

ARCHAEOLOGICAL TEXTILES NEWSLETTER

No. 13, November 1991

EDITORIAL

The editors of the *ATN* spoke too quickly in the last issue about not having to force people to write for us! There has been an obvious drop in the number of items sent for inclusion in this issue. This mistake will not be made again! The blackmail, bribery and cajoling will soon have to start again, so beware.

The present issue of the Newsletter contains various items about textiles from the Near East, notably, the continuing story of the material from the current excavations at Abu Sha'ar, Egypt; loomweights and textile production at Tel Migne-Ekron; the textiles from Kefar Shahak, and finally, the textiles and basketry from Kuntillat 'Ajrud. All three sites lie in Israel. An unusual source of information about ancient Egyptian clothing is described in a note on pictorial "clothing lists" found on ostraca from the Egyptian site of Deir el-Medineh.

The strong bias in this issue towards the Near East reflects the notes sent in by readers of the *ATN*. It is time, therefore, for those interested in the textiles and clothing from other regions to take up their pens and start writing!

In addition to the above items there are two short notes by M. L. Ryder and G. Taylor about items which were discussed in previous issues of the *ATN*. In general we do not take reviews of books or articles. However, because the items in question actually featured in the *ATN* the editors feel it was acceptable to include short comments about them. But it should be stressed that the *ATN* cannot take reviews of works published elsewhere. Finally, there is a continuation of a discussion about the differences between textiles and basketry.

Prior to the Newsletter going to press, information was received about the Joan Allgrove McDowell Memorial Appeal. As noted in the previous issue of the *ATN* Joan Allgrove McDowell died suddenly at the beginning of this year. Friends and colleagues have come together to set up a memorial fund in her name to continue her work on carpets and textiles. Further information about this fund can be found 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.

The views expressed by the various authors are not necessarily those held by the editors.

COLOPHON

The *Archaeological Textiles Newsletter*, No. 13, 1991. Published in Leiden, The Netherlands. ISSN: 0169-7331.

Editorial board: L. Bender-Jørgensen, G.M. Vogelsang-Eastwood, P. Walton and J. P. Wild.

Publication dates: Twice-yearly: May and November. Deadlines for contributions: April 1st and October 1st for the May and November issues respectively

Contact address: G. M. Vogelsang-Eastwood, Beatrixstraat 17, 2351 GP Leiderdorp, The Netherlands.

Subscription charges: Dfl. 20.00 (or equivalent in pounds sterling) per annum (two issues). Please note that payments are only accepted in pounds sterling or Dutch guilders, and that money should be transferred as indicated below! If all else fails, and it is necessary to use another currency, please add the equivalent of Dfl. 12 to the subscription to cover the bank charges.

Subscription payments can be sent to G. M. Vogelsang-Eastwood at the above address in the form of bank cheques (for payments in pound sterling only) or international postal orders, or the money may be transferred to the following Dutch Giro Account: G. M. Vogelsang-Eastwood, 2567328, again using the contact address given above; please indicate with which issue your subscription should start.

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.

PLEASE NOTE CHANGE OF ADDRESS

G. M. Vogelsang-Eastwood has moved. Her new address is: Beatrixstraat 17, 2351 GP Leiderdorp, The Netherlands.

JOAN ALLGROVE MCDOWELL MEMORIAL APPEAL

At the beginning of this year the sudden death of Joan Allgrove McDowell was announced. Because her work was such a source of inspiration to many, it was decided by friends and colleagues that her work should be continued in the form of a Memorial Appeal. The funds from the Appeal will be used, amongst others, for the following:

- a series of periodic lectures on her specialist field
- the purchase of a work of art - carpet, fabric or embroidery - to serve as the centre-piece of a Whitworth Gallery exhibition
- travelling scholarships to assist young textile or archaeological scholars in doing fieldwork

How much of this can be achieved must depend on the generosity of Joan's friends. If you wish to help please send contributions to Alistair Smith, The Whitworth Art Gallery, University of Manchester, Oxford Road, Manchester, M15 6ER, England. Cheques should be made payable to the Joan Allgrove McDowell Memorial Fund.

THE ABU SHA'AR TEXTILES 1991

A total of 317 textile fragments was recorded by Lise Bender Jørgensen during the 1991 season at Abu Sha'ar, on the Red Sea coast of Egypt [1]. Of these, 113 came from the 1990 excavations, the remaining 204 from the 1991 season. When the textiles recorded in 1990 are added, the total of

textiles from Abu Sha'ar comes to 759.

Compared with the 1990 finds, the textiles of the 1991 excavations are generally simpler. Almost all of the textiles are woven in a plain tabby weave, with a few variations, such as half-basket and basket weave. Only a few twills were recorded, mostly diamond twills with paired wefts.

Hems are few, and with one exception always the most simple type. Selvedges are mostly simple, only one or two reinforced selvedges have been recorded, belonging to the 1990 finds. Fibres are wool and flax, and possibly other kinds of vegetable fibres. A few goat hair fabrics were found too. The majority of the textiles seems to be of vegetable fibre. Coloured fabrics are rare: the textiles recorded in 1990 had a number of coloured tapestry bands, but there are very few among the 1991 finds.

"Tight" diamond twills were a characteristic feature of the 1990 finds, but none of these has been found among the textiles from the 1991 excavation.

Especially interesting fabrics are two, or perhaps three, tapestry weaves which can be added to one found in the Church trench of 1990. One of the 1991 examples has an almost complete cross in black wool on a flax ground. It is ornamented with roundels in green, red and white, probably imitating precious stones. The cross derives from Trench O in the Church area, and this suggests an interpretation as a liturgical textile, e.g. an antependium or perhaps a priestly garment.

Another interesting find from Trench O is several fragments of a textile with block print. Block printed textiles are known from Mons Claudianus (Trajanic deposits) and from Fustat. The Mons Claudianus examples are of wool and supposedly of local (Egyptian or Near Eastern) origin. The Abu Sha'ar block prints seem to be on a fabric in vegetable fibre, z-spun, this suggests that it could be cotton which makes it likely that it could have come from India. This has to be confirmed by further analysis.

A third piece of special interest is a weft-faced

compound tabby in red, blue and naturally coloured wool. This weave, which must have been woven on a loom with multiple sheds, is known from several sites in Egypt. Until recently the earliest find came from a third century context in Antinoë, but in 1991 a number of these types were found in Trajanic deposits at Mons Claudianus. The Abu Sha'ar find is a valuable addition to the corpus of this type.

The difference between the textiles from the 1990 and 1991 excavations at Abu Sha'ar is probably best explained as chronological. The 1990 samples mostly came from late 3rd and early 4th century deposits. The 1991 trenches are supposed to date to the 5th-7th centuries A.D. The point, however, awaits confirmation.

Together with the Mons Claudianus textiles (1st-2nd centuries A.D.) and those from contemporary Quseir al-Qadim, the textile material from Abu Sha'ar is going to make it possible to set up a well documented and chronologically secure sequence of textiles from Roman and Byzantine Egypt spanning the 1st-7th centuries A.D. This is much needed, and makes the Abu Sha'ar textiles an important contribution to the textile history of the Old World.

L. Bender Jørgensen and
G. M. Vogelsang-Eastwood

[1] For an earlier report on these textiles see *ATN*, 11 (1990), 5.

LOOMWEIGHTS AND TEXTILE PRODUCTION AT TEL MIGNE-EKRON, ISRAEL

The Tel Migne-Ekron excavations, directed by T. Dothan and S. Gitin [1], are a joint project of the W. F. Albright Institute of Archaeological Research and the Institute of Archaeology of the

Hebrew University. Excavations have been carried out on the Tel between 1981 and 1990 and are still ongoing.

Tel Migne, one of the larger Iron Age sites in Israel, is located 10 miles inland from the Mediterranean seaport of Ashdod and 22 miles southwest of Jerusalem. The city is identified with Biblical Ekron, one of the five capital cities of the Philistines. At the end of the 13th century B.C. (Iron Age 1, 12th-11th B.C.) the 'Sea Peoples', including the Philistines, settled on the southern Coastal Plain of Palestine and built at Tel Migne a fortified city of more than 50 acres.

In the 10th century B.C. (Iron Age II) Ekron came under the kingdom of Judah and by the 7th century B.C. was a vassal city-state of the Neo-Assyrian Empire. In 603 B.C. Nebuchadnezzar, King of Babylon, destroyed the city which never recovered.

The Iron Age I strata at Tel Migne-Ekron yielded unfired cylindrical loomweights with a narrower centre. The loomweights are not perforated. Similar loomweights were discovered at Ashkelon, which was also one of the settlements of the Philistine Pentapolis [2]. A few such loomweights were found as well at Tiryns [3], Mycenae [4] and Troy [5]. Contemporary loomweights at Tel Qasile, also considered a Philistine site, are doughnut or cylindrical shaped [6]. Hundreds of loomweights were found in the Iron Age II strata at Tel Migne-Ekron, a portion of which were fired. Most of the loomweights are doughnut shaped, as are the majority of loomweights found at other Iron Age II sites in Israel: however, spherical, cylindrical and pyramidal and ovoid shaped weights were found as well. The loomweights were found in groups of 15, 17, 22, 41 and 73 (and more). Their weights range between 300 and 500 grams.

Some of the loomweights were found in a context (Area III) (fig. 1). which included several olive oil presses. The oil industry was seasonal,

lasting perhaps two to four months a year. T. Dothan and S. Gitin believe that the industrial facilities and manpower may have been used during the remainder of the year for the production of textiles [7].

The spindle whorls discovered at the site were made of ceramic sherds, as described in *ATN* 12.

A few textile imprints were found on pottery sherds. A few fragments of linen textiles were preserved as a result of their contact with metal.

The corpus of material is still being processed. The relation between the loomweights and the oil presses requires further research.

O. Shamir

[1] T. Dothan and S. Gitin, "Tel Migne-Eqron 1986", *Excavations and Surveys in Israel*, 5 (1987), 74-77. T. Dothan and S. Gitin, "The rise and fall of Ekron of the Philistines", *Biblical Archaeologist*, 50 (1987), 197-199. S. Gitin, "Urban growth and decline of Ekron in the Iron II Period", *Biblical Archaeologist*, 50 (1987), 197-199.

[2] H. E. Egon. Lass - pers. comm. L. E. Stager, 'When Canaanites and Philistines ruled Ashkelon', *BAR* 17/2 (1991), 24-43.

[3] H. Schliemann, *Tiryns: The Prehistoric Palace of the Kings of Tiryns*, London (1886), 146, no. 7.

[4] *Ibid.*

[5] C. W. Blegen, et al, *Troy: Settlements VIIa; VIIb and VIII*, vol. IV, Princeton (1958), 152, fig. 256.

[6] O. Shamir, "Special loomweights with blue dye from Tell Qasile", *ATN* 12 (1991), 13.

[7] D. Eitan, "Tel Migne-Eqron - Survey of oil presses: 1985-1986", *Excavations and Surveys in Israel* 1986, 5 (1986), 72-74. D. Eitan, 'Textile and olive oil production in Ancient Israel during the Iron Age Period', in: *Pigments et colorants de l'Antiquité et du Moyen Age*, Colloque International du CNRS, Paris, (1990), 283-290.

D. C. Browning, *The Textile Industry of Iron Age Timnah and Its Regional and Socioeconomic Contexts. Literary and Artifactual Analysis* (Ph.D. Dissertation South Western Baptist Theological Seminary), 1988.

Fig. 1. Area III, Tel Migne-Ekron



TEXTILES FROM KEFAR SHAHAK, ISRAEL

In 1982, a salvage excavation was conducted at Kefar Shahak, located in the 'Arava (Southeast Israel) on behalf of the Israel Antiquities Authority, directed by D. Nahlieli and Y. Israel.

The site was occupied during the Early Arab period, dating to the seventh and eight centuries A.D. Kefar Shahak represents one of the settlements established in this region during this period. The site covers an area of approximately 6 dunams and contains ten rectangular structures, three of which were excavated, measuring respectively, 5 by 25 metres, 5 by 10 metres and 5 by 5 metres.

On the floors of these buildings, textiles were found. Additional contemporary sites excavated in the 'Arava region have also yielded textiles which are destined for future research.

Very few textiles from Kefar Shahak have been preserved, mostly small fragments in a state of decomposition. They are made of wool, as well as goat and camel hair, using several variations of the tabby technique. One of the woollen textiles is decorated with red on top of purple bands. The spin direction of the warp, weft and the bands is z. One camel hair (?) textile, a corded starting border in the shape of a braid, was preserved [1]. This textile was decorated with brown bands on a cream-light brown coloured background. The spin direction of the warp, weft and the bands is S.

On one of the goat hair textiles a plain selvedge is preserved. The spin direction of the warp, weft and the bands is zzS. The textile finds from Kefar Shahak will be presently published in one of the forthcoming volumes of 'Atiqot.

O. Shamir

[1] See illustrations in: A. Sheffer, and A. Tidhar, "Textiles and basketry at Kuntillat 'Ajrud", *'Atiqot* 20 (1990), 5, fig. 10.

Acknowledgements

Many thanks are due to R. Cohen and Y. Israel for their aid and encouragements, as well as to A. Sheffer and H. Granger-Taylor for their instruction concerning the Masada textiles.

TEXTILES AND BASKETRY AT KUNTILLAT 'AJRUD

The textile finds, briefly reported here, were made during excavations at Kuntillat 'Ajrud (1975-1976), a presumed Israelite cultic site in the Negev desert, located in the border area of the southern Negev and the Sinai, near the junction of ancient roads transversing the Sinai desert. The textiles are mainly notable for their secure dating (Monarchic period, ninth-eighth centuries B.C.) and also for the fact that some of them may have been parts of priestly garments.

The majority of the more than one hundred textile fragments were recovered in two main areas of the 'Ajrud complex: in the southern storeroom, and in the 'kitchen' and its vicinity; in three other locations were found hanks of threads and scraps of cloth. The fragments are generally small: most are less than 5.0 cm long, a few about 20 cm in length and only two about 50 cm long. Most of the textile finds were shown by fibre examination to be flax; only eleven were wool. Of quite exceptional interest are three items woven from mixed linen and wool threads, a type of cloth style in the Bible called *sha'anez*, which ordinary Jews are forbidden to wear.

The textiles are very diverse in quality, ranging from delicate batiste-like fabric, via soft domestic fabrics, to coarse burlap-type material. The linens are undyed, most of them whitish in colour and surprisingly glossy. Selvedges and borders, and also some coloured decoration, are preserved. Vestiges of sewing threads, stitching and patching

were observed on many items; some items have seams and joins, and a few are joined together from two or more pieces.

The linens: All the linen fragments are in plain, tabby weave. The threads are of uniform thickness. The selvages are plain, with the weft turned back across the fabric at each shed; all the warps are single. Wedges, areas of cloth where the weft passes through only part of the web and not across its full width, were found on some of the items. Apparently they were introduced mainly near the selvages in order to straighten the main weft and produce an even weave.

A starting border, a variant of the 'corded starting border', was observed on one item. Another item had a closing border; here the edge of the fabric was folded over and sewn down with overcast stitches, producing a hem. A single detached fringe was found, knotted from the same kind of thread of which only two individual strands are preserved. They may well be remnants of the ritual fringes (*sisiot*) the Israelites were commanded to wear at the hems of their garments (Num 15:38).

Items knotted together from narrow strips of cloth were found in a number of separate bundles. Very possibly these were remnants of garments knotted at the shoulders or at the waist, as one finds depicted in Egyptian art. The two kinds of decoration identified were 'self-bands' and 'blue lines'. Self-bands are produced by introducing several weft threads, in one pick, through the shed. The six examples of 'blue line' decoration divided into two groups: one group where the blue thread is introduced, in the usual way, between the wefts; and the other group where several blue threads were introduced between the undyed warps, indicating a predetermined pattern of decoration.

The sewing threads were of flax fibres, s-spun and Z-plyed. Sewing was used to strengthen raw edges, join on additional pieces to lengthen fabric, and to attach patches. Patches were carefully fitted over worn or damaged areas, their edges folded under and sewn down with basting stitch or hemming. Fabrics and seams were joined together with running or overcast stitches. A seam of exceptional toughness and neatness ("Ajrud"), not previously attested in Israel, was encountered among the fragments.

The woollens: Only eleven wool items were found, all very worn and frayed, and yellowish in colour. Although neither selvages nor borders are preserved, warps and wefts could be identified.

Loom-weights: Two groups of loom-weights were found, one group of ten weights in the entrance to the western storeroom, and the second group in the southern storeroom. The weights, hemispherical in shape and pierced in the centre, are of unbaked clay. Probably there were still more weights, but the friable unbaked clay would have caused the disintegration of some, while visitors to the site may have carried off others. As indicated by one group of weights found near the staircase, weaving may have been carried on at the upper floor or on the roof of the house.

Basketry: Two sieves plaited from unspun fibres of diverse plant origins were found, one of them in the south storeroom. This almost complete sieve has coiled sides and its bottom part consists of interlaced tendons. Three complete coils and part of a fourth coil remain of the sides, which are joined to the bottom with specially thick wrapping. Each coil is fastened to the preceding with a sweeping strip. The base of the sieve is in twined work.

The textiles from Kuntillat 'Ajrud form the largest collection of textiles of the Iron Age so far discovered within Israel.

In conclusion, the great majority of the over one hundred items are of linen, and only a few are of wool. Of special interest are three items of *sha'anez* (diverse kinds), one of them with red wool decoration, a type of fabric which according to the Bible (Deut. 22:11; Lev. 19:19) is forbidden to ordinary people and may only be worn by the High Priest (Ex. 28; 39). A possible explanation for the high percentage of linen finds may be the religious function of the site.

A. Sheffer

A PICTORIAL "CLOTHING LIST"

During the course of recent research into the construction of Pharaonic Egyptian clothing I became intrigued with a number of ostraca from the New Kingdom site of Deir el-Medineh. The ostraca were published by B. Bruyère in his 1937 account of excavated finds from the site (Bruyère 1937, fig. 32). Several of the ostraca also include simple drawings of various garments of which it has been possible to identify three. The first garment is a triangular loincloth depicted on Bruyère's ostraca 1 and 3 (fig. 1). In the case of the example on ostracon 3 there is additional information in the form of a line going vertically

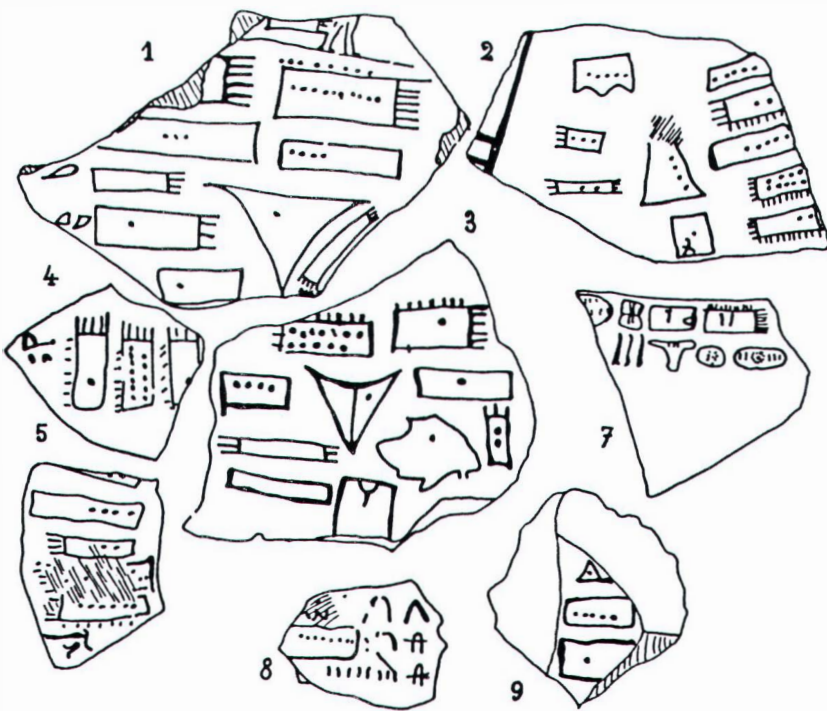


Fig. 1. Ostraca from Deir el-Medineh depicting various types of clothing

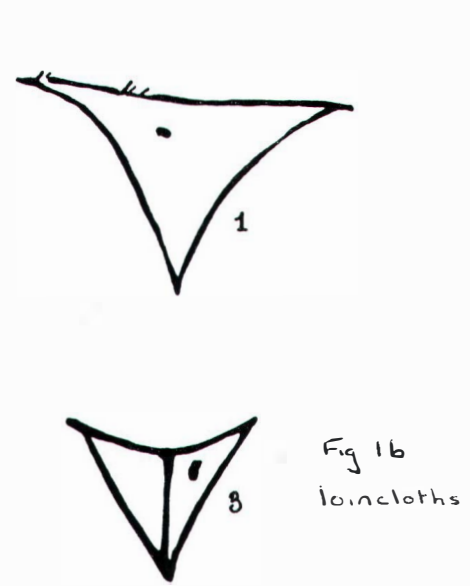


Fig. 2. Depictions of bag-tunics

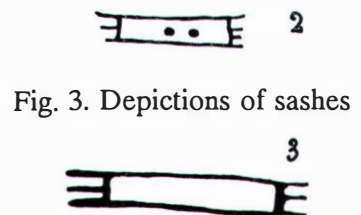


Fig. 3. Depictions of sashes

down the middle. This detail is significant because surviving triangular loincloths in linen are characterized by an overlapping seam down the middle of the garment. Over 100 examples of triangular loincloths were found by Carter in the tomb of Tut'ankhamun, while Schiaparelli recorded numerous examples in the tomb of Kha, some of which were found wrapped around bag-tunics so forming sets of everyday wear (Murray and Nuttall 1963; Schiaparelli 1927, pls. 62, 64). All of the triangular loincloths so far examined have the characteristic seam down the middle of the garment.

The second identifiable garment is the bag tunic depicted on ostraca 3 and 7 (fig. 2). It is shown as a rectangle with a semi-circle in the centre of one transverse edge. In the case of the example on ostraca 3 the semi-circular garment also has a short vertical line descending from its lower edge. All of the extant bag-tunics so far studied are constructed out of a long length of cloth horizontally folded in half and then sewn down the two longitudinal sides, except for approximately 30 cm on either side at the top, which was left as arm holes. Various methods for neatening the neck opening have been recorded, but the most common is where a circle is cut out of the cloth in the centre of the shoulder fold and then a slit of about 15 cm is cut down the front. It is these neck details which are recorded on the tunic depicted on ostraca 3.

The final identifiable garment is the sash, which is depicted on ostraca 2 and 3 as a long narrow strip with fringes at both ends (3). It would appear that fewer examples of sashes have survived than loincloths or bag-tunics. A close parallel, however, is a fringed sash which is at least 4 metres long, now in the Museum of Antiquities, Leiden.

In addition to the named garments listed above, it is also possible to put forward some

tentative identifications for three of the other depicted items, for example, a rectangularly shaped object without fringing may represent a narrow wrap-around skirt of various lengths, worn by either men or women. Similarly, a rectangularly shaped object with fringing along one transverse edge may again represent a narrow wrap-around skirt, worn by either men or women. Finally, the large rectangular garment with fringing along one transverse and one longitudinal edge may either depict the long wrap-around skirt, worn by men or women, or perhaps wrap-around cloaks of some kind, again worn by either sex.

G. M. Vogelsang-Eastwood

B. Bruyère (1937), *Rapport sur les fouilles de Deir el-Medineh, 1934-1935*, pt. II, Cairo.

H. Murray and M. Nuttall (1963), *A Handlist to Howard Carter's Catalogue of Objects in Tut'ankhamun's Tomb*, Oxford.

E. Schiaparelli (1927), *La tomba intatta dell'architetto Cha*, Turin.

BASKETRY VERSUS TEXTILES: ON TERMS

In the last issue of ATN I put forward the suggestion that basketry and textiles should be the subject of two separate specialisms. This is the opposite view to Emery's, who states that basketry and cordage should not be distinguished, since the result will be two entirely different terminologies for comparable techniques (Emery 1980, pp. 208-210). To me, this is not a valid argument, since in my opinion it is fundamentally impossible to have only one terminology for textile techniques.

Popular, i.e. non scientific, terminologies

indicate different textile and basketry types or techniques by the most striking features of the objects. These common terms are often very clear, but the drawback is that they are rarely consistent. Such terminologies stress a wide range of different aspects. Thus either the technological, structural, functional aspects, or a mixture of all of these can be used to name an object or technique. Further drawbacks of the 'common' terminology are that names are often local and that some types are not named at all.

Both Emery (1980) and Seiler-Baldinger (1973) are concerned with bringing uniformity and consistency to textile terminology, which includes basketry techniques. When comparing both textile terminologies, many differences become apparent. These are not so much caused by the use of two languages, but, much more fundamental, by a difference in classification: Emery considers the structure of a textile technique as the basis for classification, while Seiler-Baldinger mainly considers the manufacturing process.

The choice of terminology is thus a selection of a consistent set of aspects, linked to classification. Since classification is dependent on a specific research question, there are as many consistent terminologies as there are research questions. Therefore it is fundamentally impossible to create one consistent terminology which covers the entire discipline.

Common terminologies often involve indications of techniques, while consistent terminologies might overshoot their mark, especially if the complexity of the terms cloud, rather than clarify the type or technique. Still, consistent terminologies are to be preferred over inconsistent ones, as long as the classification and, therefore, the research question which is the basis for the terminology is made explicit.

A basic set of terms is quite useful in communications on textiles and basketry. However, I hope to have indicated that it is not possible to

create one overall terminology. Therefore, drawings are still the best means of communication on textiles and basketry.

W. Z. Wendrich
Admiraal de Ruyterweg 85-I
1056 ET Amsterdam
The Netherlands

References

- I. Emery, *The Primary Structure of Textiles*, Washington D. C. (1980; 2nd ed.)
A. Seiler-Baldinger, *Systematik der Textilten Techniken*, in: *Basler Beiträge zur Ethnologie*, (1973)

SOME COMMENTS ON NOTES IN ATN 12

M. L. Ryder, "Fleece breakthroughs in 1990", quotes me as having confirmed from dye analysis that the Vindolanda textiles were made in Britain. In fact, the evidence that the textiles were made in Britain came from a study of the textiles and their wools by J. P. Wild and Michael Ryder himself (*Vindolanda III The Textiles*, The Vindolanda Trust 1977). I quote from page 30 of this report, by Dr. Wild: "These factors appear to me to tip the balance in favour of a North British origin for the Vindolanda textiles".

The finding of madder and a lichen purple, both dyes well known to the Romans, suggested to me that the dyes had been imported (along with the mordant) and used during the textile manufacture at or near Vindolanda. I am sorry if my papers do not make this clear.

J. Wouters and A. Verheken rightly point out that High Performance Liquid Chromatography (HPLC) must be competently applied in dye analysis and this skill requires careful development. The implication appears to be,

however, that dye analysis on small fibre samples can only be carried out using HPLC, though I am sure that the authors do not mean this. In York, we have got along without HPLC for the past ten years. It is true that HPLC (in competent hands) yields information not readily available otherwise; for example differentiation among certain closely related insect red dyes, and some of the yellow mordant dyes; but it remains a fact that the principal natural dyes can be identified on small fibre samples without recourse to HPLC.

G. W. Taylor,
Textile Research Associates,
12 Bootham Terrace,
York YO3 7DH,
England.

WEAVING COMBS

11

The excellent paper by Tuohy (*ATN* 6) with its convincing argument, throws important new light on a controversy that has raged for 75 years (interesting me for a third of that time). Since science progresses by clarifying the questions rather than by finding answers, Tuohy's paper raises new questions. I have always supported the view that the combs were not used in weaving, having corresponded with Adrian Rance when he was writing the thesis quoted by Tuohy and having quoted Roth in my book (Ryder, 1983:750). Hand weavers still tell me that so-called weaving combs could not be used in weaving. My difficulty has been to accept an alternative use since the combs are not entirely suitable for either harvesting wool from a moulting sheep or for combing the fibres parallel for spinning.

One new question raised is what bone of the body was used to make the combs? Tuohy implies that they were all made from relatively small bones (and antler) with internal cancellous bone tissue instead of the cavity in large, long (limb) bones. Owing to the way in which archaeology works, combs being implements have never been sent to me for biological investigation (Ryder, 1969:xxiii; just as the fibre in some textiles is not sent for biological investigation) and any combs I have seen have been lying in glass museum cases. I had therefore always assumed that the curve and concavity derived from the normal circular section of long bones and that in order to obtain the required size a cattle leg bone would have to be used. With such bones there is cancellous tissue only at the ends and so a comb made from a long bone would be concave from the start.

If straightness is so important one wonders why combs were not made from a flat bone such as a scapula, which is renowned archaeologically for use as a shovel with an antler pick. Also, if the cancellous tissue had to be in place to give a straight edge for the comb to be used, would not its roughness "snag" on the fibres in the yarns? Even if one could start with a polished surface, the breakdown of the cancellous tissue during use postulated by Tuohy would create a rough surface later. I am inclined to favour the second of Tuohy's possible explanations for the loss of cancellous tissue - differential decay during burial, but there is no need to postulate shrinkage as the cause of the concavity - most antlers and bones are already circular in section and so this section will remain once the cancellous tissue has gone.

My current interest in these combs is concerned with the evidence that can be gained on wool at the Danebury Iron Age hill fort in Hampshire from such implements and sheep bone remains. In December 1990 I explained to the organizer of an exhibition on kilims in the

Southampton Art Gallery that I was noting details of the traditional Turkish weaving combs on show for comparison with prehistoric examples. I was told that a person with a similar interest had been to the exhibition and in discussion had said that he had written a thesis showing that bone 'weaving combs' could not have been used for that purpose. Interestingly that person was Adrian Rance who is now Director of Southampton Museums and Galleries, and with whom I am still in touch.

The Turkish examples had eight or nine teeth compared with ten in those illustrated by Tuohy and were 8 to 10 cm wide, i.e. up to three times as wide assuming that Tuohy's scale is in centimetres. However, the chief feature of the Turkish weaving combs was their weight. They are carved from heavy wood in such a way that a large block remained between the handle and the teeth to give the comb extra weight in operation. Rugs are woven from the bottom up on vertical looms, so that the weft is beaten-in downwards. This contrasts with the warp-weighted uprightloom on which these prehistoric combs are assumed to have been used. With these, the weaving takes place from the top downwards so that the beating-in must be upwards. We await Tuohy's "separate argument" on the type of loom on which these combs might have been used.

M. L. Ryder,
4, Osprey Close, Lord's Wood,
Southampton, SO1 8EX, UK.

Bibliography

- M. L. Ryder, *Animal Bones in Archaeology* (with an appendix on textiles), Oxford (1969).
M. L. Ryder, *Sheep and Man*, London (1983).

LEATHER GARMENTS FROM THE BRONZE AGE?

At the beginning of September of this year, it was announced by an Austrian team that a 4,000 year old male body had been found in the Oetztal glacier between North and South Tirol. The body was dressed in leather clothing and had shoes filled with heather against the cold. This would appear to be the first time that clothing from this period has been found in the Tirol region. There is some question at the moment as to whether the body lay on Austrian or Italian territory and this will affect further research. We shall keep readers posted should further information about the garments become available.

CIETA IN COPENHAGEN

In September the 14th General Assembly of CIETA was held in Copenhagen at the Kunstinindustrimuseet. The meeting was well attended by 140 members of CIETA, 43 of whom were speakers.

A wide range of subjects, both geographically and chronologically, were on the programme and divided into 10 sessions: 1 Ancient and Medieval textiles; 2 Medieval textiles; 3 Embroidery; 4 Tapestry; 5 Lace; 6 Textiles 18th century; 7 Printed textiles: textile structures and techniques; 8 Regional textiles: archaeology, history, research in the field; 9 Regional textiles: collectors, collections, conservation, and 10 Regional textiles: Research in the field, Fez.

The programme also included a visit to the National Museum in Brede. In the Textile Conservation Department a number of Bronze Age, Coptic, Peruvian and other textiles were exhibited. Danish costumes (1750-1990), not yet on public display, were presented. In addition the

Patrician Residence, Brede, built in 1795, was opened.

The members also had the opportunity to see a lace exhibition in the Kunstindustrimuseet and Royal costumes in the Rosenborg Castle.

On the last day of the meeting an excursion took place to two castles of Frederiksberg and Kronborg.

Summaries of the papers were distributed together with the programme.

E. Ostergaard,
Nationalmuseet,
Postboks 260,
Brede, DK-2800 Lyngby,
Denmark.

**KLEDING VOOR DE DODEN: DE TELLEM-
WEEFSELS UIT MALI, 11e-16e EEUW**

(Clothing for the dead: the Tellem textiles from Mali, 11th-16th century A.D.; 20th September to 26th January 1992, Rijksmuseum voor Volkenkunde, Leiden, The Netherlands).

An exhibition has recently been opened at the Rijksmuseum voor Volkenkunde (National Museum of Ethnology), Leiden, about the textiles found in the burial caves in the Bandiagara cliff, Mali, West Africa. The textiles were excavated in the sixties and seventies by members of the Institute of Human Biology of Utrecht University. They date from the 11th to the 18th century and are thus some of the earliest textiles known from sub-Saharan Africa. The majority of the pieces belong to the Tellem Culture (11th-16th century). In total, about 500 garments or garment fragments were found and their good preservation has meant that a detailed technical and stylistic study could be carried out.

The exhibition emphasises several points: the relationship between the ancient garments and textiles, and modern garments and production techniques in the same region; the role of trade in transporting textiles from one region of the continent to another; the relationship between various aspects of the material culture associated with the burial of the dead at Tellem, and finally, the nature of the textiles themselves.

It is notoriously hard to make archaeological textiles appear interesting to the general public as most are literally old rags. This exhibition, however, has achieved the near impossible and made them into something very special. The importance of these textiles to the study of Medieval African and Near Eastern textiles should never be overlooked.

G. M. Vogelsang-Eastwood

SYMPOSIUM

SAVE THE DATE!

The Asian Art Department of the Brooklyn Museum announces plans for a 1 day symposium entitled *New Approaches to Islamic Textiles*, to be held at the Brooklyn Museum, Sat. April 4th, 1992. Participants will include respected authorities in the field as well as younger scholars research new history. It is hoped that the symposium will provide an important opportunity for scholars and lay people alike to participate in the new discoveries and approaches being developed in the field.

For further information please contact:
L. S. Diba, Asian Art Department,
The Brooklyn Museum, 200 Eastern Parkway,
Brooklyn, New York 11238, USA

RECENT THESIS

D. Cardon, *Technologie de la draperie médiévale d'après la réglementation technique du nord-ouest méditerranéen (Languedoc-Roussillon-Catalogne-Valence-Majorquel), 13è-15è siècles*, Ph. D. thesis, University of Montpellier (1990).

NEW PUBLICATIONS

Dyes in History and Archaeology

The 9th annual meeting of dye researchers was held in York in November 1990. The papers presented at that meeting have now been published, as issue 9 of *Dyes in History and Archaeology*.

The volume consists of seven papers, which cover ethnographic, historical and analytical researches into dyes. The subjects include: the techniques of indigo-dyeing in the Arab world; the production of black in Mediterranean textile centres of the medieval period; the analysis of mordants; conservation problems connected with a yellow dyed document, the Buddhist *Diamond Sutra* from Dunhuang; a study of the main colorants in madder and bedstraw dyeings; a report on the analysis of dyes in 17th- and 18th- century garments at the National Museums of Scotland; and a note on the significance of Indian chay root in an 18th-century French calico print.

Also included is a four-page bibliography covering the techniques of dyeing, ancient and modern; the chemistry and analysis of dyes and mordants; and studies of individual dyestuffs. This has been compiled by members of the dye-research group and is intended as a source for students and textile researchers.

ISSN: 0959-0641

A4 36pp, colour cover, 8 black and white illustrations. Available from *Textile Research Associates*, 12 Bootham Terrace, York, YO3 7DH,

England. Price £3.50 in U.K., £4.00 Europe, £4.40 outside Europe (postage free).

Cheques payable to *Dyes in History and Archaeology*. English currency only, but Girobank (Postgiro) transfers may be made to the *D.H.A.* Giro account, number: 65-935-5906 (Leeds, UK).

BIBLIOGRAPHY

J. Balfour-Paul, "Indigo - an Arab curiosity and its Omani variations", in B. Pridham (ed.), *Oman: Economic, Social and Strategic Developments*, London (1987).

J. Balfour-Paul, "The indigo industry of the Yemen", in R. B. Serjeant and R. Bidwell (eds.), *Arabian Studies*, Cambridge (1990), 39-62.

L. Bender Jørgensen, "European textiles in later Prehistory and early history: a research project", *Journal of Danish Archaeology*, 8 (1989), 144-158.

L. Bender Jørgensen, "Textiles and textile implements", *Ribe Excavations 1970-76*, vol. 3. Sydjysk Universitetsforlag, Esbjerg (1991), 59-78.

L. Bender Jørgensen, "The textiles of the Saxons, Anglo-Saxons and Franks", *Studien zur Sachsenforschung*, 7 (1991), 11-24.

E. Cameron, "Identification of skin and leather preserved by iron corrosion products", *Journal of Archaeological Science*, 18 (1991), 25-34.

D. Cardon, *Gudie des teintures naturelles; couleurs de la nature, nature des couleurs*, Paris-Lausanne (1990).

D. Cardon, *Les vers du rouge; insectes tinctoriaux (Homoptera, Coccoidea) utilisées dans l'ancien Monde du Moyen Age* (Cahiers d'Histoire et de Philosophie des Sciences et des Techniques), Paris (1990).

S. Dalley, "Ancient Assyrian textiles and the origins of carpet design", *Iran XXIX* (1991), 117-135.

eds. E. Deconinck, L. de Ren and L. Smets, *Stof uit de kist. De middeleeuwse textielschat uit de abdij van Sint-Truiden*, Leuven, ISBN 90-6831-338-X. Price: 1280 BEF

D. S. Geddes, "Mesolithic domestic sheep in West Mediterranean Europe", *Journal of Archaeological Science*, 12 (1985), 25-48.

B. Guineau, "Non-destructive analysis of organic pigments and dyes using Raman microprobe, microfluorometer or absorption microspectrophotometer", *Studies in Conservation*, 34 (1989), 38-44.

N. Indictor and R. J. Koestler, "The identification and characterisation of metal wrapping in historic textiles using microscopy and energy dispersive X-ray spectrometry - problems associated with identification and characterization", *S. E. Microscopy*, (1986), 491-497.

N. Indictor, R. J. Koestler, M. Wypyski and A. E. Wardwell, "Metal threads made of proteinaceous substrates examined by SEM--Energy dispersive X-ray spectrometry", *Studies in Conservation*, 34 (1989), 171-182.

B. V. Kharbade and O. P. Agrawal, "Analysis of natural dyes in Indian historic textiles", *Studies in Conservation*, 33 (1988), 1-8.

U. Körber-Grohne, "Microscopic methods for the identification of plant fibres and animal hairs from the prince's tomb of Hochdorf, South-west Germany", *Journal of Archaeological Science*, 15 (1988), 73-82.

S. Lackenbacher, "Un texte vieux-babylonien sur la finition des textiles", *Syria*, LIX (1982), 129-149.

K. Marko and M. Dobbie, "The conservation of an 8th century AD sleeveless Coptic tunic", *Studies in Conservation*, 27 (1982), 154-160.

J. P. Pals and M. C. van Dierendanch, "Between flax and fabric; cultivation and processing of flax in a medieval peat reclamation settlement near Midwoud (Prov. Noord-Holland)", *Journal of Archaeological Science*, 15 (1988), 237-251.

W. Prummel and H-J. Frisch, "A guide for the distinction of species, sex, and body size in bones of sheep and goat", *Journal of Archaeological Science*, 13 (1986), 567-577.

E. Schaffer, "Fiber identification in ethnological textiles artifacts", *Studies in Conservation*, 26 (1981), 119-129.

A. Sheffer and A. Tidhar, "Textiles and basketry at Kuntillat 'Ajrud", *'Atiqot*, XX (1991), 1-26.

W. H. van Soldt, "Fabrics and dyes at Ugarit", *Ugarit-Forschungen*, 22 (1990), 321-357.

E. Spanier, "Aspects of the biology and behaviour of the purple snail *Murex trunculus*", *Israel Journal of Zoology*, 30 (1981), 106-107.

E. Spanier, "Cannibalism in muricid snails as a possible explanation for archaeological findings", *Journal of Archaeological Science*, 13 (1986), 463-468.

G. W. Taylor, "Natural dyes in textile applications", *Review of Progress in Colouration and Related Topics*, 16 (1986), 53-61.

P. Tomkinson, "Use of vegetative remains in the identification of dyeplants from waterlogged 9th-10th century AD deposits at York", *Journal of Archaeological Science*, 12 (1985), 269-284.

A. Wallert, "Fluorescent assay of quinone, lichen and rewood dyestuff", *Studies in Conservation*, 31 (1986), 145-155.

P. Walton, 'The Textile industry', in: J. Blair and N. Ramsay, *English Medieval Industries*, London (1991), 319-354.

P. Walton and G. W. Taylor, "The characterisation of dyes in textiles from archaeological excavations", *Chromatography and Analysis*, 17 (1991), 5-7.

J. Wouters, L. Maes and R. Germer, "The identification of haematite as a red colorant on an Egyptian textile from the 2nd millennium BC", *Studies in Conservation*, 35 (1990), 89-92.

W. van Zeist and J. A. H. Bakker-Heeres, "Evidence for linseed cultivation before 6000 BC", *Journal of Archaeological Science*, 2 (1975), 215-219.

I. I. Ziderman, "Blue thread of the Tzitzit: was the ancient dye a Prussian blue or a Tyrian purple?", *Journal of the Society of Dyers and Colorists*, 97 (1981), 362-364.

I. I. Ziderman, "Purple dyes made from shellfish in antiquity", *Review of Progress in Colouration and Related Topics*, 16 (1986), 46-52.