



# MEDIEVAL TEXTILES

## Technology and Tapestry in the Coptic Period

By Nancy Arthur Hoskins

There are two rare textiles from the Coptic Egyptian Period (late 2<sup>nd</sup> to mid-7<sup>th</sup> Century A.D.) that combine tapestry and taqueté. One of these textiles is at the Victoria and Albert Museum in London and the other is at the Royal Ontario Museum in Toronto, Canada. I have had the privilege of examining both of these unusual fabrics. Though there are over 100,000 examples of tapestry and perhaps 50 or 100 fragments of taqueté from the centuries spanned by the Coptic culture these two are the only published pieces in which the two weave structures are combined. The Tapestry-taqueté textiles were woven on looms that were at the cutting edge of loom technology in the antique world.

Taqueté is a weft-faced compound tabby weave woven on a threading system that alternates binding ends with pattern ends. It is also known as weft-faced summer and winter, weft-faced two-tie weave, two-faced weave with pattern in reverse, and double-faced weave. A bi-color pattern is woven with a sequence of four picks that form the solid visual line of a pass. A tri-color pattern is woven with a six-pick pass. The fabric has wide warp-wise rigs formed by the wefts as they float in a consistent order over three ends. Bi-color taqueté is reversible, but the colors are intermixed on the reverse of a tri-color piece. Typically taquetés are woven of wool. Patterns

*cont'd on page 7*

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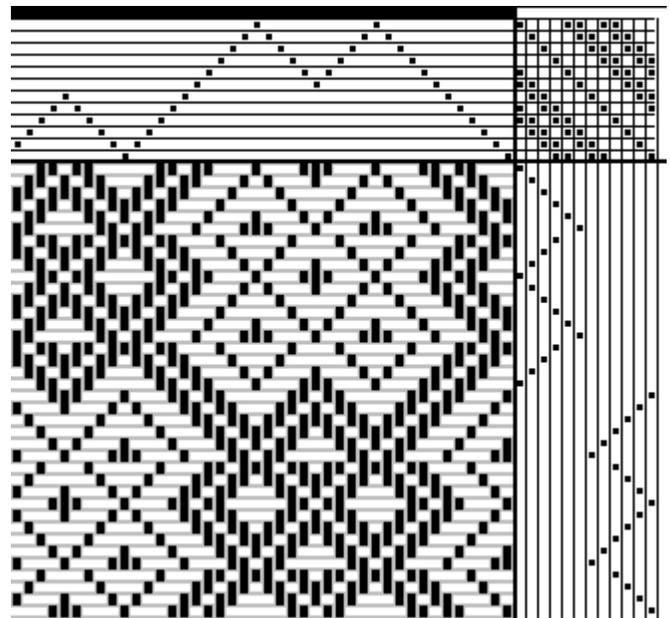
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## Two Asymmetrical Pavy Weaves

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A year ago my article "Some More Medieval Linen Weaves" presented a number of multishaft medieval liseré weaves of pavy design. One important design feature common to all these textiles was that the wales of the pattern all lined up and met perfectly. Accordingly, when I was attempting to draft an 8-shaft version of a pavy liseré weave for that article I focused a lot of attention on getting the diagonals to line up perfectly.

Last summer, however, I ran across two historic pavy weaves that are markedly irregular; their float arrangements are not perfect, and the wales do not line up perfectly. Further, the structure of these particular two textiles is not a liseré; it is a gebrochene. That is, it is an "Ms and Ws" structure with twill floats in both warp and weft systems, not just in the weft system as with a pavy liseré.



*Middelberg-Nassau-Grimbergen draft no. 1*

*cont'd on page 4*

## Beginning Cardweaving

by Cerise Moodey

Cardweaving is an ancient art. Depictions of cardweaving can be seen in Egyptian tombs, tablets of which have been found dating to the 4th or 5th centuries. Likewise, cardweaving tablets have been found in Viking burials and bogs, some with work in progress still preserved. Tabletweaving was often used to begin the leading selvedge on the warp-weighted loom, and was sometimes used on the loom to create selvages on all four edges of the work.

Cardweaving is typically (but not always) done with square cards about 4 inches to a side, with a hole punched or bored near each of the four corners. Ancient cards were made of wood or leather, while modern cards tend to be stiff paper. You can make your own easily with posterboard, a pair of scissors and a hole punch.

The warp threads pass through the holes in either an S (\) or a Z (/) direction (looking down from the top edge of the card), and the shed is changed by turning the cards, usually one quarter turn. The resultant weave is twined in a manner completely unlike conventional weaving, with four warps twining about the weft in sequence. The four warp threads per card will twist about themselves as the weaving commences, reaching a point where the weaver will have to take the warp off the loom and untwist it to continue weaving in the same direction. Alternatively, she can begin turning the cards in the opposite direction, untwisting the warp in the process.

When preparing the warp for cardweaving, expect at least a foot of waste warp at the end, when it becomes too tight to turn the cards any longer.

Cardweaving is typically done on an inkle loom with a circular warp [see photo], which simply means that the warp is tied end to end and pulled in a circle to keep the working area centered where you need it.

The piece on the loom in the photo is done with eleven cards, forty-four warp threads. The cards are threaded alternatively SZSZSZSZSZZ, with four blue warps threaded S through the first card, four cream warps threaded Z through the next card, repeating to the last, which is a blue threaded Z, as I wanted dark stripes along both edges. In the photo, I have the cards tied to prevent their turning accidentally, which is a good idea if you are blessed by children, cats, or

gravity. If you look closely at the cards, they accordion slightly because of the different directions the warp threads are passing through them  $\wedge\wedge\wedge\wedge$ .

In the close up view of cardwoven pieces, you can see the different directions the warp twines when threaded alternatively SZ. The top three pieces are done with ten cards threaded SZSZSZSZSZ. I chose sections where I began turning the cards in opposite directions; the demarcation is quite clear. Different patterns can be made in a piece by selective threading of colors through the holes, the direction the cards are threaded, the direction the cards are turned, and even by leaving some holes empty. In more advanced work, cards can be separated out of the pack to be



*Cardwoven bands woven by Cerise Moodey. The second and third band correspond to the draft to the right.*

turned individually, as in the rams head pattern in band number four. The last band was woven exactly the same way the blue and cream band on the loom is threaded.

Cardweaving will give you some of the strongest material you have ever woven, making it excellent for use as a purse strap or any other weight bearing need, like a top selvedge in a tapestry that is to be hung.

If anybody has any questions, I can try to answer them in the next issue. In the future, I will try to cover brocaded cardweaving, more advanced patterns, and period Viking weaves. I strongly recommend the

Peter Collingwood book listed in the bibliography for anyone serious about learning cardweaving.

**Sources:**

Collingwood, Peter. The Techniques of Tablet Weaving. Robin and Russ Handweavers, Inc. McMinnville, Oregon, 1982.

Crockett, Cadence. Cardweaving. Interweave Press, Loveland, Colorado, 1973.

Spies, Nancy. Ecclesiastical Pomp and Aristocratic Circumstance: A Thousand Years of Brocaded Tabletweoven Bands. Arelate Studio, Jarettsville, Maryland, 2000.

**Warping Your Cards:**

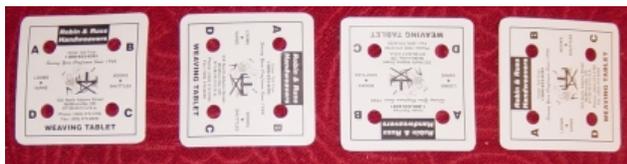
**Pattern:**

Card 1 (S)	Card 2 (Z)	Card 3 (S)	Card 4 (Z)
a) dark	a) dark	a) light	a) light
b) dark	b) light	b) light	b) dark
c) light	c) light	c) dark	c) dark
d) light	d) dark	d) dark	d) light

In the event that all the cards have the same number and relative placement of colors - i.e. two light and two dark yarns in adjoining holes it is possible to warp one's cards relatively quickly by "dropping" the cards.

**Procedure:**

1. Line up the card repeat so that the dark colored yarns go through the holes at the top of the cards as they lie.



2. Sort all the cards so that each pile is in the same direction with regards the letters, and all piles have the same number of cards, corresponding to the pattern and the width of the band you will be weaving.



3. Pick up the cards in order, in this case left to right, so that the cards are in one stack with the holes to receive the dark yarns at the top of the card as you look down on the pile. Now thread the dark and light yarns through the appropriate holes, through the entire stack of cards.



4. Holding the entire pack of cards, warp an inkle loom or use a warping board to measure your warp, dropping one card for each revolution the warp takes around the circuit of pegs. If using an inkle loom, tie the beginning yarns to the ending yarns, tension the threads and you are ready to weave. If you are using a warping board, now is when you remove the yarns, cut the ends and tie overhand knots at the beginning and end of the warp and proceed to tension the warp as you wish for weaving. Before you begin to use the shuttle, go through the cards and turn them the "right way" whereas all the A holes line up, etc and flip them so that they are in the appropriate Z or S direction.

When not weaving, it is advisable to tie a string around the cards through the shed so that the cards will remain in position between weaving sessions.

*cont'd on page 4*

card weaving, cont'd from page 3



Cards and warp on inkle loom, ready for the next weaving session.

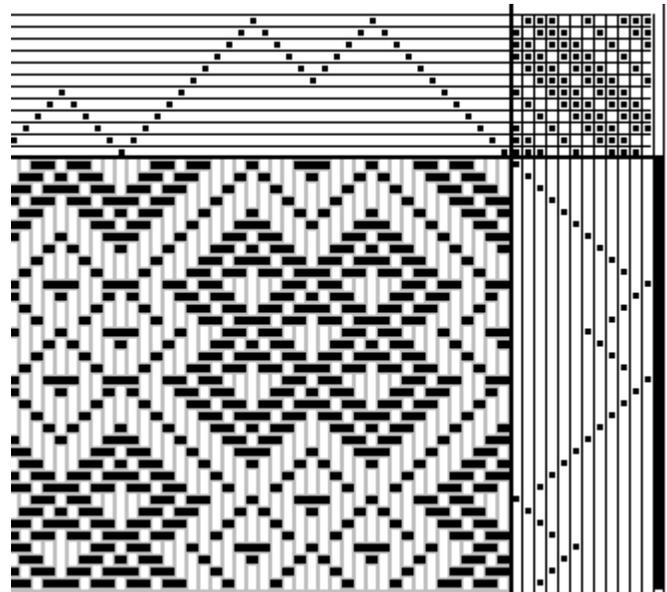


Here is a close-up of the cards on the loom. You can see the S and Z configuration of the cards.

Asymmetrical Pavy, cont'd from page 1

One is part of an antependium from Middelburg-Nassau-Grimbergen, now in the Koninklijk Instituut voor het Kunstpatrimonium in Brussels. It dates to the first third of the 16<sup>th</sup> century. A complete analysis was not available to me, but the drawdown by J. Vynckier (de Jonghe, p. 70) was. The other is a large fragment of linen (Tx 63) in the collection of the Abbey of St. Truiden in Tongeren, Belgium. It was analyzed by Daniël de Jonghe (pp. 270-272), who assigns it a date similar to that of the Middelburg piece. Although the piece is a fragment, the complete width of 33.6 cm survives, including both tabby selvedges. Like most medieval ecclesiastical linens, it is woven with Z-spun singles line linen. The thread count is about 60 ends and 45 picks per inch, and the cloth is bleached.

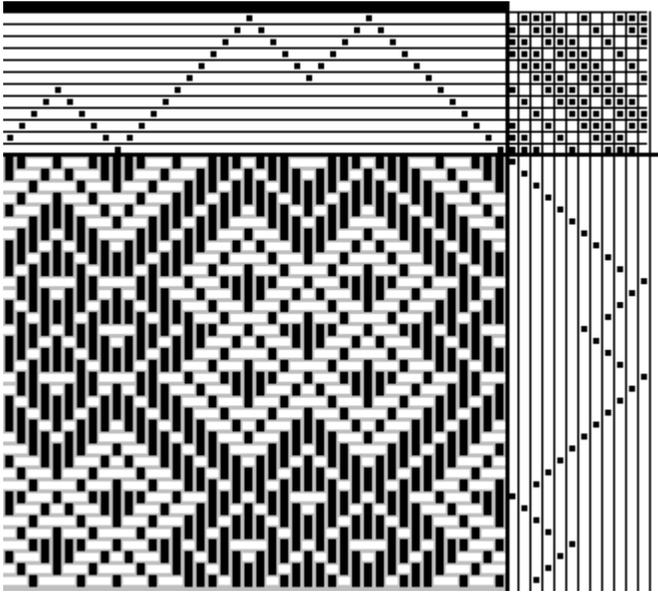
If the structural analyses by de Jonghe and Vynckier are correct as printed, then the two textiles are curious inversions of one another. Both textiles are identically drawn in, yet their tie-ups are exact opposites. If, however, the structural analysis by Vynckier is drawn using a different convention than that by de Jonghe, then the two textiles may be closely related.



Middelberg-Nassau-Grimbergen draft no. 2

De Jonghe's textile analysis can be checked against the photo of Tx 63; as always, he represents the warp with black and the weft with white. I was not able to check Vynckier's analysis against the antependium because I do not currently have access to a photo of the actual textile. But if Vynckier's drawdown uses white to represent the warp and black the weft, then

the two textiles could be woven on the same warp using the same tie-up by simply changing the treadling sequence. Because de Jonghe dates them together due to their commonalities, it's worth considering that they might be closely related, perhaps from the same production center. Accordingly, I give two different versions of the Middleburg draft, for those who'd like to try weaving them both on one warp without switching tie-ups.



Drawdown of TX 63

The draft called "Middleburg 1" is the one I first derived from the drawdown. It assumes the black-warp, white-weft CIETA convention that de Jonghe uses. The "Middleburg 2" draft I based on my hunch that the two textiles are related, and that Vynckier might have represented the textile "backward" from the CIETA convention. Instead, it is predicated on a white-warp, black-weft convention. The draft for Tx 63 is cut down and reworked from that of de Jonghe (p. 272), whose drawup and draft present more than a complete repeat and are tied up differently than I would do it.

#### Sources:

Daniël de Jonghe, "De Textieldocumenten uit Sint-Truiden: Technologische Bevindingen," pp. 63-105 in *Stof uit de Kist: De middeleeuwse textielchat uit de abdij van Sint-Truiden*. Leuven, Belgium: Uitgeverij Peeters, 1991.

Daniël de Jonghe, catalogue entry for Tx 63, pp. 270-272 in *Stof uit de Kist: De middeleeuwse textielchat uit de abdij van Sint-Truiden*. Leuven, Belgium: Uitgeverij Peeters, 1991.

## News from the Chairperson\*:

by Nancy M McKenna

After my profile in the CW Journal, a couple people have said, "say more about your area." Actually, it *does* have to do with the topic of medieval life. In the last 10 years, the town has doubled in size. Although one may find this flattering that so many want to move to one's town, with only a little contemplation it can be seen that this is actually a condemnation of "elsewhere". In general, people moving here are doing so because they are trying to escape something where they lived before the move. Traffic, crime, abusive neighbors, tract housing, strip malls: you name it. But in coming "here" they bring the same problems with them. In my opinion, rather than seeking to escape these things, people need to change what they dislike about where they live. We can choose to live the life we wish, and should work together to make where we live better rather than needing to escape. Help at events like RiverSweep and Earth Day to make one's environment better. Work with neighbors in a neighborhood watch program to make the streets safer. Work with other able bodied neighbors to help the elderly in the neighborhood by doing what those in need want done to their house or yard (as opposed to doing or pressuring them to do what you want done).

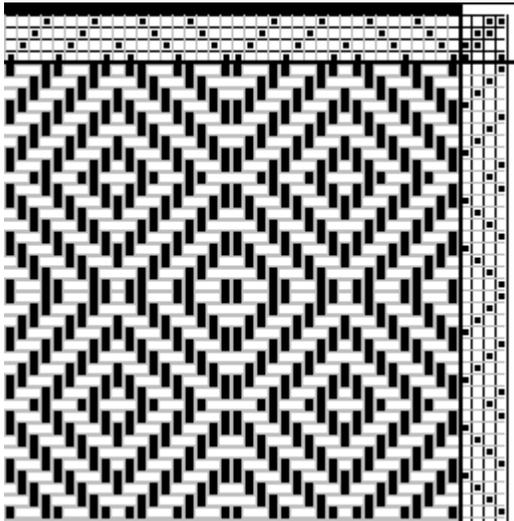
What has this to do with Medieval Textiles? Despite the thrill of the search, the joy of discovery, the feeling of accomplishment over recreating these fascinating textiles there is more to the picture. In the process of recreating textiles one sees life as it was lived over the last 1500 years. We have a window to see the best and the worst of life. We have the option of learning from the past or reliving the worst of it. The words of St. Hildegard of Bingen (1098-1178) are as valid today as they were the day she uttered them: "The earth which sustains humanity must not be injured. It must not be destroyed!" Yet she is but one of many voices of wisdom from that time period.

When it comes to clothing and textiles, we have the same basic needs, likes, and dreams as the medieval individual. Weave structures evolved to fulfill needs as biodiversity fills important niches in the environment. Look at what is available in stores today – the weave structure diversity is almost nil. As nations and as individuals, there is much to learn from the medieval period about cloth as well as life. \* CW bylaws call the overseer of the study groups the 'coordinator' and those previously called 'coordinators' are properly called 'chairs'.

## Weaving 'Perugia Towels'

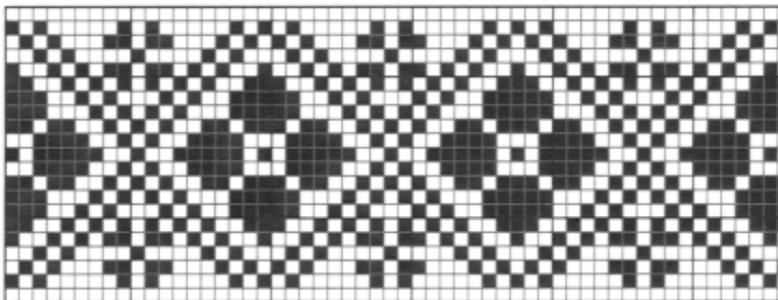
By Joanne Burrows

It all started when I was looking for a new weaving project. I had been interested in the cloths hanging over the arms of serving-women, or around paintings of food from the Spanish and Italian early renaissance. I had assumed that they were embroidered, and was looking for information on weaving the ground, and embroidery patterns for the blue colored bands, when I received an issue of a publication from the Society for Creative Anachronism (the *Compleat Anachronist* # 114) on the subject of just these towels! Well, it was fate! I am very indebted to the author of the article, Stephanie Thorson, for all her research, and her advice via email (as soon as I got the article I emailed her immediately, and we have been corresponding on the subject ever since).



*Draft used for the body of the towel*

Ms. Thorson had gone into museums and seen some extant fragments, so had thread counts and pattern drafts from some originals. I find that this is always the hardest information to uncover, so I was very pleased to see that she had already done that work.



Graph of Perugia Towel boarder pattern by Stephanie Thorson and originally published in *The Compleat Anachronist*, issue 114, Winter 2002. Used here with permission.

Next off was to find linen threads of the appropriate fineness for the weave. The best I found was a 22 epi from Jane Stafford Textiles. The originals were generally between 25 and 30 epi, so I felt this was close enough for a first test project. For this I wove 2 'napkins' 24x36", which is the most common size for mediaeval napkins, and Ms. Thorson had found that a frequent size in her researches for Perugia Towels as well.

The brocade ends of each towel were all done in different patterns, even though the period towels seem to have had the ends the same, as I wanted to test a number of patterns and techniques.

With the first towel, I experimented with a number of things. When I ordered the linen, I neglected to order the blue twice as thick as the white, which it should have been, so I ran 2 threads of blue for each pick of the patterns. Not completely satisfied with the results, I delayed starting the second towel until I ordered more of the blue in a heavier weight. I chose very simple patterns for the brocaded borders on the first towel, to test the technique and to check the length of floats that could be used.

On the second towel I chose a fairly basic (so I thought) floral repeat for the brocade strip. It took me approximately an hour per row to pick the pattern, and so the floral design took me a lot longer to do than I had anticipated. The other end of that towel was done in a geometric Greek Key pattern.

For the ground fabric, I chose a diamond twill, one of the most common patterns I have seen in mediaeval textiles from the period, and one that appears on white linens still in Germany and Spain. The exact pattern I chose was one that Ms. Thorson had already graphed from a fragment, so I did not have to do any graphing, for which I am very grateful.

*Technology and Tapestry cont'd from page 1.*



*Towel woven by Joanne Burrows*

When I took the first towel off the loom, I was a bit concerned as the thing was stiff as a board. I put it through the washer and the dryer to see if it would soften a bit, and was amazed at the results. The towel is soft, fluffy and quite absorbent. The brocade repeats do not seem to catch as much as I expected, and in 2 camping events where I used it and then brought it home and washed it again, only one of the longest floats has pulled slightly. I can see why these towels would be so popular as napkins and table covers. Soft, absorbent and indestructible, yet they are also a thing of beauty.

For my next project I want to find a 30 epi linen and weave a table length cloth and see how it compares to the two napkins I have woven. I am still researching what brocade pattern I would like to put on the ends, though I am thinking I would like it to be something relatively simple.

Useful link for Perugia wares:  
<http://www.cs.vassar.edu/~capriest/perugiabib.html>



*Towels on the loom*

are achieved by being able to control and vary sets of pattern ends as the design builds. My text *West-Faced Pattern Weaves: Tabby to taqueté* contains complete instructions and drafts for weaving taqueté on four or more shafts. Several chapters are devoted to replicas of Coptic taqueté patterns.



*A Taqueté-tapestry recreation of the Royal Ontario textile, 21 cm. x 20.5 cm.  
 Woven by Nancy Arthur Hoskins*

Taquetés, used for duvet covers, were first discovered by Albert Gayer in Roman-Egyptian graves at Antinoopolis, Egypt. I have just finished a manuscript on the Gayer collections of tapestries and other textiles and hope that publication will be within the next year. There are a few examples of taqueté in the Coptic collections at the Textile Museum, Dumbarton Oaks. The Kelsey Archeological Museum, The Museum of Arts at the Rhode Island School of Design, and The Denver Museum of Arts. Others are in the Musée de Louvre, the Musée Historique des Tissue, and the Victoria and Albert. The patterns may be of animals, flowers, trees, palmettes, leaves, frets, waves, and geometric motifs arranged in rows or framed with squares and octagons.

The assumption among scholars is that taquetés were woven on some type of drawloom by the 3<sup>rd</sup> or 4<sup>th</sup> century A.D., though the looms cannot be documented with physical or pictorial evidence. Rustic drawlooms that may resemble these early looms are still in use in Akhmin, Egypt to weave taqueté blankets. There it is called the Akhmim weave.

Since the basis for taqueté is tabby the transition to tapestry is simple. Just weave the binding end sheds (usually shafts 1 and 2) versus all of the remaining pattern ends and you have plain weave. The wide ribs become narrow ribs where the change is made. A warp-wise slit between a taqueté and tapestry area may be dovetailed or sewn.

The Victoria and Albert textile (Kendrick 1920-22 Catalogue no. 537, plate XXV) is a large fragment (2' x 17" or 61 cm. x 43 cm.) woven in dull yellow and violet-brown wool. Small birds are enclosed in octagons in the pattern field. Woven into the taqueté field are two dark violet-brown monochromatic tapestry medallions with interlace designs defined by supplementary linen wefts (see *International Tapestry Journal*, Spring 96 pp. 19-22). Akhmim is cited as the findspot for the textile.

The Royal Ontario fragment (#968.323.1, 16" x 18" or 46 cm. x 40.5 cm.) is woven of wool in a deep indigo blue and russet red. A narrow clavus and square medallion in tapestry depict figures, animals, and foliage within a wave motif border. The tapestry squares are woven in indigo wool and natural linen. The small section of the warp-wise join between the two structures appears to be a widely spaced, delicate dovetail join.

These two tantalizing remnants tease our imagination. What grand and glorious taqueté-tapestry fabrics there must have been! Other evidence for this type of textile can be found by studying some Early Christian mosaics from St. Vitale in Ravenna, Italy. Some of the clothing in the Justinian and Theodora panels seems to be of taqueté with interwoven tapestry. Other clothing and curtain fabrics seen in the mosaics are obviously examples of tabby-tapestry, taqueté, and some are probably silk samitum – a weft faced compound twill structurally related to taqueté and also woven on a drawloom.

I wove a simplified version of the Royal Ontario taqueté pattern for inclusion in my text *Tabby to*

*Taqueté*; my 16-shaft AVL computer assisted loom was used to weave this magical pattern that the Copts wove on their primitive drawloom. Because these taqueté patterns require a different set of four sheds for each pattern row the computer assisted loom is ideal. The loom can be pre-programmed for hundreds of different pattern lifts or for plain weave. The taqueté-tapestry warp as 12/6 seine twine set at 12 EPI. The Coptic pieces had 24 – 40 EPI. The weft was Paternayen crewel yarn. A very simple vine and leaf motif like the one on the clavus was tapestry woven above the pattern area. The only difficulty was that it necessitated lifting two shafts versus fourteen, but I think I can improve on that problem on the next piece using a special threading technique. This taqueté-tapestry piece is rather tentative – a first try at the combination of the two structures, but I am intrigued by the creative potential of complex weft-face patterned areas pulsating with freely painted tapestry.

Technology and tapestry are very old partners – a part of our heritage and a yet to be created part of tapestry art in the next millennium. I do not find it an anachronism – but perhaps ironic – to be weaving 1500 year old patterns with this electronic equipment. Just as the Copts embraced drawloom technology, we can explore new ways to accomplish our artistic dreams with high-tech computer assisted looms.

Note: This article originally appeared in *International Tapestry Journal*, Winter 1996, pp 8-9. It is reprinted with permission.

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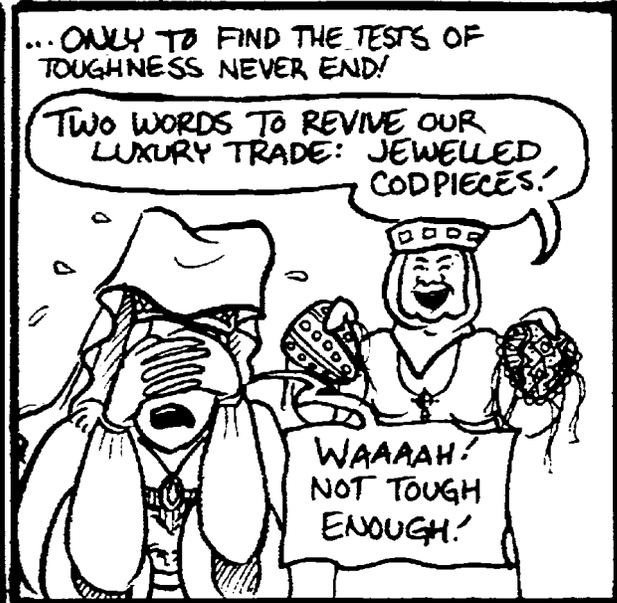
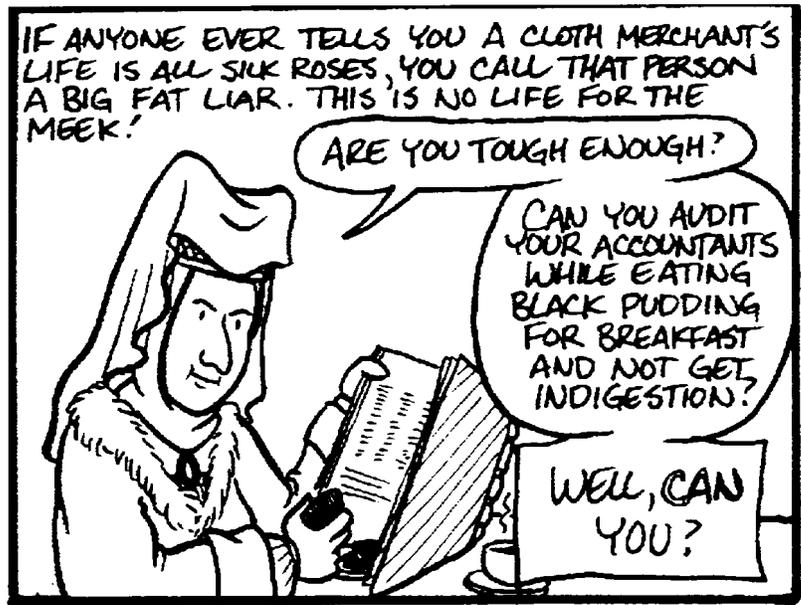
### **Pearl-Agnes Forteuga, Cloth Merchant -** about the Author:

“Rachel Hartman had little intention of becoming a cartoonist until the day she saw the ad in Washington University’s student paper saying “Your Cartoon Here.” She knew immediately that this was what she wanted to do. For two years she did a comic strip called “Ellen of Troy” and enjoyed it so much that she decided to forgo a million-dollar career in Comparative Literature in favor of living in her grandma’s attic and drawing comics... “

-snippet reprinted from the website:  
[www.amyunbounded.com](http://www.amyunbounded.com)

*more information about Ms. Hartman and her endeavors can be found at the website.*

The Amazing Adventures  
of  
**PEARL-AGNES**  
**FORTEUGA,**  
cloth merchant  
Et  
her intrepid seamstress,  
**NONA**  
by R. Hartman



Complex Weavers' Medieval Textile Study Group

The Italian Cotton Industry in the Later Middle Ages  
1100-1600

by Maureen Fennell Mazzaoui,  
Cambridge University Press, 1981  
Reviewed by Jan Ward

I had sort of absorbed the notion that yes, cotton was used sometimes in the middle ages, but not much in Europe.

According to Mazzaoui, cotton manufacture was a major industry, with guilds, etc., through much of the period. It was produced in large quantities, in many qualities (the best from cotton grown in the Levant) for domestic use and international trade. She details how the industry suffered in the later centuries from competition from German cotton manufacturers. The cotton was imported in bulk, spun locally in the rural areas, and woven in workshops in the cities. It was combined with linen, hemp, silk, and wool. It was also woven as all-cotton material, for clothing for the middle and lower classes, though the upper classes also used the nicer grades.

Being a weaver, I wish she'd provided me with nice things like pattern drafts, but you can't have everything. She does describe the various fabrics, the fiber content, and the uses for which they were woven. She gives the guild standardization for some of the fabrics, i.e., how many threads per unit of measure, and how much the warp and weft should weigh. With a little time, one can calculate the size thread needed and the other mundane calculations necessary to reproducing the cloth.

She has a bibliography that covers both manuscript and published sources. I never knew before that people in later period would have been able to buy ready-to-wear garments, including underwear! She also talks about the guilds and their organization and administration.

While the book is about the cotton industry, she does talk about the other textile industries to some extent. The last 90 pages are Appendices, Notes, and Bibliography. This isn't exactly light reading, but those interested in things like guild organizations and trade and the development of industries, etc., might find some useful information.

## Upcoming events:

### Art Institute of Chicago:

*Floor or Wall? A Selection of Carpets and Tapestries, 1920s-1970s*

May 14-September 14, 2003

### The Textile Museum:

*Carpets of Andalusia*  
March 8 - August 10, 2003

*Mamluk Rugs from Egypt: Jewels of The Textile Museum's Collections*

March 28 - September 7, 2003

<http://www.textilemuseum.org/>

Check out our website:

**[www.medievaltextiles.org](http://www.medievaltextiles.org)**

to contact the chairperson:

[nmck@medievaltextiles.org](mailto:nmck@medievaltextiles.org) or

507 Singer Ave

Lemont, IL 60439

About the Reviewer:

Jan Ward started weaving in 1975. She signed up for a class in off-loom weaving taught by an instructor from Sacramento State University, and then apprenticed to the weavers in a local weaving shop. She continued taking classes until she finally bought her own loom in 1992. Around 20 years ago, she joined a weaver's guild affiliated with the Conference of Northern California Handweaver's, and then joined the reenactment group called the Society for Creative Anachronism (SCA).

In the SCA she is known as Edwinna of Hawk's Bluff, an Anglo-Saxon lady living in England around the turn of the first millenium. It is her ambition to learn to do every kind of craft that such a lady might have practiced at that time, to have a perfectly period encampment, and to remain in persona for an entire weekend event. This includes having a set of perfectly period clothes, all handwoven in the appropriate techniques of the appropriate fiber. She still has a way to go.

In the modern world, Jan has retired from teaching art at the Junior College level, and now does occasional freelance video and computer graphics, and spoils her four grandchildren.