

ARCHAEOLOGICAL TEXTILES NEWSLETTER

No.1, 1985

EDITORIAL

In recent years the study of textiles from archaeological sites has attracted the attention of a growing number of people, and consequently it is developing into an accepted part of archaeological research. In its turn, the study of archaeological textiles is evolving into a multi-disciplinary subject which involves not only history and the history of art, but also various aspects of the sciences, notably chemistry, botany, zoology and geology. Rapid growth and specialisation, however, have led many researchers to feel out of touch with fellow scholars and current areas of research. To counteract this tendency, the Archaeological Textiles Newsletter will be published twice a year as a medium by which information can be exchanged. The information may concern the manufacturing techniques of textiles, their uses and distribution, as well as the identification of fibres, dye and mordant analysis, etc.

Subscribers to the Newsletter are regarded both as readers and contributors: they are warmly invited to contribute to the Newsletter by providing information under a number of headings. Notes are given in detail on the following page, but it must be stressed that contributions for the ATN should be directly related to the subject of archaeological textiles.

For present purposes, an archaeological textile is defined as a textile which has been found in a known archaeological context. The textile may date from the prehistoric to the modern age; but the basic criterion remains its archaeological origin.

Although the ATN is concerned with the exchange of information amongst specialists working within the field of archaeological textiles, an important geographical limitation has had to be applied: the ATN will only concern itself with Old World textiles (from Western Europe to Japan). However, if a particular technical study of New World textiles is deemed directly relevant, it may be included.

The ATN is principally intended to be an information service, and not a journal. Although the nature of the Newsletter may change according to the wishes of the contributors/subscribers, it will only contain short notes, comments, descriptions of various collections etc; longer articles cannot be accepted at present.

In August 1985, a circular was sent to about eighty scholars, students and institutions all over the world, in order to discover whether there was a need for a newsletter specifically covering the subject of archaeological textiles. To date, over thirty people have shown interest. To us, this was enough to warrant the publication of the ATN, twice-yearly, of which the first issue is now before you. The contents and arrangement of this first issue are basically the work of the four editors; however, valuable suggestions have been made by a number of contributors and these have been taken into account. Of course, any suggestions as to the arrangements and the layout of future issues of the Newsletter would be most welcome. It should be stressed that the Newsletter will be dependent upon the contributions sent by its subscribers. So notes on current research, and bibliographical information would be especially welcome. Equally, its survival and success depend on the willingness of subscribers to subscribe!

This first issue contains the following items: an editorial, which gives the basic concepts behind the Newsletter; notes to contributors; a number of Tables showing current, relevant excavations; some short summaries concerning individual sites; notes on specific subjects (of the Karanog Collection in the University of Pennsylvania and on the Blended Wools from the Marv Rose); a short section on items of miscellaneous interest (lectures, exhibitions, theses in progress etc.); a list of recent publications; (Lise Bender Jørgensen, Krishna Riboud and H.-J. Hundt); finally a list of current subscribers.

The Newsletter has been set up by the following:

Gillian M. Eastwood: a post-graduate student at Manchester University, working on a doctoral thesis concerning the development of woollen weft-faced compound weaves. She also works as a freelance textile specialist within the field of Near Eastern textiles. She lives in Leiden, Holland.

Lise Bender Jørgensen: an archaeologist who specialises in North European textiles from the Prehistoric Period (until A.D. 1000). She is especially interested in metal replaced textiles as a source of information. She lives in Copenhagen, Denmark.

Penelope Walton: a freelance archaeological textile specialist who lives in York, England. Her interests cover a wide area of North European textiles, but she is particularly interested in Viking and Medieval European textiles.

John Peter Wild: a Senior Lecturer in Archaeology at Manchester University. His specific area of interest is the production of textiles during the Roman Period (but he objects to narrow-mindedness!).

colophon

The Archaeological Textiles Newsletter.
No.1, 1985.
Published in Leiden, The Netherlands.
ISSN: 0169-7331.

Editorial Board: G.M.Eastwood, L.Bender Jørgensen, P.Walton and J.P.Wild.

Publication Dates: Twice-yearly; May and November.

Deadlines for Contributions: April 1st and October 1st. for the May and November issues respectively.

Contact Address: G.M.Eastwood, Van Swietenstraat 45, 2334 EA Leiden, Holland.

Subscription Charges: £2.50 per annum (two issues).

Subscription payments can be sent to G.M.Eastwood at the above address (in the form of bank cheques or postal orders for £2.50) or money may be transferred to the following Dutch Giro Account: G.M.Vogelsang-Eastwood 2567328 (Dutch Guilders - DF11.25), again using the contact address given above.

NOTES TO CONTRIBUTORS

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

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

LOGO

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

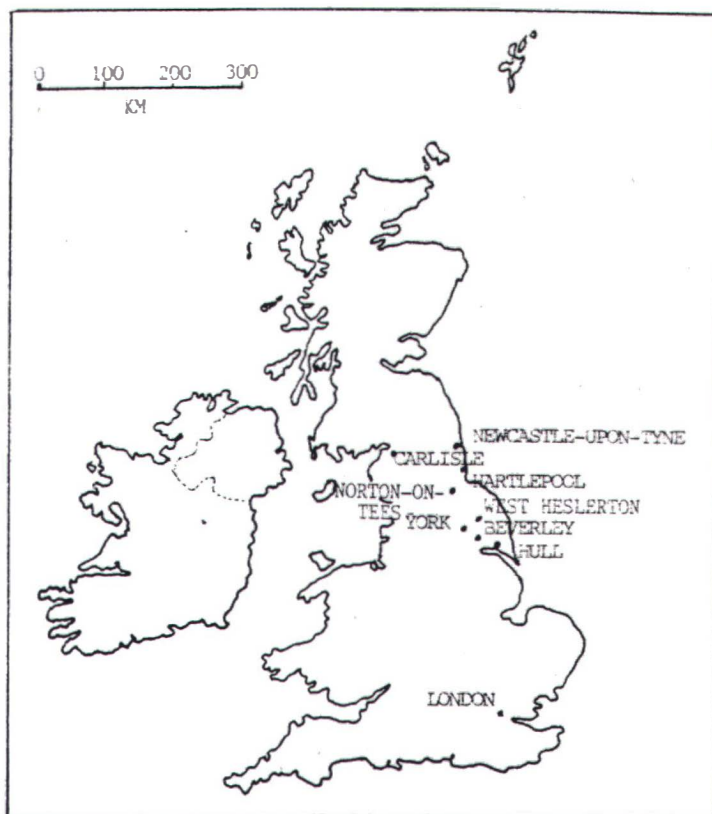
TABLE SHOWING CURRENT, RELEVANT EXCAVATIONS

| SITE | DATES | EXCAVATORS | TEXTILE SPECIALISTS |
|--|---|--|---|
| <u>Britain</u> (see Map 1) | | | |
| Beverley (1979-1983) urban and monastic | Medieval | Humberside County Council Archaeology Unit England | Penelope Walton |
| Carlisle (1980-) urban | Thirteenth - fourteenth centuries A.D. | Carlisle City Council England | Penelope Walton |
| Hartlepool (1981-1985) urban | Medieval | Cleveland County Archaeology England | Penelope Walton |
| Hull (1976) urban | Medieval and post-medieval | Humberside County Council Archaeology Unit England | Penelope Walton |
| London - Milk Street (1976-1979) urban | Ninth - twelfth centuries A.D. | Dept. of Urban Archaeology Museum of London, England | Frances A. Pritchard Dept. of Urban Archaeology Museum of London, England |
| Newcastle-on-Tees (1983 -) cemetery | ? Fifth - seventh centuries A.D. | Cleveland County Archaeology England | Penelope Walton |
| West Heslerton (1977-81; 1985 -) cemetery | Fifth - sixth centuries A.D. | J.Dent and D.Powlesland | Penelope Walton |
| York (1977-1981) urban | Ninth to fifteenth centuries A.D. (mainly Viking Age) | York Archaeological Trust York, England | Penelope Walton |
| <u>Denmark</u> (see Map 2) | | | |
| Illerup Ådal (1974 -) weapon deposit | Late Roman (third to fourth centuries A.D.) | J. Ilkjaer and J. Lønstrup Forhistorisk Museum Moesgaard, Århus, Denmark | Lise Bender Jørgensen |
| Sejflod (1979-1984) cemetery | Late Roman/Migration Periods (fourth - sixth centuries A.D.) | J.N.Nielsen Ålborg Historiske Museum Denmark | Lise Bender Jørgensen |
| Svendborg (1970's -) urban | Medieval, c. eleventh - sixteenth centuries A.D. | H.M.Jansen Svendborg Museum, Denmark | Lise Bender Jørgensen |
| Tybrind vig (1976 -) settlement | Late Mesolithic (c. 4,200 B.C.) | S.H.Andersen University of Århus Denmark | Lise Bender Jørgensen |

| SITE | DATES | EXCAVATORS | TEXTILE SPECIALISTS |
|---|---|--|--|
| <u>Egypt</u> (see Map 3) | | | |
| Akhmim (1979 -) urban | Late Roman - twentieth century A.D. | S.McNally University of Minnesota, U.S.A. | Cherry Nelson University of Minnesota |
| Fostat (1963 -) urban | Islamic | G.Scanlan The American University, Cairo Egypt | Louise Mackie Royal Ontario Museum Toronto, Canada |
| Qasr Ibrim (1964 -) urban | Late Ptolemaic - nineteenth century A.D. | J. Alexander Cambridge University, England | Elisabeth Crowfoot and Nettie Adams |
| Quseir al-Qadim (1978-1984) urban | (a) first to second centuries A.D. (b) twelfth to fourteenth centuries A.D. | D.Whitcomb and J.Johnson The Oriental Institute, Chicago U.S.A. | Gillian M. Eastwood |
| Tel el-'Amarna (1979 -) urban | Fourteenth century B.C. (18th dynasty) | B.Kemp Cambridge University, England | Gillian M. Eastwood |
| <u>Iraq</u> | | | |
| At-Tar (1971 -) cave burials | Third century B.C. - third century A.D. | H.Fujii Kokushikan University, Tokyo Japan. | Hiromi Okada and Kazuko Sakamoto |
| <u>Jordan</u> | | | |
| Pella (1979 -) urban and graves | Mid-eighth century A.D. | T.Potts The University of Sydney Australia | Gillian M. Eastwood |
| <u>Saudi Arabia</u> | | | |
| Qaryat el-Fau (1950's -) urban | Fifth century B.C. - third century A.D. | Abdul al-'Ansary King Said University, Riyadh Saudi Arabia | ? |
| <u>The Sudan</u> | | | |
| Soba-el Taiyib (1978-1984) urban | Early Christian | D.A.Welsby and C.M.Daniels Dept. of Archaeology University of Newcastle, England | Gillian M. Eastwood |

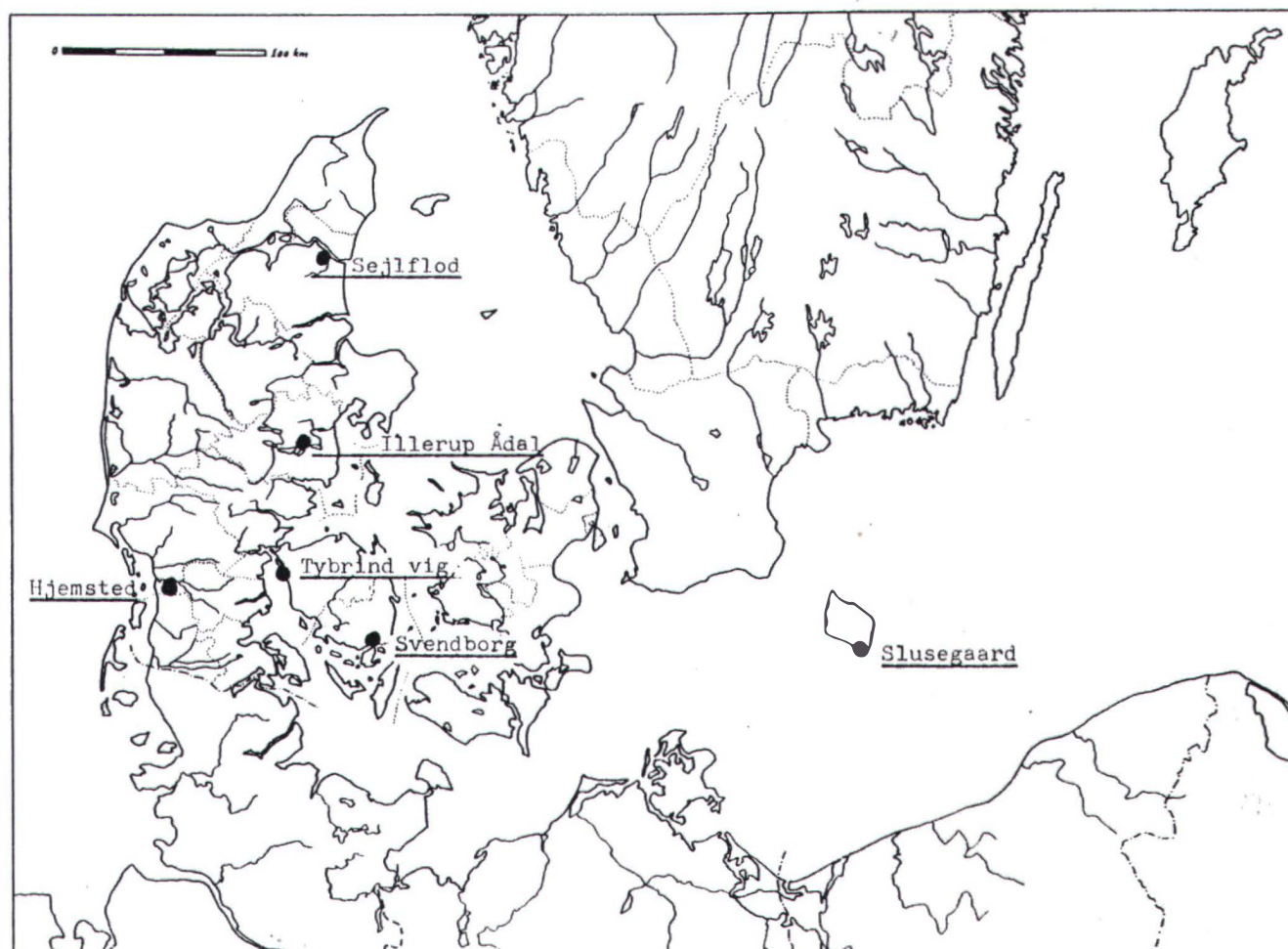
Map 1 British Sites

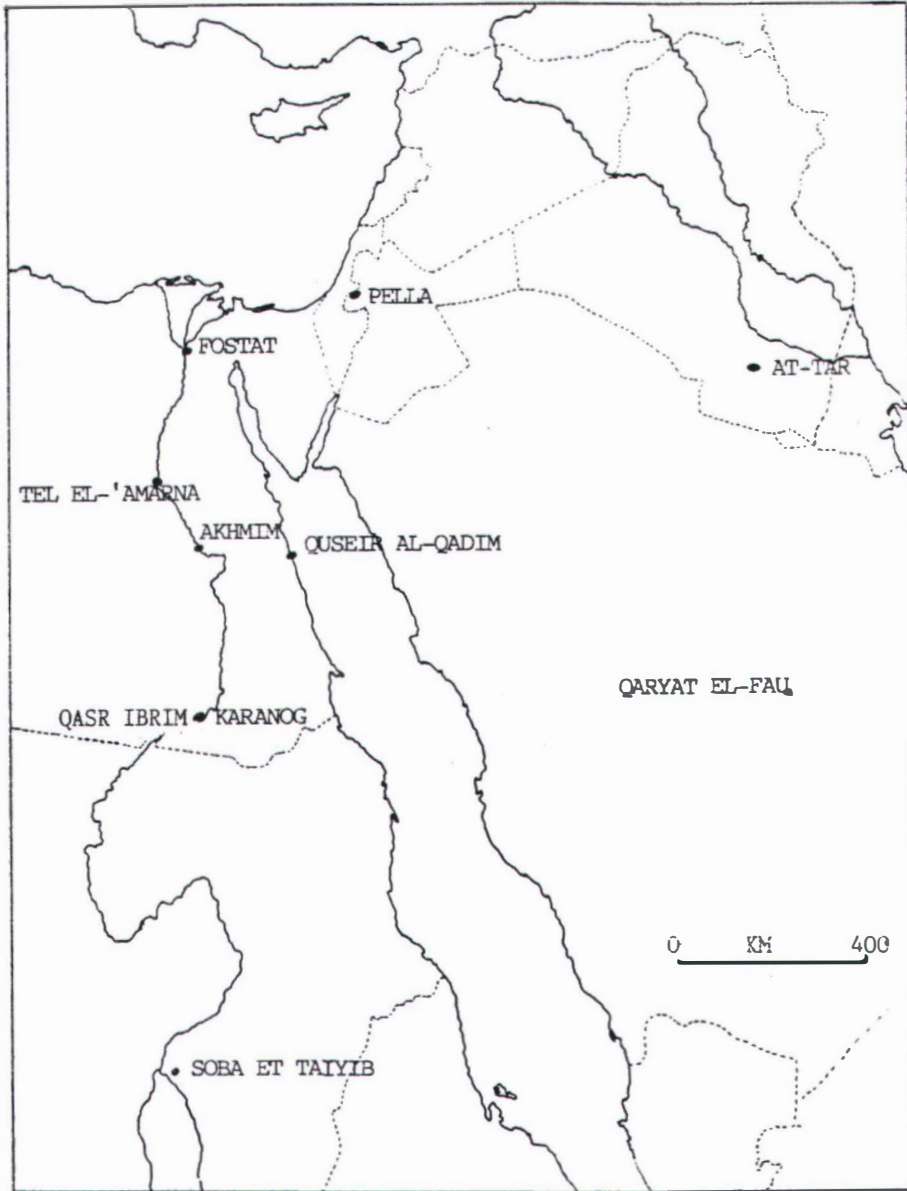
Map showing the position of current excavations in Britain where textiles have been found.



Map 2 Danish Sites

Map showing the position of current excavations in Denmark where textiles have been found.



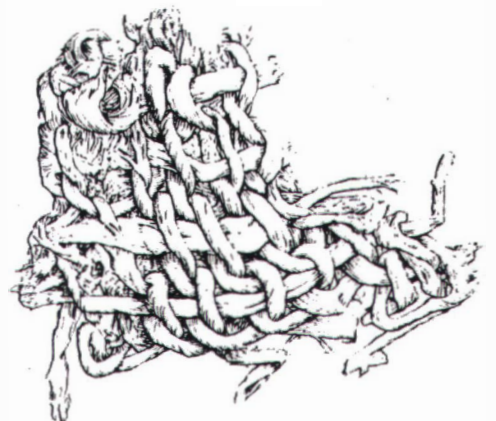


Map 3 Near Eastern Sites

Map showing the position of current excavations in the Near East where textiles have been found.



Fig. 1 Nalebinding from Tybrind vig.
drawing: Orla Svendsen
(after Skaik (1985),1.)



summary of sites

BRITAIN

Beverley: This important medieval cloth-manufacturing town has produced evidence for cloth-dyeing and fulling, but only a small number of textiles (one of them a silk diamond weave). These come from the Lurk Lane (1979-1982) and the Dominican Friary (1982-1983) sites.

Carlisle: A small group of textiles from the thirteenth and fourteenth centuries have been sent from The Lanes excavation (1980) and more are to follow.

P.W.

Hartlepool: A small amount of medieval yarn, fibre and textile from Southgate (1981-1982) and Church Close (1984-1985).

P.W.

Hull: Several cords for caulking timbers from medieval Monkgate site (1976); medieval and post-medieval textiles, including some interesting table-woven belt-braids, from the High Street/Blackfriargate site. All of these are soon to be published in P.Armstrong 'Excavations in High Street, Blackfriargate, Hull', East Riding Archaeologist, 8 (Hull Old Town Series).

P.W.

Newcastle upon Tyne: Medieval and seventeenth century textiles from Black Gate (1980); seventeenth and eighteenth century textiles from Black Friars (c. 1982). These add to the two large groups already published: 529 fragments from the fifteenth and sixteenth century Black Gate in P.Walton 'The Textiles', in B.Harbottle and M.Ellison 'An excavation in the Castle Ditch, Newcastle upon Tyne, 1974-6', Archaeologia Aeliana 5th series, 9 (1981) 190-228; 248-9; and 289; fragments from the seventeenth century in P.Walton 'The Textiles' in M.Ellison and B.Harbottle 'The excavation of a 17th century bastion in the Castle, Newcastle upon Tyne, 1976-81', Archaeologia Aeliana, 5th series, 11 (1983) 217-240; 262-3.

P.W.

Norton-on Tees: Mineralised remains from a ? fifth to seventh century A.D. cemetery; excavations begun in 1983 and still being carried out.

P.W.

West Heslerton: Many mineralised remains from a fifth to sixth century A.D. cemetery, excavated from 1977 to 1981, and again in 1985 by John Dent and Dominic Powlesland.

P.W.

YORK: Over 200 fragments from ninth to fifteenth century A.D. (mainly Viking Age) Coppergate (1977-1981) are to be published in P.Walton 'The Textiles from 16-22 Coppergate', The Archaeology of York 17/5. A small undated group from Parliament Street are soon to be published in D.Tweedle (ed.) The Archaeology of York 17/4. Work in progress on the textile implements from Coppergate, also to be published in The Archaeology of York. A report on the twelfth and thirteenth century textiles from Petergate, York, excavated by L.Wenham in 1957-8, is also in preparation.

P.W.

DENMARK

Hjemsted: Cemetery of more than 100 graves of the Roman and Migration Periods, excavated in South Jutland by Erik Jørgensen and Per Ethelberg of Haderslev Museum. There are textile remains in some twenty graves. Publication of the inhumation graves is forthcoming, including a report on thirteen graves with textiles. Most are plain z/z twills (Haraldskjaer type), but one piece proved to be a sample of the Rippenköper type identified by H.-J. Hundt in a number of Alamannic Reihengräber. Textile specialist: Lise Bender Jørgensen, Københavns Universitet.

L.B.J.

Illerup Ådal: Huge weapon deposit in Central Jutland, excavated between 1950-1956 by Harald Andersen and again from 1975 by J. Ilkjaer and J. Lønstrup, Forhistorisk Museum, Moesgaard, Århus. Work is still in progress. Preservation conditions favourable for iron, but not for textiles; nevertheless at least 100 fragments have been recovered. Those examined revealed close similarities to the garments of the well-known weapon deposit of Thorsbjerg, South Slesvig (now in the BRD Germany) 1858-1863.

L.B.J.

Sejflod: Cemetery with some 350 graves excavated just south of the Limfjord in North Jutland by Jens N. Nielsen, Ålborg Historiske Museum from 1979-1984. Over 50 graves, mostly dated to the fourth or fifth centuries A.D., contained textile remains, making up the largest single collection of Danish textiles from this period. Most finds are plain z/z twills (of the Haraldskjaer type), but patterned tablet bands and brocaded tablet bands are also found,

plus a weave best termed 'braided twill', requiring at least six sheds. Preliminary publication of one grave issued. Jens N. Nielsen *et al.*, 'En rig, germanertidsgrav fra Sejlflod, Nordjylland', *Årbøger for nordisk oldkyndighed og Historie* 1983 (1985), with short chapter on the textiles by Lise Bender Jørgensen (page ref. 97-101). Forthcoming work by L.B.J. (Prehistoric Scandinavian Textiles) with catalogue of most of the Sejlflod textiles.

L.B.J.

Slusegaard: Large cemetery of 1400 plus graves excavated on Bornholm in the late fifties-early sixties. Seventy graves with textiles, dated from c. 50 B.C. to A.D. 400. The textiles found are of the types typical for the area south of the Baltic and South Jutland (z/z twills, spin patterned twills, few tabbies and linens), plus an abnormally high number of z/s diamond twills. Publication in progress: vols. 1-2 issued in 1978, vol. 3 delayed due to the death of the excavator, Prof. O. Klindt-Jensen, Århus Universitet, but a team of archaeologists headed by Søren H. Andersen are preparing vol. 3, which also includes a textile report by Lise Bender Jørgensen.

L.B.J.

Svendborg: Urban excavations in the town of Svendborg, South Funen, with some 50 textile remains. Preliminary report in Danish on textiles in *Årbog for Svendborg og Omegns Museum* (1979). Full report in English, in *The Archaeology of Svendborg*, vol.4.(in press). Textiles similar to those known from other North European Medieval sites like Lübeck, Amsterdam, Oslo, Bergen etc., i.e. wool tabbies and twills, linens and a few silks.

L.B.J.

Tybrind vig: Excavation of a submerged mesolithic settlement off the coast of Funen has yielded the first mesolithic textile remains in Europe. Several pieces in nålebinding have been found, plus plaits, strings etc. Fibres are all vegetable, the spin is always z (or S-ply from z-spun threads). Excavator Søren H. Andersen, Århus Universitet. Date: c. 4,200 B.C.; local chronology: the Dyrholm II-phase of the Ertebølle Culture. Excavation still in progress, "many more" textiles reported from the 1985 excavations. Preliminary publication in *Stalk*, I (1985) by SHA and LBJ: 'Gamle klude' (Fig.1).

L.B.J.

WEST GERMANY

Cologne Cathedral: Two royal Frankish graves found in 1959 under Cologne Cathedral proved, in 1983, to contain many disregarded and unexamined textile remains. The most interesting piece was a Coptic tapestry which lined the ringmail neck-guard of a helm, found in the grave of a six year old boy. The second grave, that of a woman, contained a fine z/s diamond twill similar to the SH 1 fabric of Sutton Hoo, plus two possible silks. A fragment of an Oriental carpet which had covered the lady's grave was one of the only textile remains which had been examined. The graves are dated to the first half of the sixth century A.D. Preliminary report: Lise Bender Jørgensen: 'Ein koptisches Gewebe und andere Textilfunde aus den beiden fränkischen Gräbern im Kölner Dom', *Kölner Domblatt* (1984), 85-96.

L.B.J.

EGYPT

The Workmen's Village, Tel el-'Amarna: The Workmen's Village is a small, isolated site about two km north of the City of Tel el-'Amarna. The City and the Village were built c. 1370 B.C. by Akhenaton and destroyed about thirty years later following his death. Most of the c. 4,000 textiles are undyed flax tabbies and come from a series of rubbish tips. In addition a very small number of dyed flax textiles and undyed woollen tabbies have also been recorded. The site is currently being excavated by B.Kemp for the E.E.S. The textiles and allied equipment are being studied and published by G.M.Eastwood: 'Egyptian dyes and colours' in *Dyes on historical and archaeological textiles* (1985):9-19; 'Preliminary report on the textiles' in B.Kemp *Amarna Reports II* (1985):191-204.

G.M.E.

Quseir al-Qadim: The old harbour town of Quseir al-Qadim lies about eight km north of the modern port of Quseir on the Red Sea coast. The site was only occupied for two periods: (a) Roman - first and second centuries A.D. and (b) Ayyubid/Mamluk - twelfth to fifteenth centuries A.D. Due to the prevailing arid conditions thousands of woollen, flax, cotton and silk textiles have survived. Items of especial interest include a Roman saddle cloth made up of over sixty different pieces of cloth; two Islamic face veils; a number of men's caps (cloth, felt, knitted and embroidered); fragments of Chinese silk; embroideries, knitting and resist dyed cottons (Indian?). The site was excavated between 1978-1982 under the direction of Dr. D. Whitcomb and Prof. J. Johnson, the Oriental Institute, The University of Chicago. The textiles are being published by G.M.E. See:

D. Whitcomb and J. Johnson Quseir al-Qadim 1980 Preliminary Report, (1982), 285-326. 'Egyptian Dyes and Colours' in Dyes on historical and archaeological Textiles, (1984), 9-19; 'A fourteenth century face-veil from Egypt', Costume, 17 (1983), 33-38; 'Spinning Rings', Journal of Egyptian Archaeology, 70 (1984), 140-141; 'Medieval embroideries from Quseir al-Qadim, Egypt', Embroidery, 34, no. 3 (1983), 80-81 and 'The Textiles' in D. Whitcomb and J. Johnson, The Third Preliminary Report, forthcoming.

G.M.E.

 JORDAN

Pella: The textiles were found in a grave (no. 830016, Area 14, level 2) which contained two victims of an earthquake which occurred in 747/8 A.D. The small textile fragments have, at some time, been subjected to heat and are now in a fragile, carbonised state. However, eight (possibly nine) different types of silk cloth have been identified, which include a variety of complex twills. The graves were excavated under the direction of Dr. T. Potts, The University of Sydney. A description of the textiles by G.M.E. will appear in the next Pella preliminary report.

G.M.E.

 THE SUDAN

Soba el Taiyib: Soba lies about 30 km south-east of Khartoum and was once an important Christian centre. The site, and in particular the crypt of the main church, is currently being excavated by Dr. D. Welsby, Newcastle University. The church was destroyed by fire in the eighth century. The carbonised textiles from the crypt include eleven types of flax and cotton cloth and one small fragment of gold embroidery (couched). A textile report has been produced by G.M.E., but as with the other specialist reports, it will only be published when the excavations have been completed.

G.M.E.

ANOTHER LOOK AT TEXTILES FROM KARANOG

Those of us interested in textiles from Lower Nubia have long been puzzled by a collection of Meroitic textiles held by the University Museum, University of Pennsylvania. Judging by the photographs in the published report¹, they appear to be very similar to Meroitic cotton textiles from Qasr Ibrim, Gebel Adda and Qustul, but they are described in the text as being made from flax or linen.

I was privileged to examine the approximately 50 specimens comprising the Karanog textile collection at the University Museum on August 9th 1985. Although the 1910 Karanog report identifies the textile fiber as flax or linen whenever fiber is mentioned², the catalogued cards, written in 1934, list cotton as the fiber in all cases. I found that to be true for all but one of the 50 pieces. Drawer A 14 contained E 7511 F, a collection of five specimens with the same number. One of the five, illustrated in Woolley and Randall-MacIver's Plate 108, figure 6³, is cotton. Three others are very likely the unpatterned portions of the same piece. The fifth, a relatively small fragment, bearing no relation to the other four, is flax, but it is not mentioned on the catalogue card. Thus the mystery of the Karanog textiles is cleared up; they are in the same tradition, and possibly from the same looms as other Meroitic textiles from Lower Nubia.

This collection is interesting in several respects. The first is its similarity to the large corpus from the previously mentioned sites. Cotton is the predominant fiber; all yarns are s-spun. The simple techniques of plain weave, half-basket or basket weave are used as the main weave or ground weave. Decorative interest is provided in many of the undyed pieces by the use of texture: pile loops⁴, multiple wefts⁵, and openwork fringes⁶ are commonly found, and are illustrated from Karanog by figures 1, 4, and 5 in Plate 108⁷. Tapestry weave, using two shades of blue along with the undyed yarn is another decorative technique common to all of these collections. Figures 2, 3, and 6 in Plate 108⁸ are examples of this style. Applied designs are numerous from Qasr Ibrim and Gebel Adda; from Karanog, the fragment E 7511 Y in Drawer A 16 utilizes embroidery to produce a circle in chain stitch and a nearby spiral with stem stitch. This fragment could be part of a garment similar to the one worn by the fourth figure from the left, presenting the basket, in the top register of Plate 27⁹. A complete one was found at Qasr Ibrim in 1972¹⁰, and many fragments have subsequently come to light there.

Examples of three types of fabric borders are found among the Karanog specimens. E 7511 W has what is probably a starting border. Selvages are found on several specimens, including two fragments having both selvages, which give us the full width of the fabric (26.5 cms). Ending borders are represented by five specimens having openwork fringes, shown in figure 5¹¹. A simpler ending border on E 7511 R has tassel heads only -- no openwork, and the fringe of the tassels is missing.

An ending border technique which has not been previously noted is illustrated in figure 2, Plate 108¹². The warps remaining at the end of the weaving have been curved around a cotton cord (four s-spun, two Z-ply, S-cabled) and secured to the other side by twining or chain stitch. The fragility of the specimen and lack of time precluded thorough examination, but it was determined that the warp-ends were not wrapped around the cord, but simply curved around it. The exact nature of the stitching was not analysed.

I would like to thank Dr. David O'Conner, Curator of the Egyptian Department, University Museum in Philadelphia, who kindly permitted this examination on rather short notice. Although small, this collection of textile specimens from Karanog confirms our knowledge and enlarges our understanding of Meroitic textiles, thus making a valuable contribution to the field of Nubian Studies.

Nettie K. Adams
Museum of Anthropology
University of Kentucky

1. C. Leonard Woolley and D. Randall-MacIver, Karanog: The Romano-Nubian Cemetery, IV, Philadelphia University Museum (1910).
2. Ibid., III:27 and 37.
3. Woolley and Randall-MacIver, op.cit. (n.1).
4. Termed 'gausapa' by Woolley and Randall-MacIver, op.cit. (n.2):27.
5. The authors suggest that this may be the 'polymita' referred to by Pliny, ibid.: 27.
6. For an excellent technical discussion of these decorative borders, see Elisabeth Crowfoot, 'Openwork Fringes from Qasr Ibrim', Meroitic Newsletter, 23 (1984), 10-17.
7. Woolley and Randall-MacIver, op.cit. (n.1).
8. Ibid.
9. Ibid.
10. Illustrated in N.K.Adams, 'Meroitic High Fashion: Examples from Art and Archaeology', Plate V, E, forthcoming in Wissenschaftliche Zeitschrift (Der Humboldt-Universität zu Berlin); in press).
11. Woolley and Randall-MacIver, op.cit. (n.1).
12. Ibid.

WHEN DID WOOL BLENDING BEGIN?

Modern wool processing frequently involves the blending, i.e. mixing, of more than one kind of wool to produce different types of cloth. A carpet yarn, for instance, might contain four or five different qualities of wool, the amounts of which are varied according to the price and availability of suitable wools.

I am not aware of any historical evidence on the date when wool blending started. One imagines that blending began at some time during or after the Middle Ages. Modern blending involves a preliminary mixing¹, but the main mixing of the fibres takes place during machine carding. In hand spinning the wool is spun more or less directly from the fleece with little preparation and usually without mixing it with another kind of wool. This is assumed to have been the case when the wools in old yarns are measured in order to determine fleece type.

In all the wool samples from the medieval and earlier periods which were measured by the author, the wool fibre diameter distributions thus obtained have been from recognisable fleece types². There have been either more primitive skewed distributions (hairy medium, true hairy and generalised medium fleeces) or less primitive symmetrical distributions (medium, short and fine fleeces), and from this it is clear that a yarn containing wool with a fine wool fibre diameter distribution is not a blend of more than one fleece type.

It can be postulated that the blending of a fine or short wool (having a symmetrical distribution) with a coarse wool (having a skewed to fine distribution with a hairy 'tail') would increase the proportion of fine and/or medium fibres. This would make the diameter distribution more symmetrical, without eliminating the hairy fibres.

A 'warp' yarn from one of the wool textiles found in the sixteenth century Mary Rose appeared to fit the above description, and as far as I am aware this is the first early yarn on record showing evidence of blending³. Its fibre diameter distribution was first identified as a medium wool because of its mean value and symmetrical shape. The number of hairy fibres it contained, however, caused the wool to be reclassified as a hairy medium fleece. The wool in this yarn could well have been a blend between a medium wool and a hairy or a hairy medium type.

The wools of these two kinds appear to have been mixed before spinning, possibly during carding. The purpose would have been to make the cloth less coarse than it would have been if solely made of hairy wool. Having once found evidence of such a fibre mixing, a lookout should be kept not only for other examples, but also for historical records on the introduction of blending during the manufacture of cloth.

M.L.Ryder
Hill Farming Research Organisation
Bush Estate, Penicuik, Midlothian,
Scotland, EH26 0PY

- 1 The machine used is named a 'willey', the origin of which is thought to date back to the time when wool was loosened by beating it with a willow branch.
- 2 M.L.Ryder Sheep and Man, London (1983).
- 3 M.L.Ryder 'Wools and textiles in the Mary Rose, a sixteenth century English warship' Journal of Archaeological Science, 11 (1984), 337-343.

Philomeen M. van 't Hooft, Koptische weefsels in het Rijksmuseum van Oudheden te Leiden, Drs., Faculty of Art History and Archaeology, Leiden University, The Netherlands. Supervisors: Prof. dr. P.P.V.van Moorsel and Dr. M.J.Raven. This thesis was submitted and passed in October 1985. A revised, English version of the thesis will be published in 1987 as the official catalogue of the museum's Coptic textile collection.

A photocopy of the original thesis (in Dutch) can be obtained directly from P.van 't Hooft.

Lise Bender Jørgensen, North European Textiles until A.D. 1000, Ph.D. Dept. of Archaeology, Copenhagen University, Denmark.

topica

FORTHCOMING LECTURES AND EXHIBITIONS

Indigo - natuurlijk blauw, Tropenmuseum, Amsterdam, the Netherlands. 18th Dec. 1985 to 7th April 1986.

DYE ANALYSIS

Dye analyses: Basque 16th century textiles from Red Bay, Labrador; medieval textiles from Baynard's Castle in London (being studied by Elisabeth Crowfoot); Viking textiles from Dublin (researched by Frances Pritchard); dye-stained potsherds from seventh to tenth century sites in England, Scotland and Ireland. A summary of recent dye results is given in P.Walton, 'Dyes on Medieval Textiles', Dyes on historical and archaeological textiles, 3 (1984), 30-34.

P.W.

OTHER RESEARCH

Other research: a chapter on the textile industry for a book on medieval industries (eds. J.Blair and N.Ramsey) is almost complete and a search for documentary evidence for early trade and cultivation of dye-plants is also under way. In late September work will begin on the investigation of dyes and wools in selected textiles from Scandinavia and Germany (the textiles have already been reported on by Lise Bender Jørgensen, Bente Magnus and Klaus Tidow inter alia).

P.W.

THESES IN PREPARATION

Gillian M. Eastwood, Woollen Weft-Faced Compound Weaves from Late Roman and Early Islamic Egypt, Ph.D., Dept. of Archaeology, Manchester University, England. Supervisor: Dr. J.P.Wild.

recent publications

a. General Topics

Adams, N.K. 'Meroitic High Fashion, Examples from Art and Archaeology', Wissenschaftliche Zeitschrift, (der Humboldt-Universität zu Berlin in press).

Barber, E. 'New Kingdom Egyptian Textiles: Embroidery vs Weaving', American Journal of Archaeology, 86 (1982), 442-445.

Budny, M. and Tweddle, D. 'The earliest English embroideries', Illustrated London News, 272 (1985), 14-21.

Butazzi, G. and Pertegato, F. 'Un paio di piane cinquentesche delle Civiche Raccolte d'Arte Applicat di Milano', Rassegna di Studi e di Notizie, xi (1983), 119-168.

Carroll, D.L. 'Dating the foot-powered loom: the Coptic evidence', American Journal of Archaeology, 89 (1985), 168-173.

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

Eastwood, G.M. 'The Textiles' in D.Whitcomb and J.Johnson, Quseir al-Qadim 1980 Preliminary Report (1982), 285-326.

Eastwood, G.M. 'A fourteenth century face-veil from Egypt', Costume, 17 (1983), 33-38.

Eastwood, G.M. 'Spinning Rings', Journal of Egyptian Archaeology, 70 (1984), 140-141.

Eastwood, G.M. 'Preliminary report on the textiles' in B.Kemp, Amarna Reports II, (1985), 191-204.

Eastwood, G.M. 'Medieval Embroideries from Quseir al-Qadim, Egypt', Embroidery, 34, no.3. (1983), 80-81.

Farag, R.A. 'Excavations at Abydos in 1977: A Byzantine Loom Factory', MDAIK, 19 (1983), 51-57.

Finch, K. 'A medieval hat rediscovered', Textile History, 14, no. 1 (1983), 67-70.

Fujii, H., Sakamoto, K., Okada, H. and Ichihashi, M. 'The latest discussion on the textiles from At-Tar Caves', Al-Rafidan, III-IV (1982-1983), 47-52.

Eidem, 'Textiles from At-Tar Caves, Iraq', Al-Rafidan, III-IV, (1982-1983), 89-96.

Fujii, H. 'Roman textiles from At-Tar Caves in Mesopotamia', Lecture given at the Turin Congress on Common Ground and Regional Features of the Parthian and Sasanian World, June 17th-18th, 1985.

Giner, C.A. 'Tejido y cestería en la península Ibérica. Historia de su técnica e industrias desde la prehistoria hasta la romanization', Bibliotheca Praehistorica Hispana, XXI (1984).

Gudjónsson, E. 'Fjórar myndir af íslenska vefstadium', Árbók Hin Íslenska Fornleifafélags (1977), 125-134 (English summary: Four pictures of the Icelandic warp-weighted loom).

Gudjónsson, E. 'A note on Medieval Icelandic shaggy pile weaving', Bull. C.I.E.T.A., 51-52 (1980), 41-45.

Gudjónsson, E. Notes on Knitting in Iceland, Reykjavik (5th ed., 1985).

Gudjónsson, E. 'Nogle bemaerkninger om den islandske vaegtvaev, vefstadir', By og Bygd, 30 (1985), 117-128 (English summary).

Hägg, I. 'Die Textilfunde aus dem Hafen von Haithabu', Berichte über die Ausgrabungen in Haithabu, 20 (1984).

Harte, N.B. and Ponting, K.G. (eds.) Cloth and Clothing in Medieval Europe, London (1983).

Jørgensen, L.B. 'Forhistoriske tekstiler i Skandinavien. Prehistoric Scandinavian Textiles'. Nordiske Fortidsminder, 9 (1985).

Nagy, K.E. 'Die Tracht eines vornehmen Ungarischen Mädchens aus dem 16ten Jahrhundert, Restaurierung und Rekonstruktion des Boldauer Fundes'. Artes Decorativae, 7 (1982), 29-79. (Annual of the Museum of Decorative Arts and the Far East, Budapest).

de Neergaard, M. 'Children's shoes in the thirteenth to sixteenth centuries', Costume, 19 (1985), 14-21.

Newton, S.M. and Giza, M.M. 'Frilled edges', Textile History, 14 (1983), 141-152.

Renner, D. Die Spätantike und koptischen Textilien im Hessischen Landesmuseum in Darmstadt, Wiesbaden (1985).

Ryder, M.L. 'Wools from Textiles in the Mary Rose, a 16th century English Warship', Journal of Archaeological Science, 11 (1984), 337-343.

Sakamoto, K. 'On the loose fitting trousers from Noin-Ula in North Mongolia', Al-Rafidan, III-IV (1982-1983), 31-46. (In Japanese).

Trilling, J. The Roman Heritage: Textiles from Egypt and the Eastern Mediterranean 300-600 A.D. Textile Museum Journal, 21 (1982).

Walton, P. 'Old Sock', Interim, 8, no.2 (1982), 5-8.

Walton, P. 'The Textiles' in M. Ellison and B. Harbottle, 'The excavation of a 17th century bastion in the Castle, Newcastle upon Tyne, 1976-1971', Archaeologia Aeliana, 5th series, 11 (1983), 217-240; 262-263.

Walton, P. and Eastwood, G.M. A Brief Guide to the Cataloguing of Archaeological Textiles, York (2nd ed., 1984).

b. Recent Serials

Dyes on Historical and Archaeological Textiles, Proceedings of meetings held in York and Edinburgh. National Museum of Antiquities of Scotland, Edinburgh (1982, 1983 and 1984).

1 (1982):

Whiting, M. 'Recent Advances in the Detection and Identification of Red and Yellow Dyes', 2.

Harvey, J. 'Analysis of Dyes in Fabrics Recovered from the Mary Rose Site', 3-4.

Taylor, G.W. 'Detection and Identification of Dyes on Anglo-Scandinavian Textiles', 5.

Walton, P. 'Dyes on Textiles from Newcastle upon Tyne and Spitsbergen', 6.

Sinclair, R.S. 'Colour Specification and Colour Fading', 7-8.

Duff, D.G. 'Natural Dyes used in Scottish Textiles', 9.

Dalrymple, H.E. 'Problems in Identifying Dyes on Old Scottish Textiles', 10-11.

Eastwood, G.M. 'Textiles Available from Middle Eastern Sites', 12.

2 (1983):

- Dalrymple, M.E. 'Dye Identification at the National Museum of Antiquities of Scotland', 3-7.
- Daniels, V. 'Dye Analysis at the British Museum', 8.
- Duff, D.G. and Sinclair, R.S. 'Natural Dyes of the Scottish Highlands', 9-11.
- Grierson, S. 'Practical Work with Dyes of the Scottish Highlands', 12-13.
- Taylor, G.W. and Walton, P. 'Lichen Purples', 14-19.
- Taylor, G.W. 'Detection of shellfish purples on textiles', 20-21.
- Pritchard, F. 'Evidence of Dyeing Practices from a Group of Late Saxon Textiles from London', 22-24.
- Hall, A.R. 'Evidence of Dyeplants from Viking Age York and Medieval Beverley', 25.
- Jones, F. 'Natural Dye Collection - Leeds University', 26.

3 (1984):

- Dalrymple, H.E. 'Dyes on Scottish Tartans', 3-7.
- Daniels, V. 'Progress in Dye Analysis at the British Museum', 8.
- Eastwood, G.M. 'Egyptian Dyes and Colours', 9-19.
- Grierson, S. 'Workshop Dyeing', 20-21.
- Taylor, G.M. 'Survey of the Insect Red Dyes', 22-25.
- Taylor, G.W. 'American Chemical Society Meeting, Philadelphia, August 1984 - Comments on the Papers Concerned with Dye Analysis', 26-27.
- Tomlinson, P. and Hall, A. 'Progress in Palaeo-Botanical Studies of Dye Plants 1983/3', 28-29.
- Walton, P. 'Dyes on Medieval Textiles', 30-34.

c. Personal Bibliographies

Lise Bender Jørgensen:

- 'Textilfundene i Stengade', in J.Skaarup: Stenga Stengade II, Meddelelser fra Langelands Museum (1976).
- 'Analyse eines Textilfragmentes aus Grab I von Harpelev', Acta Archaeologica, 47 (1976).
- 'Klaede fra romerriget', Skalk, 2 (1977).

'Kvindedragten i nordisk jernalder', Kontakt-stencil, 13 Århus (1977).

'Middelaldertextilerne fra Svendborg', Årbog for Svendborg og Omegns Museum (1979).

'To textilfragmenter fra romersk jernalder. Elmélund og Ellidshøj', Kuml (1979).

with M. Benard, H. Brinch Madsen, I. Nielsen, K. Ambrosiani and U. Näsman: 'Wikingerzeitliches Handwerk in Ribe', Acta Archaeologica, 49 (1978).

'Cloth of the Roman Iron Age', Acta Archaeologica 50 (1979), 1-60.

'Et textilfragment fra Dalagerard-graven', Kuml, (1981).

'A new textile material from Danish Iron Age graves', in L.B.J. and K. Tidow, Textil:symposium Neumünster. Archäologische Textilfunde, 6.5-8.5. 81, Neumünster (1982).

with T. Skov, 'Textilerne fra Norre Vosborg', Kuml, 83 (1982), 197-203.

with T. Skov 'Kokholmfundet. Et gravfund fra yngre romersk jernalder', Fram (1983).

'Textilerne fra Norre Vosborg', Kuml, (1982-83).

'Vaevnes Danmark', Skalk, 2 (1984), 11-14.

'Cloth production and the cloth trade in the first millenium A.D.', Skrifter från Skaraborgs Länsmuseum, 4 (1984), 99-104.

'North European Textile Production and Trade in the First Millenium A.D. - A research project', Journal of Danish Archaeology, 3 (1984), 124-134.

'Ein koptisches Gewebe und andere Textilfunde aus den beiden fränkischen Gräbern im Kölner Dom', Kölner Domblatt (1984), 85-96.

'Melhøj-fundet. En hidtil upaagtet parallel til Skrydstrupfundet' with E. Munksgaard and K.H. Staermose Nielsen, Årbøger for Nordisk Oldkyndighed og Historie (1985).

with S.H. Andersen, 'Gamle klude', Skalk, 2 (1985).

'Frisisk klæde', Skalk, 4 (1985).

'Textilerne fra Sejlflod grav DI', Årbøger for Nordisk Oldkyndighed og Historie (1985).

'The Textiles from Medieval Svendborg', The Archaeology of Svendborg, vol.4 (in press)

'Forhistoriske tekstiler i Skandinavien' (Pre-historic Scandinavian Textiles), Nordiske Fortidsminder (in press).

Krishna Riboud:

'Some aspects of the study of ancient textiles', Studies in Museology, II (1966), 36-41.

'Textiles of Han and T'ang periods excavated by Sir Aurel Stein and preserved in the National Museum, New Delhi', Bull. C.I.E.T.A., 27 (1968), 37-42.

with G.Vial and E.Loubo-Lesnichenko, 'A comparative study of two similar Han documents. Polychrome figured silks from Lou-lan and Ilmovaya Padj', Bull. C.I.E.T.A., 28 (1968), 25-63.

with G.Vial, 'Les soieries Han'-
1) Aspects nouveaux dans l'étude des soieries de l'Asie Centrale (K.R.)
2) Analyse technique sur un specimen de Noin-Oula (G.V.).
Arts Asiatiques, XVII (1968), 93-116.

'Essential problems concerning Central Asian silks', Journal of Indian Museums, XXV-XXVI (1969-1970), 56-63.

with G.Vial, Tissus de Touen-Houang, conservés au Musée Guimet et à la Bibliothèque Nationale, XIII, Paris (1970).

with G.Vial, 'Procedures and results of a study - Sir Aurel Stein textile collection at the National Museum, New Delhi', Bull. C.I.E.T.A., 32 (1970/2), 24-39.

'A study of two Central Asian silk specimens of the Han Dynasty', Bulletin of National Museum, New Delhi, 2 (1970), 1-3.

with E.Loubo-Lesnichenko, 'Lou-lan and Oglakty', Ctranie i Narodnie Vostoka (People and countries of the Orient), XV (1973), 278-287.

'Nouvelles découvertes soviétiques à Oglakty et leur analogie avec les soies façonnées polychromes de Leou-lan - Dynastie Han', Arts Asiatiques, XXVIII (1973), 139-164.

'Some remarks on strikingly similar Han figured silks found in recent years in diverse sites', Archives of Asian Art, XXVI (1972-1973), 12-25.

'A reappraisal of Han Dynasty monochrome figured silks', Bull. C.I.E.T.A., 38 (1974), 122-138.

'Techniques and problems encountered in certain Han and T'ang specimens', Irene Emery Roundtable on Museum Textiles 1974 Proceedings, Washington (1975), 153-169.

'Further indication of changing techniques in figured textiles of Post-Han period (A.D. 4th to 6th c.)', Bull. C.I.E.T.A., 41-41 (1975), 13-40.

contributor to the catalogue of the exhibition 'La Route de la Soie', held at the Grand Palais, Paris (1976), 73-76.

'A newly excavated Caftan from the North Caucasus' The Textile Museum Journal, IV, no. 3 (1976), 21-42.

'A detailed study of the figured silk with birds, rocks and tree from the Han dynasty', Part 1 by K.R., Part 2 by G.Vial, Bull. C.I.E.T.A., 45 (1977), 51-68.

'A closer view of early Chinese silks', Studies in Textile History, ed. V.Gervers, Toronto (1977), 252-280.

'Some remarks on the face-covers (fu-mien) discovered in the tombs of Astana', Oriental Art, XXIII, no. 4 (1977), 48-64.

'Les Textiles du Bassin du Tarim' in M.L.Hambis (ed.), L'Asie Centrale, Paris (1977).

'Some comments on the evolution of complex weave structures found in early patterned silks', ICOM, Zagreb (1978) (78/9/5).

'Quelques problèmes techniques concernant une célèbre soierie façonnée polychrome Han (Lou-Lan)
1) 'Exposé technique L.C. 07a+b' (K.R.)
2) 'Techniques' (G.V.).
Bull. C.I.E.T.A., 49 (1979-1), 51-64.

'La vie mystérieuse des Chefs d'oeuvre: la science de l'Art'. Exhibition catalogue, Grand Palais, Paris (1980).

'Quelques considérations techniques concernant quatre soieries connues', ed. M.Flury-Lemberg and K. Stolleis Documenta Textili, Festschrift für Sigrid Müller-Christensen, Deutscher Kunstverlag (1981), 129-155.

'Han dynasty specimens from Noin-Ula and Mawangdui in looped-warp weave', Bull.C.I.E.T.A., 57-58 (1983), 16-33.

H.-J. Hundt

for publications prior to 1974, see Jahrbuch des römisch-germanischen Zentralmuseum, Mainz, 21 (1974).

'Die Restaurierung der Funde aus den Hallstattzeitlichen Fürstengräbern von Novo Mesto. Über Textilreste in Hügel 4, Grab 3', Archeološki Vestnik (Acta Archaeologica), XXIV (1973), 333ff.

'Ein römischer Asbestfund aus Lauriacum (Enns)', Mitt. d. österr. Arbeitsgem. f. Ur- u. Frühgeschichte, XXVI, 2 (1976), 125ff.

review of K.Schlabow, Textilfunde der Eisenzeit in Norddeutschland. Göttinger Schriften zur Vor- und Frühgeschichte, 15 (1976) in Prahist. Ztschr. 52 (1977), 263ff.

'Report on textile traces on a coin of Basil I from the Antalya Hoard', in D.M.Metcalf 'The Antalya Hoard of Miliarasia of Basil', Numismatic Chronicle, VII, ser. XVII (1977), 125.

'Gewebereste aus den Reihengräberfeldern von Rudelsdorf, Hafeld und Schlatt'. Catalogue Baiernzeit in Oberösterreich, Linz (1977), 139ff.

'Gewebeabdruck auf der Innenseite eines Tubulus', in D.Baatz, 'Das Badegebäude des Limeskastells Walldürn, Odenwaldkr', Saalburg Jahrb., 35 (1978) 106ff.

'Ein seidenes Aufnähek aus Oberflacht, Gem. Seitingen-Oberflacht, Kr. Tuttlingen', Forschungen und Berichte zur Vor- u. Frühgeschichte in Baden-Württemberg, 10 (1978), 24.49ff.

'Das alamannische Gräberfeld von Giengen an der Brenz (Kr. Heidenheim)', Forschungen u. Berichte zur Vor- u. Frühgeschichte in Baden-Württemberg, 10 (1978), Die Textilreste S.149ff.

'Drei mittelalterliche Bestattungen von Kordlar Tepe. Die Gewebefunde', Archäologische Mitteilungen aus Iran, 11 (1978), 174ff.

'Textilreste aus den Gräbern von Säben-Klausen' in K.Krömer, 'Das frühgeschichtliche Gräberfeld von Säben bei Klaus in Südtirol', Archaeologia Austriaca, 64 (1980), 47f.

'Textilreste aus dem frühgeschichtlichen Kriegergrab von Sievern, Kr. Wesermünde, 1954', Studien zur Sachsenforschung, 2 (1980), 151ff.

'Die Webkunst der Hallstattzeit' in E.Lessing, Hallstatt Bilder aus der Frühzeit Europas, (1980) 88ff.

'Die Gewebereste aus dem Grab von Hügelsheim' in S.Schiek, 'Der 'Heiligenbuck' bei Hügelsheim', Fundber. aus Baden-Württemberg, 6 (1981), 309ff.

Die frühgeschichtliche Marschensiedlung beim Elisenhof in Eiderstedt, 4, Die Textil- und Schnurreste, (1981).

'Einige Textilreste aus dem frühgeschichtlichen altfriesischen Grabfeld von Zetel, Kr. Friesland, Niedersachsen', Studien zur Sachsenforschung, 3 (1982).

'Die Textilreste aus Grab 30 von Herbolzheim Kr. Heilbronn', Fundber. aus Baden-Württemberg, 7 (1982), 470ff.

review of H.Hayen, R.Ullemeyer, K.Tidow, F.Ruttner u. Inst. f. Härtereitechnik. Einzeluntersuchungen zu Feddersen Wierde, Wagen, Textil- und Lederfunde, Bienenkorb, Schlackenanalysen, Feddersen Wierde, 3 (1981) in Bonner Jahrb., 183 (1983), 761ff.

'Textilreste der Hallstattzeit aus Subingen, Kanton Solothurn', Archaeologie des Kantons Solothurn, 3 (1983), 78ff.

'Ein Textilfund aus Grab 8 von Dörverden, Kr. Verden (Aller), Niedersachsen', Studien zur Sachsenforschung, 4 (1983), 207ff.

'Die Gewebereste von Müdesheim, Sulzheim und Hettstadt', in Chr. Pescheck, Neue Reihengräberfunde aus Unterfranken, Kat. 21. Prahist. Staatssammlung München (1983), 113ff.

'Textilfunde aus Grab 86 des awarischen Friedhofs von Sommerein am Leithagebirge, Niederösterreich' in F. Daim, A.Lippert 'Das awarische Gräberfeld von Sommerein am Leithagebirge, NÖ', Studien zur Archäologie der Awaren, I (1984), 181ff.

Güterproduktion in: DFG, 'Archäologische und naturwissenschaftliche Untersuchungen an Siedlungen im Küstengebiet, Bd.1, Ländliche Siedlungen 3,1,7. S.302-304, Acta humaniora. (1984).

'Gewebe- und Filzfunde aus Haithabu, Ausgrabung (1966-1969), Berichte über die Ausgrabungen in Haithabu, 19 (1984), 129ff.

'Die Textilreste aus dem Reihengräberfeld von Niedernberg in Chr. Pescheck, 'Das fränkische Reihengräberfeld Niedernberg am Main', Aschaffener Jahrbuch für Gesch., Landeskunde u. Kunst d. Untermaingebietes, 8 (1984), 123ff.

review of M.Hald, Ancient Danish Textiles from Bogs and Burials in Prahist. Zeitschr., 60 (1985), 121ff.

'Die Textilien im Grab von Hochdorf: Hervorragende Zeugnisse frühen Kunsthandwerks' in Der Keltenfürst von Hochdorf: Methoden und Ergebnisse der Landesarchäologie. Katalog zur Ausstellung, Stuttgart, 4 August - 13 Oktober 1985, 107ff.

additional bibliography

De Jonghe, D. and Tavernier, M. 'Les damassés de Palmyre', Bull. C.I.E.T.A., (1982), 20-52.

De Jonghe, D. and Tavernier, M. 'Les damassés de Palmyre', Les Annales Archéologiques Arabes Syriennes, 32 (1982), 89-116.

Schulten, W. 'Der Kölner Dreikönigenstoff: 1 Aus Seide im 2 Jahrhundert gewebt', Bayer-Berichte 47 (1982), 14-19.

Wild, J.P. 'Some early silk finds in Northwest Europe', The Textile Museum Journal, 23 (1984), 17-14.

list of subscribers

a. Individuals

- N. K. Adams 957, Wolf Run Road, Lexington, KY-40504, U.S.A.
 C. Giner Alfaro Gobernador Viejo 34 ^{4a}, 46003 - Valencia, Spain.
 J. Allgrove M^CDowell 13, Ponis Villias, Brighton, England, BN1 3HD.
 H. M. Appleyard 8, Bridle Stile, Shelf, Halifax, England, HX3 7NW.
 A. Bergli Historisk Museum, Konservenkgsaudelingem, Årstadsvollen 22, N-5000 Bergen, Norway.
 W. Cooke Dept. of Textiles, UMIST, P.O.Box 88, Manchester, England.
 M. Fentz Norupvej 44, Vammen, DK-8800 Viborg, Denmark.
 G. M. Eastwood Van Swietenstraat 44, 2334 EA Leiden, The Netherlands.
 T. Gabra-Sander Teaching and Research Centre, Western General Hospital, Edinburgh, Scotland, EH4 2XU.
 E. E. Gudjónsson National Museum of Iceland, P.O.Box 1499, IS-121 Reykjavik, Iceland.
 M. Hoffmann Almevegen 28, Oslo 8, Norway.
 P. van 't Hooft Elsa Bränströmstraat 12, 2037 LR, Haarlem-Schalkwijk, The Netherlands.
 L. Bender Jørgensen Bryggerivej 8, ^{4tv}, DK-2500 Valby, Denmark.
 M. Lindström Kulturhistoriska Föreningen för Södra Sverige, Box 1095, 22104 Lund, Sweden.
 L. M. Mackie Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, Canada, M5S 2C6.
 K. Marg, Bof Stationsgade 20, 8240 Risskou, Denmark.
 N. Moore 5, Rue Eliane, F-92190 Meudon, Haut-de Seine, France.
 K. H. Nielsen Hulsøvang 17, 2960 Rungsted Kyst, Denmark.
 S. Niessen Rijnsburgerweg 164, 2333 AJ Leiden, The Netherlands.
 E. Peacock Arkeologisk Audeling, UNIT Museet, Erling Skakkes gt. 476, N-7000 Trondheim, Norway.
 F. Roberts Konserveringsanstalten, Vestergade 5-7, DK-6870 Øglod, Denmark.
 M. L. Ryder Hill Farming Research Organisation, Bush Estate, Penicuik, Midlothian, Scotland, EH26 OPY.
 K. Sakamoto 13-25 Tennoji-ku, Shinpoin-cho, Osaka 543, Japan.
 T. Schinck The Israel Museum, Jerusalem 91012, Israel.
 E. Scholberg Allégt 38, N-5000 Bergen, Norway.
 A. Sheffer Institute of Archaeology, Tel Aviv University, Ramat Aviv 69 978, Tel Aviv, P.O.B. 39040, Israel.
 G. Tata P.O.Box 8414, Salt Lake City, Utah 84108, U.S.A.
 P. Walton 12, Bootham Terrace, York, England, YO3 7DH.
 S. Wikström Bergvik, Ådo, 19700 Bro, Sweden.
 J. P. Wild Dept. of Archaeology, Manchester University, Manchester, England.

b. Institutions

- The Abegg-Stiftung Ch-3132 Riggisberg, Bern, Switzerland.
 The National Museum of Copenhagen Nationalmuseet, Bibliotekstjenesten, Ny Vestergade 10, DK-1471 Copenhagen, Denmark.
 Textilmuseum Krefeld Textilmuseum Krefeld, Andreasmarkt, D-4150 Krefeld, W.Germany.
 The Lejre Weavers Denmark.
 Textile Conservation Centre Apartment 22, Hampton Court Palace, East Molesey, Surrey, England, KT8 9AU.
 Riksantikvarieämbetet Box 5405, S-114 84 Stockholm, Sweden.