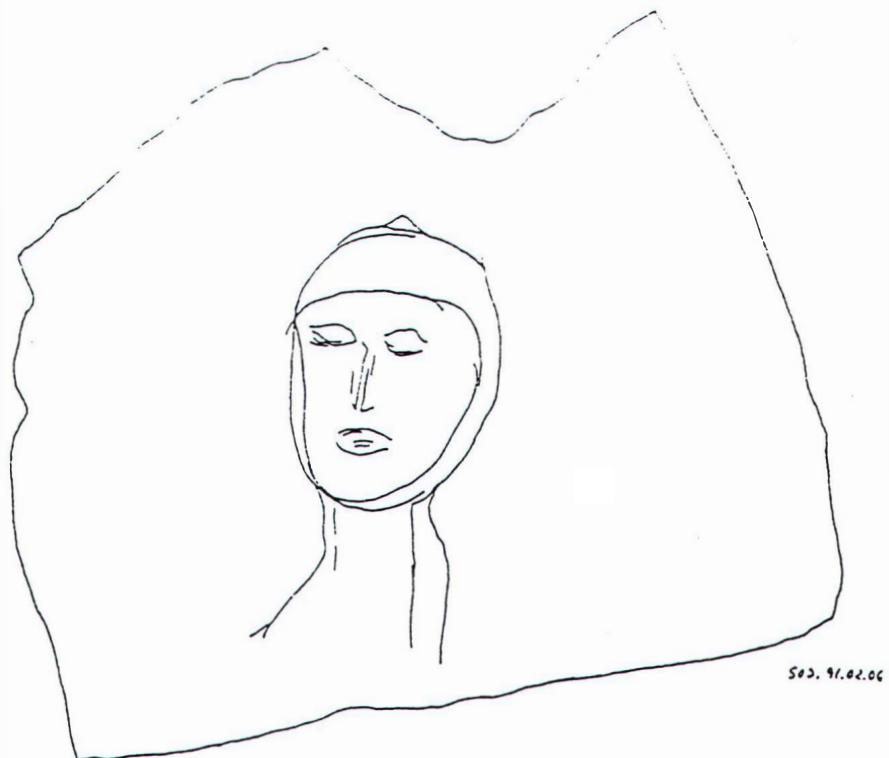
Three samples of "Coptic knitting" can be added to the almost complete sock found in 1990.

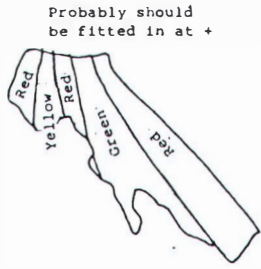
Most of the textiles are undyed, i.e. the natural colours of wool (white to brown). However, purple, red, blue, green and orange have been found too. Several pieces must be interpreted as "shaded bands", which are mentioned in the *Periplus of the Erythraean Sea* and found at other

Red Sea sites such as Quseir al-Qadim and Abu Sha'r.

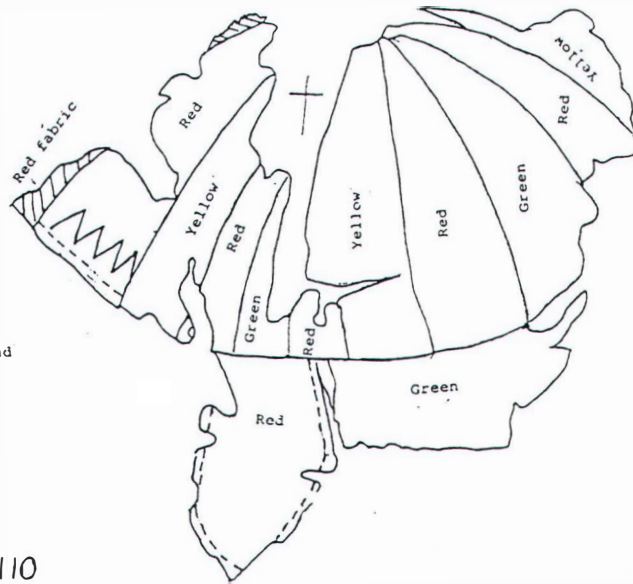
Finally, a small group of almost complete garments deserve special mention. One tunic with *clavi* on both shoulders; about a third of another tunic, with gamma decoration on shoulder and knee; a baby tunic; a cloth shoe; and two hats. One hat is a broad brimmed form in green felt, the other is made of yellow, red and green triangles with red earpieces and a green neckpiece. It would have been useful in the cold mornings at Mons Claudianus! The unique nature of the find was emphasised by a drawing found on a potsherd in the 1991 campaign, showing a man wearing a similar cap.

L. Bender Jorgensen.



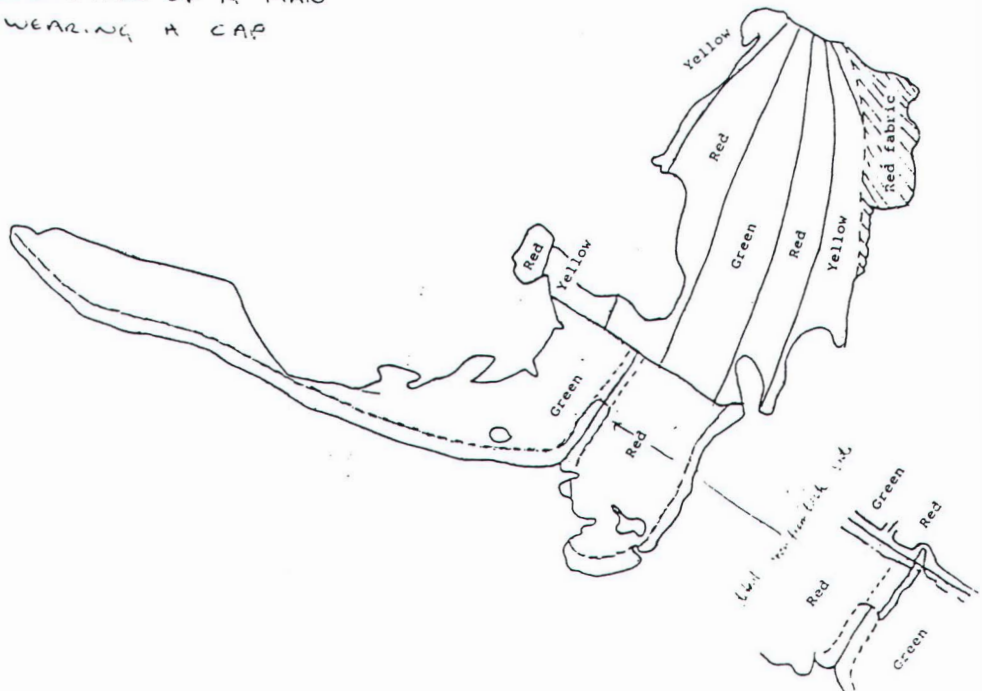


Embroidery with blue thread



M.C. NR. 1110

THE MONS CLAUDIUS CAP
AND PUTSHERD WITH A
DEPICTION OF A MAN
WEARING A CAP



**WEFT-FACED COMPOUND TABBIES: A
RECANTATION**

L. Bender Jorgensen has announced the finding at Mons Claudianus of fragments of weft-faced compound tabby in wool in an unimpeachably Trajanic context (see above). They are almost 200 years earlier than the date for the emergence of that weave which I have proposed in recent articles (e.g. in *American Journal of Archaeology*, 91, 1987, 466-471) and I hasten to recant! An early Roman dating has been propounded before by scholars relying on rather dubious art-historical criteria and even more dubious linguistic mas-saging; but the archaeological evidence is now unequivocal.

It is no longer valid to link the development of weft-faced compound tabby with that of damask; the dating of the later Roman silk damasks stands, but they can now be seen to have a prehistory in the early wool 3/1 diamond twills from Mons Claudianus and Quseir al-Qadim.

The reconstruction of the complex method of weaving weft-faced compound tabbies is not directly affected by their re-dating, but the loom responsible (horizontal, I have argued) can now be seen to have emerged by early Roman times in the eastern provinces, and the development of advanced weaves can no longer be regarded as a special feature of Late Antiquity. The Editor of *ATN's* view that the wool weft-faced compound tabbies preceeded those in silk now has strong support. The changes in clothing fashion in the later Roman world are less the product of new technology than of a vogue for more expensive raw materials and labour-intensive decorative techniques.

J. P. Wild

TEXTILES FROM EN RAHEL, ISRAEL

In 1981 a salvage excavation was carried out at En Rahel in the 'Araba (south-east of Israel, see *ATN* 2) on behalf of the Department of Antiquities and Museums of Israel. It was directed by D. Nahlieli and Y. Israeli.

The fortress of En Rahel is a square structure, about 16 x 16 metres, comprising 8 rooms around a central courtyard, belonging to the Nabataen period. Two layers were distinguished: one from the first century B.C. and the second from the first century A.D. The excavations yielded plentiful organic material because of the dry climate: wooden objects, worked skin, mats, baskets and textiles.

About 115 pieces of cloth were found: 20 fragments are made of goat hair; 8 fragments are mixed goat and camel hair; 83 fragments are made of wool, among them 22 are dyed or with dyed bands. The colour used for these textiles are red, purple, blue, green, brown and orange. No linen has been found. All of the textiles are in plain or tabby weave. Some of the fragments also retain their selvages.

Most of the pieces are torn and only two are insect damaged. The largest measures 45 x 15 cm (made from goat hair). Only one textile shows evidence of stitching (two pieces of wool stitched together).

Work on these textiles has only just begun, but they are already yielding valuable information about textiles and textile production from the Nabataen period.

O. Shamir.

LOOMWEIGHTS AND WHORLS FROM THE CITY OF DAVID

Eight seasons of excavation between 1978 and 1985 were conducted at the City of David (Jerusalem) on behalf of the Hebrew University of Jerusalem, and directed by the late Prof. Y. Shiloh.

A total of 174 loomweights and 82 whorls were discovered in all 16 strata at the site, ranging from the Early Bronze Age (3000 B.C.; Stratum 20), to the 1st century B.C. (Stratum 5). However, the majority of them belong to the Iron Age, dating from the 8th to 6th centuries B.C. (Strata 12-10).

135 unfired loomweights were found that were attributed to the Iron Age. Most of them are doughnut shaped, while the rest are spherical, biconical or of amorphous shapes. The weight of the latter is the same as that of the other loomweights of this period. One possible explanation for the shape of this type is that their manufacture was never completed.

The weight of the loomweights ranges from 25 to 805 grams, while most of them weight around 400 grams.

The majority of the loomweights were found in Area G in 3 hoards, numbering respectively 6, 24 and 74. The hoard of 6 loomweights was found on the plaster floor, amid the thick ash layer attributed to the destruction dating to 586 B.C., along with spatulas used for weaving [1]. The others were not found *in situ*. This amount is quite low considering the scope of the excavated Iron Age strata at the City of David, and in comparison with contemporary Iron Age sites such as Tel Beit Mirsim [2], Tell Mique (in preparation), and Tell Qasile, where hundreds of loomweights have been discovered.

Fifteen fired pyramid shaped loomweights were

found, of a type well-known during the Hellenistic Period.

Flat ceramic spindle whorls were found in all the strata, but are concentrated mainly in Iron Age contexts. Similar whorls are found in Israel from the Neolithic Period (6000 B.C.) onwards. However, the main distribution of these whorls dates to the Iron Age. The shape of these whorls is a result of re-working pottery sherds to a roughly circular shape. A hole was then drilled through the centre.

The relatively small quantity of loomweights and whorls found in the City of David attests to domestic weaving activity, rather than industrial mass-production. Perhaps the residents bought their textiles from other towns and cities which were known for their production, such as those in the Beth Shean Valley, the Central Jordan Valley, or the Shephelah.

More detailed information about the loomweights and whorls found in the City of David excavations is due to be published in: *Excavations at the City of David 1978-1985: Part IV*, Qedem Monographs series. The report will include data on typology, materials, shapes, sizes, and weights. In addition, there will be information about manufacture, provenances, dating and distribution of loomweights and whorls at the City of David and other sites in Israel.

O. Shamir

[1] D. T. Ariel, *Excavations at the City of David 1978-85, Directed by Y. Shiloh, Part II*. Qedem Monographs 30, (1990) Jerusalem.

D. T. Ariel, *Imported Stamped Amphora Handles, Coins, Worked Bone and Ivory, and Glass*, Jerusalem.

[2] W. F. Albright, *The Excavation of Tell Beit Mirsim; vol. 2: The Bronze Age*, (1938).

SPECIAL LOOMWEIGHTS WITH BLUE DYE FROM TELL QASILE

Fourteen seasons of excavations were conducted at Tell Qasile (see *ATN* 2, 7-8) on the Israel Coastal Plain, directed by Prof. A. Mazar on behalf of the Eretzh-Israel Museum and the Hebrew University of Jerusalem.

The 14th season, in 1989, yielded 64 unfired loomweights (22 doughnut shape and 42 cylindrical), as well as 1 whorl. They were discovered on the stone floor of Room 443, measuring 3 x 8 metres, dated to stratum X (1050-980 B.C.). The weight of the loomweights range from 265 to 405 grams.

On 7 of the cylindrical loomweights there are blue coloured stripes, 2-3 mm wide around the perforation, on the surface and in some cases on both. These stripes are slightly wavy, and are definitely not painted on deliberately, but rather represent the traces of blue threads which passed through the perforation.

As far as I know, this is the first time such stripes have been found. If anyone has any information about the same phenomenon, please contact Orit Shamir at the address given below.

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FLEECE BREAKTHROUGHS IN 1990

I have long used the fibres in textile remains to study the way in which different kinds of fleece developed in sheep during prehistory and history. Notably, large collections of cloth from the Danish Bronze Age; the Roman site of Vindolanda on Hadrian's Wall, England, and from British medieval towns have been investigated. Readers of the *ATN* might be interested to know that more finds described in several papers published during 1990 have filled gaps in the record and thrown new light on the first stage of fleece development in the early Bronze Age.

Neolithic sheep had short hairs obscuring very fine underwool in a coloured coat like that of deer. A sheep surviving from this period is the "wild" (feral) Mouflon of Corsica. Haired skins preserved in the Iron Age salt mines at Hallstatt in Austria have now shown that the Neolithic type of sheep without a fleece persisted alongside fleeced sheep into the Iron Age [1]. Several years ago, P. Walton drew my attention to clothing from the Danish Iron Age made from this same type of skin [2].

During the 1960's I used wool remains from the Danish Bronze Age to show that the first fleece to develop was a primitive hairy type (the hairy medium fleece), from which developed a primitive woolly type (generalised medium fleece). The same fleece types are seen in the hairy and woolly, brown Soay sheep that survive on St. Kilda. What the recent studies have shown is that some of the earliest Bronze Age textiles from Denmark had wool, with no hairs, as fine as that of the underwool of the Neolithic sheep.

It therefore appeared to have been combed

from a hairy coat intermediate between a fleece and a hair coat, if not from the Neolithic hair coat itself [3]. Before the development of shears in the Iron Age primitive sheep (which have a natural spring moult) had their wool removed by plucking or combing.

Iron Age wool had the same two hairy and woolly fleece types as in the Bronze Age, but there was now a greater range of colour: black, white and grey in addition to the brown of wild and Bronze Age sheep. The evidence for this comes from the large collection of the ca. 100 AD textiles from the Roman site of Vindolanda that I measured during the 1970's. Since J. P. Wild thought that the cloth was of local manufacture this indicated that the wools came from local sheep. A surviving sheep with this range of colours and fleece types is the native Orkney breed. The stimulus to breed sheep with white wool was associated with the development of dyes.

The large collection of cloth from Hallstatt dated up to 800 years earlier than the Vindolanda remains has the same range, not only of colours, but of fleece types, so confirming that the Vindolanda wools are typical of the Iron Age [4]. More recently Taylor confirmed from dye analysis that the Vindolanda textiles were made in Britain [5].

All Roman sites including Vindolanda also have a few modern fleece types: semi-fine (shortwool), medium wool (some of which later became longwools) and fine wool, and it was thought that these began to develop in the Roman period. An additional find from Hallstatt was the presence of some semi-fine and medium wool fleeces, which indicates that these types were already emerging in the Iron Age. The fine fleece developed in the Near East and the Mediterranean area during the Roman period and later emerged in Spain as the

modern Merino breed.

Until the Hallstatt material became available for study, very few Iron Age samples of wool had been examined. One I published in 1961 came from the Scythian, frozen burials at Pazyryk in Siberia, dated ca. 400 BC. This was a piece of sheepskin with the wool intact, which therefore indicated the appearance of the fleece. It was a white, primitive hairy type. A larger collection of wools from Pazyryk (kept in the Hermitage Museum Leningrad) has now been measured [6]. As well as the expected primitive hairy and primitive woolly types, there were also semi-fine and medium fleeces, which support the finding from Hallstatt that these modern fleeces were developing in the Iron Age. Of particular interest was one very fine sample apparently combed (like the Danish, Early Bronze samples) from a Neolithic type of coat (seen at Hallstatt only on skins). I have been looking for Neolithic wool for over 30 years and now it seems to be emerging in an unexpected way. More finds are needed to elucidate further the very first stages in fleece development.

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TO CURATORS OF ARCHAEOLOGICAL TEXTILES: A WARNING CONCERNING ANALYSES OF DYES BY HPLC

The technical analysis of old and archaeological textiles is becoming increasingly important. Methods such as the analysis of weaving technique; the radiocarbon dating method; analysis of the fibre constitution (even on partly decomposed fibres) and of the mordant and dyestuffs, may yield precious information. Any curator of archaeological textiles should be aware of the importance of the results obtained by these methods, and even more so when the particular data may be combined in multidisciplinary research.

However, several of these methods are destructive, and although the amount of material necessary for an analysis has greatly decreased over the last years, still some material is consumed. So, it is understandable that curators of archaeological textiles may be somewhat reluctant in giving samples from precious and unique textiles. It is therefore of the utmost importance that the analysis to be applied to a sample will consume minimal material and yield maximum information. The balance "information yield to consumed material" has greatly increased over the last decades. In the field of dyestuff analysis, for example, the pioneering work of Pfister (about

1935 -1955) needed square centimetres of cloth, and yielded only rather vague data. Nowadays, a few millimetres length of one thread can be analysed by High Performance Liquid Chromatography (HPLC): this method allows separation of all constituents of the mixture, their identification and determination of their relative amounts. Therefore, HPLC is one of the best methods for dyestuff analysis - that is, if the "performance" of the technique used copes with the complexity of the samples to be analysed.

HPLC, that is "Highly Performing", and not merely "Highly Priced" should absolutely cover two elemental capabilities. First; all components that may contribute to the formation of colour should be separated from each other and should be spectrally characterised; second: proper quantifications should make it possible to calculate relative ratios of these components.

The greatest contribution to the performing quality of any HPLC equipment is not offered by the pump, the column or the detector, but by the development of an appropriate separation program which must be created by the chromatographer himself. Those who cannot afford the time for creating a suitable method may find useful data in the literature. This means that there is no excuse at all for publishing bad chromatograms.

The purpose of this note is not to point an accusing finger at individual workers, but to warn curators of archaeological textiles against unprofessional HPLC analyses on their material. Requests for samples from precious or unique textiles should be backed up by sufficient proof that the HPLC method to be used yields optimal information. If this is not the case, your sample will simply be lost, and perhaps even worse, only

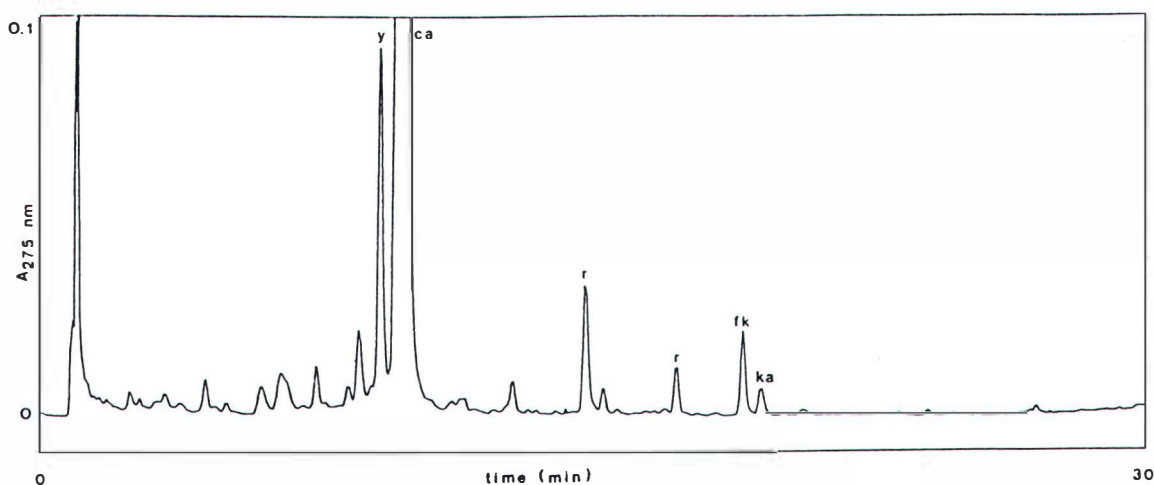


Fig. 1

Figures 1-2

HPLC of aqueous extract of Dactylopius coccus (cochineal).

1 Chromatography program: gradient of methanol in water, from 30 to 80% (v/v), in the presence of 0.5% (w/v) phosphoric acid. Abbreviations: y, yellow component; r, red component; ca, carminic acid; fk, flavokermesic acid; ka, kermesic acid.

2 Chromatography program: methanol in water (70/30; v/v), no gradient. No pure products are obtained, so no peak can be assigned.

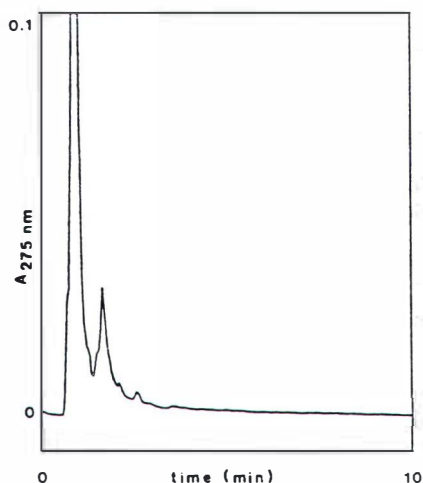


Fig. 2.

incomplete or erroneous results will be obtained. Moreover, curators might be reluctant to give new samples from the same textile (even to experienced chromatographers) since they rightfully consider it their primary task to protect the invaluable historical documents entrusted to their care. As a consequence a new HPLC analysis, intended to verify or correct the bad one, will be difficult to accept.

It is here proposed that curators from whom samples are requested, should claim a proof for the quality of the HPLC method to be used. A good proof would be the analysis of the insect dye cochineal, from the American scale insect *Dactylopius coccus*, samples of which can be obtained without difficulty. The chromatogram of a simple aqueous extract of this scale insect should show at least 6 well-separated and spectrally defined dye components, among which carminic acid (ca), flavokermesic acid (fk) and kermesic acid (ka) should be assigned specifically. Such a chromatogram is depicted in Figure 1. For comparison the same sample was analysed according to a separation program that is also to be found in the literature (see figure 2). Obviously in the latter chromatogram only a few agglomerated peaks are visible. This result cannot even be used to distinguish the dye cochineal from other closely related scale insect dyes.

It is emphasized that the proof of HPLC quality with the aid of cochineal also ensures sufficient performance for the analysis of most mordant dyes (plant reds, flavonoid yellows).

It may be concluded that the use of cochineal, as a standard for verifying the quality of the HPLC method used by the applicant for textile samples, would certainly give the textile curator a valuable criterion for making the decision whether or not to give samples for dye analysis.

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BASKETRY: A TEXTILE TECHNIQUE?

In the past, basketry techniques have been incorporated in classifications of textile techniques. Examples can be found in the work of both Emery (1980) and Seiler-Baldinger (1973). As Emery has pointed out, efforts made in the past to draw a clear line between basketry and textiles have failed [1]. Such efforts are usually illustrated using extreme examples, for example, a hamper and a handkerchief. Nevertheless, there are inevitable groups of objects which cannot be classified so conveniently. Where such a division is made then it is usually carried out according to an inconsistent combination of technical, material and functional criteria.

Emery stated that basketry and textiles should not be regarded as two different specialisms, since this would result in two entirely different terminologies for comparable techniques [2]. I would like to argue, however, that textile and basketry techniques differ fundamentally and should therefore be treated as two distinct subjects. The analysis of basketry using a textile technique and terminology simply results in losing those aspects which primarily determine basketry technique.

The first aspect to be considered is the relation between technique and raw material. Figure 1 represents a textile technique known as *tabby* weave (plain or linen weave). The same structure is visible in both figure 2 and 3: passive vertical elements ("warp/ends") are crossed at right angles by active horizontal elements ("weft/picks") in an *under 1 / over 1 shift 1* pattern. Even though the structures of figure 1-3 are identical when considered purely schematical, the two basketry techniques differ fundamentally. The differences lie in the way in which the raw material is inserted. In Figure 2, for example, five willow

rods have been inserted and are worked up at the same time. In Figure 3 one willow rod is put in and worked up, then the next one is inserted and so on. Both techniques are used by basketmakers working with willow rods. The willow rods have a limited length (about 1.50 m.) and a specific shape (the diameter varies from about 20 mm. at the butt, to 1 mm. at the top). In order to make a basket which has sides of a uniform height, the willow rods cannot be inserted randomly: the thick butts and the thin tops have to be evenly distributed. Two methods to do this are illustrated by Figure 2 and 3. Describing these basketry techniques as a tabby weave would be missing the point entirely.

Thus the properties of the plant parts used to make a basket determine the technique, whereas textiles can be made from more or less uniform materials [3].

The second aspect which requires a different recording approach is the shape of the end product. Just as with some textile techniques (for instance knitting) a basket is shaped simultaneously with the construction of the basketry "fabric". Thus the start of the construction, usually the centre of a basket, involves a number of elements. Away from the centre of the base, the circle expands and there is a need to increase the number of elements. During the entire process new material has to be inserted, since the raw material is of limited length. At certain points the entire construction needs strengthening. The shaping of the object, such as transition from base to side, is an intrinsic part of the technique. Lastly, all elements have to be fastened, usually at the rim. The fastening of elements often has to fulfil other requirements at the same time, such as fixing the shape. These four aspects, start, shaping, finish, and insertion of new material are all part of the technique and

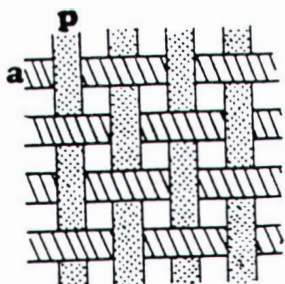


figure 1 tabby weave (plain, linen)

a = active
p = passive

figure 2 French Randing

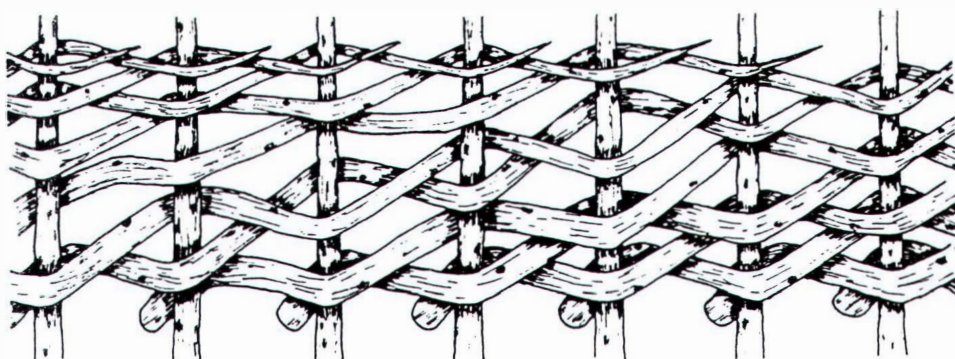
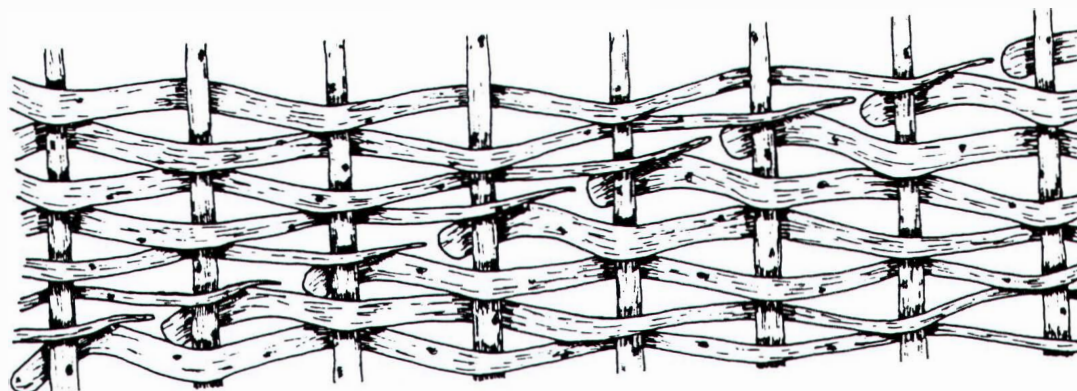


figure 3 English Randing



should be recorded as such.

Basketry and textiles are essentially two different forms and although traditionally they are treated as one, they should be treated as two separate subjects in order to obtain the maximum amount of information from such objects.

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[1] Emery (1980), 208-210.

[2] *ibid.*

[3] Flax, wool, silk, hemp, for example, are all used as long cylindrical "strands" which in theory are of an unlimited length.

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TEXTILE SYMPOSIA

Seminar Approaches to the Study of Textiles

The Centre of Non-Western Studies, Leiden University, The Netherlands, together with the National Museum of Ethnology, Leiden, is organising a two-day seminar on "Approaches to the Study of Textiles". The organising committee includes Dr. R. Bedaux and Dr. G. M. Vogelsang-Eastwood. The seminar will focus on twelve different approaches to the study of textiles. Presentations will be given by pertinent specialists with due consideration to the practical side of their particular approach. Examples will be taken from the Museum's collection, in particular from the forthcoming exhibition of medieval textiles from Tellem, Mali, Africa. Participants will receive a booklet with short introductions to the twelve different approaches about one month in advance. Speakers include R. Bolland (Haarlem); Dr. R. Boser-Sarivaxévanis (Basel); Dr. B. Cooke (Manchester); D. de Jonghe (Gent/Brussels); Dr. B. Menzel (Krefeld); Dr. G. M. Vogelsang-Eastwood (Leiden); J. Wouters (Brussels). The language of communication is English. For further information, please contact Dr. W. J. Vogelsang, Centre of Non-Western Studies, PO Box 9515, 2300 RA Leiden, The Netherlands (tel. 071-272210).

Textiles in Daily Life

Textile Society of America: Third Biennial Symposium: September 24-27th, 1992, *Textiles in Daily Life*. The symposium will focus on the subject: "Textiles in Daily Life" in order to provide an intimate view of textiles and the people who make and use them. It relates to textiles in the daily lives of everyone from slaves to royalty; people living from prehistoric times until the present day and people living in every area of the globe.

The themes include:

Textiles and social relationships; Textiles in the everyday life of artists and artisans; Textiles and gender; Textiles and power; Textiles in the home environment; Textiles and leisure time; Ritual use of textiles; Textiles and the marketplace; Textiles and the Life Cycle.

For more information please contact:

S. Baizerman and B. Gordon,
TSA '92,
2236 Commonwealth Ave.,
St. Paul, MN 55108.

Textiles from Indonesia and Related Areas

Symposium on *Textiles from Indonesia and Related Areas*, Basel, Switzerland, 26th-30th August 1991.

The subject areas to be discussed are: Textiles in archaeology and history; Iconography: Function

and meaning; Techniques and their interpretation: social and/or historical implications: Workshops: regional studies, methodology.

For more information, please contact:

Dr. Brigitta Hauser-Schäublin,
Institute of Ethnology,
Münsterplatz 19,
4051 Basel,
Switzerland.

EXHIBITIONS

BEYOND THE PYRAMIDS

Geometry and design in the carpets of Egypt, 1450-1750.

The Textile Museum, Washington, D.C., June 1st, 1991 - February 16th, 1992.

The Textile Museum's unparalleled collection of Classical Egyptian carpets is the basis of an exhibition exploring aspects of geometry and design in the carpets of Mamluk Egypt (1250-1517) and in the 16th and 17th century carpets of the Ottomans who conquered Egypt in 1517. In addition, there will be carpets on loan from The Metropolitan Museum of Art, The Walters Art Gallery and various private collections.

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A.E.D.T.A. series

The *Association pour l' Étude et la Documentation des Textiles d'Asie* (A.E.D.T.A.) wish to remind subscribers to the *ATN* of the publication of G. M. Vogelsang-Eastwood's work: *Resist Dyed Textiles from Quseir al-Qadim* (Paris, 1990). Copies of the book are available from A.E.D.T.A., 60 bis, Avenue de Breteuil, 75007, Paris, France, price 450 FF, or US \$ 70.00.

Textiles in Northern Archaeology: NESAT III Textile Symposium in York.

Published by NESAT and produced by Archetype Publications, London 1990.

244 x 184 mm, 231 pages, 234 figures.

Price: £16.50, plus £1.90 for postage and packing.

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