



MEDIEVAL TEXTILES

Open Hole Cardweaving: A Viking and Pre-Viking Sample

By Cerise Moodey

The principles of this technique couldn't be easier. Just leave a hole open in the cards during your loom setup! Cardweaving is ordinarily a warp-faced weave. Eliminating a warp during the card setup leaves a space in the weaving for the weft to show through.

This 12 card sample has three warp threads per each four hole card - one hole is left open. It has a direction change every seven passes (full pattern in Peter Collingwood's *The Techniques of Tablet Weaving*, p. 105). The olive green wool has a gold wool weft; you can hardly see the weft in the pattern because the wool is fuzzy. It results in a textural effect. The pattern is seen clearly in the cotton sample of white warp and black weft.

Margrethe Hald gives a pattern for a Norwegian band from the Snartemo find. The original band was 12 cards wide (repeat the pattern), materials and colors unspecified.

For this sample (see chart 1) I used white and gray linen. While this looks on the surface like a very easy weave, technically it is slightly more difficult. The cards try to separate out into two packs, so the weaver must hold on to them at all times during the weaving process. I would not recommend this pattern for a beginning cardweaver. If, at any point during the weaving one needs to pause, the cards must be tied to prevent them from mixing up.

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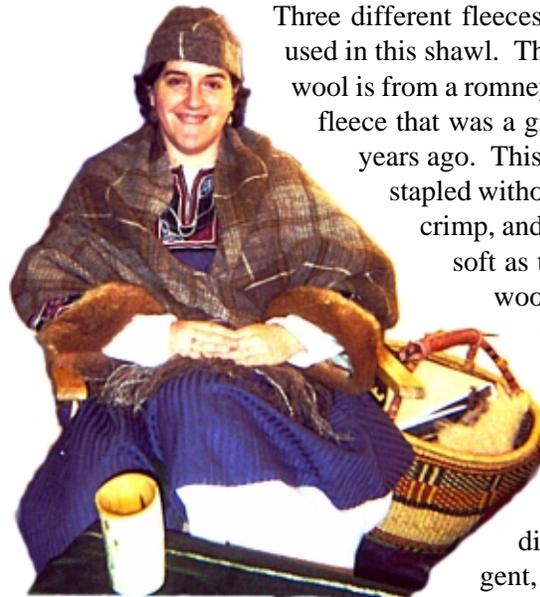
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On Weaving a Handspun Plaid Shawl

By Laura Artates

I consider this project to be a milestone in my development as a spinner, weaver, and textile recreator. I started with unwashed fleeces, washed, combed, spun, dyed, and wove the fabric to create this plaid shawl.

The Fleeces and Preparation



Three different fleeces were used in this shawl. The brown wool is from a romney-type fleece that was a gift several years ago. This is a long stapled without a lot of crimp, and not as soft as the other wools used. I washed the fleece by hand in hot water and dish detergent, several times, and rinsed

in hot water. This fleece was then sent to be machine-carded into roving before spinning (top sample). The grey singles are a blend of some of the romney fleece and a dorset fleece that I also washed by hand. The romney-dorset blend was also machine-blended and carded into roving at the same time as the romney. These two wools were very different in character, the dorset being softer, crimpier, and somewhat shorter in staple length than the romney. I was hoping that blending the two wools would give me a softer yarn. Unfortunately, it also gave me a slubby yarn, since the dorset tended to ball up in the carding process and create "noils" in the roving. The

cont'd on page 2

bright yellow and gold yarns are the grey yarn dyed with natural dyes. As I worked on the project, I realized I needed some additional colors for contrast and yardage to finish the project, so I also spun yarns from a Jacobs fleece that was bought from a neighbor's farm. This wool was washed as above, and the fiber was combed on single-pitch Viking combs and drawn out into roving before spinning. The white yarn is from this fleece, as is some of the grey weft.

The Yarns and Spinning

The yarns used for this shawl are all handspun wool singles, spun with Z (clockwise) twist on my Majacraft Suzie wheel. The size of the yarns varies, depending on the wool, the preparation, and human variation. The darkest brown yarn is from the romney-type wool, which spun up beautifully into a relatively fine, smooth yarn. Most of the medium greyish wool is the blend of the romney and dorset type fleeces. This yarn ended up being the thickest of the yarns, with some slubs and irregularities. I wanted some white yarn to use for color contrast in the plaid, so I selected the white sections of the jacob fleece during combing. It made a very fine, smooth singles, which behaved quite differently from the romney yarn and the blended yarn. The Jacob wool singles were far more elastic than any of the other yarns used. Towards the end of the project, I also started running out of the grey blend singles, so I blended some of the jacobs wool, combining the two colors to try to match the grey blend yarns. To try and match the texture of the grey blend singles more

closely, I carded this wool before spinning instead of combing it.

Table 1 summarizes the yarn sizes and yardages used in the shawl. The yarn sizes ranged from approximately 22-28 wraps per inch. Approximate yardages required of each yarn for warp and weft are also indicated, with yardage for dyed yarns in parentheses.

The Dyes

Three different dyes were used to add variety to the colors in the shawl. Onionskins were used to dye some of the grey blend yarn. Turmeric was also used on some of the same yarn. These two colors were used in some of the narrower stripes in the plaid; the turmeric being used when the onionskin dyed yarn ran out. I overdyed some of the darkest brown romney-type wool yarn with black walnut hulls from my yard to have a darker yarn to outline the narrower stripes. The use of yellow dyes is documented in [Textiles and Clothing](#). The dye analysis documented in the Appendix by Penelope Walton indicates that several unidentified yellow dyes were found in the samples analyzed. It also indicates the probable use of tannin dyes (of which black walnut hulls is one), and the practice of overdyeing colored wools. In all of these dyes, I was using what was readily at hand. This is, and presumably always has been, the most common practice in household textile production, so it seems an appropriate method of dye selection for a living history application.

Table 1: Yarn sizes and yardages for plaid shawl

	“romney”	Blend	Jacob combed	Jacob carded
W.P.I.	26	22	28	24
Yards in Warp	390 (+85)	1000 (+145)	135	0
Yards in Weft	370 (+72)	350 (+180)	70	355

Approximate yardages required of each yarn for warp and weft are indicated, with yardage for dyed yarns in parentheses.

The Weave

The weave structure chosen was a 2/2 twill, in a plaid designed to use up the appropriate ratios of the colors I had available. This type of pattern could have been woven on either a warp-weighted loom or a horizontal loom. I have both, but chose to weave on my horizontal 4-harness loom.



I started by designing the plaid (with the help of THL Angharad) and weaving a sample. The original plaid design had wide stripes of brown and wide stripes of grey yarn, separated by narrow stripes of dark brown, yellow, and white. Similar plaid patterns can be seen in *Textiles and Clothing*, pages 50-51 and in the illustration in Hoffmann. An example of a large plaid shawl or cloak with fringe can be found in the “Thorsburg mantle” in *Textiles, 5000 Years*. I used a sett of 16 warp ends per inch, as an average for the varied sizes of yarns I was using. This was chosen to be slightly more open, to allow for shrinkage during washing and finishing of the fabric.

I washed my sample by hand to check for problems with differential shrinkage of the different yarns. As

I suspected, the brown yarn did not shrink or full appreciably during washing, while the grey yarn shrank and full nicely. The finished sample had a somewhat seersucker effect, with the squares in the plaid that were brown in both warp and weft puffing and puckering inside the slightly shrunken areas with grey yarn. Despite this, the sample made a very nice hat!

Back to the drawing board.

I went back and added some of the grey yarns into the brown stripes, which I hoped would even out the shrinkage of the stripes during finishing. To keep from losing too much contrast between the grey and the brown stripes, I also added some white yarns in the grey stripes. (See chart #2.) The full-sized warp was over 42 inches on the loom at 16 epi. Photos of the woven fabric on the loom are displayed with the fiber samples in the notebook regarding this project in the Complex Weavers’ library. In the finished shawl, the seersucker effect was lessened, and is only barely apparent when the shawl is laid flat. The effect is not noticeable at all when the shawl is worn. I also used a lot more grey yarn in the second stripe design than I had originally planned for, so I ran out of grey blend yarn for the weft. The substitution of onionskin dyed grey blend yarn and then the jacobs grey yarn did not have a noticeable effect on the final appearance of the shawl.

Finishing

The finished shawl was left with long fringes at either end, which were twisted two ends at a time and then plied into 4-end fringes. This technique is documented in *Textiles and Clothing*, page 49 figure 36B, which is shown below. I then washed and fullled the

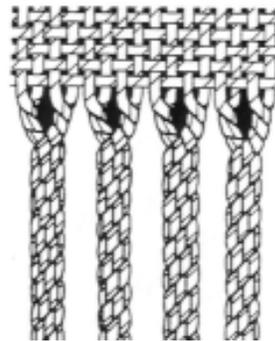
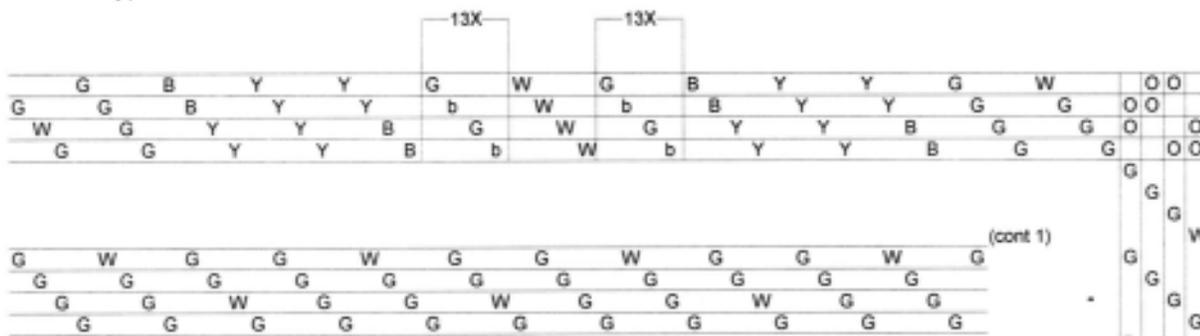


Illustration from *Textiles and Clothing* by Crowfoot et al showing fringe detail

finished shawl by hand and reshaped it before



hanging it to air dry. A final firm pressing with a steam iron also helped flatten out the slight puckering. The finished fabric has a sett of 19-20 warps per inch (8/cm) and 17-18 wefts per inch (7/cm). This is at the coarse end of extant 2/2 wool twills from Roman Britain and Anglo Saxon archaeological sites cataloged in Jorgensen, as well as the Medieval London textiles. The fabric weave and sett approximates that of textile SH4 from the Sutton-Hoo Ship Burial, which is also a 2/2 twill with Z twist in both warp and weft, with a sett of 7-8 warps and 6 wefts/cm. Crowfoot describes this textile as a “light cloak or blanket” fabric.

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Letter	Sheep	Color
B	Romney	Overdyed Brown
W	Jacob	Natural White
Y	Rom-dorset	Overdyed with onionskins
b	Romney	Brown
G	Rom-dorset	Grey

cardweaving, cont'd from page 1

Chart 1: Norwegian band from the Snartemo find

	Card 1 (Z)	Card 2 (Z)	Card 3 (Z)	Card 4 (S)	Card 5 (S)	Card 6 (S)
A	dark	open	light	light	open	dark
B	open	dark	open	open	dark	open
C	light	open	dark	dark	open	light
D	open	light	open	open	light	open



The missed holes in this pattern, rather than allowing the weft to show through, result in warp floats over two wefts instead of the usual one. At the beginning of the piece I wove normally, and had a long, unwoven warp along one edge that alternated from side to side as the weaving progressed. After the initial start, I began to deliberately catch the rogue warp with each pass of the shuttle.

This card setup produces an interesting and attractive W pattern, perfect for trim on one's reproduction Viking clothing.

Peter Collingwood mentions a narrow pre-Viking band in this technique, and through the kind offices of the editor provided his source material for us! (Thanks to both of you!) This band is described in detail in the Proceedings of the Royal Irish Academy. It is a four card braid from Lagore Crannog, Ireland. Hencken, the author, described the threading as "to the right". (See Chart 2)

The pattern on the band is achieved by turning the

cards forward (and passing the weft through) three times, then turning the cards back (and passing the weft through) three times. Six turns, six passes of the weft. The author states the pattern will continue with continual turning in one direction, but will result in a very twisted band. I found the band wanted to twist even after three passes, so I certainly believe this!

To recreate this band I used hand spun Icelandic fleece. I both spun and plied using a drop spindle. Not having any fiber that would qualify as "hair" I used singles for the spun hair warp of card one and for the weft. The cards were of vellum, very sturdy and light.

I had intended to do a second sample of Hald's W weave above using hand spun singles, but did not size the warp because I thought, the sample is so small, how much breakage could there be? Silly me! It was catastrophic. Wisely deciding not to make the same mistake twice, I sized the warp with a flour and water mixture (like making gravy

Chart 2: four card braid from Lagore Crannog

Card 1	Card 2	Card 3	Card 4	Spun hair weft
A spun hair warp	double ply	double ply	double ply	
B spun hair warp	open	double ply	open	
C spun hair warp	double ply	double ply	double ply	
D spun hair warp	double ply	open	open	



without the pan drippings). The sample I wove was short, and much of it was double plied, but there was no breakage even of the singles.

This band was hard to weave with an even width! Part of that was the sizing in the wool, but I think the variation in the number of warps each pass was a greater factor. I would like to play with this pattern, using a contrasting warp and weft, to get a better idea of its construction.

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

Margrethe Hald. *Ancient Danish Textiles from Bogs and Burials: A Comparative Study of Costume and Iron Age Textiles*. The National Museum of Denmark, 1980.

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9th Century Sacramentary lid

The Art of Research

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Introduction

So, you have the research fever. The only cure is to go forth on an informational quest. Whether your plans include an A&S entry, an Insanity Project, an article, or simply satisfying your curiosity, research is a way to touch the past by exploring how something was done. The challenge is the more common anything was the less information seems to be available. The textile arts are notorious for this. After all, every woman could spin and weave from childhood

Books

Bibliographies are a gold mine of potential reading material. They can be found in the back of a book you already have, in an article, or on the web. Annotated bibliographies describe what is in the book and why the creator of the bibliography thought the book is worth a read. The more specific your research, the less time you have to read books, that while are interesting, do not pertain to the topic at hand.

Interlibrary Loan (ILL) is your friend. Libraries can order a fortune in rare and obscure books for you free or for a nominal charge. Libraries connected to a college or university have even better luck ordering for you than will your local library. Sometimes you do not even need to be a current student. Many libraries extend lending privileges to alumni or community members.

To buy or borrow, that is the question. Several factors to consider are budget, space, and contents. How much does that book cost and what will I have to give up to get it? Where am I going to put it? No, adding on to the house is NOT really my best option. Are the contents worth the cost and shelf space? My rule is that after I have borrowed the book three times I might as well shut up and buy it

Medieval Researchers on the Web

There are many web sites and newsgroups to pursue. Use caution. There is a lot of information available and some of it is not reliable. Double-check your findings and your sources. A site published by a university or research foundation has more creditabil-

ity than a “personal” site.

If you plan on citing a web site, get permission from the owner. There are copyright laws to be considered. It is the same for books and articles.

Learn how to use the advanced search features in your favorite search engine. Three to five words should give you a manageable return for your efforts. I like www.google.com because it will let me search web sites, newsgroups, and pictures. There are also specialized search engines that are geared for one topic only. Several are designed with medieval studies in mind.

Some newsgroups have search engines within the group. This is a great feature for finding that thread that you were not interested in six months ago. While the content of newsgroups may be primarily opinions, they can provide useful how-to or how-not-to information from someone who actually tried to do what you are researching. They are also good sites for book reviews because some of the members are obsessive enough to read everything that pertains to their field of interest.

Museums

Museums are wonderful sources for primary documentation. There are specialized museums that focus solely on one area of expertise. Also consider your local museums. They can bring in traveling exhibits. Admittance fees are generally reasonable. Some forbid the use of cameras, so it is a good idea to check policy before visiting. If you are fortunate to be on good terms with the curator, it might be possible to obtain a closer look at some of the exhibits.

Exantant specimens are a primary source. There is no arguing with a bog or burial find. It can be measured, photographed, and subjected to all sorts of tests. We know where it was found and what was around it.

The sad truth is that textiles do not hold up well. If wool, many insects consider them to be food. If plant fiber, they become compost. Bogs do a good job of preservation, however, the tannin can interfere with accurate carbon dating and mask signs of dyeing.

A museum presents you with your chance to see the object of your quest live with only a plate of glass

separating the two of you. Here lives a source of primary documentation – maybe. Check the fine print. A replication, however carefully researched and reproduced is still a replication. Museums will use these and label them as such, commonly when setting up displays or tableaux. Forgeries and hoaxes can be done so well that even the curators are fooled. This is especially true if the hoax is also several hundred years old.

Consider how the artifact is preserved and displayed. Was it necessary to use a stiffener, backing, or frame to display the fragments? Also consider how it was treated during its life before the museum. A large tapestry may have been cut up into pillow-sized squares when the fashion changed. The gown may have been mended poorly or remade from an older gown. Did some unknown artist touch up a faded painting or tapestry 200 years ago thus changing details and chemical compositions?

My experimentation with “Virtual” Museums left me convinced that they were for people with high speed internet access and those interested in an overview. The interfaces need work and I want the option to get details on individual parts of exhibits. Like most weavers, I am not happy unless I can get thread counts, drafts, fiber micron readings, and any other bit of trivia that comes to mind.

Visuals

Portraits are an excellent source of information regarding the art of painting. Since an artist made his living by rendering his clients in the most flattering light possible, take the image with a grain of salt. It helps to remember definitions of beautiful and elegant have changed drastically over centuries. Without seeing the cloth up close and having a chance to turn the gown inside out to see the seams, we have no way to know what details were altered by the painter or how the gown really looked.

Some pictures from other sources, such as a Book of Hours show people engaged in humble (useful) occupations. Please consider artistic license and that the artist likely has never turned a hand at the work portrayed. There is one picture of a dyer that shows folded cloth lying next to the dye pot where it could be splashed and ruined. Another shows a loom that is physically impossible to work and a lady attempting to weave

Records

Court records are another source of information about what people owned, used, and how they lived. You can find wills, contracts, and lawsuits pertaining the creation and disposal of textiles. The main drawback with these is that the people keeping records do not go into great detail about the items in question or about their construction. However, you can find wage, guild, and other economic information here.

Great households kept detailed inventories of household furnishings and clothing. Some of these listed not only the cost for the materials, but also the cost of the labor. With clothing, it was very apparent that the bulk of the cost was in the material, not the labor. Queen Elizabeth's Wardrobe Unlock'd by Janet Arnold is an excellent example of such a resource.

Experimentation

So, you've read the books, looked at the pictures, chatted with those who share your interests, taken a pilgrimage to a museum, and still wonder what it would be like to weave enough cloth for a gown. A project researched and completed from the raw materials through the use of the finished product gives a very tangible form of reality to the research and to the work and skill that go into something as basic as clothing. Here is where you find the small gaps in your research. There are small steps that are omitted from records and pictures because the details were common and "everybody" knew how to do that. Great detail was kept on the making of a queen's gown, but not that of a village granny's gown.

Conclusion

Just hand over the data and no one has to get hurt.



Linen chasubles

by Nancy M. McKenna

Linen chasubles have been called plague chasubles because presumably they were used while ministering to plague victims due to the greater ease in cleaning linen versus the more costly silk vestments. However, this phrase appears to originate with Cannon Bock in the 19th century. Chasubles of wool and linen as well as silk have been preserved; however, those made of silk are currently more numerous because they were considered precious and thus saved.¹ In the medieval period, as now, vestments were available in various qualities to suit the rules or pocketbook of the Order or cathedral that commissioned the work.

From an early date, linen chasubles have been allowed and under some circumstances have been preferred over more elaborate vestments. It is these instances that are the focus here. In the instances where canon laws in sects enjoying continuous life have separated from a shared ancestral Church are nearly identical, it is usually understood that this law dates from before the split. In the case of linen chasubles, the applicable Apostolic Constitution is common to the Latin, the Orthodox Greek, the Syrian, the Coptic, the Armenian, and the Nestorian sects. Therefore, the code could in theory date back to the point of their separation which can be as early as the Council of Chalcedon in AD 451 and states, "[Direct] the celebrant to put on this vestment... The material of the chasuble may be of linen or silk, but the latter is preferable."²

Despite the preference for fine materials, during the reformation of religious orders, there is often a rule stating that simplicity is to be preferred over finery and thus linen is to be preferred over silk. For instance, the Cistercians (Trappists, reform movement within the Benedictine family of Religious orders) first reform of 1142 states, "They resolved to retain no crosses of gold or silver, but only painted wooden ones; no candelabra except a single one of iron, no chasuble except of plain cloth or linen, and without silk, gold, and silver; no albs or amices except of linen, likewise without silk, gold, and silver. As for all mantles and copes and dalmatics and tunics, these they rejected entirely.... As for altar cloths, they explicitly decreed that they must be of linen, without pictorial ornamentation..." This is repeated in the Capitula attached to the Exordium Cistercii: Summa Carta Caritatis: XXV, "That it is not permissible for us

to have gold, silver, precious stones and silk: Altar linens and the vestments of the ministers must be without silk, except for the stole and maniple. The chasuble is to be of only one color.”

Other reformation of orders was similar: According to the ancient Constitutions of the Order, the Franciscan Capuchins were not allowed to use vestments of rich texture, not even of silk, although by Decree of the Sacred Congregation of Rites, 17 December, 1888, they must now conform to the general laws of the Church in this matter. They are, however, still obliged to maintain severe simplicity in their churches, especially when nonparochial.³

It is interesting to note that the woven pattern of the linens remained popular for centuries. For instance, the woven pattern of the St. Godehard Chasuble is seen in a pattern and sample book of table linens woven at Caen dated 1736. It is noted on the sample page that the cloth was woven for the table of the Chief Steward (Maitre d’Hotel du Roy) and at the Director-General’s table; the length of their table cloths was three and a half aune, their width two.⁴

Brief catalog of known linen chasubles (from Flury-Lemburg unless otherwise noted):

St. Godehard Chasuble in Hildensheim:
fine linen with a lozenge pattern,

lined with coarse linen

Ornamentation: Back is decorated with a red silk taffeta cross.

Present form dates to 15/16th century, it was cut to the pattern of a 14th bell chasuble & re-modeled later into fiddle shape.

Fabric width: ~76 cm wide (one selvedge present)

Warp/weft: 32-33 threads/cm, z twist (~80 epi/ppi)

Lining:

Linen, Tabby, z twist, warp: 12.4 threads/cm, weft: 11-12 threads/cm (~30 epi/ppi)

Trim:

Silk, warp/weft 45/34 threads/cm

Ulrich Chasuble, St. Urban, cat 42

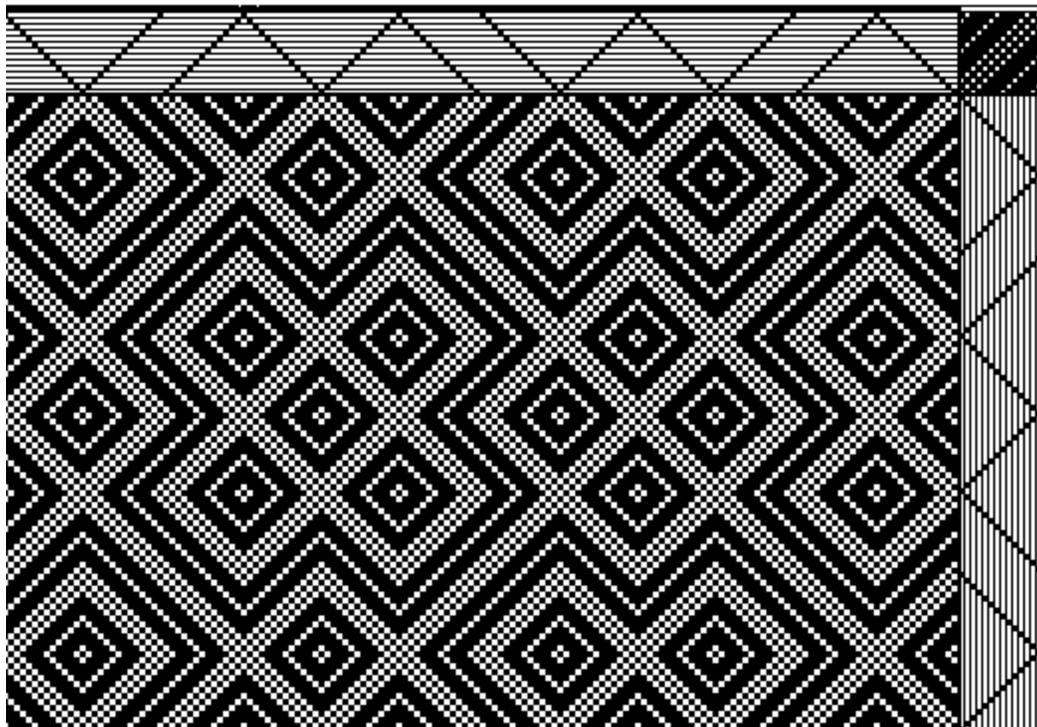
Castel S. Elia (Roman Campagna)

No. 2

Bell shaped chasuble, plain white linen, neckline edged with gold tapestry silk border. Front, lateral and back orphrey of new silk fabric. Braun # 399-402

No. 5

Bell shaped chasuble, firm white linen of 3/1 lozenge twill, raised nap on unpatterned side, used for the top side of the chasuble while the lozenge pattern was used inside. Neck trim as well as front and back orphrey made of the same new silk fabric as on chasuble No. 1, no lining. Braun # 406-409



Drawdown of the St Godhehard chasuble fabric. Note: the draft was selected to show the pattern and not for accurate representation of the warp and weft repeats, both of which resemble alternating M and W.

No. 7

Bell shaped chasuble, cut, plain white linen, neck as well as front and orphrey of blue silk taffeta. Most of it lined with blue linen. Braun #410-412

No. 8

Bell shaped chasuble, plain white linen, patches on front and back, some from the missing parts of the back. No trim, no lining. Braun # 403-405

No. 9

Bell shaped chasuble, plain white linen, neckline as well as front and back orphrey trimmed with hemmed blue strip (2.5 cm wide) unlined. Braun # 415-417

No. 11

Semi-circular bell shaped chasuble, plain white linen, many patches, neck and front orphrey trimmed with modern silk. Back orphrey of blue linen, unlined. Braun # 413-414

St. Donat in Arlon

Cathedrals of Augsburg and Halberstadt.

inv. #251

Bell shaped chasuble, plain white linen, back with red forked cross (tabby weave) coarse linen lining.

Inv # 252

Bell shaped chasuble, cut, plain white linen, back with pomegranate red damask cross trimming. Coarse linen lining.

Augsburg Cathedral, Diocesan Museum

Semi-circular bell shaped chasuble, plain white linen. Shoulder trimming of patterned silk, back adorned with embroidered forked cross. Entire chasuble strewn with tiny silk stars, rosettes and squares.

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¹ Flury-Lemburg, *Textile Conservation and Research* (Bern, 1988) 214

² Rogers, B. Talbot, ed. *The Works of the Rt. Rev. Gharles C. Grafton (Vol. 6)* (New York: Longmans, Green, 1914)

³ Ceremoniale Ord. Cap.; Analecta Ord. Cap.; Constit. ord. (Rome).

⁴ Hardouin-Fugier, Elisabeth, et al., *Les Etoffes: Dictionnaire Historique* (Paris: Les Editions de l' Amateur, 1994)



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