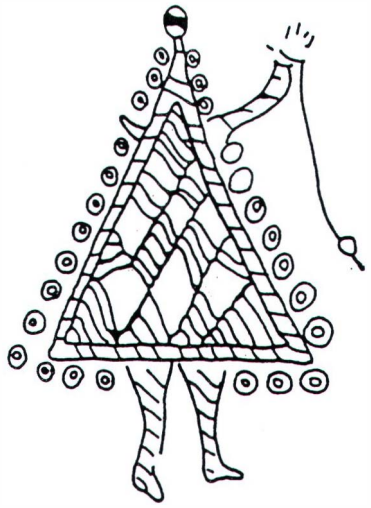

ARCHAEOLOGICAL TEXTILES NEWSLETTER

ATN, 17 November 1993

EDITORIAL

This edition of the *Archaeological Textiles Newsletter* again reflects the wide range of interests of its readership. Subjects covered in this issue range from textiles and clothing from various Chinese excavations to a reappraisal of finds from a 19th century excavation in Egypt.

There are several items about finds from China, including one by Zhao Feng on the appearance of a Greek influenced 'Helios' in Chinese textiles, and another, this time by Wang Xu on the use of cinnabar for dyeing cloth. We then move to Germany for a description of some textiles from the site of Hochdorf by J. Banck. M. L. Ryder has presented a discussion about the use of hemp in some textiles of Scottish origin and he outlines a method for the identification of this vegetable fibre.

There are two items on textiles from earlier excavations in Egypt. The first is by W. D. Cooke and concerns the famous or perhaps infamous, dyed wool from Kahun. Recent carbon dating evidence suggests that these pieces must be given another date. Finally there is a note about a project to catalogue the textiles and clothing of the Egyptian pharaoh, Tutankhamun.

There is also a slight change in emphasis in this edition of the *Newsletter*. There have been various questions about the role of the *Archaeological Textiles Newsletter*, for example, what is our duty towards establishing a professional status for textile archaeologists? What indeed is the function of a newsletter? Is it purely for the dissemination of information or has it other functions. The position of the *Archaeological Textiles Newsletter* has been outlined by John Peter Wild in the item immediately following this editorial. The editors would be interested to hear from readers how they feel about this matter and what they think could be done. Further to this there is an item by T. Schick about the problems terminology and achieving a degree of consistency. Again readers' comments would be appreciated. Have readers other points they would like to raise?

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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Textile Research Centre at the above address. Dutch subscribers may also use the postal giro: G. M. Vogelsang-Eastwood, 2567328, again using the contact address of the Stichting given above. Please indicate with which issue your subscription should start.

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

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.

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INDEX: In the following edition of the *ATN* we will be including a separate index covering items from issues nos. 1-16.

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Corrigenda to ATN 16

p. 8, line 20 (col. 1): for 'fibre' read 'five'.
p. 8, line 31 (col.1): for 'garments' read 'fragments'.
p. 9, line 7 (col. 2): for 'garments' read 'fragments'.
p. 10, line 17ff (col. 1): the address of A. Baginski is: Shenkar College of Textile Technology and Fashion, 12 Anna Frank St., Ramat-Gan 52526, and of O. Shamir: Israel Antiquities Authority, P.O. Box 586, Jerusalem 91004.

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SUBSCRIPTIONS - the banks are at it again! The charges made by the Dutch banks have just been raised again. We are trying to get round this by requiring subscribers to send cheques in POUNDS STERLING and made out to the Archaeological Textiles Newsletter. Or, where legal, send the money in an envelope - its much quicker and cheaper.

At present we are going through the list of subscribers who have paid, and more importantly, who have not paid for the *ATN*. There are a number of people who have not sent in their subscriptions for some time and in the future they will receive no further copies of the *ATN*. If you wish to continue receiving this newsletter, please make sure that you have paid your subscriptions before the end of March of this year.

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AIMS AND OBJECTS OF THE ARCHAEOLOGICAL TEXTILE NEWSLETTER

Now that the *Archaeological Textiles Newsletter* is approaching its eighth year of publication and enjoying the support of a wider circle of subscribers than ever before, it may be appropriate to re-state its aims and objects and define once more its house-format.

The *ATN* is primarily a newsletter which prints information about new discoveries and research into textiles from Old World archaeological contexts of any period. New World textiles are not excluded (see *ATN* 14, 1992), but are not a prime focus of attention! The *ATN* is concerned not just with textiles and textile-related

structures, but with any kind of archaeological evidence which sheds light on ancient textile production. The Newsletter's modest size imposes certain limitations; we do not print book reviews or replies to book reviews, and we publish notes and communications rather than full-length articles, in English, French and German. Manuscripts are accepted in good faith and at the discretion of the Editorial Board; the opinions expressed in the notes published are the views of their authors, not of the *ATN* itself. Notes replying to notes on points of information or interpretation are welcome. We put special emphasis on bibliographical updates, and from time to time carry longer personal bibliographies. If you have a point to make or a new find to announce, try the *Archaeological Textiles Newsletter* first!

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HELIOS ON THE SILK TEXTILES FROM ANCIENT CHINA

A huge tomb belonging to an ancient Tibetan noble was excavated at Rishui, Dulan, Qinghai Province of China in 1983 (Fig. 1). Many silk textiles of Tang Dynasty or slightly earlier (about 600-750 AD) were found, and recently analyzed by me and published in the *Journal of China National History Museum* (no. 15-16).

There are various kinds of silk textiles containing warp-faced compound tabby; weft-faced compound twill; a ribbon woven with gold; Chinese special leno; damask with twill figure on tabby ground or on twill ground; silk tapestry (kesi); printed and embroidered products. Most of them have beautiful figures and bright colours. The subjects are always flowers, animals and geometric patterns. These patterns clearly show great influences from the West and the Central Asian culture on the appearance of Chinese silk textiles. The most interesting example is the model of Greek Helios on some warp-faced brocades (Fig. 2).

In Greek religion, Helios represents the sun god. He drove a chariot daily from east to west across the sky and sailed around the northerly stream of Ocean each night in a huge cup. In classical Greece, Helios was especially worshipped in Rhodes and regarded as the chief god until at least 5th century BC. After that, Apollo was more and more interpreted as a sun god, but Helios came to Asia and was used as a model for the oriental silk. The textiles from Rishui are good examples. But this Helios seems somewhat like the Buddha with a special gesture sitting on a seat of lotus, who comes from India. The chariot is driven by six winged horses that can be considered a feature of the culture of Sassanian Persia. The circle consisting of linked pearls and whirling clouds may be regarded as the influence from Central Asia. And the technique for weaving warp-faced compound tabby and some Han characters surely belongs to the Chinese tradition. In other words, this silk textile was produced in Inner China under exotic influences.

Another silk textile with the model of Helios is shown in Fig. 3 which has the same theme but is simpler than the above-mentioned one. The weave structure is also similar but the colour is yellow on

a green ground. Both of the silk textiles can be considered to have been produced before but near AD 600 chronologically.

Zhao Feng

EXTRACTS FROM TWO PAPERS ON CHINESE TEXTILES

"On craft of silk 'knitting' cords of Warring States Period in Jiangling", *Journal of China Textile University* 15-16 (1989), 50-56 (in Chinese with English abstract).

Seven pieces of silk braid excavated from Chu Tomb no. 1 at Mashan in Jiangling are thought to be a knitted fabric. The structure is a double-stitched type, with a lining silk on the back side to fix the knitted threads; besides the traverse linking structure, there are also multi-structures by single jersey combined with traverse linking, the excavators declare. The authors of the paper believe that these cords can be classified as intermediate between knitwear and needlework. They have the structure similar to certain kinds of knitting, crochet and embroidery, and can be duplicated through two different methods. The differences and similarities between these cords and the traditional hand-knitting or embroidery, as well as their origins are discussed. Photographs of the relic and the reconstructions are presented.

Bao Mingxin and Lu Xiying

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"Initial study into the Han-Dynasty craft of colouring silk with cinnabar" (in press, when abstract was received by the ATN)

The method of colouring silk with cinnabar is a craft unique to ancient China. The mechanism by which cinnabar colours silk is different from that of a typical dyeing process. The mechanism involves the mixing of very finely ground mineral pigment - cinnabar - with a natural bonding base, to form a thick colouring paint. When the painting is applied to the fabric and dried, the bonding agent congeals and attaches the colour pigment uniformly to the fibre of the fabric, thereby achieving the object of dyeing. This process was once referred to as the "stone dyeing" method. However, according to modern terminology, this process should be classified under the craft of "paint colouring".

In ancient China, cinnabar was called "red' or "vermilion", and that produced in Chenzhou was the most famous; this is why cinnabar is also called "Chensha" (Chen Powder). Cinnabar is a major mercury compound - mercury sulphide (HgS). Aside from medical applications, powdered cinnabar was used historically as a quality colouring agent. It offers a vivid and enduring red colour, which was widely used on buildings, furniture, decorated handicrafts, paintings and so on. Since the early Qin Dynasty [223-206 BC], cinnabar has been considered one of the five formal colours (blue, yellow, red, white and black). To symbolise power and authority, emperors and royalty used vermilion-coloured entrance gates

and carriage wheels. They wore red clothes and used red embroidered decorations for clothing.

Documentation from the Han Dynasty [c. 200 BC - AD 220] on cinnabar-dyed silk fabric first appeared in archaeological finds unearthed between 1924 and 1925 at Noin-Ula in Mongolia. Additional discoveries of actual fabrics were made later in Huaian and Mancheng, Hebei province; Changsha, Hunan province; Jiangling, Hubei province; Baoji, Shaanxi province; Wuwei, Gansu province; Dabaotai, near Beijing and Anyang, Heman province. The material spans the period from Shang-Zhou to Eastern and Western Han, over a thousand years in length. Even though this cinnabar-colouring technique was frequently mentioned in ancient records, the actual technique has long since become a lost art. It was not until 1972, when the Han Dynasty tomb of Mawangdui was excavated in Changsha and many well-preserved cinnabar-dyed fabrics were uncovered, that we were able to commence reliable investigation and analysis. In conjunction with documentation, we have been able to carry out experiments and research, which have led to a better understanding in the following areas:

(1) The grinding technology of cinnabar
(2) The preparation of the emulsion which serves as the bonding agent
(3) The craft of cinnabar dyeing and the extent of its application

Preliminary results from the research indicate that:

(1) The vermilion-coloured dye is a natural compound, mercury sulphide.
(2) At least as early as the Shang and Zhou dynasties, the technology of the "colloidal grinding process" had already been developed, to obtain a finer granular size.
(3) There are many different formulae for preparing the paint base. During the Han dynasty, processed Tung-tree seed oil or emulsified raw egg yolk was used to make the base. Silk dyed in this way is waterproof, hard wearing and practical.
(4) To print with the dye, a paint-and-press method was used. This is similar to the dyeing technique, employing lime mortar, commonly used by peasants even today.

(5) The dyeing process results in the cinnabar making up one to two thirds of the final weight of the fabric. At saturation level, the weight of the dye is usually once or twice the weight of the fabric.

Wang, Xu,

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TEXTILE NOTATION: A Plea for a Uniform Terminology Relating to Spinning and Plying Directions

Some time ago, while reexamining textiles from the Cave of the Treasure in the Judaean Desert, I encountered the confusing correlation of the Chalcolithic linen textiles (Bar Adon 1980:153), many of which are S plied from two Z spun threads, with later age textiles from Murabba'at (Crowfoot & Crowfoot 1961) and from the Cave of Letters (Yadin 1963), which are predominantly single ply, S twisted.

Different authors have used different terms in describing

spinning procedures. The terms spin, twist, plying, doubling, and their derivatives have been used in a non-uniform way. With regard to the notation of the spin direction, the variation and confusion are even greater: Bellinger (1959:4) describes a two ply wool yarn simply as "Z" spun and "S" plied; the Crowfoots (1961:59) in more or less the same way: Z-spun, S-plyed. Emery's (1966:14) notation is s-s-Z. In more recent publications the notations such as zS2 for two ends Z spun and S plied (Wendrich 1991:32) and zzS (Shamir, 1991:6) can be encountered for the same combination. I myself preferred, for such a specimen, the notation Z2S (Schick 1988:34), in accordance with the suggested designation of Walton & Eastwood that the smallest element is given first (1988:5).

Burnham in analyzing the famous (and controversial) Çatal Hüyük textiles (1965), describes the yarn as being "primary Z twisted and usually 2S plied" (p. 170) and his notation for this description is Z,2S (p. 171). Bender Jørgensen, in referring to this report (1988, Apx A), misinterprets the notation -- problably due to an oversight-- and describes the Çatal Hüyük yarn as "the spin is always Z , that is: Z plied from 2Sspun threads." From here, it is only a short way to her concluding remarks that "this spinning fits well with the material from the Near East at a far later period, where S spinning and Z plying is a distinguished feature of the Eastern Mediterranean textiles."

Upon reading the recent Vogelsang-Eastwood account of the textile from Çayönü (1993) I felt quite confused: the Çatal Hüyük twined textiles are referred to as S plied, the way Burnham had described them (1965:170); however, Vogelsang-Eastwood's notation is transposed to S,2z (1993;6). I was also embarrassed to see that the Nahal Hemar fabrics are misquoted as made of "Z,2s yarn (ibid, p. 6), namely Z plied from two S spun threads." The true picture is exactly opposite: S plied yarns twisted from two Z spun threads predominate in Nahal Hemar, and all the twined fabrics are made of such yarn. Therefore there is a similarity with the Çatal Hüyük and probably with the Çayönü material as well. It is only the notation as used by several researchers which is different. Grace Crowfoot (1958;434) draws attention to the characteristic doubling of threads in early periods. A few examples from Egypt are mentioned: the textile from Fayum A and textiles from graves at Badari are described as 2-plyed S - Z twist in the single thread (ibid, p. 431).

It is interesting to note that also the comb from Wadi Murabba'at (Schick, 1992), now dated to 10.220_+ 45 years BP (article in preparation), is made in twined structure with S plied linen yarn, twisted from 2 Z spun threads. It seems, so far, that the earliest known textiles from Anatolia, from the Levant, and from Egypt share a common raw material and spin direction. The first two also share the twined fabric structure.

Spin direction is a major aspect in the analysis of ancient textiles. It has been suggested as being indicative of the raw material used, of different spinning methods, of regional traditions, of chronology and more.

It is important, therefore, that the information be precise. In order to avoid further confusion it is imperative that we adopt a clear, uniform terminology and notation relating to spinning and spin direction. Such a generally accepted terminology will help to avoid erroneous interpretation and is bound to become an indispensable tool in comparative studies.

Tamar Schick
Israel Antiquities Authority
Jerusalem

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DIE TEXTILFUNDE AUS DEM FÜRSTENGRAB VON HOCHDORF

Die Erforschung frühkeltischer Grabhügel hat im westlichen Hallstattkreis, besonders in Süddeutschland eine Tradition, die bis in die Mitte des letzten Jahrhunderts zurückreicht (1). Das Grabungsvorgehen wurde anfangs von der Suche nach an-sehnlichen Funden geprägt. Als markante Erhebuagen in der Landschaft gut sicht-bar, waren die Grabhügel häufig das Ziel von Raubgräbern. Bei späteren Nachgrabungen konnten durch differenziertere Fragestellungen und verfeinerte Grabungs-techniken häufig noch wichtige Informationen zu Funden und Befunden gewonnen werden. Die Kenntnisse über Artefakte aus organischem Material erweiterten sich aufgrund schlechter Erhaltungsbedingungen und fehlender Erfahrungen im Erkennen, beim Bergen und in der Auswertung dieser Funde nur langsam. Publizierte Textilfunde

liegen aus dem Hohmichele in Baden-Württemberg (2) und aus Apremont im französchen Departement Haute-Saône (3) vor, beides Grabhügel der späten Hallstattzeit.

Die Kammer des Fürstengrabhügels von Hochdorf (Gemeinde Eberdingen-Hochdorf, Kreis Ludwigsburg/ Mitte des 6.Jaht. v. Chr.) war nach der Grabniederlegung eingestürzt. In der Grabkammer entstand ein Milieu, in dem sich Holzteile eines vierrädrigen Wagens, Textilien und anderes organisches Material erhalten konnten. Bei der Freilegung und Grabungsdokumentation 1978 und 1979 arbeitenen Naturwissenschhaftler und Archäologen eng zusammen. Durch die Bestimmung der biologischen Reste konnte festgestellt werden, dass ein mitgegebener Bronzekessel mit Honig-meet gefüllt war und Hanfbast, Schaf-wolle, Dachs- und Pferdehaar zu Textilien verarbeitet worden waren (4). Wände und Boden der hölzernenen Grabkammer waren mit Textilien ausgekleidet, weitere Stoffe lagen auf dem Bronzekessel und dem Wagen. Der Tote ruhte auf einer gepolsterten Kline, eingehüllt in eine Vielzahl kostbarer Gewebe. Die Auswertung der Textilfunde dauerte ungefähr vier Jahre. Ihr hoher Zersetzungsgrad erforderte eine zweijährige Einarbeitungs-zeit, um unterscheiden zu können, welche Gewebe vorhanden sind und wo lediglich wegen unterschiedlicher Zersetzungs-stadien variierende Erscheinungs bildervorliegen. Dies gilt besonders für die Textilien auf der Kline, da diese stark zersetzt und nur dort auswertbar waren, wo die niedergedrückte Rückwand die darunterliegenden Stoff- und Polsterungslagen bedeckte und dadurch konservierte. Auf der Kline sprechen viele Gewebe-falten und das Fehlen von Nähten und Säumen dafür, dass die Gewebe als grosse Tücher mantelartig um den Toten ges-chlungen waren. Mindestens vier feine Gewebe, die Ränder mit gemusterten Brettchengeweben verziert, umgaben den Toten, Darunter waren farbig gemusterte Gleichgratköper und Brettchengewebe mit Hakenkreuz- oder Mäandermotiven. Farbanalysen haben bei allen Geweben aus der Grabkammer eine deutliche Dominanz von Rot und Blau ergeben (5).

Die blaue Farbe stammt vom Indigo, der aus der Waidpflanze gewonnen wuorde und die rote Farbe von der Schildlaus "Kermes vermilio", welche vorwiegend im Mittelmeerraum beheim-atet ist. Für die textile Ausstattung der Grabkammer worde eine Vielzahl feiner Gewebe verwendet, unterschiedlich in Material, Farbe und Musterung. Trotz dieser Vielfalt zeigen sie in ihren Herstelllungstechniken und Musterungen eine einheitliche Machart. Die gleichen Gewebe fanden sich als Teil der Wand-verkleidung, bei Stoffen auf dem Kessel und auf dem Wagen oder als Umhüllung des Toten. Es gibt Hinweise darauf, dass zumindest ein Teil der Gewebe für die Bestattung des Fürsten anfertigt worden ist. Grobes Dachshaar wurde zusammen mit Gräsern und anderen pflanzlichen Resten als Polsterungsmaterial zwischen zwei Lagen eines Hanftgewebes geschoben, Bei der Herstellung der feinen Dachshaargewebe, für die nur feine Grundwolle verwendet wurde, fiel das grobe Dachshaar als Rest an. Die Pracht in der Grabkammer,

während der Toten-feierlichkeiten zur Schau gestellt und Ausdruck für den Reichtum und die gesellschaftliche Stellung des Bestatteten, wurde für die Reise ins Jenseits verhüllt. Reste eines groben Gewebes finden sich auf dem Wagen und vor allem um den Toten herum. Das Verhüllen von Beigaben ist eine Grabsitte, die in der Hallstattzeit häufig belegt werden kann.

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(1) Kurze Zussammenfassung der süddeutschen Fürstengräber in: J. Biel, *Der Keltenfürst von Hochdorf*, Stuttgart 1985, 9-16.
(2) H.-J. Hundt, Die Textilfunde aus dem Hohmichele, in G. Riek und H.-J. Hundt, *Der Hohmichele, Römisch-Germanische Forschungen* 25, Berlin 1962, 199-214.
(3) H. Masurel, *Tissus et tisserands du premier âge du fer, Antiquités Nationales*, mémoire 1, Saint-Germain-en-Laye 1990.
(4) U. Körber-Grohne, Pflanzliche und tierische Reste aus dem Fürstengrab von Hochdorf, in: H. Kuster und U. Körber-Grohne, *Hochdorf* I, Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg Bd. 19, Stuttgart,1985.
(5) Die Farbanalysen wurden von Penelope Walton Rogers (Textile Research Associates, 12 Bootham Terrace, York YO3 7DH, England) durchgeführt.

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PROBABLE HEMP FIBRE IN BRONZE AGE SCOTLAND

In *ATN* 16 (1993) 3-4, T. Gabra-Sanders and T.G. Cowie reported important textile finds from St Andrews. I here report measurements of the bast fibres in textiles and string from the site, which not only suggest that hemp was used in Britain much earlier than has been thought, but indicate the possibility of distinguishing the bast fibres of hemp (*Cannabis sativa L.*) from those of flax (*Linum usitatissimum L.*), by measurement. The use of tree bast to make string goes back to the Palaeolithic period. Flax fibres were used in Neolithic textiles in Turkey c. 6500 BC (Ryder, 1965), flax having been domesticated in the Middle East (Barber, 1991, quoting Helbaek). Another example of what is thought to be flax fibre dated 7000 BC has recently been reported from Çayönü in Turkey (Vogelsang-Eastwood, 1993). Seed as well as fibre remains show that flax cultivation was well established in Neolithic Europe, including Scotland (Fairweather and Ralston, 1993).

Hemp was domesticated in temperate Asia (Simmonds, 1976) and was the main textile fibre of China for millennia from the Neolithic period. Barber (1991) reviewed evidence on the spread of hemp cultivation through Europe, seeds (possibly having a narcotic use) having been found on Neolithic sites in various parts of the continent as early 5000 BC. As with flax, seeds do not prove the use of the fibre, but she quotes one Neolithic site in France from which hemp as well as linen cloth was claimed. The only evidence for hemp in prehistoric Britain I know is the description by

Tomlinson (1989) of some loose fibres of Bronze Age date in Wiltshire described as not flax but possibly hemp.

Hemp has not been confirmed before the Roman period in Britain and the main cultivation began during the Saxon period. Flax and hemp fibres have microscopic similarities which make it difficult to distinguish between them. I here report a large difference in the diameter of the "ultimate" bast cells, which provides a diagnostic feature that allows one to suggest that hemp was used for fibre in Bronze Age Britain. Although it is generally accepted that hemp fibre is coarser than flax as judged by eye, few measurements of fibre diameter have been reported, and I am not aware that they have ever been used to distinguish between the two fibres, particularly in archaeological contexts.

The plant fibre from St Andrews to be described was dated c. 800 BC. It came from string and cloth and was found with wool cloth and haired animal skin. The six string samples and five yarn samples from the cloth comprised the same bast fibre that was superficially similar to flax. Whole-mount preparations were made in Euparal of sub-samples of the fibres and the diameter of 100 fibres in each sample was measured using the standard IWTO method at a magnification of 500 X. Scanning Electron Micrographs made by Mrs T. Gabra-Sanders were available of two string samples and of two cloth samples. The string and cloth had the pale appearance that is usually associated with plant fibre identified as flax. During mounting the fibres appeared yellow and "fluffy", which are both features associated with hemp.

Table 1

COMPARISON OF PLANT FIBRE DIAMETERS (MICRONS)

Individual range	range of mean (mean)	range of modes (mean)
A. Flax 6500 BC to recent (ref 7, plus others: 21 samples)		
4 - 36	10.0 -15.6 (12.54)	7 - 16 (11.55)
B. St. Andrews bast fibre, 800 BC (11 samples)		
8 - 40	15.1 - 20.6 (17.82)	14 - 20 (17.20)
(few coarser fibres 50 - 68 microns)		
C. Hemp published		
	range 17.0 - 22.8 (ref 1)	
D. Hemp AD 1700 (ref 6) plus modern (4 samples)		
8 - 54	17.4 - 25.5 (22.67)	18 - 20 (19.50)
(few coarser fibres 60-94 microns)		
E. Wilsford Bronze Age [?? hemp] (ref 9)		
12 - 23		

The "fluffiness" is presumably caused by the greater separation into ultimates than with flax as seen under the microscope. The yellowness seen with the naked eye was more obvious under the microscope. There were few longitudinal streaks, probably because most fibres were ultimates. A few fibres had a thin lumen, and even fewer nodes (transverse divisions) were obvious. The nodes were clearer in SEMs but no more numerous.

Some fibres had a wider (5-micron) lumen filled with orange material; others had branched ends, both of which are features distinguishing hemp from flax (Matthews, 1923). The difference from flax was more marked in the diameter measurements (Table 1). The cloth and the string showed the same range of mean diameters, and there was a continuous distribution of the means over the 11 samples making it unlikely that there were two populations e.g. flax with another fibre. Since the similar Bronze Age hoard at Beeston Regis, Norfolk had string of lime (*Tilia*) bast fibre, some slides were sent to the Royal Botanic Gardens, Kew for comment. T. Lawrence reported qualitatively that the St Andrews fibre could be either flax or hemp, which eliminated lime bast.

The flax I have measured, dating from 6500 BC (Çatal Hüyük in Turkey) to recent flax, has had mean fibre diameters ranging from 10.0 to 15.6. The 11 samples in the present collection had means ranging from 15.1 to 20.6 (Table 1). If modern fibre is excluded from the range, the greatest flax mean becomes 13.3 (Ryder & Gabra-Sanders, 1987). There is then no overlap of the flax means and the means of the St Andrews' fibre. The hemp I have measured had means ranging from 17.4 to 25.5 (Ryder, 1991). The fibre diameters of the St. Andrews material therefore appear to be closer to those of hemp than of flax. More measurements of hemp are required to improve the comparison. This second suggestion of hemp in Bronze Age Britain is of immense interest. It also reinforces the suggestion by Barber (1991) that some fibres reported as flax in the past (without measurement) might in fact have been hemp.

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THE MANCHESTER MEDIEVAL TEXTILES PROJECT

A new computerised project is being set up by two Manchester scholars: Dr. Elizabeth Coatsworth, Department of History of Art and Design, Manchester Metropolitan University and Dr. Gale Owen-Crocker, Department of English, University of Manchester. Both are associated with the Centre for Anglo-Saxon Studies based at Manchester University.

The aim of the project is to produce a computerised catalogue and annotated bibliography of medieval textiles. Four states are being envisaged:

England and Wales	400-1100
England and Wales	1100-1500
Scotland and Ireland	400-1500
Tools and Trade	

It is hoped that a publication in printed form will emerge in a few years, but essentially the computerised project is to be open-ended and is to be available to all as a research tool. So if you want to know the answer to a specific question such as "What examples of silk have been found in England before 1100 and where are they now?" the computer will tell you. This is the future. Serious work is to begin in 1994 with, it is hoped, joint funding from the two Universities.

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W. F. PETRIE AND THE WEAVERS WASTE

Petrie returned to his excavation at Kahun in the 1880's to find that one of his workmen had discovered a small collection of dyed spun wool, including red and blue yarns and loose dyed fibre (red), on the floor level of an ancient workman's house. Such evidence of the use of dyed wool in a Middle Kingdom context was unique, and Petrie paid special attention to these wool scraps including them in his excavation report, calling them weavers waste [1].

The textile related material from Kahun ultimately found a home in the Manchester Museum, where the presence of dyed wool in a Middle Kingdom collection generated controversy.

In order to resolve this problem the late Joan Allgrove McDowell initiated research which involved sending samples to Dr. Renate Germer for dyestuff analysis and Dr. M. Ryder for fleece analysis.

Dr. Germer identified madder and indigotin with alum mordant, and Dr. Ryder's measurements showed the wool to be in a development stage from primitive hairy medium to generalised hairy medium fleece type. Both these identifications raised doubts about the high antiquity of the wool, and

suggested the possibility of a dating in the Roman period.

Radiocarbon dating was the obvious approach to settle the matter. The development of accelerator mass spectrometer (AMS) dating has resolved many of the ethical reservation implicit in the need to destroy a portion of a collection as the new technique only requires 30 mg of textile material.

Samples of the blue and red yarns and the red wool totalling 100 mg were selected for dating at the Oxford University Radiocarbon Accelerator Unit with support from the SBAC funded Accelerator Dating programme.

The results calibrated to calendar years were as follows:

1. AD c. 1260-1400
2. AD c. 1180-1430

A decision was made to delay making the results public when the testing was completed as a mark of respect for Joan Allgrove McDowell, and her very considerable contribution to the study of Ancient Textiles.

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1 W. M. F. Petrie, *Kahun, Gurob and Hawara*, EES, London (1890), 28.

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TUTANKHAMUN: A REAPPRAISAL OF HIS WARDROBE

It is a well-known fact, cited in most of the standard literature about Egyptian textiles or objects from the tomb of Tutankhamun, that little can be gained from studying the textiles found in the tomb of the young Egyptian pharaoh. However, this is not the case.

At the end of 1992 research was began on the *Tutankhamun Textile, Clothing and Costume Project*. The project is headed by G. M. Vogelsang-Eastwood and involves various students from the Department of Egyptology, Leiden University, as well as well-established specialists in the fields of dye, weave and metal analysis. The aim of the project is to catalogue and place in a wider context the items of textiles and clothing found in the tomb.

Although the project has not been running long some interesting discoveries have already been made and numerous questions raised. For example, what did the dead king want with 145 loincloths? What was the purpose of nearly 100 sandals? These questions are not as frivolous as they may seem at first, as they raise points about the role of goods placed within an Egyptian tomb. Some of the items were apparently new, others well worn; some were intended for everyday use while others were ceremonial in concept.

The Project is being carried out in three stages. Firstly a basic catalogue is being made of the textiles noted by the excavator of the tomb, Howard Carter. To date over 450 textile items have been recorded. Some of the notes left by Carter (his notes and records are now in the Griffith Institute, Oxford) are frustrating: "elaborate tapestry woven garment, to be returned to" and nothing further. Other cards, however, provide information on the size of the object, how it was made and related items. The second stage of the

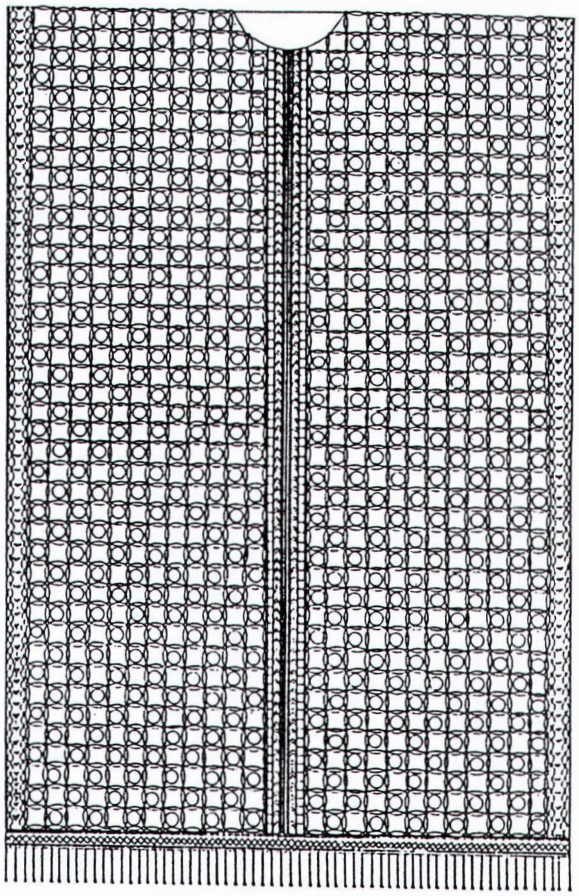
project is to see and record as many of the textiles as possible. These include the items on display in the Egyptian Museum, Cairo, as well as textiles such as those in the Metropolitan Museum, New York which were found outside the tomb in 1903 [?]. The third phase is to publish a catalogue of the textiles and clothing items.

Sadly, a number of the textiles simply disintegrated when the excavators removed them from the tomb and so we will never be totally certain how they originally looked. However, based on the notes and drawings made by the excavators it has been possible to give an idea of the appearance of some of the garments. In Figure 1, for example, a drawing has been given of a bag-tunic which was probably worn by Tutankhamun when he was a child.

The above bag-tunic also raises a number of interesting questions concerning the child's size garments found in the tomb. These include bag-tunics, sashes, gloves as well as sandals. Why were the items placed in the tomb, were they favourite garments or had they a deeper meaning? If these questions can one day be answered it may be in the context of a wider reappraisal of Egyptian funerary practices.

Gillian Vogelsang-Eastwood

Fig. 1 Initial drawing for one of Tutankhamun's bag-tunic



SEMINARS

BRAVING THE COLD
10th-11th March 1994, Leiden, The Netherlands

At the beginning of March 1994 there will be a two-day international symposium on Arctic clothing at the National Museum of Ethnology, Leiden, The Netherlands, organised in conjunction with the Research School CNWS, Leiden University. Many aspects of Arctic clothing will be discussed including the archaeology of Arctic clothing and the various types of present day clothing. Anyone interested in attending the symposium should contact either:

C. Buijs, Curator of the Arctic and Sub-Arctic, The National Museum of Ethnology, Postbox 212, 2300 AE Leiden, The Netherlands.
or
G. M. Vogelsang-Eastwood, Textile Research Centre, The National Museum of Ethnology, Postbox 212, 2300 AE Leiden, The Netherlands.

EARLY TEXTILES STUDY GROUP: EARLY ITEMS OF CLOTHING

Biennial 2-Day Conference, Friday 9th to Sunday 11th September 1994, Ashbourne Hall, University of Manchester.

Early Items of Clothing: Extant garments from pre-history to the Renaissance - methods of approach and study in detail. Speakers will include experts from the UK and abroad, for example, J. Arnold ("Clothes from 16th century tombs of the Medici in Florence"); A. Jeroussalimskaja ("Clothing found in 8th-9th century tombs in the Northern Caucasus as a source for the hsitory of the Middle Ages"); N. Kajitani ("Hair coverings from Roman Egypt in the collection of the Metropolitan Museum of Art"); M. Nocert, ("Frgaments of Migration Period clothing from graves in Scandinavia"), and many others!

Cost around 85 pounds sterling per person including board and lodging.

Organisers:
Hero Granger-Taylor,
22 Park Village East,
London, NW1 7PZ,
England.

Karen Finch,
7 Western Gardens,
London W5 3RS,
England.

ANCIENT NEAR EASTERN TEXTILE CONFERENCE

Rijksmuseum van Oudheden, Leiden, The Netherlands. November 1994.

CALL FOR PAPERS

A two-day conference on ancient Near Eastern textiles and clothing is being organised at the National Museum of Antiquities, Leiden to coincide with the opening of an exhibition about textiles and clothing from Ancient Egypt. The conference is based around the theme of the Amarna Letters. This means that papers relating to the production or use of textiles from around the 14th century BC and from the geographical regions of Egypt or Mesopotamia (or anywhere in between) will be considered.
Anyone interested in participating in the conference, either as speakers or in general, should contact G. M. Vogelsang-Eastwood at the address given below.

G. M. Vogelsang-Eastwood,
Textile Research Centre,
National Museum of Ethnology,
Postbox 212, 2300 AE Leiden,
The Netherlands.

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CIETA MEETING IN LYON

The 15th General Assembly of CIETA took place in Lyon, the Jewel of the Roman Empire and an important silk weaving centre, where the association was founded in 1954.

From 20-22 September 1993 about 190 delegates from various countries attended 52 lectures covering sources and techniques of textile patterns. These were chronologically

arranged, and divided into ten sessions: The Ancient World; Ancient and Early Medieval Near East; Early Medieval Europe; Medieval East and America; Late Medieval Europe; Renais-sance in Later Europe; 18th c Europe (2x); 18th to 20th c Europe; Far East.

Without wishing to ruffle any feathers, from a textile archaeologist point of view, one could particularly mention from the varied and stimulating programme, lectures by Elizabeth Barber, "Decorative Fountainheads: The earliest documentable textile motifs of pre-historic Europe and the Near East"; Dominique Benazeth, "A tapestry from Antinoe"; Chris Lammens, "A detailed analysis of the technical particulars found in a Coptic child's tunic"; Dominique Cardon, "A mysterious group of textiles, probably medieval, found in the caves of Manazan, in Turkey"; Alisa Baginski, "The earliest cotton warp *ikats* textiles from Nahal Omer, Israel"; Hero Granger-Taylor, "New textile finds from Sutton Hoo"; Mrs Pirenne-Hulin, "The textiles from the shrine of St. Mabelberte"; Margareta Nockert, "Picked-up double cloths in Sweden 900-1500"; Marie-Helene Velton, "Technical structure of a group of figured silks - China and its borders, 12th to 14th century", and the papers on various drawlooms from late medieval and 18th c Europe and Japan by Sophie Desrosiers, Daniel de Jonghe, Guy Scherrer and Mihoko Domyo.

For those who could afford the time, a fourth day in Lyon, interesting and informative visits to textile workshops had been arranged. These were gold threads and moiré production, a visit to the internationally known Prelle studios and a tour to see the processes of engraving and printing silk scarves.

In honour of Donald King, who retired after being President of CIETA for 16 years a special exhibition was mounted in the Musée des Tissus. This was followed by a buffet which was beautifully laid on by Pierre Arizzoli-Clémental, the new President of CIETA. The congress was concluded by a superb dinner given by the President of the Chambre de Commerce et d'Industrie de Lyon and the President of CIETA in the historic Salle de la Corbeille in the Chamber of Commerce.

What should not pass without mention was the delightful video presented to Donald King, made from extracts from his Presidency. The smooth running and hard work of the organisers of the conference was greatly appreciated and did much to make this a most agreeable conference.

Thea Gabra-Sanders,
18 Craigleith Hill Park,
Edinburgh, EH4 2NR, UK.

WRAP-AROUND CLOTHING SEMINAR, LEIDEN SEPTEMBER 16-17, 1993

A combined seminar/workshop on Wrap-Around Societies was held at the Stichting Textile Research Centre, National Museum of Ethnology, Leiden on 16-17th September, organised in collaboration with the Research School CNWS, Leiden University. About 25 people took part in the two days of lectures and workshops which actively involved the participants. Textiles from both

ancient and modern cultures were discussed and examined. On the first day Ms Hero Granger-Taylor (London) spoke about the toga in Roman society and later demonstrated how this garment was worn. Gillian Vogelsang-Eastwood (Director, Stichting Textile Research centre) who had organised the seminar, spoke on Pharaonic Egyptian wrap-around garments describing a wide range of items of dress. Later replicas of individual Egyptian pieces and of a toga were examined and worn by participants to understand how these clothes worked.

On Friday Dr. Brigitta Menzel (Krefeld, Germany) who has spent much time in West Africa spoke about Ashanti dress and weaving skills. She displayed her fine collection of Ashanti cloth, and shared her great knowledge of this culture. Dr. Marion Oort (Kern Institute, Leiden University) discussed the history of textiles in India. Dr. R. Heringa (Leiden University) spoke of the role of cloth in Indonesian society with particular emphasis on Java.

In the afternoon Dr. Oort-Liszy and team displayed a dazzling array of saris and demonstrated some of the multiplicity of ways in which this graceful dress can be worn. From Indonesia the sarong and other wrapped pieces were shown, and a variety of textiles displayed and examined.

The combination of scholarly discussion, examination of the actual cloth and, in some cases, using the cloth as dress made for a stimulating two days. The linking of early cultures with modern resulted in a widening understanding of this form of dress. Using the replicas of early dress meant that participants could understand the realities of draping, arranging and moving; the toga certainly presented a challenge in reproducing the elegant folds of classical sculpture! The whole exercise proved stimulating, thought-provoking and emphasized the value of lateral thinking. The textiles themselves were an Aladdin's Cave of treasures to be long remembered.

Elizabeth Heckett.

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EXHIBITIONS

COPTIC TEXTILES FROM FLEMISH PRIVATE COLLECTIONS

Provinciaal Archaeologisch Museum van Zuid-Oost-Vlaanderen, Velzeke Belgium. 19th November 1993 - 30 January 1994.

The exhibition, coordinated by Prof. A. De Moor contains - besides a few earlier items - about 160 Coptic textiles. Nine wholly or largely preserved tunics are also on show. The exhibition also contains a few rare, even possibly unique items.

A bilingual (Flemish-English) catalogue is published in collaboration with researchers from the Museum of Art and History in Brussels; the Royal Institute for Cultural Research Heritage in Brussels; the State University of Utrecht and the British Museum in London.

Each textile has been described in detail with iconographic and technological information. A dye analysis of 20 textiles has been carried out which yielded interesting results (for example, real purple, Armenian cochineal, Kermise vermillion, Indian lac) and

13 textiles have also been radiocarbon dated.

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