

# ARCHAEOLOGICAL TEXTILES NEWSLETTER



## Editorial

The spread of cotton in the Mediterranean region has always been attributed to the Arabs and their expansion westwards in the early Middle Ages. We are now discovering, however, to what extent they were building on earlier developments in Egypt and Western Asia. Fleur Letellier-Willemin and Jana Jones report in this number of *ATN* on new finds at two Roman sites in the Kharga Oasis of Egypt which strongly suggest the cultivation and weaving of cotton there under oasis conditions. In Lower Nubia during the Roman/Meroitic period cotton was certainly the dominant fibre as the Editors reveal in their account (p.16–19 below) of recent work on textiles from Qasr Ibrim. *ATN* in fact can barely keep track, such is the pace of new discoveries.

To stay in touch – and keep readers in touch – *ATN* needs not just articles but news, notes and queries, and bibliography. If you want to announce a find or an event do not hesitate to tell *ATN* about it, in any of our main languages.

After 9 years based in England, the publication centre for *ATN* will be moving in a year's time to Denmark. The Centre for Textile Research in the University of Copenhagen (see p.32–34 below), we are pleased to say, will edit and publish *ATN* 46 (spring 2008) as their first number. More information about the move will be printed in future Editorials.

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## Table of Contents

<b>Editorial</b>	<b>1</b>
<b>Features</b>	<b>2</b>
Bronze Age Textile Remains from Lower Saxony	
Runde Webgewichte aus Südwestdeutschland	
The Bog Body from Obenaltendorf	
Monastère de Baouit	
Qasr Ibrim: Study Season 2005	
La Découverte de Coton, Oasis de Kharga	
'A kind of wool is made ... from a tree'	
<b>Report</b>	<b>32</b>
Centre for Textile Research, Copenhagen	
<b>Notes and Queries</b>	<b>35</b>
Mummy Portraiture	
Query on a Carolingian Antler Object	
Terminology of Stripes, Bands and Checks	
<b>Review</b>	<b>38</b>
ETSG Conference, Manchester	
<b>Resources</b>	<b>38</b>
Recent Publications	
Dissertations	
<b>News in Brief</b>	<b>39</b>
NATCC Conference, 2007	
Military and Textiles Conference, 2008	

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**Cover:** A late Roman ivory *pyxis* in Berlin showing the Virgin Mary spinning with a supported spindle. (Drawing: Priscilla Wild)

## Features

### A Hidden Treasure – Bronze Age Textile Remains from Lower Saxony

While examining material from Bleckmar and Wardböhmen district, Celle, in Lower Saxony in the Niedersächsisches Landesmuseum Hannover (NLH) one of the authors (SB) discovered that many of the small boxes contained textile remains. Some had clearly visible pieces, others were visible only with the help of a magnifying glass. This was a surprise as only three graves have been previously examined (Bender Jørgensen 1992, 225; Ehlers 1998, 326f).

Later some of the bone material came to Stockholm for analysis. The osteologist, Petra Molnar, found two small textile fragments with the bones. Anita Malmius photographed and examined them. The weaving technique was balanced tabby and the single threads were s-spun. The thread count was c.5.5 x 6 threads per cm, i.e. the thread count sum  $T=11.5$  and the rib factor  $R=0.09$  (Malmius 1996, 80ff; 1998, 66f) (fig.1). The raw material, analysed by Anita Malmius and Malgorzata Wojnar-Johansson, was wool (fig.2), and the fibres measured 7–12  $\mu\text{m}$  (fig.3).

The textile fragments came from grave II in mound 5 in Hengstberg, Wardböhmen (NLH inventory number K773:76), a female grave (Piesker 1958, 31; Laux 1971, 179). These were found in a box containing fragments of the lower jaw, vertebrae and the first rib (Molnar 2006). This ought to indicate that the fragments were either part of the head gear or the blouse. The fact that the textile fragments had traces of corrosion from a metal item supports the position at the upper body. This information might not in itself hold any new revolutionary facts about Middle Bronze Age (1600–1300 BC) textiles. The fragment fits very well with other textiles from northern Germany and southern Scandinavia. What would be interesting, however, is if someone now conducted a comprehensive study of the small textile fragments from the area; for there is no other limited region that has so many textile fragments available for study.

SB's notes from the museum in Hannover include information pertaining to 17 museum numbers that have (or probably have) textile

remains from Bleckmar and Wardböhmen, from 10 graves. There are also many other boxes containing organic remains which may also include additional traces of textile. Going through the contents of the boxes labelled 'organic material' might therefore produce even more fragments for study.

The material was excavated by Dr H. Piesker, who also excavated other Bronze Age mounds on the Lüneburg Heath between 1936 and 1944. Organic remains are seldom mentioned in his catalogue of the material (Piesker 1958). Similarly, Laux's catalogue (1971) contains information about remains of wooden dagger sheaths and remains of wooden coffins, but there is no information about textile fragments. It is, however, likely that the museum boxes with material from Piesker's excavations contain more organic material. Going through the material from, for example, Althagen, Hagen and Manhorn might produce additional textile fragments. For instance, the drawings of a bronze spiral from Althagen show a possible thread inside it.

A location is often provided on the boxes containing organic material, e.g. 'in the vicinity of the fibula' (or some other artefact). This might be helpful information if one is interested in reconstructing the dress. This is probably possible using the artefacts and the known clothing from Jutland (Broholm & Hald 1940), and it has already partly been done for other Middle Bronze Age graves from Lower Saxony (Hägg 1996; Ehlers 1996, 1999). This will probably become an easier task in the future when the remaining plans from Piesker's excavations become available to the general researcher. At the moment they are in the possession of Dr Laux, who is working on a publication of the material excavated by Piesker (letter from Herr Laux 23.2.2005).

Nevertheless, this relatively large sample of textile fragments from a fairly limited area gives us a unique opportunity to study the production of Bronze Age textiles. Indeed, there is at present very little known about the production of textile during the Middle Bronze Age in northern Germany and southern Scandinavia, which is very much due to the lack of preserved objects related to the craft. Also, there are hardly any known loom weights or spindle whorls from the period in the region (Bergerbrant



*Fig.1 One of the corroded textile fragments from a metal item (Photo: Anita Malmius)*



*Fig.2 Typical wool scales seen after rinsing in de-ionized water in an ultrasonic bath for four minutes. (SEM photo: Anita Malmius and Malgorzata Wojnar-Johansson)*

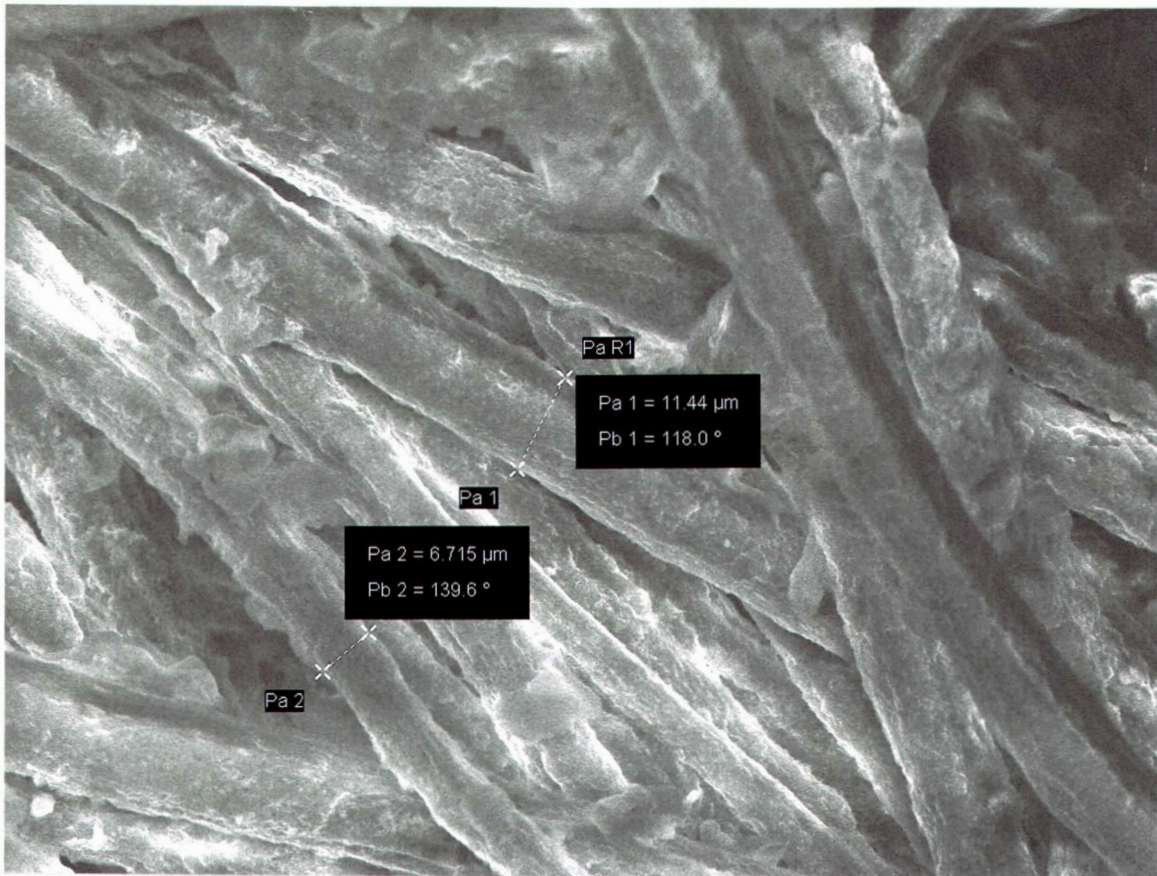


Fig.3 The wool fibres, measuring mostly between 10 and 12  $\mu\text{m}$ , a few as thin as 7 $\mu\text{m}$

forthcoming). There is therefore much scope for research; for there has never been a study of how the craft was learned, yet some light may be shed on the subject drawing on ethnographic analogies. For example, Greenfield has studied how weaving is learnt among the Zinacantecs, a Maya group in Chiapas, Mexico, and how a change in economic importance of textile has affected this (Greenfield 2000). A detailed study of the textile fragments and the remaining pieces of thread including, for example, thread count, which way the thread was spun and how the threads were combined for the cloth, quality of spinning etc., might also help us understand something about the organisation of textile production in the Middle Bronze Age. Was everyone equally skilled, or can one spot degrees of talent and learning processes among the fragments? If so, to which piece of clothing might this relate? Do all fragments from one grave possess equal quality or were they made to different standards? Can one see quality differences between the textile fragments in bronze-rich graves in contrast to bronze-poor graves? As indicated here there are many interesting

questions that can be answered through studying material from old excavations. Piesker's excavations are an excellent starting point for a detailed study of Middle Bronze Age textiles.

### Bibliography

- Bender Jørgensen, L. 1992, *North European Textiles until AD 1000*, Aarhus
- Bergerbrant, S. forthcoming, *Cut from a Different Cloth: Changing Styles in southern Scandinavia and northern Germany 1600-1300 BC*. Ph.D. dissertation, Stockholm University
- Broholm, H. C., M. Hald 1940, *Costumes of the Bronze Age in Denmark*, Copenhagen
- Ehlers, S. K. 1996, 'Die Textilien aus dem Schwertgrab bei Quelkhorn, Ldkr. Verden', *Die Kunde* N.F. 47, 237-241
- Ehlers, S. K. 1998, *Bronzezeitliche Textilien aus Schleswig-Holstein. Eine Technische Analyse und Funktionsbestimmung*, Dissertation zur Erlangung des Doktorsgrad

der Philosophischen Fakultät der Christian-Albrechts-Universität zu Kiel

Greenfield, P. 2000, 'Children, material culture and weaving. Historical change and developmental change' in L. Sofaer Derevenski (ed.), *Children and Material Culture*, London, 72-86

Hägg, I. 1996, 'Mikrostratigraphische Analyse von Geweberesten auf Armspiralen aus einem Grabhügel bei Quelkhorn, Lkdr. Verden', *Die Kunde N.F.* 47, 223-236

Laux, F. 1971, *Die Bronzezeit in der Lüneburger Heide*, Hildesheim

Laux, F. Letter from Herr Dr Laux 23.2.2005

Malmius, A. 1996, 'Tortoise brooches, textile impressions and textiles', *Laborativ arkeologi, Journal of Nordic Archaeological Science* 9, 79-88

Malmius, A. 1998, 'The textile fragments in boat-grave 5, Valsgårde, Old Uppsala parish, Uppland', *Laborativ arkeologi, Journal of Nordic Archaeological Science* 10-11, 65-80

Molnar, P. 2006, Unpublished report, Stockholm University

Piesker, H. 1958, *Untersuchungen zur älteren Lüneburgischen Bronzezeit*, Lüneburg

Teerink, B. J. 1991, *Hair of the West-European Mammals*, Cambridge

Wildman, A. B. 1954, *The Microscopy of Animal Textile Fibres*, London

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### Runde Webgewichte des frühen und hohen Mittelalters aus Südwestdeutschland

Webgewichte stellen eine der Fundgattungen dar, die bei Ausgrabungen in mittelalterlichen Siedlungen bis ins 12. Jh. immer wieder zutage treten. Durch das verstärkte Aufkommen des gewichtslosen

sog. liegenden Webstuhles (Windler, Rast-Eicher 1999/2000) verschwinden sie mit Beginn des Spätmittelalters.

Angesichts ihrer Bedeutung muß es erstaunen, daß die tönernen Gewichte noch keine eingehendere Behandlung erfahren haben, sondern allenfalls cursorisch abgehandelt wurden. Lediglich W. H. Zimmermann betrachtete 1982 Beispiele aus dem Nordseeküstenbereich näher (Zimmermann 1982). Mit der chronologischen Verwertbarkeit verzierter Exemplare, die im nordwestdeutsch-niederländischen Küstenbereich im 8./9. Jh. zahlreich sind, beschäftigte sich H. Steuer 1974 (Steuer 1974, 119ff.).

An dieser Stelle sollen einige Beobachtungen mitgeteilt werden, die in den letzten Jahren bei der Bearbeitung südwestdeutscher Siedlungsfunden gemacht wurden. Während der Spätantike/Völkerwanderungszeit scheinen die aus vorgeschichtlichen Epochen gut bekannten Gewichte in Kegelstumpf- oder Pyramidenform weiterhin in Benutzung gewesen zu sein. In Süddeutschland bezeugen dies zahlreiche Funde aus dem 4./5. Jh. (Gamburg/Tauber, Renningen, Gültstein, Sponeck am Kaiserstuhl, Bürgle bei Gundremmingen sowie in Igersheim/Tauber (Frank 1999, 76 Abb. 5,12), auf dem Runden Berg bei Urach (Koch 1994, Taf. 17-18) (Abb. 4.1) und auf dem Kügeleskopf bei Offenburg (Hoepfer, Steuer 1999, 226 Abb. 26,10). Diese Art der Kettfädenbeschwerung wurde dann in der Merowingerzeit - zumindest im betrachteten Raum - von den rundlichen Gewichten völlig verdrängt. Da die frühesten Belege runder Gewichte aus (spät)kaiser- und völkerwanderungszeitlichen Siedlungen in der Germania libera vorliegen (Schuster 2004, 173ff), kam diese Form wohl mit Germanen aus den nördlichen Regionen in die Landstriche zwischen Main und Alpen.

Die inzwischen zahlreich erforschten Ansiedlungen des frühen Mittelalters erbringen allenthalben nur noch runde Gewichte. Das in der Wurtensiedlung Feddersen Wierde oder im nördlichen Mitteldeutschland beobachtete Nebeneinander von runden Stücken, zu denen auch flache, scheibenförmige mit großer Fadenöffnung (süddeutsche Beispiele: Schwabmünchen, Zolling, Igersheim, Lauda, Königshofen, Tauberbischofsheim, Gablingen) zählen, und

kegel- oder pyramidenförmigen Exemplaren, ist im Süden seit dem 6./7. Jh. nirgends belegt. Auf wenige Sonderformen machte H. Ament schon 1965 aufmerksam; unlängst konnte ein weiteres Exemplar in der Wüstung Winternheim bei Speyer in einem Kontext der 1. Hälfte des 7. Jh. beobachtet werden (Schenk 1998, Taf. 16,14) (Abb. 4.2). Die mit Sicherheit oder doch zumindest mit einiger Wahrscheinlichkeit in die Merowingerzeit zu datierenden runden Exemplare weisen so gut wie immer nur geringe Höhen bis zu 5cm auf. Ihre Durchmesserwerte liegen in der Regel, ähnlich wie in der Spätkaiser- und Völkerwanderungszeit, bei maximal 10cm (Speyer [Schenk 1998, Taf. 26, B 7-8; 47, B 8; 48, A 16]; Neuses/Oberfranken [Haberstroh 2003, 173 Abb. 99]) (Abb. 4.4-5).

Die Stücke der nachfolgenden Karolingerzeit zeigen demgegenüber eine deutliche Tendenz zu größeren Durchmessern, bei gleichzeitig meist ebenfalls zu konstatierender Höhenzunahme (Abb. 4.7).

Können Gewichte des ausgehenden ersten Jahrtausends bereits eine Höhe von 7 oder 8cm aufweisen, so werden solche oder höhere Werte bei den Stücken des Hochmittelalters die Regel (Abb. 4.8). Die Durchmesser vergrößern sich dagegen meist nicht mehr. Viele der späten Fadenbeschwerer sind nun nicht mehr kugelig, sondern (annähernd) zylindrisch (Abb. 4.9-10). Typische Vertreter dieser Art von Webgewichten stammen derzeit vor allem von Plätzen im mittleren Neckarraum, z.B. aus Ditzingen, Kr. Ludwigsburg oder aus den Wüstungen Altingen bei Sindelfingen und Reitingen bei Herrenberg, beide Kr. Böblingen.

Eine überregionale Tendenz zu zylindrischen Gewichten scheint sich im hohen Mittelalter durch Funde aus der Vorburg der Pfalz

Tilleda im Harz einer- und von Plätzen in der Schweiz andererseits abzuzeichnen (Berslingen bei Schaffhausen, Wüstung Bettenach bei Lausen, Kt. Basel-Land, Schinznach, Kt. Aargau (*Jahrbuch Schweizerische Gesellschaft Ur- und Frühgeschichte* 82, 1999, 316 Abb. 43).

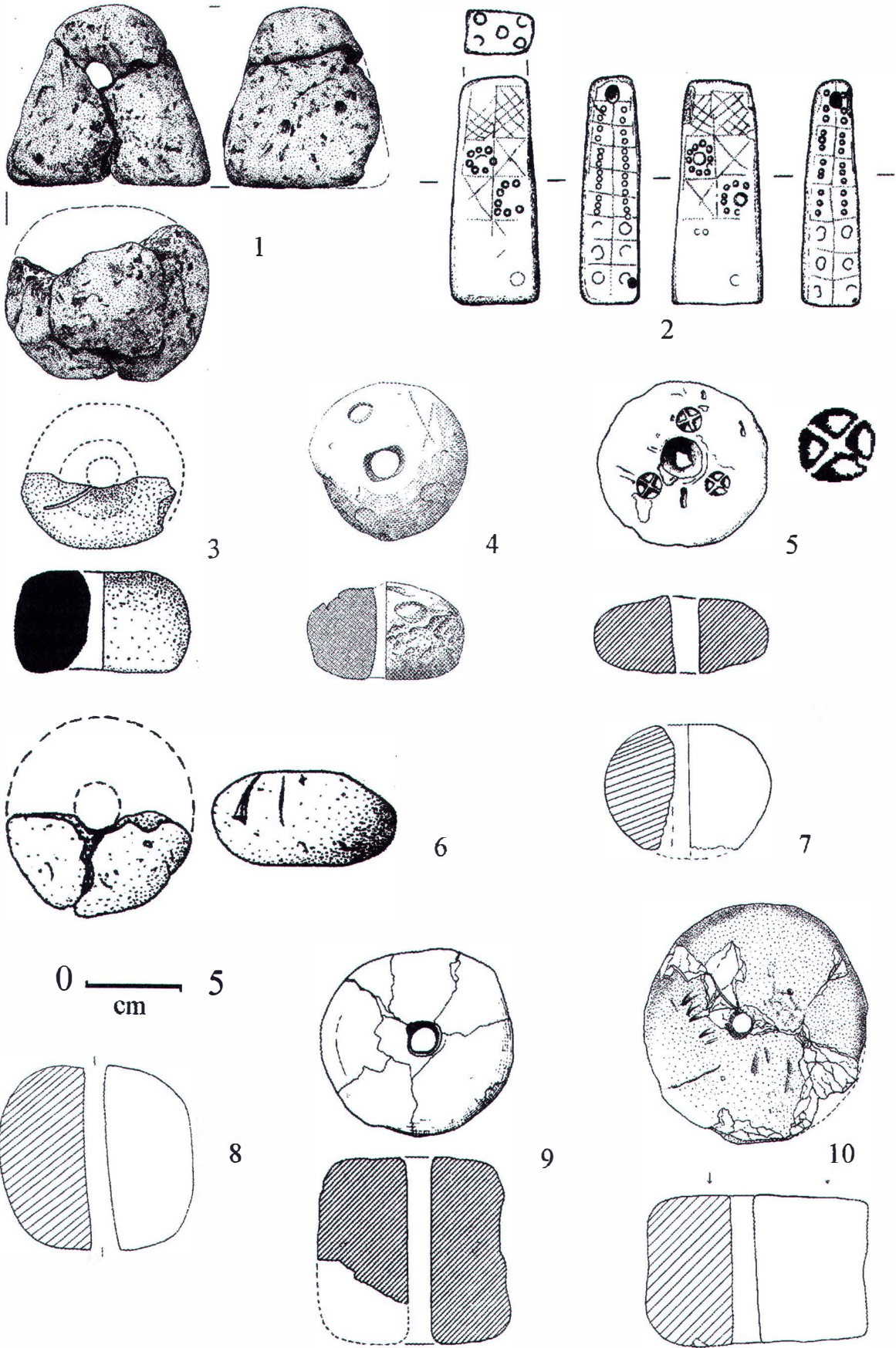
## Verzierungen

Betrachtet man die heute sehr viel zahlreicher als zur Zeit der eingangs erwähnten Zusammenfassung von H. Steuer vorhandenen verzierten Gewichte, so fallen einige Unterschiede auf. Zu dem einzigen ihm 1974 aus der Literatur bekannten Stück aus Manching bei Ingolstadt in Bayern ist bis heute ein gutes Dutzend weiterer Exemplare hinzugekommen. Beginnt man die Aufzählung mit den stempelornamentierten Gewichten, dann sind neben schon länger bekannten aus Igersheim/Tauber (Abb. 4.4), Tauberbischofsheim, vom Runden Berg bei Urach, aus Urspring (Abb. 4.5), Gablingen bei Augsburg, Kirchheim bei München, München-Englschalking nun Vorkommen in Mannheim-Vogelstang (unpubliziert; Archäologisches Landesmuseum Baden-Württemberg, Zentrales Fundarchiv Rastatt), Kirchheim am Neckar (Hinweis E. Di Gennaro, Esslingen) oder Oberwinterthur, Kt. Zürich (Roth, Windler 2004, 246 Taf.1, 15 [Abdruck einer Schlafmonkapsel ! ]) zu erwähnen.

Soweit bekannt, weisen bei ihnen die Fundumstände bzw. die Maße überwiegend in die merowingische Zeit. Im Gegensatz zu den Küstenregionen Nordwestdeutschlands und der Niederlande fällt auch die Blütezeit der mit Eindruckstempeln dekorierten Gefäßkeramik im Süden bereits in das 6. und 7. Jh., nicht erst in die Karolingerzeit. Schlüsselabdrücke kennt man südlich des Mains bislang nur aus Ditzingen.

Am häufigsten treten in diesen Regionen

*Fig.4 1. Völkerwanderungszeitliches pyramidales Gewicht vom Runden Berg bei Urach (nach Koch 1994); 2. völkerwanderungszeitliches Gewicht aus der Wüstung Winternheim bei Speyer (nach Schenk 1998); 3. völkerwanderungszeitliches Gewicht aus Mengen (nach Bücher 1999); 4. merowingerzeitliches Gewicht aus Igersheim/Tauber (Stempel M 1:1); 5. merowingerzeitliches Gewicht aus Urspring (nach Meier 1991); 6. frühkarolingisches Gewicht (dendrodatiert 753/754) vom Christenberg bei Marburg (nach Gensen 1997); 7. karolingisches Gewicht aus Mannheim-Wallstadt; 8. hochmittelalterliches Gewicht aus Walldorf (nach Fundberichte Baden-Württemberg 28, 2005, Taf. 141); 9. hochmittelalterliches Gewicht aus Urspring (nach Maier 1991); 10. hochmittelalterliches Gewicht aus der Wüstung Berslingen bei Schaffhausen (nach Banteli/Höneisen/Zubler 2000). M 1:3*





einfache oder einander überkreuzende Kammeindrücke auf, sowohl auf den Oberseiten wie auf den Wandungen (Beispiele: Igersheim, Unterreggenbach, Ladenburg, Ditzingen, Renningen, Runder Berg bei Urach, Manching, Kirchheim bei München, Hallstadt am Main, Burglengenfeld, Sommerein in Niederösterreich, Bettenach bei Lausen/BL).

Die Kombination mit Stempeldekor auf dem Gewicht aus Igersheim an der Tauber (Abb. 4.4) sowie vor allem die keramischen Befunde sichern ein merowingisches Alter auch dieser Verzierungsform. Die Masse der (reinen) Vorkommen ist jedoch karolingisch oder jünger. Auf späten Gewichten zylindrischer Form treten solche Kammeindrücke noch in Ditzingen und Renningen auf. Sie erweisen sich somit als ausgesprochen langlebige Dekorationsform, sind sie doch bereits auf den eingangs erwähnten pyramidalen Gewichten aus Renningen und vom Kügeleskopf bei Offenburg vorhanden.

Einfache (Finger-)Vertiefungen treten im Süden anscheinend erst im hohen Mittelalter auf (Ladenburg), während sie andernorts schon viel früher zu fassen sind. Fingerzwicken konnten bislang nur einmal, auf einem wohl hochmittelalterlichen Gewicht aus der Wüstung Reistingen bei Herrenberg, festgestellt werden.

## Gewicht

Leider fehlen bei den aus süddeutschen Fundorten publizierten Stücken fast immer Gewichtsangaben. Vor allem von den frühesten, spätantik-völkerwanderungszeitlichen Gewichten wurde bisher anscheinend kein einziges gewogen. Bei den merowingerzeitlichen stempel-verzierten Exemplaren aus Urspring (Durchmesser zwischen 9 und 10cm, maximale Höhen zwischen 4 und 5cm) liegen die Werte zwischen 370g und 405g. Die aus einem Grubenhaus des 11./12. Jh. geborgenen Gewichte (Durchmesser zwischen 10 und 12cm, Höhen zwischen 8 und 10cm) wiegen dort immerhin zwischen 1070g und 1330g.

Die mit Kammeinstichen dekorierten, ebenfalls hochmittelalterlichen Funde aus Ditzingen (Durchmesser 11.5cm bzw. 12cm, Höhe 11cm) sind 965g und 805g (beschädigtes Exemplar!) schwer. Das

unverzierte Ditzinger Gewicht wiegt bei 12cm Durchmesser und 12cm Höhe 1740g und ist das schwerste bislang überhaupt entdeckte. Gewicht 1 aus der Ulmer Rosengasse aus der Zeit um 1100 (Durchmesser 12.5cm, Höhe 7.5cm) wiegt schätzungsweise 1200g, Gewicht 2 aus der Zeit um 1200 (Durchmesser 12.2cm, Höhe 6.6cm) ebenso (Mitteilung Th. Westphalen, Leipzig). Die Masse der 57 Gewichte (Durchmesser 10–14cm, Höhen 7–10cm) aus einem Grubenhaus des 11. Jhs. in Schinznach/Kt. Aargau liegt gemäß der freundlichen Auskunft von Th. Frey (Kantonsarchäologie Aargau) im Bereich von 1000–1500g. Im ebenfalls schweizerischen Berslingen betrug in zwei Grubenhäusern des 10./11. Jhs. die Durchmesser zwischen 7–8cm, die Gewichte zwischen 1000 und maximal 1400g (Bänteli, Höneisen, Zubler 2000, 128 Abb. 91).

Zusammenfassend läßt sich sagen, da nach dem bisher bekannten südwestdeutschen Material die Maße der runden Gewichte durchaus – zumindest grobe – Anhaltspunkte für ihre zeitliche Einordnung innerhalb des frühen und hohen Mittelalters liefern. Für die verschiedenen Zierweisen gilt dies jedoch nur mit Einschränkungen; am aussagefähigsten hinsichtlich einer frühmittelalterlichen Datierung scheint Stempeldekor zu sein.

Es stellt sich abschließend die Frage, ob parallel zu den hier geschilderten Änderungen bei den Webstuhlengewichten Veränderungen bei den zeitgleichen Textilien einhergingen.

Diese Zeilen stellen die aktualisierte Fassung eines Beitrages von 1992 dar. Aus Platzgründen werden die Fundortnachweise für die dort (Gross 1992) erwähnten Gewichte nicht wiederholt, Literatur ist nur für Neufunde angegeben.

## Literatur

Ament, H. 1965, 'Ein Webgewicht aus Mayen', *Jahrbuch RGZM* 12, 93–98.

Bänteli, K., M. Höneisen, K. Zubler 2000, *Berslingen – ein verschwundenes Dorf bei Schaffhausen*, Schaffhauser Archäologie 3, Schaffhausen.

Bücker, Ch. 1999, *Frühe Alamannen im*

Breisgau. Untersuchungen zu den Anfängen der germanischen Besiedlung im Breisgau während des 4. und 5. Jahrhunderts n. Chr., Sigmaringen.

Frank, K. 1999, 'Die germanische Besiedlung im Vorfeld des Obergermanischen Limes in Baden-Württemberg vom 2.-5. Jahrhundert n. Chr.' in: Th. Fischer, G. Precht, J. Tejral (Hrsg.), *Germanen beiderseits des spätantiken Limes*, Köln/Brünn, 69 - 79.

Gensen, R. 1997, 'Ein Keramikkomplex mit dem Schlußdatum 753 vom Christenberg, Gde. Münchhausen am Christenberg' in: Bérenger, D. (Hg.), *Beiträge zur Geschichte Westfalens. Festschrift für Klaus Günther*, Studia Honoraria 2, Rahden/Westf., 219-228.

Gross, U. 1992, 'Zu den runden Webgewichten des frühen und hohen Mittelalters', *Archäologische Informationen* 15/1&2, 56-62.

Haberstroh, J. 2003, 'Funde der jüngeren Merowingerzeit aus Eggolsheim. 2000 Jahre Siedlungskontinuität im Regnitztal?' in: I. Ericsson, H. Losert (Hg.), *Aspekte der Archäologie des Mittelalters und der Neuzeit. Festschrift für Walter Sage*, Bonn, 53-64.

Hoepfer, M., H. Steuer 1999, 'Eine völkerwanderungszeitliche Höhenstation am Oberrhein - der Geißkopf bei Berghaupten, Ortenaukreis: Höhengründung, Kultplatz oder Militärlager?', *Germania* 77, 185-246.

Koch, U. 1994, *Der Runde Berg bei Urach VIII. Frühgeschichtliche Funde aus Bein, Geräte aus Ton und Stein aus den Plangrabungen 1967-1984*, Sigmaringen.

Maier, K. 1991, *Eine mittelalterliche Siedlung auf Markung Urspring, Gde. Lonsee, Alb-Donau-Kreis*, Materialhefte zur Archäologie in Baden-Württemberg 23, Stuttgart.

Roth, M., R. Windler 2004, 'Zum früh- und hochmittelalterlichen Winterthur. Eine Ausgrabung am Fuß des Kirchhügels', *Jahrbuch Schweizerische Gesellschaft Ur- und Frühgeschichte* 87, 215-253.

Schenk, H. 1998, *Die Keramik der früh- bis*

*hochmittelalterlichen Siedlung Speyer 'Im Vogelgesang'*, Archäologische Forschungen in der Pfalz 1, Neustadt an der Weinstraße.

Schuster, J. 2004, *Herzprung. Eine kaiserzeitliche bis völkerwanderungszeitliche Siedlung in der Uckermark*, Berliner Archäologische Forschungen 1, Rahden/Westf.

Steuer, H. 1974, *Die Südsiedlung von Haithabu*, Neumünster.

Windler, R., A. Rast-Eicher 1999/2000, 'Spätmittelalterliche Weberwerkstätten in der Winterthurer Altstadt', *Zeitschrift für Archäologie des Mittelalters* 27/28, 3-84.

Zimmermann, W.H. 1982, 'Archäologische Befunde frühmittelalterlicher Webhäuser', *Jahrbuch der Männer vom Morgenstern* 61, 111-144.

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## The Bog Body from Obenaltendorf

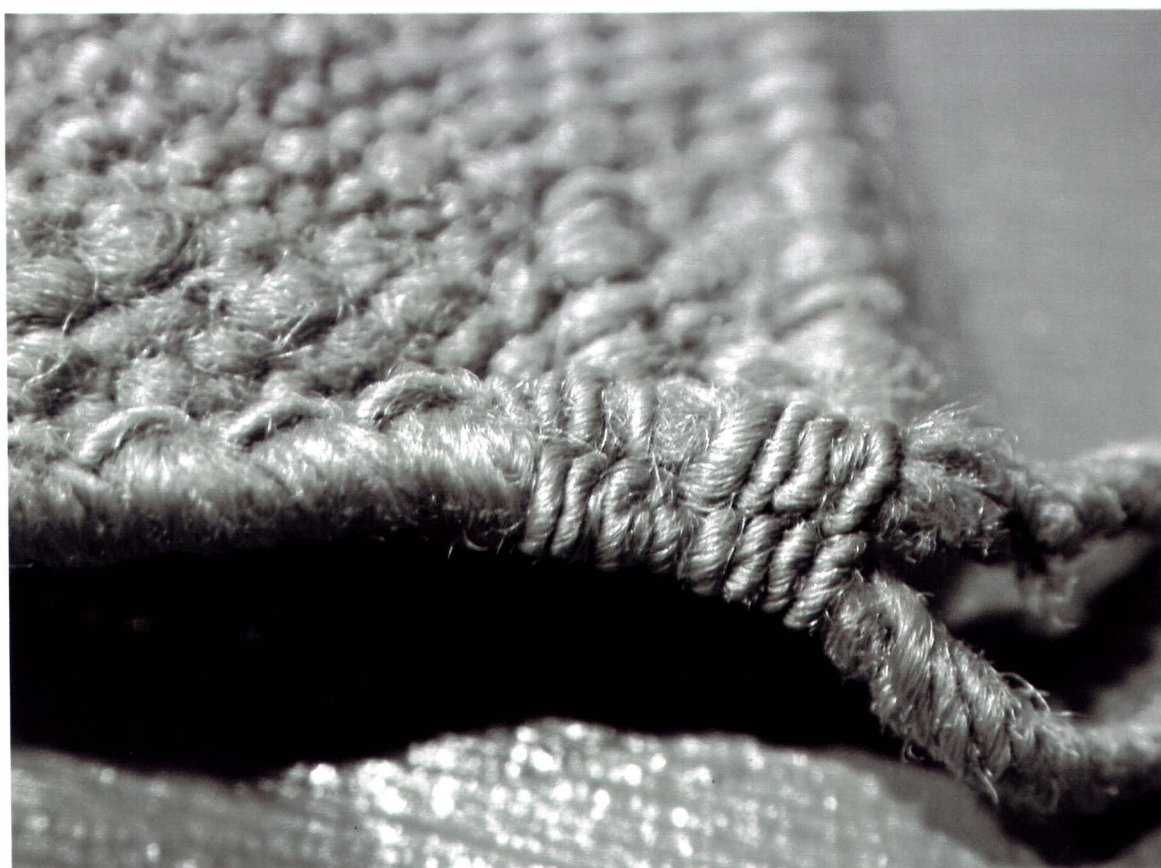
The bog body from Obenaltendorf was found not far from the mouth of the river Elbe in 1895 (Hahne 1919). Only a little is left of the dead body itself, but a tunic, trousers, a cloak, two small pieces most probably used as wrappings for the knees, leather shoes and two silver pendants are preserved (Schlabow 1976, 20-21, 68, 71, 80, 90; Bender Jørgensen 1992, 57, 67, 130). The man had short, rather light, curly hair and was quite tall, according to eye witnesses. The body is C14-dated to the 3rd century AD.

## The fabrics

All textiles are made of originally white wool. The rectangular cloak is 2.53m x 1.73m in size. Along the shorter edges there are 5cm long fringes but no starting or finishing borders. The selvages (fig.5) are strengthened using two bundles of six warp ends each. It is a half-basket weave with 7 x 17-18 threads per cm, z-spun in both systems. In the weft direction, close to



*Fig.5 Selvedge on cloak from Obenaltendorf (Photo: S. Möller-Wiering)*



*Fig.6 Knee wrapping, starting border with loop (Photo: S Möller-Wiering)*

both ends, there is a narrow, dark stripe in tabby, made of yarns in zS.

The tunic is made of one piece of cloth, with seams along one side of the body and along the shoulders. It is again a half-basket weave in z, in this case with 11 x 23 threads per cm. Three narrow stripes run across the breast, two more are to be found close to the lower edge, all woven as rep. The selvages are strengthened almost as in the cloak.

Another half-basket weave was found in those pieces which are reconstructed as short trousers, with 11-12 x 19 threads per cm, again z-spun. There is a selvedge as in the tunic and a plaited finishing border. And again there are stripes in the weft, woven as rep.

Two pieces of 15 x 75cm in size were identified by Hahne (1919, 30, 36) as wrappings for the knees. Originally, they belonged to one piece of cloth. There is a starting border consisting of a twined cord making a loop at the corner (fig.6), a twined finishing border and a selvedge of the same type as before. But in contrast to the other clothes, the wrappings are made of tabby, with 13 x 14 threads per cm, again z-spun.

### Parallels

The shape of the cloak can be found in the Roman Empire as well as beyond its northern boundaries and attention may be drawn to a Roman tombstone showing a piece of cloth resembling the cloak from Obenaltendorf (fig.7) (Schwinden 1989, 289 Abb.4a). The size of the tunic is rather small compared to known Roman pieces, and the warp runs from head to foot, in contrast to typical Roman tunics. However, if one were to open the seams, the width (and technique) would be very similar to the cloak, and the tunic might be a re-used cloak. The trousers are reconstructed and nothing is known about their original shape. The shape of the knee wrappings is also unspecific.

All threads are spun in z-direction, the common spinning direction in all western and northern Europe and seemingly also Italy. The weave of three pieces - half-basket -, on the other hand, is to be found



Fig.7 Roman tombstone from Hirzweiler, Germany. (Drawing: Reinhard Kühn, Archäologisches Landesmuseum, Stiftung Schleswig-Holsteinische Landesmuseen Schloss Gottorf, after Die Römer an Mosel und Saar, 1983)

quite often within the Empire, but is almost unknown beyond its northern boundaries. Interestingly enough, neither twill nor tablet woven edges were observed, both being typical for northern and western Europe at that time. Twined starting and finishing borders are present in the North but rare; they are more often found within the Empire. The lack of any starting and finishing border on the cloak may point to a loom different from the warp-weighted loom. The parallels for both types of reinforced selvedge found in Obenaltendorf are again to be found within the Empire (Mannering 2000). And finally, the same applies also to the stripes in the trousers because of their rep weave and because of the transition between basic weave and the *clavus*-like stripes. These features are typical for Roman tunics and the trousers may well be made out of a tunic. On the other hand, the tunic from Obenaltendorf lacks such *clavi* which in turn may point to its origin as a cloak or any other kind of large cloth.

Taking all features and their parallels into account, the Mediterranean character of the clothing is striking. Only the shoes (as Carol van Driel-Murray kindly informs me) and probably the pair of pendants (berlocks) are of Germanic origin. It seems that the

man was not a Roman, but clothed in Roman textiles. However, there are a few hints – like the absence of indications of a belt – pointing to a civilian rather than a military background.

## References

Bender Jørgensen, L. 1992, *North European Textiles until AD 1000*, Aarhus

Hahne, H. 1919, *Moorleichenfunde aus Niedersachsen, Vorzeitfunde aus Niedersachsen* herausgegeben vom Provinzialmuseum zu Hannover, B (VI).

Mannering, U. 2000, 'The Roman tradition of weaving and sewing: a guide to function?', *ATN* 30, 10–16.

Schlabow, K. 1976, *Textilfunde der Eisenzeit in Norddeutschland*, Göttinger Schriften zur Vor- und Frühgeschichte 15.

Schwinden, L. 1989, 'Gallo-römisches Textilgewerbe nach Denkmälern aus Trier und dem Trevererland', *Trier Zeitschrift* 52, 279–318.

## Supplementary bibliography

Bender Jørgensen, L. 1986, *Forhistoriske Textiler i Skandinavien*, Nordiske Fortidsminder, Serie B, 9

Bender Jørgensen, L. 2006, 'The late Roman fort at Abu Sha'ar, Egypt' in S.Schrenk (ed), *Textiles in situ*, Riggisberger Berichte 13, 161–173

Desrosiers, S., A.Lorquin 1998, 'Gallo-Roman period archaeological textiles found in France' in L.Bender Jørgensen, C.Rinaldo (edd), *Textiles in European Archaeology: Report from the 6th NESAT Symposium, 7–11th May 1996 in Borås*, Gotarc Series A, 1, 53–72

Hald, M. 1980, *Ancient Danish Textiles from Bogs and Burials*, Publications of the National Museum, Archaeological-Historical Series XXI, Copenhagen

Pritchard, F. 2006, *Clothing Culture. Dress in Egypt in the First Millennium AD*, Manchester

Wild, J.P. 2002, 'The textile industries of

Roman Britain', *Britannia* XXXIII, 1–42

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## Monastère de Baouit : Premiers Textiles

Le site du monastère de Baouit se trouve à environ 80 kilomètres au nord d'Assiout (Moyenne Egypte). D'après *l'Historia Monachorum in Aegypto*, le monastère aurait été fondé par le moine Apollo vers 385–390. Au VIe siècle il avait une grande renommée. La vie de l'abbé Daniel indique que environ cinq mille moines habitaient la région à cette époque.

Complètement ensablé, il forme un *kôm* très important qui attira l'attention de l'archéologue Jean Clédât, pensionnaire de l'Institut français d'archéologie orientale (IFAO). Cinq campagnes de fouille, de 1901 à 1913, permirent la découverte de deux églises, dites 'nord' (fig.8.F) et 'sud', ainsi qu'un grand nombre de salles et cellules, parfois ornées de peintures murales. Le partage du produit des fouilles qui s'en suivit permit l'ouverture d'une 'salle de Baouit' au musée du Louvre en 1929, et d'une autre au Musée copte du Caire en 1939. Au Louvre, une nouvelle présentation de l'église 'sud', des sculptures et peintures du monastère a été ouverte au public en 1997.

En 1913, dans la partie nord du *kôm*, Jean Maspero fouilla une série de salles dont il établit un plan (fig.8.A). Le Service des antiquités de l'Egypte effectua trois campagnes en 1976, 1984 et 1985, dans ce secteur, à l'est des fouilles de Maspero (fig.8.B).

Après une mission de reconnaissance en juin 2002, le musée du Louvre et l'IFAO ont repris la fouille du site. Trois campagnes d'un mois ont eu lieu (septembre 2003, 2004, 2005).

Le monastère s'étendait sur 40 hectares. La prospection géophysique utilisant la méthode magnétique entreprise par Tomasz Herbisch (Institute of Archaeology and Ethnology, Polish Academy of Sciences) couvrant 20

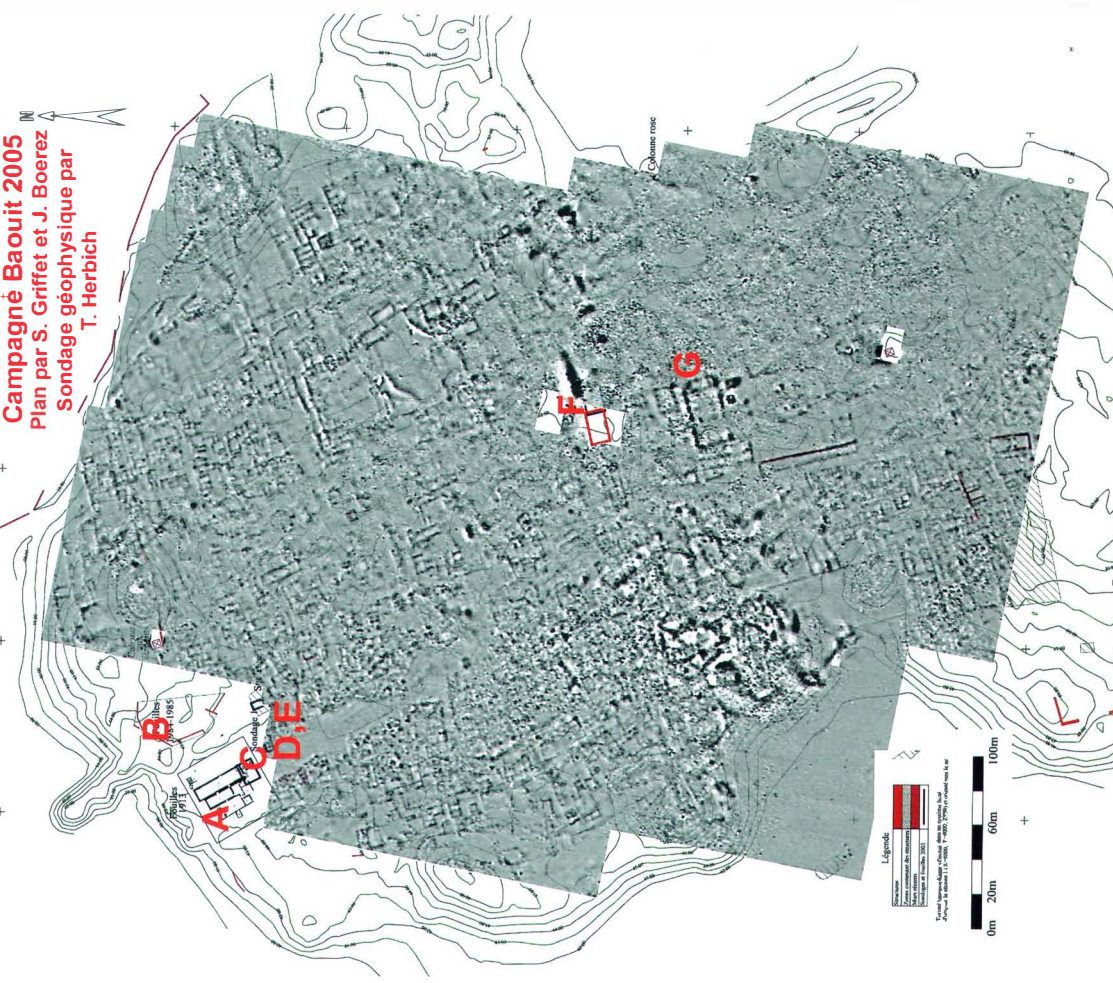


Fig.8 Plan partiel du monastère de Baouit



Fig.9 Mèche de lampe SGN.2.28  
 (Copyright: Baouit/R. Cortopassi)

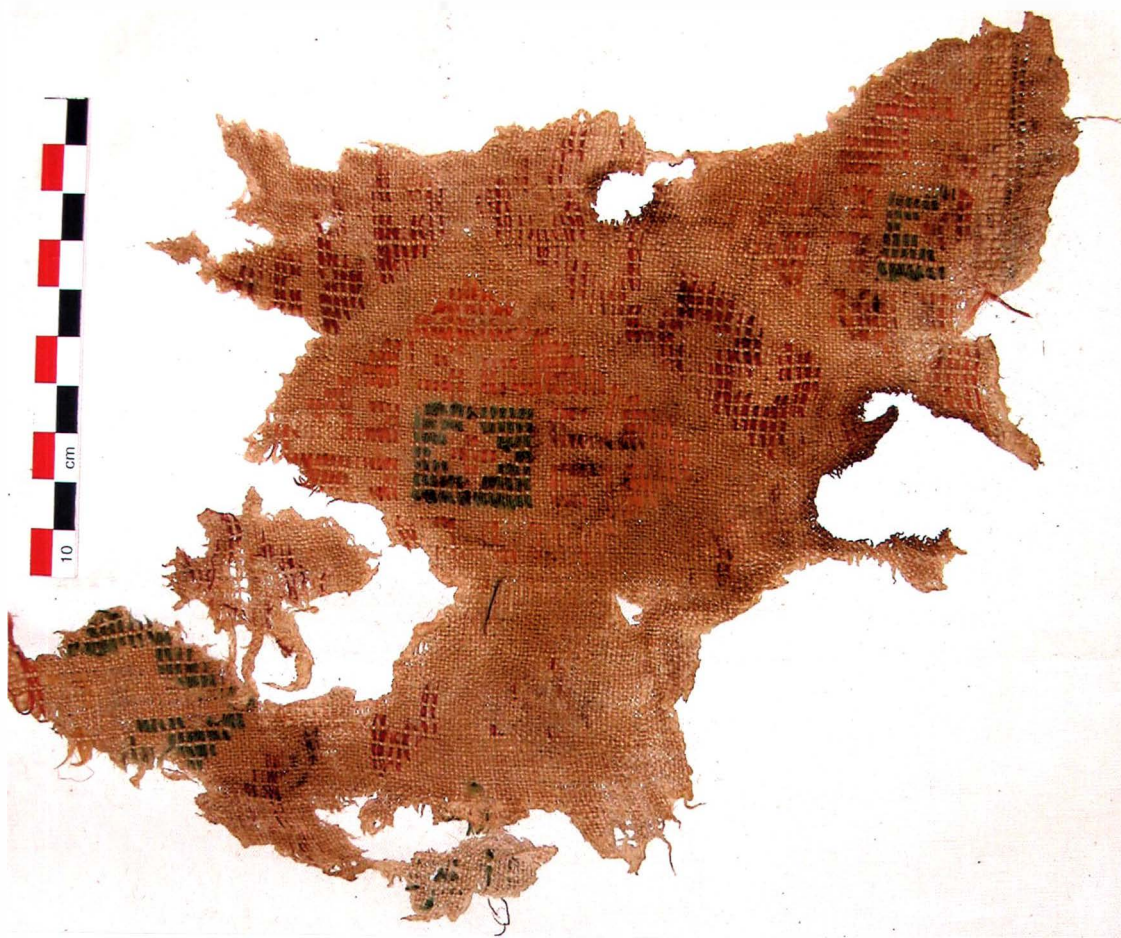


Fig.11 Fragment broché, EGNext.38  
(Copyright: Baouit/R. Cortopassi)



Fig.10 Grand fragment de laine, EGN.3.12  
(Copyright: Baouit/R. Cortopassi)

hectares (en gris sur la fig.8), montre que le monastère présentait un réseau dense de petites constructions regroupées en ensembles irréguliers. Un bâtiment beaucoup plus grand que les églises 'nord' et 'sud' a pu être distingué un peu plus au sud (fig.8.G).

Deux équipes se partagent le travail. La première, dirigée par Dominique Bénazeth (musée du Louvre) chef du chantier, a travaillé sur l'église 'nord' (fig.8.F), qui avait été partiellement dégagée par J. Clédat, afin de mieux comprendre le plan, la structure et le décor peint, en particulier celui des colonnes. Une fouille stratigraphique minutieuse n'était ni envisageable ni utile car la couche de remplissage comporte des éléments anciens, mais aussi beaucoup d'éléments laissés par les fouilleurs du début du XXe siècle.

La deuxième équipe, dirigée par Marie-Hélène Rutschowskaya (musée du Louvre), a procédé à la vérification des plans établis par Maspero (sondage 1; fig.8.C) et s'est déplacée ensuite vers le sud-est pour entreprendre des sondages en terrain vierge (sondage 2 et 3; fig.8.D, 8.E). Le sondage 3 a mis au jour une série de salles, disposées autour d'une cour avec un escalier donnant accès aux toitures en terrasse (effondrées) sur lesquelles un nombre très important d'amphores était entreposé. Une salle voûtée de grandes dimensions (9.30 x 5.33m) était complètement peinte. Le mur nord, dégagé et consolidé en septembre 2005, présente une série de scènes de l'enfance de Jésus: 'le songe de Joseph', 'le voyage à Bethléem', 'la Nativité, Salomé et les bergers', 'la présentation au Temple' et 'l'adoration des Mages'. Les têtes et les bustes des personnages qui se trouvaient à l'amorce de la voûte sont perdus, mais malgré cela ce mur peint reste certainement une découverte spectaculaire (fig.12).

L'étude du matériel céramique par Sylvie Marchand (IFAO), et des fragments de verre par Maria Mossakowska (IFAO), donnent un cadre chronologique assez précis. Ainsi le matériel trouvé dans l'église 'nord' se situe autour du Xe siècle, tandis que la date d'abandon du sondage 2 se situe dans la deuxième moitié du VIIe siècle.

Parmi le matériel mis au jour, les textiles ont offert matière à une étude approfondie.

Une première mission a eu lieu en septembre 2005. Un fichier FileMakerPro adapté à l'enregistrement des tissus a été créé. Il comporte les rubriques habituelles nécessaires à l'identification de l'objet et celles destinées aux caractéristiques techniques (matériaux, torsions, armures, réductions, etc.). Une ou plusieurs photographies numériques ont été prises pour chaque fragment, mais pour les pièces les plus intéressantes une diapositive a été faite par le photographe de la mission (G. Poncet)

Une partie du matériel exhumé pendant la fouille de septembre 2003, dont tous les tissus, a été déposé dans un magasin du CSA à Ashmounein. 51 fragments ont donc été étudiés dans ce magasin. Tout le reste du matériel se trouve, pour l'instant, sur le site. Au total 233 fiches et 550 photos ont été faites à ce jour.

### Sondages

Le sondage 1 n'a donné aucun fragment textile. Pour le sondage 2, 31 fragments ont été trouvés et ils ont tous été étudiés. Sans surprise, le lin de torsion S et l'armure toile représentent la grande majorité. Mais on note aussi 2 fragments de lousine avec fils de chaîne (par 2) très fins et très tordus et des trames beaucoup plus grosses et faiblement tordues. Quelques nattés (2.2), un fragment bouclé, un broché, un fragment à trame lancée, ainsi qu'un fragment en poil de chèvre, complètent l'ensemble. Il s'agit d'un matériel pauvre, datable du VIIe siècle, et correspondant au lieu de découverte: des pièces qui devaient être probablement des celliers.

Pour le sondage 3, qui n'est pas terminé, seulement une partie des fragments trouvés a été étudié. En tout cas, le matériel semble très proche de celui du sondage 2. Peut-être la salle 7, la grande pièce avec le cycle de peintures (fig.12), qui devait être une pièce de réception (?) ou de réunion, donnera des fragments d'un autre type quand le niveau du sol sera atteint.

### Eglise 'nord'

La situation est bien plus compliquée pour l'église 'nord', car, comme nous l'avons indiqué, le matériel ancien est mélangé à celui laissé par les fouilleurs du début du



XXe siècle. Il a été décidé d'analyser et d'enregistrer de la même manière les fragments anciens et 'modernes'. De plus, assez souvent, plusieurs fragments trouvés à quelque distance l'un de l'autre, semblent appartenir au même tissage, mais leur identification reste délicate car l'état de conservation peut varier ainsi que la densité des fils.

Au total 172 fragments ont été enregistrés dont un peu plus de un tiers sont modernes. Dans ces tissus 'modernes' le coton est prédominant ainsi que la torsion Z, mais il faut faire une deuxième classification entre tissages industriels, voire importés, et tissages locaux 'traditionnels'. Les tissus industriels présentent des fils et un tissage extrêmement réguliers, on y trouve des toiles mais aussi plusieurs sergés, l'utilisation fréquente d'une teinture synthétique bleu foncé, et des fragments imprimés. Dans le deuxième groupe, les tissus locaux traditionnels, filés et tissés à la main, le coton, le lin et la laine sont présents, en torsion S ou Z. Quelques pièces sont particulièrement intéressantes, comme un gros tissage en laine barré à trame lancée (fig.10), un fragment de bande aux tablettes à décor de soumak et une djellaba pratiquement complète. En l'absence de tout repère chronologique, il reste toutefois extrêmement difficile de faire la différence entre une toile de lin filée et tissée à la main produite au IXe siècle et une produite au XIXe.

Dans les tissus 'anciens' de l'église 'nord' on retrouve tous les types rencontrés dans les sondages, mais aussi quelques fragments de tapisserie et des brochés, dont trois de dimensions relativement importantes (fig.11). L'éventail des techniques est donc plus large.

Douze mèches de lampe, trouvées dans les niches de l'église, constituent une découverte assez intéressante. Leur datation reste problématique, comme nous l'avons déjà indiqué, mais des lampes ou fragments de lampe en terre cuite datés des VIIIe-Xe siècles ont également été trouvés dans l'église. Certaines ont été utilisées et sont partiellement brûlées, d'autres n'ont jamais servi. Ces mèches, toutes en fibres végétales, sont de trois types: en fibres non filées, en fibres filées (fig.9), en tissu.

Les mèches de lampe semblent rares, peu d'exemples sont conservés. Une étude est actuellement en cours pour essayer de collecter les informations à ce sujet et éventuellement comparer les pièces conservées ou publiées avec celles trouvées à Baouit. Toute information concernant les mèches de lampe nous serait extrêmement utile.

## Bibliographie

Rutschowskaya, H.-M. 2004, 'Fouilles du monastère copte de Baouit (Moyenne Egypte). Musée du Louvre - Institut français d'archéologie orientale du Caire. Saisons 2002-2003', *La Revue des musées de France. Revue du Louvre* 2, 27-30.

Rutschowskaya, M.-H., D. Bénazeth, 'Neue Grabungen im Kloster von Bawit (2003-2004)', *Kemet* 14/1, 56-59, 99.

Boutros, R., M.-H. Rutschowskaya 2005, sous presse, 'Sondages dans le monastère de Baouit. Musée du Louvre/IFAO 2003', *BIFAO* 105.

Rutschowskaya, M.-H. sous presse, 'Reprise des fouilles françaises à Baouit: Louvre/Ifao 2003' en A. Boud'hors (éd.), *Actes du 8e Congrès international d'Études coptes (Paris, 28 juin - Juillet 2004)*.

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## Qasr Ibrim: Study Season 2005

The acropolis of Qasr Ibrim, today an island projecting above the surface of Lake Nasser, lies in Lower Nubia, not far north of the Egyptian/Sudanese border. Since 1960 it has been the focus of regular campaigns of excavation by the Egypt Exploration Society under a number of distinguished directors, prompted initially by the UNESCO project to record and/or save monuments from the rising waters retained by the Aswan High Dam. Occupation at Qasr Ibrim extended from the eleventh century BC to 1811 when the Bosnian garrison withdrew; thanks to the arid conditions abundant textiles survive from most of the periods represented on



*Fig.12 Baouit, sondage 3, salle 7, mur nord (Copyright: Baouit/R. Cortopassi)*



*Fig.13 Embroidered flowers in cotton from Qasr Ibrim (as yet unrecorded). The reverse is shown here: the front has faded. (Photo: P.J. Rose)*

site. The formidable task of recording them fell to the late Elisabeth Crowfoot, a textile polymath (ATN 41, 25–29), assisted by Nettie Adams, who is now working on the archive. Recent excavations directed by Pamela Rose have concentrated on domestic structures of the Napatan (principally eighth and seventh centuries BC), Meroitic (first century BC – c.AD 350) and Post-Meroitic (formerly 'X-Group') (c.AD 350 – 550) periods. The material is well stratified, almost free of later intrusion and hence of special value. During a study season at Shellal (Aswan) in October 2005 we recorded the textiles of the 2005 dig (Trenches 25 and 27) and made a start on those from 2000 (Trench 22) (320 items in all).

During the 25th Dynasty (c.750 – 657 BC) Egypt was ruled by Nubians from Napata, and Qasr Ibrim on the edge of Napatan home territory at that time reflected the textile traditions of the Lower Nile Valley. Flax totally dominates the assemblage (just two scraps of the same S/S tabby in wool (0309, 0347) are recorded as Napatan). All flax is spliced, none spun, as can be most clearly seen in the fragments of coarser fabric. First, individual bundles of fibre ultimates were spliced to one another with a slight Z-twist; then two spliced lengths are (often hard) plied together in S-direction (Granger-Taylor 1998, 102–107). In some fragments of sacking quality it is apparent that the fibre ultimates had not been fully separated at the preparation stage.

Plain warp-faced tabby is the principal weave, though some fragments of half-basket weave appear to be of Napatan date. There are simple multi-strand warp fringes, some ending in knots and one with a more complex interlace element. The fine cloth 0156 has a blue warp stripe forming the selvedge, and begins with a starting cord of 4 blue threads followed by 6 single blue weft threads. A rather irregular pile is featured on an unusual basket weave (0154): pairs of plied spliced yarns are anchored under 4 warp pairs grouped together. Numerous fragments of cloth painted with figural motifs were also recovered: their conservation and recording are an urgent task for the future.

By the first century BC a new Nubian power centre at Meroe had extended its control

over Ibrim. Many Napatan textile traditions continued, however; flax was still always spliced, for instance. After the incorporation of Egypt into the Roman empire, Ibrim lay in a southern buffer zone, and from 25/24 – 22 BC there was a small Roman garrison on the acropolis. So far, however, only one textile from the 2000 and 2005 seasons can be unequivocally associated with the garrison: a fine 2/1 twill Z/S gaberdine in wool. Elisabeth Crowfoot and Nettie Adams, however, recorded a large deposit of early Roman-period textile refuse from along the southern ramparts (Adams, Crowfoot 2001); it represented not just soldiers' clothing, but items imported from the province of Egypt and local imitations.

The number of linen fabrics in Meroitic contexts was limited, and there is the likelihood that some of them are rubbish survivals of Napatan date. There are a few half-basket and basket weaves, but most are fine tabby; the coarser tabbies of incompletely prepared flax are probably sacking. Notable items include a small pouch in half-basket weave and a tabby with blue, reddish and pale undyed bands. Several pieces show self-bands, including one with a self-band close to the base of a fringe. (To form the fringe strands, a pair of adjacent warp threads was Z-twisted, then S-twisted around the adjacent pair.) Warp breakages were corrected with neat knots.

Wool textiles (x33) also formed only a small proportion of the Meroitic assemblage. Most were fine and medium-fine S/S tabbies (one basket weave), occasionally showing traces of colour – red, blue and 'purple'. On tabby 0236 a standard reinforced selvedge had been embellished with red and blue embroidery stitching on both sides. Some 9 fragments had cotton warp and dyed wool weft, arguably tapestry remains.

The most remarkable change in the local textile industry, initiated no later than the early first century AD, is the introduction of cotton on a large scale. Occupation layers of Meroitic date commonly contain wads of cotton fibres, cotton seeds and even complete bolls, pointing to local cultivation. Cotton, a summer crop, requires ample irrigation, and how that was achieved – given that the *saqia* water-raising wheel is not thought to have been introduced into Nubia until the fourth century AD – is

debateable (Clapham, Rowley-Conwy 2006, 7; Wild, Wild, Clapham forthcoming).

Most of the cotton is tabby, but basket weave and half-basket weave are present, too. Structural features include a starting border (flat-woven over 6 cords), reinforced and plain selvages and complex openwork fringes in the styles already carefully defined by Elisabeth Crowfoot (Crowfoot 1984). The fringes, equally demanding of manual dexterity, attention to detail and time, are distinctive constituents of the Meroitic textile repertoire. An example of woven surface enhancement is a basket weave carrying a grid pattern of squares of looped pile (0466). More often however, decorative effects were achieved by linear embroidery, always in blue yarn. One fragment shows a lively scorpion in stem stitch (0376), but the most popular motif was rows of flowers on long stems (0178, 0375, 0383, 0468) (fig.13). The flower centre was a tight boss in chain stitch, framed by radiating petals in running stitch. Hems might be embellished with lines of couched piping in red and/or blue cotton (0215, 0380, 0488)). It has been suggested that such embroidery was applied to the apron worn by a Meroitic male: certainly it was worked across the seams of cut and sewn garments.

One complete example (0382) was recorded of a type of textile described recently by Nettie Adams (2006, 207-9) as weaver's trial pieces or possibly votive offerings in the temple of Isis at Ibrim. Of the size and shape of a bookmark in fine basket weave, it starts and ends with openwork fringes; there are plain selvages and 4 blue weft bands.

Numerous finds of mud loomweights at Ibrim indicate that the cotton weavers used the warp-weighted loom - in contrast to the two-beam loom normal in Egypt. It should be noted, however, that in the Dakhleh Oasis there is also a possible association between loomweights and cotton weaving (Hope, Bowen 2002, 97, 165). The reinforced selvages, moreover, hint that Meroitic cotton weavers adopted techniques from both wool and linen weavers and were well aware of the properties of the cotton fibre. Spinners used a high-whorl spindle, often with a resin-coated wooden whorl.

One problem in particular requires further research. Most cotton yarn at Ibrim was consistently very strong spun in S-direction. We take this to be standard local practice. But some 15% of the cotton corpus has Z-spun yarn in both systems, and it was noticeably unevenly spun. What was its origin? At Berenike such fabrics were claimed as Indian imports (Wild, Wild 2000, 271-273), but at Qasr Ibrim, so far from a port, this seems unlikely.

## Bibliography

Adams, N.K. 2006, 'Ideologies in conflict: the textiles from the Isis temple at Qasr Ibrim' in S. Schrenk (ed.), *Textiles in situ*, Riggisberger Berichte 13, 197-210.

Adams, N.K., E.Crowfoot 2001, 'Varia romana: textiles from a Roman army dump' in P.Walton Rogers, L.Bender Jørgensen, A.Rast-Eicher (edd), *The Roman Textile Industry and its Influence*, Oxford, 30-37.

Clapham, A.J., P.Rowley-Conwy 2006, 'Qasr Ibrim's archaeobotany', *Egyptian Archaeology* 29, 6-7.

Crowfoot, E. 1984, 'Openwork fringes from Qasr Ibrim', *Meroitic Newsletter* 23, 10-17.

Granger-Taylor, H. 1998, 'The textile material from Lahun' in S.Quirke (ed), *Lahun Studies*, Reigate, 100-107.

Hope, C.A., G.E.Bowen 2002, *Dakhleh Oasis Project: Preliminary Reports of the 1994-1995 to 1998-1999 Field Seasons*, Oxford.

Wild, J.P., F.C.Wild 2000, 'Textiles' in S.E.Sidebotham, W.Z.Wendrich (edd), *Berenike 1998: Report of the 1998 Excavations at Berenike and the Survey of the Egyptian Eastern Desert, including Excavations in Wadi Kalalat*, Leiden, 251-274.

Wild, J.P., F.C.Wild, A.J.Clapham forthcoming, 'Roman cotton revisited' in C.Alfaro Giner (ed), *Proceedings of the 2nd International Symposium on Textiles and Dyes in the Ancient Mediterranean World, 24-26 November 2005*.

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## La Découverte de Coton dans une Nécropole du Site d'El Deir, Oasis de Kharga, Désert Occidental Egyptien

### Le site d'El Deir et ses nécropoles

Fin 2005, l'équipe du Professeur Françoise Dunand avait mis au jour six nécropoles sur le site d'El Deir (Sud, Nord, Est, Le Piton aux Chiens, Nord-Est, Ouest) (fig.14). Nous ne connaissons toujours pas le nom antique d'El Deir. Le site se trouve dans le nord de l'oasis de Kharga, dans le désert occidental. Cette oasis était appelée dans l'antiquité La Grande Oasis ou l'oasis extérieure, pour la différencier de Dakhla l'Oasis intérieure, à environ 200km à l'Est. Le site est à 20km à vol d'oiseau au Nord-Est d'Hibis et de la nécropole de Bagawat.

Actuellement un fort romain en briques crues domine les nécropoles; les restes d'un temple également en briques, dont les murs intérieurs sont couverts d'inscriptions coptes, sont encore visibles; les parcellaires antiques sont bien conservées avec leur

système d'irrigation. Le village n'a pas encore été retrouvé, le site n'ayant jamais été fouillé avant la mise au jour des nécropoles. Les six nécropoles s'étendent sur une période qui va du début de l'époque ptolémaïque jusqu'à l'époque romaine tardive et aux débuts du christianisme (IVe siècle a.D.).

Nous avons ainsi la chance de pouvoir étudier une population homogène (ce qu'ont confirmé les études anthropologiques de Jean-Louis Heim et Roger Lichtenberg), sur un même site, sur une longue période traversée par d'importants changements politiques et religieux dont nous espérons retrouver certains impacts dans les nécropoles.

Les cinq plus anciennes nécropoles (Sud, Nord, Est, Piton aux chiens, Nord-Est), présentent toutes les critères communs, constants, qui caractérisent les pratiques funéraires de l'Égypte traditionnelle: construction des tombes, préparation et présentation des corps. Seule la sixième, la nécropole Ouest, la plus récente, diffère nettement des précédentes en ce qui concerne les tombes, les corps et les textiles, et présente les caractéristiques d'une nécropole chrétienne (Dunand *et al.* 2005). C'est dans cet ensemble funéraire que furent mis au jour les restes de coton. Des tessons de poteries permettent de la dater pour le moment de la fin du IVe siècle a.D. Dans cette première étude (décembre 2005), quatre-vingt huit tombes ont été prises en compte. Elles se répartissent sur un terrain relativement plat entre deux zones de petites collines, d'une superficie de 80m Nord-Sud et de 18m Est-Ouest. Elles se divisent en deux groupes presque homogènes: le groupe Nord où les tombes sont orientées Ouest-Est avec les têtes à l'Ouest, le groupe Sud où les tombes sont orientées Nord-Sud avec les têtes au Nord (à l'exception de six d'entre elles, creusées dans une direction différentes de celles des tombes environnantes, et d'une tombe double qui a les deux orientations).

### PLAN TOPOGRAPHIQUE DU SITE D'EL DEIR

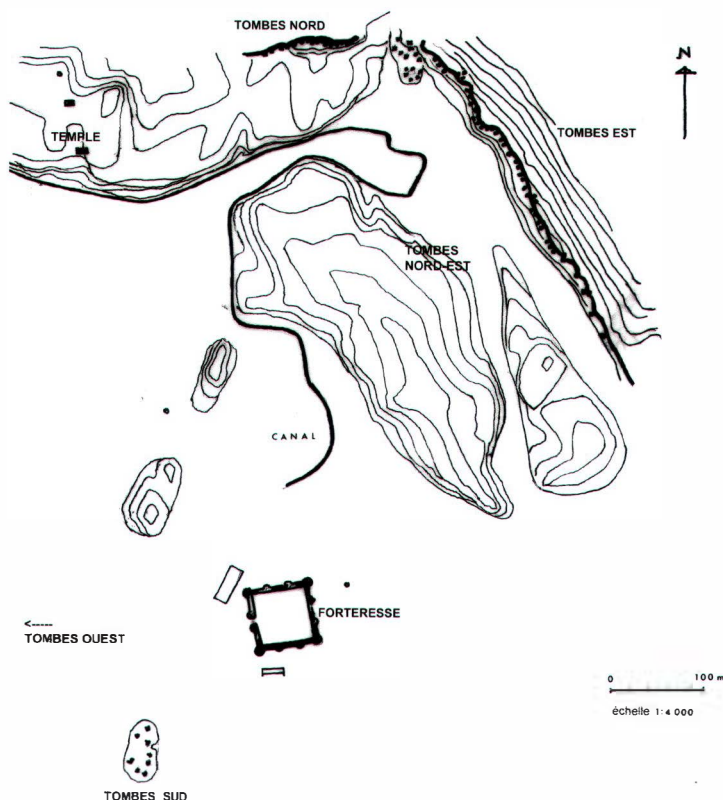


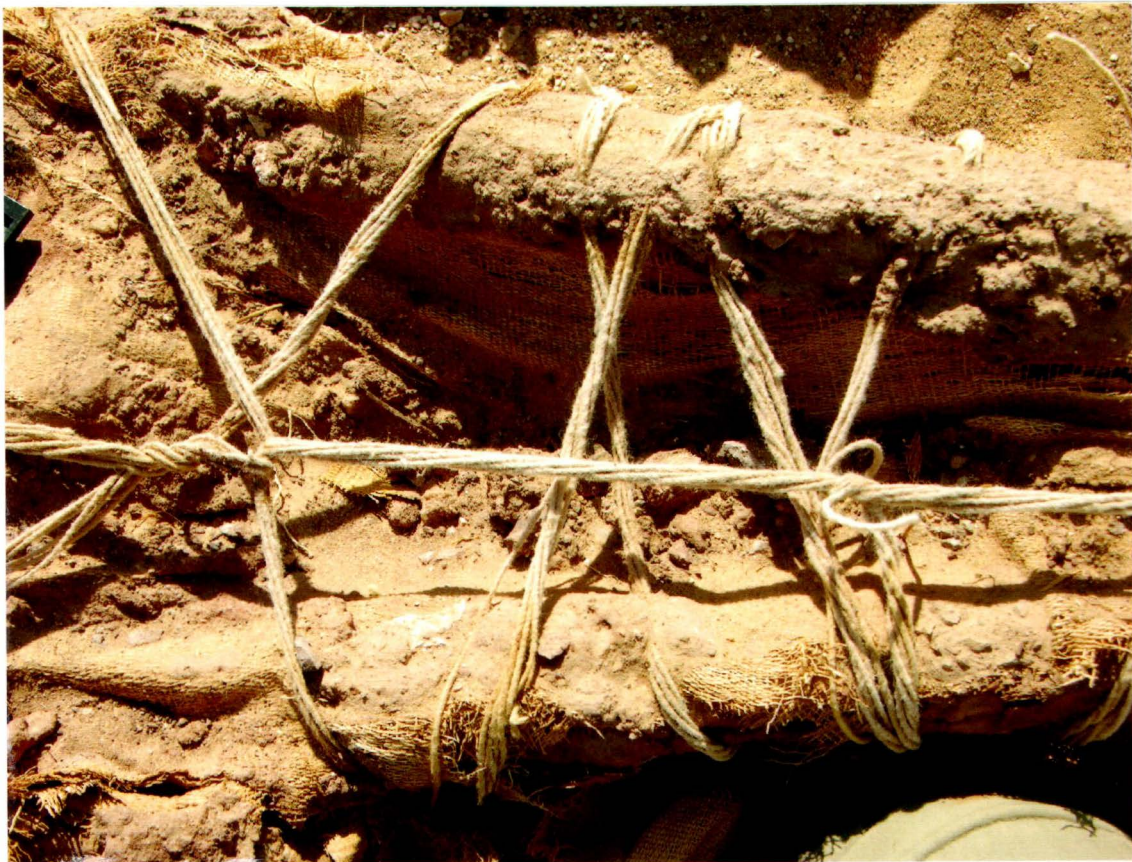
Fig.14 Plan topographique du site (Dessin: F.Letellier-Willemin)

### La Nécropole Ouest

Ce sont des tombes pillées, mais sur 74 corps dénombrés, seuls 13 étaient 'nus'. Un très grand nombre donc était enveloppé de tissus (de simples fragments aux corps complètement enveloppés de linceuls), qu'ils



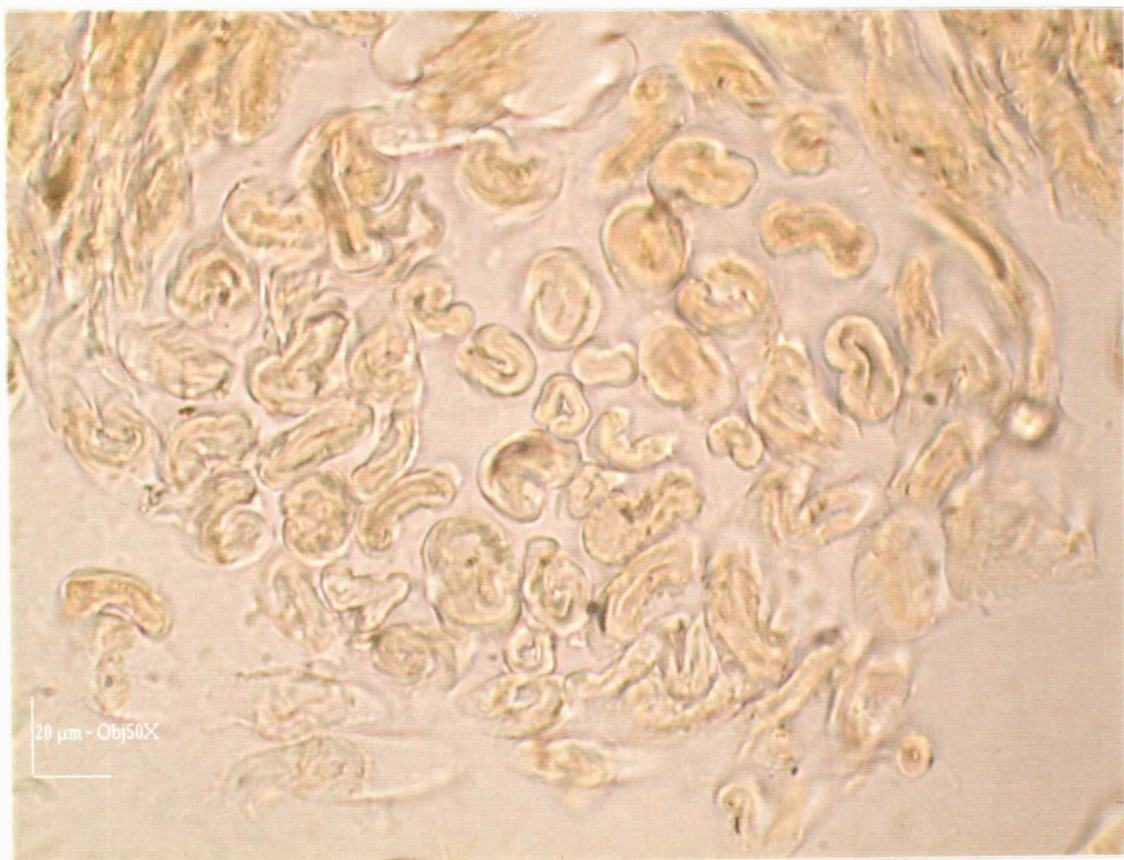
*Fig.15 Bandelettes et cordelettes en place (Photo: F. L-W)*



*Fig.16 Cordelettes seules (Photo: F. L-W)*



*Fig.17 Vue générale des trois cordelettes analysées*



*Fig.18 Coupe transversale de fibres de coton extraites de la cordelette no.3.  
Grossissement X500 (Copyright : C2RMF-Moulherat)*

que soient le sexe et l'âge.

Les tissus sont majoritairement en lin, en particulier les linceuls entiers, tous d'aspect neuf, au contraire des tissus en laine, usagés, du quotidien, réemployés comme linceuls, pour certains adultes ou déchirés pour être aux dimensions des corps d'enfants.

Tous les corps retrouvés avec des tissus ont des liens pour les tenir serrés: bandelettes en lin étroites à deux lisières, lanières en fibres de palmier et des cordelettes de coton (fig.15). Ces dernières ont été retrouvées dans les deux groupes de la nécropole. Elles sont le plus souvent associées aux bandelettes dans les tombes les plus anciennes, orientées Ouest-Est. Dans l'ensemble, il est fait peu d'usage des lanières en palmier.

En conclusion, sur le terrain (fig.16): le coton n'a été retrouvé que sous la forme de cordelette. Tous les tissus accessibles à l'étude sont en lin ou en laine. Deux nouveau-nés ont été retrouvés avec un brin de laine jaune encore noué autour du cordon ombilical. Et pour de nombreux individus, les jambes, les pieds, les gros orteils, les bras sont attachés mais avec des lanières en palmier.

Les cordelettes sont employées en grande quantité, jusqu'à près de 20m pour un individu. Elles sont entrecroisées toujours de la même façon, identique par ailleurs à celles des bandelettes et des lanières. Certaines sont utilisées comme mentonnière de la même façon là aussi que les bandelettes. Rarement, elles sont utilisées comme 'fils' pour coudre le dernier linceul à ceux du dessous. Enfin elles sont d'un aspect très semblable à celui des lanières en palmier.

Trois cordelettes ont fait l'objet d'une identification de fibre (fig.17).

Cordelette no.1: elle semble imprégner d'un produit qui lui donne une couleur légèrement ocrée, le fragment étudié mesure 45cm de long. Il s'agit d'un câble S de 4mm de diamètre constitué de 6 fils retors Z de torsion forte d'1mm, chacun étant constitué de quatre fils simples z de 0.4mm, soit: S,6Z,24z.

Cordelette no. 2: non teinte, elle mesure 30cm de long. La seconde cordelette est un câble S de 4mm de diamètre constitué de trois fils retors Z de torsion moyenne de 2mm, chacun étant constitué de 6 fils simples de torsion s de 0.5mm, soit: S,3Z,18s.

Cordelette no. 3: non teinte, elle mesure 35cm de long (fig.18). La dernière cordelette est aussi un câble S de 8 mm de diamètre constitué de deux fils retors Z de torsion moyenne voire faible, l'un est constitué de 9 fils simples de torsion s et un fils retors Z, le second comprend 12 fils simples s et un fils retors de Z, soit: S,2Z,21s2Z.

Ces cordelettes sont toutes des câbles de torsion S, constituées de fils simples de torsion s ou z.

Nous avons procédé successivement à la caractérisation des fibres de chacune des cordelettes. Une fibre peut s'observer de deux façons distinctes: soit en vue longitudinale, soit en coupe transversale. À chacune de ces observations correspond une méthode d'analyse spécifique. Pour l'observation en vue longitudinale, on dispose quelques fibres entre lame et lamelle dans un liquide d'immersion (baume du Canada par exemple) et on observe sous un microscope optique à transmission. Il est souvent utile d'effectuer l'examen sous une lumière polarisée pour mettre en évidence les structures caractéristiques des fibres.

L'observation en vue transversale nécessite l'utilisation d'un microtome. Cette opération permet de déterminer de façon plus précise les principales espèces de fibres. Le microtome utilisé a été mis au point par l'Institut textile de France (ITF) et requiert un mode opératoire spécifique (*Premiers Tissus* 1985, 12-14). Les fils que l'on désire analyser doivent être disposés à l'intérieur d'une gaine en Téflon remplie par capillarité d'une résine polyester. Cette résine doit être préalablement mélangée à un catalyseur et un accélérateur de polymérisation. On laisse sécher le tout soit 24 heures à température ambiante, soit 45 mn à l'intérieur d'une étuve portée à une température de 50°C. Ce tube est ensuite positionné dans la gouttière porte-échantillon du microtome. Les coupes transversales de 15 à 20µm d'épaisseur sont obtenues avec des lames de rasoir rigides à



tranchant rectiligne (type Ega) sous une loupe binoculaire. Ces coupes sont ensuite teintées par des méthodes histochimiques de coloration (rouge de Ruthénium et vert d'Iode).

Les analyses de ces tissus ont nécessité l'usage combiné de plusieurs appareils. L'étude des structures techniques de filature et de tissage a été faite sous compte-fil, complétée le cas échéant par un examen sous microscope stéréoscopique (Nikon SMZ-10A) muni d'un appareil photographique. La caractérisation des fibres a exigé une double observation: en vue longitudinale (grossissement de 200) et en coupe transversale (grossissement de 500) à l'aide d'un microscope optique à transmission (Nikon Universal Epi-illuminator 10). Les coupes ont été obtenues au microtome ITF.

Les cordelettes ont été confectionnées avec du coton. Celui-ci, à la différence du lin et du chanvre, est formé de poils unicellulaires qui recouvrent la graine du cotonnier. En coupe transversale, les sections des fibres ont une forme plus ou moins ovoïde munie de deux bourrelets, en même temps les parois sont épaisses et solides, le lumen est parfois réduit à un simple trait. Le diamètre des fibres est compris entre 11 et 18µm. En vue longitudinale, il s'agit de fibres unicellulaires tordues sur elle-même en forme de rubans vrillés. L'étendue de la longueur des fibres est de 1.2 à 1.5cm.

Parmi les espèces de coton de l'Ancien Monde on distingue le *Gossypium arboreum* du *Gossypium herbaceum*. Durant la période pré-islamique c'est le premier qui semble avoir été connu; son aire de diffusion correspond à des régions chaudes et offrant la possibilité, par irrigation ou pluviométrie élevée, d'une culture en milieu très humide. Pour les fibres les plus anciennes, seul le *Gossypium arboreum* a été reconnu (Moulherat, Tengberg, Haquet, Mille 2002).

Pour les exemplaires d'El Deir, il est très difficile voire impossible de déterminer à laquelle de ces deux grandes familles ils appartiennent. De plus, les caractéristiques morphométriques longueur, diamètre, moyenne, état général des fibres ne peuvent en aucun cas servir à préciser l'origine de ce coton. Nous savons seulement que la présence de coton en Egypte à partir du II siècle a.D. n'est pas un phénomène isolé; en

effet, de nombreux travaux attestent de la présence de tissus, cordelette en coton en Afrique orientale et aux confins de l'Égypte pour l'Antiquité tardive (Lorquin, Moulherat 2001-2002). À l'époque considérée ici, le coton peut provenir de deux régions distinctes: l'Afrique du Nord-Est et l'Inde.

### Ce que l'on sait du contexte antique du site

On ne peut pas parler de Kharga, l'Oasis extérieure, sans parler de Dakhla, l'Oasis intérieure, les deux étant désignées collectivement à l'époque romaine comme 'la Grande Oasis' (Wagner 1987). Pour les atteindre depuis la vallée, les pistes passaient par le Nord de Kharga (il y en a une qui passait par le site d'El Deir), les reliant à la Moyenne Egypte, et d'autres par le sud de Kharga, les reliant à la Haute Egypte. Il fallait environ sept jours de marche entre la vallée et Kharga, environ quatre entre Kharga et Dakhla. Cette 'autre' Egypte que sont les Oasis n'était pas isolée du monde de la vallée et donc du monde tout court, le bassin Méditerranéen, la Mer Rouge, l'Afrique. La piste des 'quarante jours' reliait la vallée à la Nubie en passant par Kharga. Les oasis n'étaient donc certainement pas en dehors des influences étrangères, cela demandait seulement plus de temps (Grimal, Menu 1998).

### Apports des textes anciens sur les oasis

La présence du coton est attestée à Kharga à l'époque romaine: un 'compte de coton' (*O.Douch* 51,1) donné à filer à cinq femmes, dans une liste établie par les agents de l'administration fiscale pour l'annone militaire, ce qui permet de penser qu'il s'agissait d'un produit banal comme l'étaient les aliments et la paille pour l'annone (Douch, IVe siècle a.D.) (Cuvigny, Wagner 1986); registre foncier (*P.Iand.* VII, 142) mentionnant la culture du coton (Douch, 164/165 a.D.) (Wagner 1987, 291-292). De même, on retrouve le coton dans les textes provenant de Dakhla et la concernant (Bagnall 1997).

D'une façon plus générale, Hérodote, Strabon, Olympiodore, Pline l'Ancien (Wagner 1987, 279-301), parlent des oasis comme des lieux riches et prospères. Ils parlent de cultures de céréales, d'arbres fruitiers, de vignes (très réputées), de légumes en abondance! Ce qui signifie qu'il y



Fig.19 Pelote de coton trouvée dans une tombe (Photo: F. L-W)

a de la terre et de l'eau en quantité. Ce que confirment la présence de nombreux puits artésiens antiques (pour la plupart actuellement ensablés: il s'est produit une désertification de la région et une raréfaction des nappes), l'étendue des parcelles antiques et de très nombreux réseaux d'adduction d'eau en surface et souterraines. L'étude de Bernard Bousquet, sur la région de Douch (Bousquet 1996), dans le Sud de l'oasis, met en évidence la richesse en eau des oasis à l'époque romaine, leur système d'irrigation très étendu, et reconstitue les cultures des parcelles avec, entre autres, du lin et du coton, deux plantes qui exigent beaucoup d'eau et un sol de qualité.

#### Apports archéologiques les plus récents

Hala Nayel Barakat et Nathalie Baum n'ont pas trouvé de coton parmi les restes de végétaux de la nécropole de Douch (1992). Jana Jones a trouvé une dizaine de fragments de tissus en coton lors du 'survey' de Salima Ikram dans l'extrémité Nord de l'oasis (voire ATN, cet numéro). (Je la remercie tout particulièrement de me permettre de la citer.) Nabuko Kajitani (2006), dans son importante étude des tissus

de Bagawat du Metropolitan Museum of New York, ne cite que deux fragments de tissus en coton (sur environ une centaine de tissus). Enfin dans leur très vaste étude et base de données sur les textiles d'Amarna, Barry Kemp et Gillian Vogelsang-Eastwood (2001) ne décrivent aucun tissu ou fil de coton, ce qui est aussi important à relever puisqu'il s'agit de grandes quantités de textiles du quotidien et d'une manufacture, dans la vallée, au Nouvel Empire!

#### Découverte du coton dans cette nécropole: portée

La nécropole Ouest d'El Deir n'est pas une nécropole égyptienne traditionnelle comme les cinq autres. Mais les traditions pharaoniques persistent jusqu'à la période romaine tardive et aux débuts du christianisme. Le coton n'est utilisé que sous la forme de cordelettes (fig.19), encore qu'en grande quantité. Nous sommes dans une période charnière, qui garde en partie les très fortes traditions pharaoniques avec l'emploi majoritaire du lin, des bandelettes, et où on emploie de grandes quantités de tissus, ce qui rend les funérailles onéreuses. Il ne faut pas perdre de vue que les tissus

coûtaient cher. Ils étaient une partie importante de l'économie égyptienne. Le filage et le tissage étaient deux activités distinctes. Il était possible de filer soi-même sans tisser, de tisser sans filer après s'être procuré du fil (par achat ou troc). Filage et tissage pouvaient être des activités à usage domestique, des activités commerciales, et donc dépendaient des conditions politiques, économiques, administratives, locales, régionales, et des relations internationales.

Le coton est absent des plus anciennes nécropoles d'El Deir, il n'apparaît que dans la nécropole chrétienne. Et nous savons, grâce aux textes, qu'il y avait une production locale (cf *P.Iand.* VII, 142, IIe siècle a.D.).

Ce sont les seules certitudes locales. Elles apportent un modeste complément à l'évaluation de la présence du coton dans le monde romain, entreprise depuis ces dernières années. Nous pouvons espérer trouver localement des réponses, avec la mise au jour de nouveaux textes, avec l'archéobotanique des parcelles antiques, avec les fouilles des habitats, afin de mieux connaître la vie dans une oasis du désert occidental dans l'Égypte antique.

## Bibliographie

- Bagnall, R.S. 1997, *The Kellis Agricultural Account Book (P.Kell. IV Gr.96)*, Dakhleh Oasis Project Monograph 7, Oxbow Monograph 92, Oxford
- Barakat, H.N., N. Baum 1992, *La Végétation Antique de Douch*, Le Caire
- Bousquet, B. 1996, *Tell-Douch et sa Région, Géographie d'une Limite de Milieu à une Frontière d'Empire*, Le Caire
- Cuvigny, H., G. Wagner 1986, *Les Ostracas grecs de Douch (O.Douch) I*, Le Caire
- Dunand, F., M. Coudert, F. Letellier-Willemin 2005, 'Découverte d'une nécropole chrétienne à El Deir', *Journées d'Etudes Coptes*, Lyon
- Grimal, N., B. Menu 1998, *Le Commerce en Égypte ancienne*, Bibliothèque d'Étude 121, Le Caire
- Kajitani, N. 2006, 'Textiles and their context

in the third- to fourth-century CE cemetery of al-Bagawât, Khargah Oasis, Egypt, from the 1907-1931 Excavations by the Metropolitan Museum of Art, New York' dans S.Schrenk (ed), *Textiles in situ: Their Find Spots in Egypt and Neighbouring Countries in the First Millennium CE*, Riggisberger Berichte 13, 95-112

Kemp, B.J., G.M. Vogelsang-Eastwood 2001, *The Ancient Textile Industry at Amarna*, London

Lorquin, A., C. Moulherat 2001-2002, 'Étude des vestiges textiles de la sépulture gallo-romaine de Fontvielle à Vareilles (Creuse): Corpus des vestiges de coton recensés pour l'antiquité tardive en Syrie, Égypte, Nubie et au Soudan', *Aquitania* XVIII, 186-192

Moulherat, C., M. Tengberg, J. Haquet, B. Mille 2002, 'Early evidence of cotton at Merhgarh, Pakistan', *Journal of Archaeological Science* 29, 1393-1401

*Premiers Tissus, premiers Tisserands*, Catalogue de l'Exposition, Musées d'Aurillac, 9 novembre - 31 janvier 1986, Aurillac 1985

Wagner, G., 1987, *Les Oasis d'Égypte à l'Époque grecque, romaine et byzantine d'après les Documents grecs*, Bibliothèque d'Étude 100, Le Caire

## Bibliographie supplémentaire

Il s'agit d'une bibliographie très succincte, concernant directement les oasis du désert occidental ou permettant de mieux y appréhender le sujet.

Dunand, F., J.L. Heim, R.Lichtenberg 1992, *La Nécropole de Douch I*, Le Caire

Hombert, M., J.G. Winter, H.C. Youtie 1944, 'Cotton in Graeco-Roman Egypt', *American Journal of Philology* 65, 249-258

R. Lagièrre, avec la collaboration des divisions de l'I.R.E.T. et de Olivier Roehrich 1966, *Techniques agricoles et Productions tropicales, le Cotonnier*, Paris

Mayer-Thurman, C.C., B. Williams 1979, *Ancient Textiles from Nubia: Meroitic, X-Group and Christian Fabrics from Ballana*

and *Qustul*, Chicago

Wild, J.P., F.C. Wild, A.J. Clapham, 'Roman cotton revisited' in C. Alfaro Giner (ed), *Proceedings of the 2nd International Symposium on Textiles and Dyes in the Mediterranean World, Athens, 24-26 November 2005*, sous presse

Wild, J.P. 2006, 'Berenike: archaeological textiles in context' in S. Schrenk (ed), *Textiles in situ: Their Find Spots in Egypt and Neighbouring Countries in the First Millennium CE*, Riggisberger Berichte 13, 2006, 175-184

Wipszycka, E. 1965, *L'Industrie textile dans l'Egypte romaine*, Wroclaw

Zisis, V.G. 1954, 'Cotton, linen and hempen textiles from the fifth century B.C.', *Praktika tes Akademias Athenon* (séance du 25 novembre 1954), 587-593.

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## 'A kind of wool is made by the Egyptians from a tree ...'

### Introduction

A collection of over 55 textiles from the North Kharga Oasis Survey (2001-2005) was examined using microscopic techniques. (A full report will appear in Rossi and Ikram (eds) forthcoming.) Thirty-four different textiles were recovered from tombs D13 and D9 at Cemetery D at Umm el-Dabadib, and 11 were miscellaneous finds that had washed down from the cemetery. Thirteen originated in the Western Tombs near Maghatta and two in Ain Amur. The majority were linen tabbies in a variety of qualities, ranging from very fine to coarse, and a number of basket weaves. A large proportion was dyed. They are tentatively dated to the early 3rd to late 4th century AD.

The most significant finding was the identification of four cotton tabbies, and a further three of cotton and flax union,

reportedly rare in Roman finds (Wild 1997, 289). Most finds of cotton in Egypt have been at Red Sea and Lower Nubian Roman-period sites (for Qasr Ibrim, see p.16 above) and to date very few cotton textiles are from the oases (Wild 1997, 290). However, cotton textiles have also been identified recently in Kharga Oasis from the cemetery at ed-Deir (Fleur Letellier-Willemin, personal communication, and p.20 above). These new finds contribute to our scattered knowledge of the cotton industry in the oases, and provide explicit evidence to support written and archaeobotanical evidence for local cultivation and production of cotton in Kharga Oasis.

### The cottons

The largest and most diagnostic of the all-cotton textiles is number D13 B, from Tomb 13 at Umm el-Dabadib (figs 20, 21). A coarse, loosely woven tabby, it was originally approximately 60cm long x 30cm wide, bounded by a reinforced selvedge on one side and a rolled hem at one warp end. It is now in several pieces. Like all the textiles examined, the yarns are single, S/S spun, c.5 warp and c.22 weft threads per cm. The warp yarns are hard and over-spun, whilst the weft yarns are soft and weak. The latter are heavily fibrillated and deteriorating, exposing patches of intact warp yarns. The weft yarns are predominant in the ratio of 4:1.

This striking difference in the tightness of the twist of the warp and weft yarns is a characteristic of all the cotton textiles from the survey. At this stage of investigation it appears that the weft yarns may be spun of shorter fibres, thus contributing to their 'woolly' appearance and weakness. Another feature common to the cotton textiles, and to a lesser extent the flax and cotton union fabrics, is the random use of double, triple, and even quadruple-laid weft yarns.

The reinforced selvedge consists of two bundles of 5 warp threads. The weft passes around the two bundles independently, and then returns to the ground weave. The weft in the selvedge is more tightly packed than in the main fabric, which is loosely woven. This type of reinforced selvedge is in the tradition of wool weaving in Roman Egypt. It has been noted at Qasr Ibrim that the cotton weavers sometimes used the

traditions of the linen weavers, such as self-bands, and sometimes the wool weavers, such as the reinforced selvedge (J.P. Wild, personal communication). (We are indebted to Dr Wild for this information and for his invaluable comments on the structure of the selvedge.) The hem is rolled and whipped, 0.4cm wide with 3 stitches per cm. The cotton sewing thread is plied Z,2s. As with most Egyptian textiles re-used for funerary purposes, the primary function had been utilitarian and this example shows signs of heavy wear.

Similar characteristics of spin and weave have been noted in textile DM A, from Miscellaneous Cemetery D. A small central fragment of a closed weft-faced weave, it is dyed a dark red-ochre. The dye has not fully penetrated the yarns, which are paler where the crown is worn. The warp is tightly over-spun, best observed at the raw edges where the yarns turn back on themselves and curl like 'pigs' tails'. Again, the weft is more loosely spun than the warp and is deteriorating. (Based on the structure of textile D13 B above, it has been assumed that the warp in all the cotton specimens is the strong, tightly over-spun yarn.)

Two fragments of undyed cotton from the Western Tombs (textiles WT A & B) again display the characteristic over-spun warp yarns, but the weft yarns are considerably tighter than in the examples from Umm el-Dabadib. Consequently the weave is more even, especially in WT A. Nevertheless, the weft yarns have begun to deteriorate.

The 'S' (anti-clockwise) direction of spin suggests local production, based on the long tradition of flax spinning in ancient Egypt. Beginning in the period Naqada IC (c.3800 BC) 'Z' twisted yarns were gradually superseded by spliced 'S' spun yarns. By NIIB onwards (c.3600 BC) all Egyptian yarns were 'S' spun (Jones in press). At Berenike both 'Z' and 'S' spun cottons occur in equal proportion, but recently it has been suggested that some of the z-spun cottons may indeed be locally produced and not exclusively imported from India (Wild, Wild, Clapham forthcoming). Moreover, amongst textiles from the settlement at Ismant el-Kharab (Dakhleh Oasis), cotton is spun 'Z', along with wool and hemp; only flax is spun 'S' (Bowen, in Hope, Bowen

2002, 89).

### **The cotton and flax union fabrics**

The three union fabrics are woven of single, s-spun yarns, flax in one system and cotton in the other. Based on the higher count and greater strength of the flax yarns and supported by textual evidence (Pollux VII, 75, see below), the flax was assumed to be the warp, and the cotton the weft. However, textile D13 T is an exception; the cotton yarns predominate in the ratio 2:1. Both the flax and cotton yarns are very tightly spun in this open weave. The flax is in excellent condition, but the cotton is fibrillated and deteriorating. Interestingly, the (weft?) cotton yarns in the unions (all from Tomb D13 at Umm el-Dabadib) are over-spun like the warp of the all-cotton examples.

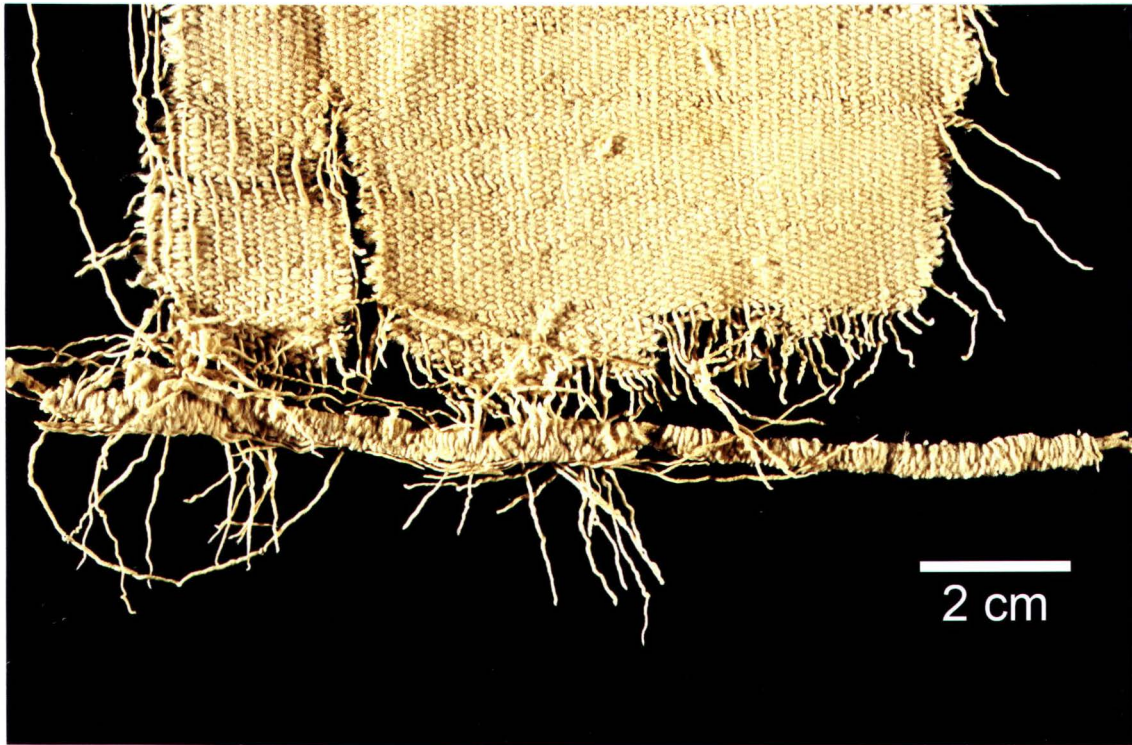
Textile D13 E is a very coarse, loosely woven textile. The flax yarns are loosely spun of coarse, barely separated fibre bundles. Conversely, the cotton is finer, very uniform in diameter and typically very tightly spun. The flax yarns are predominant in the ratio 4:1.

D13 S is an interesting fragment comprising two layers of textile stuck together by an unidentified resinous adhesive. A thin layer of plaster with traces of red and black decoration remains on the upper layer (fig.22). It is either cartonnage base or residue from the plaster that encased the mummy. The backing textile is linen, the lower is a flax and cotton union (D13 S (b), fig.23). The flax in the latter is medium-spun, and the cotton yarns are in good condition, very even in diameter, with the characteristic hard twist.

### **Fibre identification**

Polarisation light microscopy was used for fibre identification. It has the distinct advantage of rapidity, of very much larger specimen sampling than is possible with scanning electron microscopy, and of showing internal fibre cell detail in high contrast and marked colour relief (see fig.21). Scanning electron microscopy displays images of external morphology only.

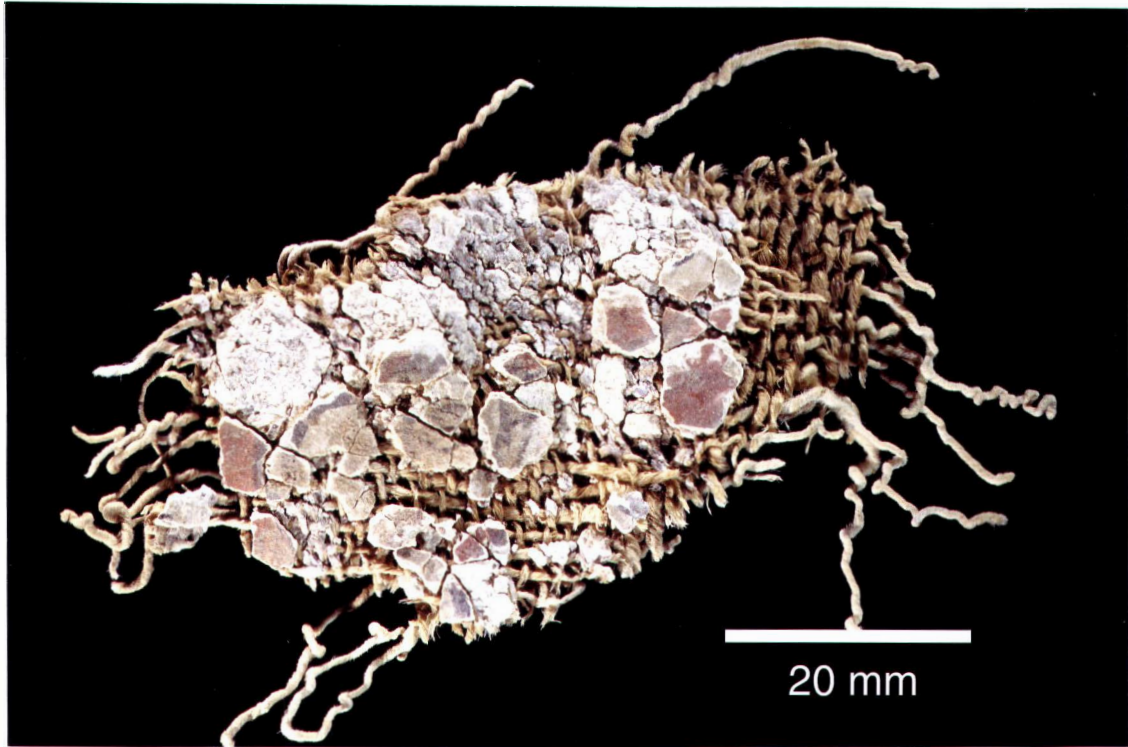
A 3mm to 5mm portion of yarn was cut and



*Fig.20 Kharga D13 B cotton textile. (The detached selvedge should be oriented vertically.)  
(Photo: R. Oldfield)*



*Fig.21 Separated cotton fibres from D13 B (above), as seen in the polarising microscope  
220x (Photo: R. Oldfield)*



*Fig.22 Kharga D13 S. Painted plaster on linen, with layer of flax and cotton union underneath. (Note the protruding cotton yarns.) (Photo: R. Oldfield)*



*Fig.23 D13 S (b). Detail of lower layer, showing warp (flax) and weft (cotton). (Photo: R. Oldfield)*

placed directly onto a drop of glycerine on a standard 3 x 1 inch microscope slide. After gentle separation of the ultimates with dissecting needles, the preparation was covered with a No 1 coverslip, and observed under a polarising microscope.

Our interpretation of images was constrained by the paucity of reference collections of Old World cottons (*Gossypium arboreum* and *Gossypium herbaceum*). Although the majority of the fibres identified by us as cotton display the typical flattened convolutions associated with present-day, New World, cotton, many Kharga cotton fibres have an appearance that superficially resembles flax. These characteristics include a prominent very narrow lumen, higher polarisation colours (second order blues and greens, rather than first order grey) and what appear to be cross-markings. The convolutions at times were very few and far between, a characteristic of coarse, short cotton in modern samples (The Textile Institute 1985, 14).

However, the identification of cotton is most easily made by a lack of extinction in the polarising microscope. Between crossed polars in the microscope, cotton is distinguished by remaining more or less bright in all orientations. Flax, as a typical fibre, will extinguish orthogonally, i.e. appear dark when it is oriented parallel to the directions of the polars.

#### Archaeobotanical and textual evidence

A range of solid evidence is emerging for the cultivation of cotton and the production of cotton textiles at Kharga Oasis. Written evidence for the growing of cotton as a crop near Kysis in the Kharga Oasis in the 2nd century AD appears in *Pap.Iand.* VII, 142, II, 8 (Kalbfleisch 1912–1938). That the commodity was still an investment in the 4th century AD is attested in *O.Douch* 1, 51 (Cuvigny, Wagner 1986; cf. Wild 1997 and Wild, Wild, Clapham forthcoming for a review of the written sources and archaeological evidence from other sites). Desiccated fragments of cotton-seeds were found in mud-bricks from a 3rd to 4th century Roman building during the recent North Kharga Oasis Survey (Clapham, in Rossi and Ikram (eds) forthcoming). The identification of cotton textiles of the same

period significantly rounds out the body of evidence.

References to yarn and cotton clothing (although not specific to Kharga) are quite numerous and support the archaeological evidence derived from the textiles. Pollux (VII, 75), after describing cotton as 'a kind of wool made by the Egyptians from a tree, cloths of which wool one might compare to linen except as regards thickness' mentions a linen warp and a cotton weft. Surely this accords with our flax and cotton unions!

Further mention of warp, but with no particular fibre specified, occurs in unprovenanced papyri (*SB* VI. 9025 = *P.Mich.* inv. 3630) dated to the 2nd Century AD (Preisigke, Bilabel, Kiessling 1958; Winter, Youtie 1944). At ll.31ff the writer says 'I did not find the cotton chiton as I wished. If you want one to be woven for you here, send the warp and the measurements'. Further references to yarn and clothing occur (*SB* VI. 9026 = *P.Mich.* inv. 1648) (Preisigke, Bilabel, Kiessling 1958; Winter, Youtie 1944). At ll.10ff, Areskousa writes to her brother: 'By all means do send me by this carrier twenty drachmas worth of good cotton thread'. The word used for 'thread' is well established as the Greek term for 'weft'. The letter continues: 'See that you do not neglect it, since your brothers have no outer garments, now that their cotton ones are worn out, and they need them as they spend all their time in the field'. (We wish to thank Dr M.Choat, Macquarie University, for his translation and comment on these texts.)

The utilitarian nature of these 'outer garments' accords well with the structure of the cotton textiles examined. As Pollux noted, textiles woven from 'wood wool' are considerably thicker than linen. They are heavier but less durable than linen. There is no darning or patching on the badly worn D13 B, unlike linens from the survey that have been mended numerous times. Is this simply chance, or were cotton garments so common that they were 'disposable'?

Clearly there is a marked difference between the manufacture of the hard, over-spun warp, and the soft, loose, weft. The written sources differentiate between the two – 'warp' often occurs, at times in association with 'weft'; at times each is specified



individually. Is this differentiation noteworthy?

## Conclusion

This small yet significant sample of textiles from the North Kharga Oasis Survey has produced new evidence to augment the limited archaeological record on cotton textile production in the oases. The first evidence that the cotton weavers in the oases were using wool weavers' techniques is inherent in one of the textiles. To date, this trend has been identified solely at the Lower Nubian sites. There are examples of flax and cotton unions, rare finds to date, but known from the written sources. Yet examination of the textiles has raised some questions. Future investigations of a larger sample from Kharga will help to redress the imbalance of evidence between the oases and Red Sea and Lower Nubian sites, and provide a clearer picture of the cotton textile industry in Roman Egypt.

## Acknowledgement

Thanks to Dr Salima Ikram and Dr Corinna Rossi for the opportunity to examine this material, and the Antiquities Endowment Fund for funding some of the research. For the NKOS website visit: [www.northkhargaoasissurvey.com](http://www.northkhargaoasissurvey.com)

## References

- Bowen, G.E. 2002, 'Textiles, basketry and leather goods from Ismant el-Kharab' in C.A.Hope, G.E.Bowen, *Dakhleh Oasis Project: Preliminary Reports on the 1994-1995 to 1998-1999 Field Seasons*, Oxford, 87-104
- Clapham A. forthcoming, in C.Rossi, S.Ikram (eds), forthcoming
- Cuvigny, H., G.Wagner 1986, *Les Ostraca grecs de Douch*, Documents de Fouilles 24, Fasc. I., Cairo
- Jones, J., in press, 'Pre- and Early Dynastic textiles: technology, specialisation and administration during the process of state formation' in B.Midant-Reynes, Y.Trissant (eds), *Proceedings of the International Conference 'Origin of the State. Predynastic and Early Dynastic Egypt'*, Toulouse, 5th to 8th September, 2005, Leuven

Kalbfleisch, C. 1912-1938, *Papyri Iandanae*, Leipzig-Berlin

Pollux, Julius of Naucratis, 1967, *Pollucis Onomasticon. E codicibus ab ipso collatis. Denuo edidit et adnotavit Ericus Bethe*, Stuttgartiae

Preisigke, F., F.Bilabel, E.Kiessling 1958, *Sammelbuch griechischer Urkunden aus Ägypten*, Wiesbaden

Rossi, C., S.Ikram (eds), forthcoming, *The North Kharga Survey I*, with contributions by A.Clapham, A.Dunsmore, A.Gascoigne, M.Gaubert, T.Herbich, J.Jones, R.Knisely-Marpole, G.Cruz-Urbe, N.Warner, Cairo

The Textile Institute, 1975, *Identification of Textile Materials*, Manchester

Wild, J.P. 1997, 'Cotton in Roman Egypt: some problems of origin', *Al-Rāfidān* XVIII, 287-298

Wild, J.P., F.C. Wild, A.J. Clapham, forthcoming, 'Roman cotton revisited', in C.Alfaro Giner (ed), *Second International Symposium on Mediterranean Textiles and Dyes, 24th-26th November 2005, Athens*

Winter, J.G., H.C.Youtie 1944, 'Cotton in Graeco-Roman Egypt', *American Journal of Philology* 65.3, 249-258

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## Report

### Centre for Textile Research in Copenhagen

In August 2005, the Centre for Textile Research (CTR) opened in the University of Copenhagen, Denmark (ATN 40, 2005). Funded by the Danish National Research Foundation, it will operate until July 2010. CTR focuses on textile development from prehistory to the present time, carrying out a substantial research programme involving Danish and European universities, research institutions and museums.

## News of the research programmes

### Textile and Costume from the Bronze Age and Early Iron Age in Danish Collections

One of two research programmes of the CTR, the above deals with the important corpus of archaeological costumes in Denmark, which includes some of the world's most spectacular archaeological textiles: complete Bronze Age costumes preserved in oak coffins and Early Iron Age costumes recovered from bogs where special acidic environments preserved proteinaceous materials almost intact. In addition, we are dealing with a large collection of mostly mineralized textiles, preserved in several large weapon deposits dating to the Iron Age. The latter material is being studied by Susan Möller-Wiering within the framework of a special project 'Textiles for War'.

The research programme takes as its starting point H.C. Broholm and M. Hald, *Costumes of the Bronze Age in Denmark* (1940) and M. Hald's *Ancient Danish Textiles from Bogs and Burials*, which was published in English in 1980 as a translation of the Danish edition of 1950. These books, still the primary references to the finds, contain detailed information on specific finds and textile technology in general, but are out of date and out of print. Since their appearance more than fifty years ago, our knowledge of prehistoric Scandinavian textile technology has increased dramatically. Many new landmarks have been reached in technical textile research, developed in close collaboration with the natural sciences and conservation.

Our immediate mission is to explore all these new possibilities in a new publication of Danish prehistoric textiles, which will include information on costume and garment reconstruction, textile technology and chronology, quality analyses, tablet weaves, resource exploitation, fibre, dye and carbon-14 analyses and aspects of gender and social identity. The programme has involved a wide range of specialists from all over Europe, including archaeologists, conservators, chemists and hand-weavers. The primary analyses have been carried out by Ulla Mannering and Margarita Gleba in collaboration with three conservators from the National Museum. Many supplementary specialist analyses are being undertaken.

About 150 samples will be analyzed for fibre quality, allowing us to define better the type of wool and fibre preparation methods used during the Iron Age. Over 200 samples will be analyzed for dye content in Brussels, making this one of the largest collections of ancient textiles for which dye analysis has been performed. We have already had some preliminary results indicating that Danish Iron Age textiles were much more colourful than previously thought. Over 25 samples from textile and skin garments are being C14 dated at the Tandem Laboratory in Uppsala, Sweden; this will permit a precise dating of all finds we are working with.

We have also been exploring new methods for determining the origin of textiles – specifically, strontium and lead isotope analyses, which until now have been used primarily on human bones to trace population movements or diet. Despite some difficulties, the preliminary study conducted in collaboration with Schloss Gottorf in Schleswig and the Staatssammlung für Anthropologie und Paläoanatomie in Munich, Germany, seem to indicate this as a viable method for textile provenancing, a task that until now has proved impossible.

The main goal behind gathering all this information together is to set these textile finds in their proper archaeological context. A very important angle to this project is to link the European research to the Scandinavian results. Therefore, in January 2007, we are organizing an international seminar with our collaborators from many countries, where the new results will be presented and international, cultural, historical and other new perspectives will be discussed.

### Tools and Textiles, Texts and Contexts

The second CTR research programme involves the Central and Eastern Mediterranean in the 4th to the 2nd millennia B.C., when textile production progressed rapidly from household manufacture to a standardised, industrialised, centralised production based on division of labour. As evidence for these developments we have inscriptions on production management documenting the growth of palace economies and new ways of production; tools; iconography from glyptic art, frescoes and reliefs where various types

of dress are visually represented; and the architecture of production from the excavations.

The aims of this research programme are: to understand the technological parameters for textile production; to elucidate the economic and cultural impact of textiles and textile manufacture on society; to develop experimental textile archaeology as a scientific method; to disseminate this new knowledge to the academic community in general.

In the Mediterranean area there is great confusion over the identification and definition of textile tools because the main analyses are based on shape and decoration, and not on function. Another problem is that textile tools are rarely discussed or published systematically. The first source to investigate is thus the tools, but with a functional approach. The empirical data for the functional typology – consisting of tools from closed contexts – will be selected in close collaboration with specialists and excavators from numerous Bronze Age sites such as Troy and Mycenae in Greece, Tel Kabri in Israel, Miletus in Western Turkey, Hagia Triada in Crete, Ebla in Syria and many more. These data have never been studied systematically. The collection of data is taking place at the moment, with excavators from participating sites recording thousands of textile tools in a standardized database, created by CTR.

Moreover, we want to subject the Mediterranean tools to systematic controlled experiments conducted at CTR with the help of skilled textile technicians. The experiments conducted so far included testing of reconstructed tools (spindle whorls and loomweights) in spinning and weaving with both wool and flax fibres.

The results of the establishment of an international textile tool typology, based on both the empirical evidence and on selected experimental tests will provide a unique set of systematic data for Mediterranean Bronze Age cultures. It will increase our knowledge of production and function, and will enable us to differentiate production types and patterns. This will lead the research programme into the next phase which will allow us to compare and contrast the archaeological and experimental results with

the written sources and the rich textile terminology in the Mediterranean area. Here, too, linguistic specialists from all over the world will contribute their expertise and knowledge.

### Other CTR activities

Besides primary research, CTR's goal is to disseminate knowledge in an accessible format, thereby closing the gap between traditional archaeology and specialized textile studies. Thus, in cooperation with other institutions in Denmark and Sweden, CTR is training several PhD students working on textile-related subjects in archaeology:

Ulla Isabel Zagal-Mach, *Sails on the Horizon: A Craft-Oriented Study of the Integration of Sails on the Scandinavian Boat 500–800 AD*

Maj Ringgaard, *Degradation Phenomena in Textiles from around 1700 found in Copenhagen Urban Excavations*

Judit Pászókai-Szeoke, *The Archaeological Evidence of Textile Production in Roman Pannonia*

Birgit Lyngbye Pedersen, *Design as Competition Parameter in Textile Industry Development after World War 2*

A fifth PhD student will be appointed by the end of 2006.

The CTR is also involved in teaching university-level courses that cover a wide range of topics. It hosts a variety of public lectures and, in collaboration with other institutions is organizing minor topical workshops and a major conference. Thus, CTR will host the next NESAT in May 2008 and a conference on 'Textiles and Military' is planned in collaboration with the Royal Military Academy. In 2009, CTR will hold the Second Ancient Textiles conference.

For more information on CTR and its activities, please visit:  
<http://ctr.hum.ku.dk/>

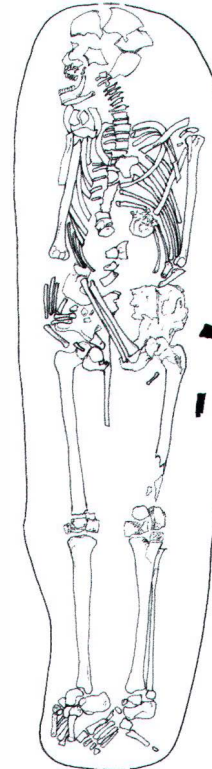
*Margarita Gleba*  
*Centre for Textile Research*  
*University of Copenhagen*  
*Njalsgade 102*  
*2300 Copenhagen S*

## Notes and Queries

### Mummy Portraiture

My undergraduate thesis, completed at the University of Reading in 2003, was concerned with the importance of costume in the Roman Egyptian mummy portraits. Attention was focused on identifying markers of ethnicity and social status through the clothing choices in the paintings, yielding interesting and potentially significant discoveries on the importance of width and colour on the tunic bands known as *clavi*. Elements of these findings on costume and textiles are being assessed in my current doctoral work at the University of Oxford, entitled 'The development of portraiture at Antinoopolis in Middle Egypt from the 2nd century AD to the Arab conquest'.

*Lauren Mcghee*  
<lauren.mcghee@sjc.ox.ac.uk>



### Query on a Carolingian Antler Object

Between 1999 and 2004 the Bayerisches Landesamt für Denkmalpflege (Bavarian Heritage Board) has partly excavated an early medieval settlement at Unterigling near Landsberg/Lech, Upper Bavaria, Germany. Besides many settlement features a small church and an accompanying cemetery has been found. Apart from some potsherds and animal bones there were no grave goods; a number of radiocarbon dates fix the cemetery between approximately the first half of the eighth and the middle of the ninth century AD.

In grave 127.3 an early mature male (determination N. Strott, München) was buried along with a piece of pottery to the left of his pelvis and an object left of the upper thigh (fig.24). This object is made of antler of a red deer (determination S. Bischler, München) and highly polished from intensive use on a soft tissue (figs.25, 26). It is slightly curved due to the natural shape of the antler and was artificially flattened on one side. At the 'bottom' there is a conical drilling, while at the opposite end there is a groove with bevelled bars, on each side of which one is slightly reduced. Apart from minor damage to one of the bars the object is complete, which excludes the

*Fig.24 Grave 127.3 with the antler object left of the upper thigh. Scale 1:20 (Drawing: Y. Stransky)*

interpretation as a bar toggle or as a cheekpiece of a snaffle. The intensive polishing covers all parts of the object including the inner sides of the groove,



*Fig.25 Antler object. Without scale, max. length 5.4cm*

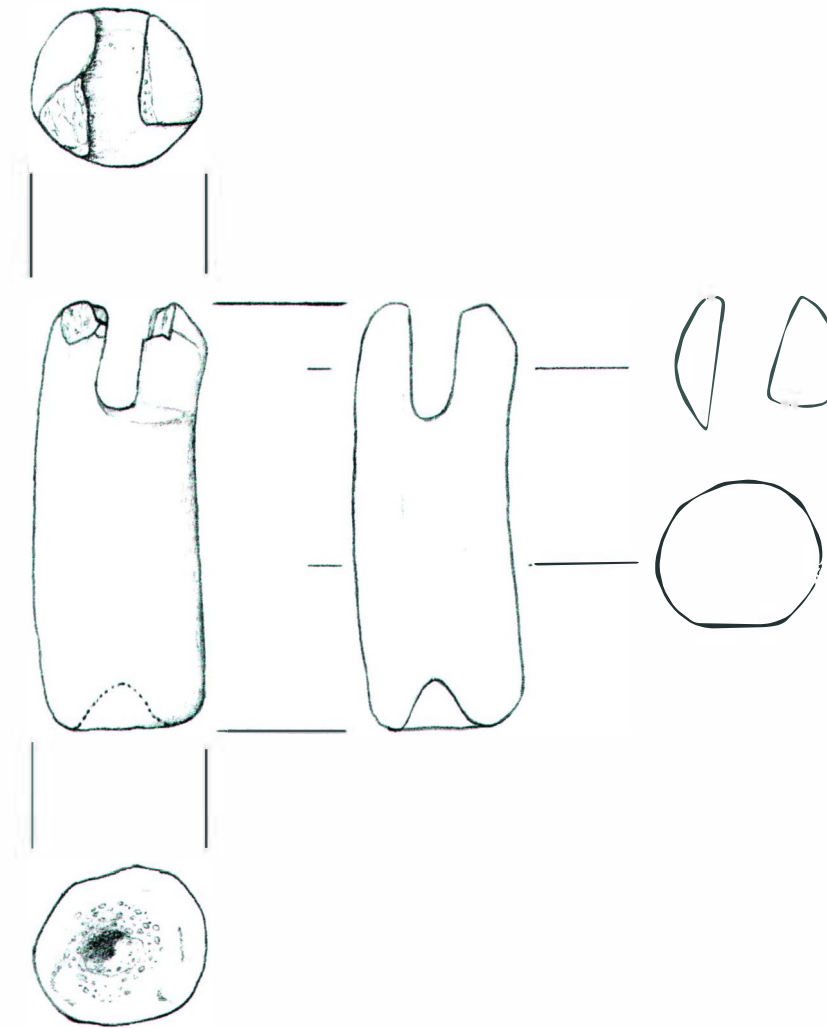


Fig.26 Antler object. Scale 1:1 (Drawing: M. Rettenbacher)

where there are slight traces of iron oxide on one side

So far I have not been able to determine the use of this object, but a roughly similar object, fragmented on both sides and made of lava, is known from the sunken hut 3041 at Speyer-Im Vogelgesang (10./11. century AD; Schenk 1998, 266 Taf.53, B10). Antja Bartel, to whom I am very grateful for discussion on this item, agreed that it might have been used in textile production e.g. on some type of loom and/or as a spool. Therefore, I would like to ask the *Archaeological Textiles Newsletter* community, whether anybody knows of a similar object. Any proposals on its function would be much appreciated!

#### Bibliography

Schenk, H. 1998, *Die Keramik der früh- bis hochmittelalterlichen Siedlung Speyer 'Im*

*Vogelgesang'*, Archäologische Forschungen in der Pfalz 1, Neustadt an der Weinstraße

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Fig.27 Lise Bender Jørgensen offers the contribution opposite to establish a standard terminology for describing simple woven decoration. Comments to:  
 <lise.bender@hum.ku.dk>

# Terminology of Roman Stripes, Bands and Checks

## Bands and stripes:

**Band(s):** in weft

**Stripe(s):** in warp

## Transition features:

### Regrouped warp

1. croisage
2. dropped threads
3. other

**Paired or triple weft** at transition

**No demarcation** of transition

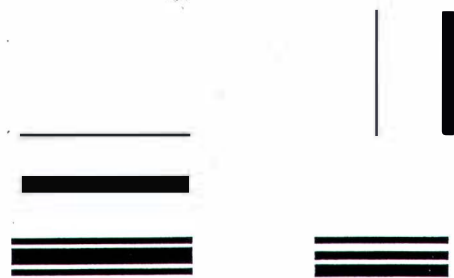
**Shadow band**

## Designs:

**Pin bands/ stripes:** consists of 1-4 threads

**Bar bands/ stripes:** More than 4 threads

**Composite bands/ stripes**



**Band/stripes:** (single band/stripes)

**Multibands, multistripes:** band or stripes consisting of several elements/colours.

**Group of bands/stripes:** two or more separate bands/stripes

**Banded/striped:** overall pattern

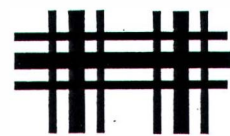


## Checks:

**Grid checks**

**Block checks**

**Composite checks**



## Further design elements:

**Symmetrical/Assymmetrical**

**Occurring:** appears

**Recurring:** repetitive

**Monochrome:** one colour in addition to ground weave

**Bichrome:** two colours in addition to ground weave

**Polychrome:** more than two colours in addition to ground weave

## Review

### Clothing in the Near East to AD 1600: Early Textiles Study Group Conference, Manchester, 8.-10.9.2006

The theme of the 2006 conference of the ETSG directly reflected that of the Whitworth Art Gallery's exhibition 'Clothing Culture: Dress in Egypt in the First Millennium AD'. Both were organised with efficiency and imagination by Frances Pritchard, and both have left a lasting impression on visitors and participants of the colour and complexity of costume in Graeco-Roman and medieval Egypt.

Hero Granger-Taylor opened the meeting with a demonstration of how a handful of surviving Roman cloaks from Egypt through their characteristic weaves and edge structure can illuminate the function of small fragments from archaeological excavations with like features. Amazingly, many of these same structural features are found in the work of a group of present-day weavers in southern Morocco, as Frieda Sorber later explained. Even without the benefit of such helpfully complete comparanda textile scholars have been able to bring to life some far less well-preserved material. Fiona Handley's Roman cotton 'shirt' sleeve from Quseir al-Qadim provoked a lively debate, while Cäcilia Fluck introduced the meeting to some of the highlights of the Berlin collection, principally from Arsinoe.

The radiocarbon dating of textiles from the Nile Valley has brought an independent perspective to some of the old issues and controversies (ATN 40, 22-23, 25-26). Antoine De Moor reported on new radiocarbon dates on Egyptian shoes and sandals - again with some surprises! His contribution was followed by three papers on medieval clothing: Patricia Baker discussed the vexed question of the dating of two silk robes from Jabal Adda; Marianne Ellis reviewed the role of embroidery in the Islamic world; some of the highly decorative fabrics in the Berlin collection were discussed by Gisela Helmecke.

Innate in the study of archaeological textiles are many unresolved problems of recognition and description. Chris Verhecken-Lammens examined in her paper

a series of such issues, and Lise Bender Jørgensen followed her by addressing the problem of band-versus-stripe terminology (see p.37 above). The last two papers were by J.P.Wild on new finds from Qasr Ibrim, and Ana Cabrera on some of the little-known Coptic garments in Spanish collections.

Some radical changes in the University mean that this will probably be the last ETSG conference to be held in Manchester. But, thanks to Frances Pritchard, ETSG leaves on a high note!

*John Peter Wild*

## Resources

### Recent Publications

Böhme-Schönberger, A., 'Kleidung und Schmuck' in: K.Scherberich (Hrsg), *Neues Testament und Antike Kultur II*, 2005, 42-47

Borgard, P., J.-P.Brun, M.Picon (edd), *L'Alun de Méditerranée: Actes du Colloque International Naples/Lipari, 4.-8.juin 2003*, 2006

Ewing, T., *Viking Clothing*, Tempus, Stroud, 2006

Gearey, B.R., A.R.Hall, H.Kenward, M.J.Bunting, M.C.Lillie, J.Carrott, 'Recent palaeoenvironmental evidence for the processing of hemp (*Cannabis sativa* L.) in Eastern England during the medieval period', *Medieval Archaeology* 49, 2005, 317-322

Grömer, K., 'Experimentalarchäologische Rekonstruktion der Brettchenwebereien aus dem Salzbergwerk in Hallstatt', *Experimentelle Archäologie in Europa: Bilanz 2004* (3), 145-158

Grömer, K., 'Experimente zur Haar- und Schleiertracht in der Hallstattzeit', *Mitteilungen der Anthropologischen Gesellschaft in Wien* 134-135, 2004-2005, 115-134

Grömer, K., 'Vom Spinnen und Weben, Flechten und Zwirnen: Hinweise zur neolithischen Textiltechnik an

österreichischen Fundstellen', *Archäologie Österreichs* Sonderausgabe 14-17, 2003-2006, 171-187

Grömer, K., M.Mehofer, 'Metallfunde mit ankorrodierten Textilien aus Vösendorf und Mautern: Rasterelektronenmikroskopische Analysen anhand urnenfelderzeitlicher und spätantiker Beispiele', *Archäologie Österreichs* 17 (1), 2006, 59-65

Grömer, K., M.Mödlinger, 'Metallographische und textilkundliche Untersuchungen an einem urnenfelderzeitlichen Schwert aus Nordböhmen', *Archäologie Österreichs* 16 (2), 2005, 51-55

Jones, J., R.Oldfield, 'Egypt's earliest linen', *Egyptian Archaeology* 29, autumn 2006, 33-35

Pritchard, F., *Clothing Culture: Dress in Egypt in the First Millennium AD*. Manchester, 2006 [ISBN 0-903261-57-X]

### Dissertations

*Eva Andersson* successfully defended her doctoral dissertation 'Kläderna och Människan i Medeltidens Sverige och Norge' (Dress and People in Medieval Sweden and Norway) on 29th September 2006 in the Department of History, University of Gothenburg, Sweden.

*Margarita Gleba* had her doctoral dissertation 'Textile Production in Pre-Roman Italy: Archaeological Evidence' accepted in November 2004 by the Department of Classical and Near Eastern Archaeology at Bryn Mawr College, Pennsylvania, USA. It will be published in the CTR's *Ancient Textile* series with the aid of a Cotton Foundation publication grant.

*Ulla Mannering* successfully defended her doctoral dissertation 'Billeder af Dragt: En Analyse af påklædte Figurer fra yngre Jernalder i Skandinavien' (Costume Images: An Analysis of Clothed Figures from the Late Iron Age in Scandinavia) on 30th June 2006 in the Department of Prehistoric Archaeology, University of Copenhagen, Denmark.

*Maria Mossakowska-Gaubert* defended with the top mark her doctoral dissertation 'Le

Costume monastique en Egypte à la Lumière des Textes grecs et latins et des Sources archéologiques (IVe - début du VIIe Siècle)' at the University of Warsaw.

*Orit Shamir* was awarded the degree of PhD for her dissertation 'Textiles in the Land of Israel from the Roman Period till the Early Islamic Period in the Light of the Archaeological Finds' on 26th September 2006 at the Hebrew University of Jerusalem.

### News in Brief

**North American Textile Conservation 6th Biennial Conference, Facing Impermanence: Washington, DC, 6.-10.11.2007**

The conference will focus on theory and practice of preventive conservation. Conservators, curators, conservation scientists, project managers and other museum specialists are invited to submit proposals for presentations.

Topics may include but are not limited to: case studies of treatments that have affected the longevity of textiles; environmental issues; innovative use of materials; case studies on storage and facility upgrades and risk management; funding, management and documentation of preventive conservation projects; cultural policy, advocacy and preventive conservation.

Papers may be submitted in English or Spanish. Presentations will be 20 minutes long.

Abstracts (no longer than 250 words) to be submitted to Suzanne Thomassen-Krauss by September 29, 2006: <sstk@cox.net>

For more information about NATCC, visit <[www.textilemuseum.org/natcc/main.htm](http://www.textilemuseum.org/natcc/main.htm)>

**International Conference on Military and Textiles: Copenhagen, 23-25.5.2008**

Textiles have been a key component of military equipment since antiquity and remain so today. With a view to scrutinising the commonalities of textiles and military, the Danish National Research Foundation's



Centre for Textile Research and the Royal Danish Defence College are convening an international and interdisciplinary conference scheduled for the period Wednesday 23th to Friday 25th May 2008. The conference venue will be in Copenhagen, Denmark.

2006. Please register at [www.hum.ku.dk/ctr](http://www.hum.ku.dk/ctr)  
For further information, please contact Marie-Louise Nosch (<nosch@hum.ku.dk>) or Kjeld Galster (<kjeldg@hum.ku.dk>)

The basic concept of the conference takes its point of departure from the fact that textiles are among the oldest handicrafts in the world, developed to meet the basic needs of protection against climate and weather. Moreover, from time immemorial textiles have been an essential element in military organisation and operations. Textiles are used for uniforms, tents, sails, saddle pouches, caparisons, parachutes, early model aeroplanes, camouflage nets and dinghies, body armour etc.

The conference will aim to analyse the role of textile culture in military organisation: the use, distribution, production, provision, and consumption of raw materials, and the organisation of the production processes. Moreover, the organising committee is encouraging participants to address aspects such as symbols and badges, development of technologies, political and national agendas, and the interaction between military and civil society concerning textile equipment.

Geographically the scope of the conference will be the world at large and the chronological framework is from antiquity until today. The organising committee aims to gather specialists from various fields of research in order to obtain a truly interdisciplinary result. In particular, scholars from the fields of history, archaeology, museums, social sciences and textile production as well as military experts will be invited through an open international call. The preparatory work will be undertaken by an organising committee headed by Dr. Marie-Louise Nosch, Director of the Centre for Textile Research. A scientific committee will be established to undertake the review of abstracts and subsequent papers. The proceedings of the conferences will be published in *Ancient Textiles*, a monograph series to be published by Oxbow Books, Oxford, for the Centre for Textile Research.

The organising committee invites interested scholars and experts to submit abstracts and preliminary registrations by 31 October

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## Subscription

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

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

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## Guidelines for Authors

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

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

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

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

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

5. Line drawings and photographs are welcomed, but must be originals of good contrast for reproduction.. Artwork should not be mounted or incorporated into text. Captions, please !

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

Submissions should be addressed to:

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