

L-M BRIC News No. 7

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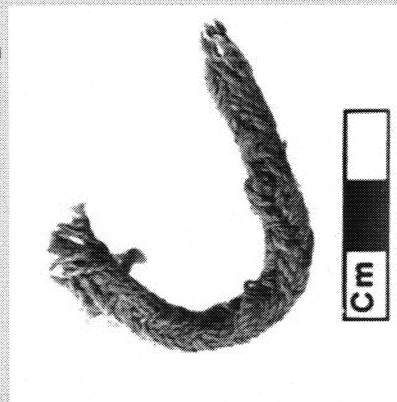
L-M BRIC News

Loop Braid from the Bronze Age!! ?

An exceedingly early loop braid of wool and goathair, and of five loops, from the Nineteenth Dynasty (14th to 12th century BCE) Egyptian smelting camp at Timna in Israel has been reported by A. Baginski and O. Shamir (1) in *ARCHAEOLOGICAL TEXTILES NEWSLETTER = ATN*, no. 16, June, 1993. (Information from C. Priest-Dorman (2)).

Although we have speculated that the origin of the loop-manipulation (l-m) technique is much earlier than we have known so far, we could not have ever imagined finding a specimen that proves such an early existence of the technique. We'd scrutinized unsuccessfully looking for illustrated proofs whenever we had a chance to view old frescoes or Greek painted vases. This one, moreover, is a braid itself!! If this proves to be true, it will be one of the most important discoveries in the research on the history of the l-m braiding technique.

(Photo 1: Photo by Moshe Cohen ©)



The smelting camp site 30 is located at Timna (Formerly Wadi Menei'jeh) in the Arabah Valley which runs between the Dead Sea and the Gulf of Arabah/Eilat at the northeast end of Red Sea. Early copper mining sites in the area have long been known. Famed biblical scholar Nelson Glueck, as the result of explorations in the 1930's, identified these mines as "King Solomon's Mines." However, after extensive excavations and systematic researches from 1964 to 1969 by Beno Rothenberg, the site did not yield the materials to support Glueck's identification. While the new thesis, that the mining and smelting industry of Timna was much earlier than King Solomon, first met with strong opposition, it was firmly established by Rothenberg's discovery in 1969 of a mining temple build for the Egyptian goddess Hathor, dated by inscriptions to the Egyptian New Kingdom (3). As an added note, modern archeo-metallurgy was born in Rothenberg's research at Timna. The research continues to this day (<http://www.ucl.ac.uk/iams>).

The article in ATN is a summary of the full report to be published in the projected monograph on the excavation of the mining and smelting camps at Timna. The authors were asked by Rothenberg to examine the textile fragments uncovered in 1974-6, during the excavations of the smelting camps site 30 at Timna, now dated from the end of the 14th century BC to the middle of the 12th century BC.

Among over 150 textile fragments, including woven fabrics, baskets, threads and cords, and ceramic shards with textile impressions, there was one fragment of a band of diameter 0.5 cm and length 11 cm.

The authors compared the braid fragment with a sample made by the late A. Tidhar following the instruction in the article on Icelandic loop braiding by Gudjonsson (4) and also referring to the Manual of Braiding (5), identified it as loop-braided. If the report is proven to be valid, it is a discovery extremely exciting as well as important.

We presume that the authors had noticed the unusual appearance of the fragment that prompted them to seek the references quoted. Unfortunately, there is no mention to the specifics that prompted them. While we understand that the projected monograph on the Timna copper industry is not the venue for such details, we think the discovery is important enough to keep it on record. Dr. Rothenberg, Baginski and Shamir generously gave us a copy of the unpublished report and permitted us to write our comment on the discovery. Shamir also sent us a scanned copy of the photo showing one side of the fragment (Photo 1). The responsibility for the following comment is entirely ours.

The photo shows a surprisingly well-conserved braid fragment. Here, we trust the count of 10 elements although we are not able to confirm it by the photo. No looped ends, however, are present. Shamir and Baginski must simply have equated 10 elements to 5 loops. From the photo, with the two bulging center ridges, it might be taken as a 4-ridge twill tubular braid or even a 4-ridge twill flat braid. It may also be taken as the obverse face, which comes to the underside as the braid is being made, of the UO #1 (6). Unfortunately, at present, we don't have the image of the other face of the braid that may provide an incontrovertible proof.

Generally speaking, the structure of a braid cannot be determined by observing one face unless it is a single-layer braid. Even for a braid for which the structure is known, determining its construction technique is often more difficult. UO #1 and #2 are the unique case for which the construction technique can be determined with a high probability because of their distinctly different faces. Therefore, it is crucial to have a description or the images of the two faces. We hope the matter will be cleared by the time the next issue of the *News* will be published. What we can say at this time is that the possibility of the fragment being an l-m braid is high. We, however, approach with prudence because of the importance of the discovery.

Assuming that the excavated braid fragment is actually UO #1, who exercised the technique in this area at the time?

The specimen found is from the era when Egypt ruled the area. The mining temple proved that the mining at Timna was certainly an Egyptian project. Interestingly, however, they found out that the Egyptian Temple had been converted into a temple of Midianites, known to have lived at that time in North-west Arabia and worked with the Egyptians of the New Kingdom in the area. While the Midianites are known through historical writings, their highly developed material culture has been uncovered for the first time by the Rothenberg's excavations in Timna.

We cannot tell at this time whether the braiding technique belonged to Egyptian or Midians, or both. We are sure, however, if the method had been known originally to only one culture, it must have become a shared heritage of both.

Acknowledgement: We thank Professor Beno Rothenberg, Ms. A. Baginski and Ms. O. Shamir very much for allowing us to use the unpublished report, reproduce the photograph and their assistance.

Discovered!! Fragments of Tortoise Shell Design Braids

Proving the Practice of the Procedure Proposed by N. Speiser in 1986

Mari Omura (7)

The Gangoji Institute was commissioned to repair the Full Armor with Red Lacing Braid (national treasure, the 14th c.) and the Domaru Armor with White Lacing Braid (important cultural treasure, late 14th c.) by Kushibiki Hachiman Shrine, Hachinohe City in northern Japan in 2002.

Among the braids used on the two sets of armor, the fragments of those with single-face tortoise shell design (kataomote kikko) prove that they were made using kute-uchi construction method #2 of kikko braids (8).

Kikko braids have a rectangular cross section. The method #2 is a two-braider procedure that constructs a single-face kikko braid in a C-shape fold along its spine. When a braid is made using this method, it leaves a groove on one face of the braid running through the entire length of the spine. Since the groove is built into the structure it is impossible to erase.

Fragments from the waist tie (kurishime no o) from the Domaru armor show the groove mark, despite the fact that it was tied flat on the armor. All those from edge-trimming braids also show grooves deeper than one could have been left on a flat braid constructed flat and then laced in two-fold. As a matter of fact, I realized that I might have stumbled on a new discovery when I tried to press one of the fragments flat and felt a resistance as if the c-shaped fragment was pulled inward to keep it curled.

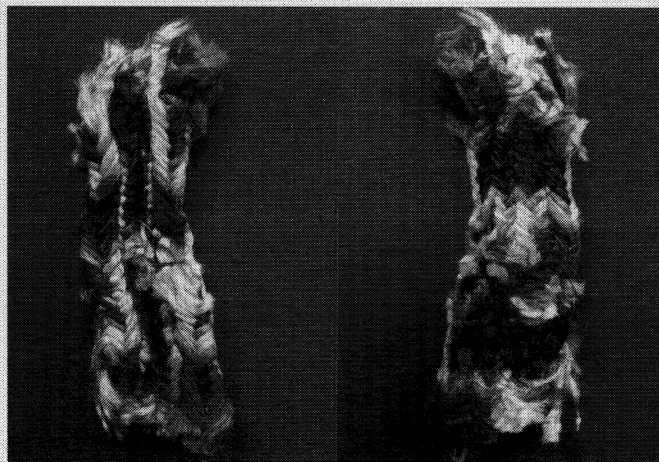


Photo 2 Fragment of trimming braid.
Left: reverse side with a groove.
Right: obverse side with kikko pattern.
Photo by M. Omura © 2002

In addition I found that in braids with a rectangular cross section (that were large enough for examination), all four corner ridges have an equal number of floats. This means that these braids have been made using 4-layer construction method of kute-uchi.

Because this type of groove was not found in any single-face pre-17th-century kikko braid surveyed since late 1980's by Kinoshita and Nishioka, the specimens from the Kushibiki Hachiman armor are the first to prove the use of the construction method #2 of the single-face kikko braid (9).

The number of elements in the kikko design unit was observed to have changed from 9 for the full armor to 7 for the domaru suggesting that production methods were simplified as time went on. This is consistent with observation of later products.

The ability of medieval braiders to exploit the kute-uchi technique has been known. This discovery proves to be another example. Hat off to the medieval artisans! (End of Omura's contribution.)

Editor's note:

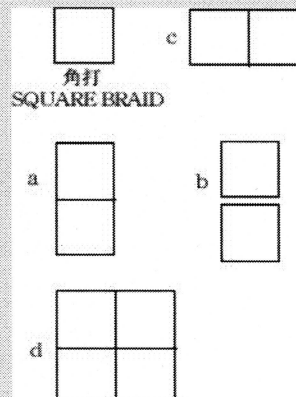
KUTE-UCHI is the loop-manipulation braiding technique used and still in use in Japan. Japan is unique in having both the finger-held (f-h) method and that of hand-held (h-h).

The practice of the former is evidenced in a 15th-century painted scroll as well as in braid artifacts from the 7th-8th c. It is still practiced today. It belongs to method #2 of f-h l-m, that is, those that work with the "palms facing up and operated by an inner finger" which results in V-shaped fell (10).

The hand held method seems to have developed in the late 12th c. The technique has gone in obscurity around 1900, leaving only a vague recollection by an old man of an old woman who practiced it at the time. Kinoshita reconstructed the technique in 1983 from several early 19th-century records (11). The reconstructed technique contains 9 procedures; some for making braids used for armor since the 7th century, and all for armor from the 12th century. Kinoshita subsequently proved that the majority of highly developed braid artifacts from 12th c. down to 17th c. could be made using procedures she developed systematically from the reconstructed procedure (12). This proves that kute-uchi was the braiding technique traditionally used in Japan rather than that of stand-and-bobbin type as has been considered in the past.

Kute-uchi requires no tool except a rudimentary device for tightening the structure. An assistant may help acting as a beater when making long braids.

The special feature of the kute-uchi technique is that it constructs braids either in 2-layers or 4-layers. For instance, the 'double square' braid which has a rectangular cross section is constructed while having the longer sides of the rectangle in vertical position (Figure 1a). The double square braid has the same structure as 'Mitake-gumi' braid conventionally made using stand-and-bobbin technique of kumihimo. In kumihimo technique, however, Mitake-gumi is constructed by connecting



two square braids side by side, that is, in two-layers (Figure 1c). Similarly, in kute-uchi, the 'twin square braids' procedure simultaneously constructs two square braids on top of the other (Figure 1b).

The four-layer-construction feature is vital to the later development of complex braids.

Various 4-layer braids have developed from the idea of connecting 'double-square braid' and/or 'twin square braids' side-by-side by a plural number of braiders:

4-layer double double-square braid (Chusonji braid) by two braiders (Figure 1d and Photo 3 top),

4-layer triple double-square braid (Shitennoji braids) by three (Figure 1e and Photo 3 middle two),

4-layer quadruple double-square braid (double face kikko braid) by four (Figure 1f and Photo 3 bottom).

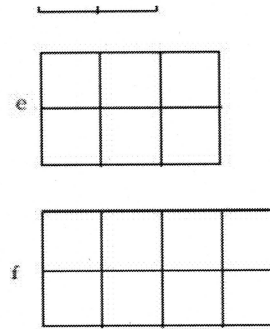
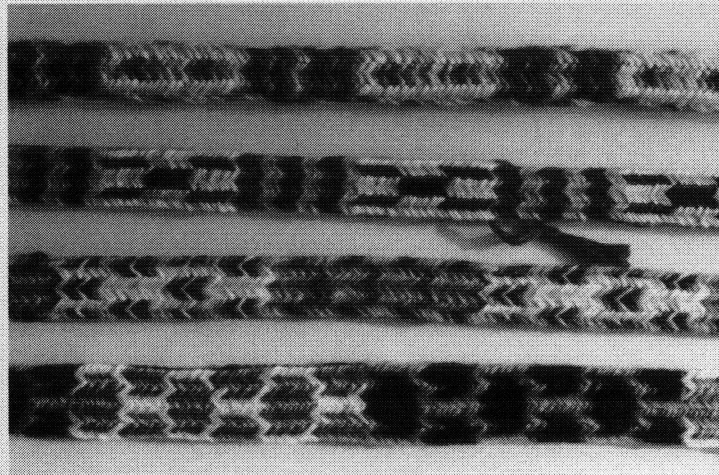


FIG. 1

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(Photo 3: Replica samplers of some medieval 4-layer multi-connected square braids made by Masako Kinoshita. Photo by M. Kinoshita © 1985)

When these braids are analyzed in light of the kute-uchi technique, development processes of the structure and the color design features become clear.

About Tortoise-shell-pattern (kikko) braids:

There are two types of kikko braids; double-face kikkos, those that have honey-comb pattern on both obverse and reverse faces of the braid, and single-face kikkos, those that have the pattern only on one face. The former has a 4-layer structure while the latter has that of a 2-layer. Both seem to have been created in the 14th c (13).

Construction method #2 for single-side kikko braid is a variation of '4-layer double double-square braid' procedure. It will be outlined along with methods #1 and #3 in THE ILLUSTRATED INSTRUCTION Series No. 7.

Several braids from the 14th c. with entirely different appearance were constructed in series of the same variation of method #2 kikko procedure (Photo 4). It seems that there was a spurt of innovations in this period.



Photo 4 Replica samplers of medieval braids made using variations of kikko method #2. Constructed by M, Kinshita. Photo by Massako Kinoshita © 1991

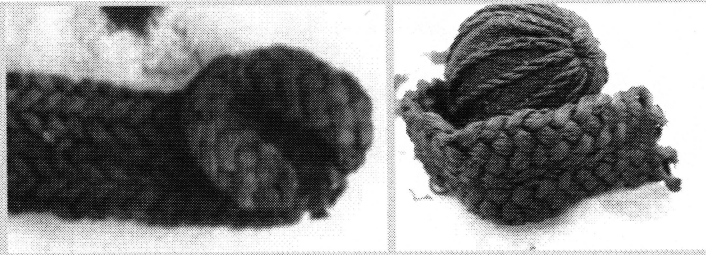
Braids on Relic Purses in Sion, Switzerland

Joy Boutrup

Another 17th-century specimen of f-h l-m found Of Denmark or Northern Germany

The specimens found by J. Boutrup are of UO #1 braid stitched to form into a pair of button hole frogs are different from those found on the coat of Danish King Frederik III (1609-1670) reported in the News No. 6, which were braided to the shape.

The frogs were found on the coat of Count Ulrick, the Elder (1578-1624), an uncle of Frederik III. They were removed from the coat when his coffin was repaired and accessioned to the collection of Danish National Museum. He was first buried on his estate in northern Germany and later moved to the Roskilde Cathedral, the Danish royal burial place. The frogs, therefore, are of either Danish or northern German origin.



Two faces of the frogs from the coat of Count Ulrik the Elder
Photo 5 Photo by Joy Boutrup © 2003

Patterns on the obverse face of the braid (left) are coarser, looking like a twill and the those on the reverse face (right) looking like a hopsack. On the obverse face the second and third ridges from the edges are wider and bulge out a little suggesting that the braid used is UO #1.

A Florentine fresco shows loop-manipulation warp-twining. (Photo 6)

Noémi Speiser

There are few colors. The main part is gray.

The Virgin holds a child's garment in pale orange on her knees. In front of her hand there is something looking like a sleeve of this garment -- I can see the opening and a blue lining, and immediately under the Virgin's fingers again the same lining: it is likely that she is working on the neck opening or the second sleeve. Her outward-bent right wrist seems to indicate the typical movement of passing through the shed formed by the loops and stitching behind the edge of the garment. The child bears no more than one loop on each hand.



The virgin is painted gracefully and, I think, with quite some professional skill, whereas with child Jesus, about four or five years of age, the artist seems to have some troubles: his head sits badly on the shoulders, he has no neck and the whole position from head to feet is inappropriate.

The painting was photographed a long time ago by Speiser's distant friend. The photographer remembers vaguely having taken the picture at the Museum of Cathedral Works (Museo dell'Opera del Duomo). No record of the artist's name and the date of the work.

(End of Speiser's contribution)

Edge Trimmings on the Llangorse Textile from Wales.

Is It Tablet Woven or Loop Braided?

Louise Mumford ⁽¹⁴⁾

The Llangorse textile was excavated in 1990 from the waterlogged silts of the crannog, or artificial island, in the lake at Llangorse, near Brecon in southeast Wales. The textile (late 9th to early 10th c.) comprises fragments of a garment composed of panels of silk- and linen-patterned embroidery or soumak brocading on a tabby linen ground, seamed to a panel of undecorated tabby linen.

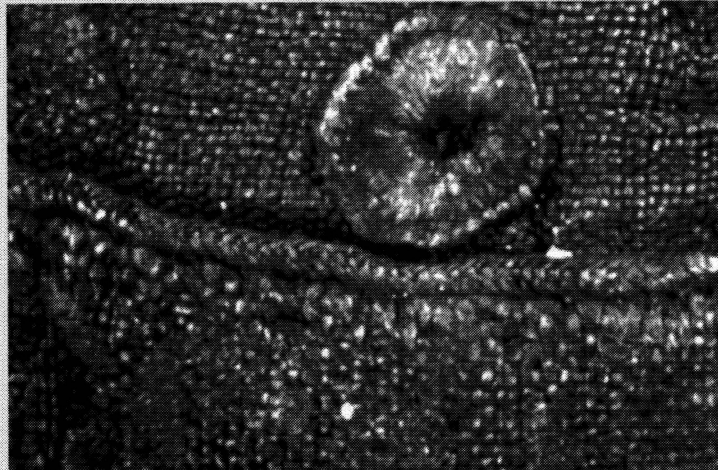


Photo 7

Over the seams are stitched tiny braids, or sennits, less than 2 mm wide, very much like the braids covering the seams of (the 7th-c.) St Cuthbert's vestments ⁽¹⁵⁾. Elizabeth Plenderleith describes two ways in which St Cuthbert's braids could have been made: the warps could either have been formed using two two-holed tablets, oppositely threaded, or by a two-looped fingerlooping method, passing one loop through the other. In each case, a separate weft is passed through the fell at each pass of the warps, then back underneath the braid and through the garment, sewing it in place. An edging similar in appearance used several hundred years later (the 12th-14th c.) is described as tablet-woven and attached to the ground fabric in the manner described above in Crowfoot, Pritchard and Staniland ⁽¹⁶⁾.

Pritchard and Granger-Taylor have published an interim account of the Llangorse textile in which they say "The cord was probably made by finger-looping and attached to the garment in the same process as ..." ⁽¹⁷⁾. They, however, gave no basis to the claim that the technique used was loop-manipulation (l-m).

However, when loose fragments of the braids on the Llangorse textile have been examined, it can clearly be seen that they have not been sewn on with each pass of the weft, but at approximately 1 cm intervals, showing that the braids were made separately and sewn on afterwards.

The braids appear markedly asymmetrical under the microscope. This caused me to suspect that it might have been made by finger l-m. The experiments I conducted have shown that the two-person finger l-m method produces identical asymmetrical braids. The method worked more quickly and produced better result than tablet-weaving.
(End of Mumford's contribution)

Editor's note:

The "sennits" mentioned in Mumford's report are composed of a parallel pair of 2-ply twines twisted in opposite directions to each other and bound together by a weft thread. The weft passes through each half twist of the twines, binds them into a sennit and stitches it on to a ground fabric after each passing. As Mumford has found out, sennits may be made separately and stitched on to a fabric. The type of sennits may also be made with two or more pairs of twines. Similar treatments have been known on ethnic garments or bags, old and new.

It is not difficult, given today's information sources, to number several techniques to produce this trim work. Pinpointing which one was actually used to make it, however, is more difficult when there is no eyewitness. One needs to have a definitive clue that separates one technique from others. It may involve minute structural characteristics resulting from the technique used. You also have to show that other methods cannot replicate the original fabric. In addition, it would be better if you are able to explain why this method can but others cannot replicate it.

Mumford as a conservator at the National Museum has the access to intimately learn details of these fragile textiles. She must also have the ability as well as sensitivity to use various textile techniques to mend them as close to the original as possible. In this sense her suggestion that the trimming was more likely made using loop-manipulation than tablet weaving is valuable. She, however, does not seem to have the rationale to back up the experimental result, except she could easily and more quickly make swatches that closely resemble the original.

We suspect that loop techniques have been used much earlier and over a widespread area than we have ever known. Therefore, it is important to test the possibility of its use every chance that comes along. It has been almost 50 years since the two techniques for making this type of edge trimmings were suggested in 1956. Yet, we still don't know how to identify the l-m-made specimens from those that are tablet-woven. (The other way around is possible depending on the structure.) We even do not know whether it is possible to identify the former from the latter. Or is it so difficult to find the answer? It perhaps comes down to this: nobody has ever paid attention.

We encourage Mumford to continue to explore her hunch and find a way to a better understanding of this subject.

LIST OF OBSERVATION POINTS FOR RECORDING L-M TECHNIQUES**ILLUSTRATED INSTRUCTION SERIES****Introduction to the KUTE-UCHI
The Basic Techniques****Illustrated Instruction Series: No. 7
How to Make Single-face Kikko Braids.****§ Publications relating to L-M techniques:**

Journals: J. Carey, 'The Chamberlain Secret,' *Strands 2003*, Issue 10; S. Inoue, 'Learning to make flat braids using l-m braiding technique,' *Report of the 8th Annual Seminar 2002*, Association of Repair Technicians of National Treasures, 2003; F. Nishioka, 'Report on the restoration of "Helmet in the Shape of Catfish Tail" at Jagu Jinja Shrine', *Katchu Bugu Kenkyu = Arms and armor research*, no. 144, 2004; N. Speiser, 'The Three Super-categories of Fabric-making Processes': 'The Three Key Questions Related to Structure and Technique in Textile Fabrics'; and 'The Braid on the Urumchi Mummy,' *Strands 2003*, Issue 10.

Newsletters: B. L. Whaley, various small articles introducing l-m braiding in Mendocino Coast Handweaver's Guild Newsletter.

§ Activities (April, 2003 to March 2004) :

Exhibits: H. Aihara and M. Kamei, accompanied by Y. Shimizu and S. Yamaga, presented an Exhibit of KUMIHIMO with demonstrations and a workshop of the L-M braiding at Japan Festival as part of the 300th Anniversary Fest of St. Petersburg, Russia.



Photo: The Exhibition at Shbalovski

Palace

T. Hine, N. Kinoshita and S. Sumiura, Octagonal-eye lace wall pieces, The 10th Anniversary Exhibits of the Braid Society, UK.

C. Kawabe, l-m braid swatches at the Annual Natural Dye Group Exhibition, 3/12-14/04.

Y. Sugiyama, l-m braiding used as finishing of a wall piece for a group exhibit.

H. Yokoi, l-m braiding incorporated with woven works, One-person exhibit at galerie 16, 2/10-22/04.

Works: Fumio and Chizuru Nishioka, restorations of the "Helmet in the Shape of Catfish Tail," municipal important cultural treasure of Tomioka City, Japan, and the "Armor with Light Green Lacing" belonging to the Tachibana Family, Yanagawa, Japan. The former, owned by Jagu Shrine, Tomioka, Japan, is from the 17th c. The latter the 18th c.

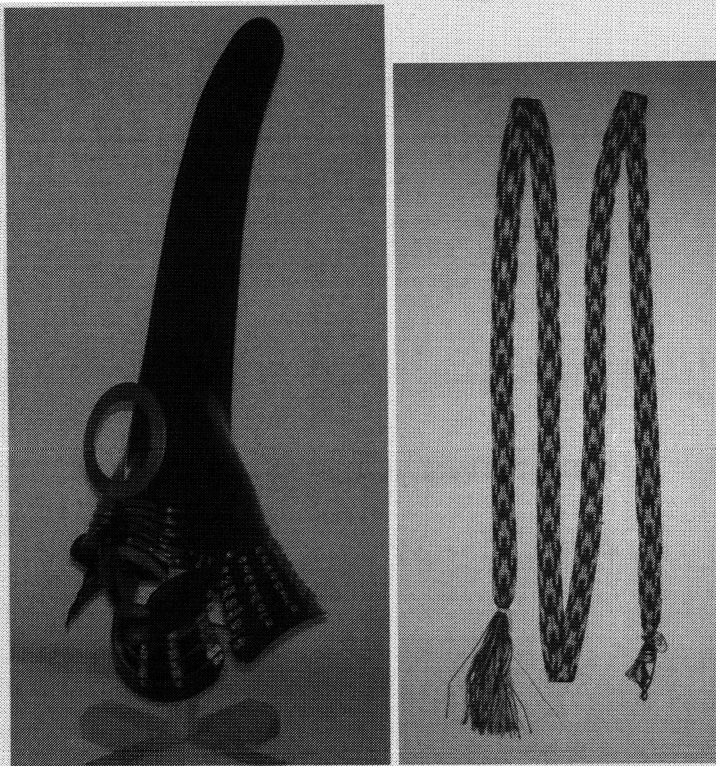


Photo: Restored "Helmet in the Shape of Catfish Tail," courtesy of Association for Research and Conservation of Arms and Armor.

Here, details of the restoration work of the braids are provided as reference for those who might be interested in actually making lacing braids for armor.

1. For the helmet: The original lacing braids are about 7 mm wide, of an 8-ridge twill, 33343333, and in colors black, lt. green and white. We made 8 braids, approx. 80 cm long and 8-9 mm wide, using 3 ends each of 2-ply silk, 13 ends of size med. 21, attached on 13 plastic kute. It took about an hour to braid each 10 cm while Chizuru braided and Fumio acting as the beater. (Photo: Newly made odoshige for the helmet.)

2. The edge trimming braids of the Tachibana armor are about 7 mm wide, of a 8-ridge twill, 33343333, and an oblique plaid in colors lt. green, purple, red, yellow and white. We made one braid, 20 cm long and 8-9 mm wide, using 2 ends of single silk, 9 ends of size med. 27, except for red thread which was 2-ply, attached on 13 plastic kute.

We also made two other braids, for which details are abbreviated.

Workshops, and demonstrations:

Photo: Workshop at Wako-shi, Japan. 4-person working the octagonal lace procedure.



C. Priest-Dorman organized the Society for Creative Anachronism-related fiber arts teaching event in March '03 - a track of three classes on l-m braiding; C. Kawabe, Otani Women's Junior College, Special course in Jan, 2004; M. Kinoshita, in Summer, 2003, 7 courses from beginner to advanced, in Wako-shi, and in Nara, Japan; N. Speiser, 2-day course organized by K. Johansen at Brede, Denmark, and an

individual instruction at home.

§ **Acknowledgement:** Contributions of publications to our library by F. Nishioka; reports by J. Boutrup, L. Mumford, M. Omura, N. Speiser. Sending information by C. Priest-Dorman, Boutrup; Monetary contributions by C. Kako, K. Kinouchi, A. Kinzuka, M. Tada, K. Takahashi. And to those who wrote letters of encouragement.

Corrections: S. Ambegaoker in issue No. 6 should have been S. Ambegaokar.

In the contribution by Joy Boutrup in this issue "Braids on Relic Purse in Sion Switzerland," on the 3rd line from the bottom of the 2nd page. "There are 720 different sequences possible....." should read "There are 60 different sequences possible **when all the duplications have been eliminated....**" Speiser's article on the 6-color 6-loop braids announced in same report has subsequently been withdrawn.

Editor's note: Please note that we no longer publish hard copy version of English edition of the *News* starting from this issue.

* For further information, please get in touch with the *News* editor.

L-M BRIC News is totally self-supported publication by the Loop-Manipulation Braiding Research and Information Center founded by Masako Kinoshita to promote the study of L-M braiding. Donations from interested readers, however, are welcome.

<http://www.geocities.com/lmbric/index.html>