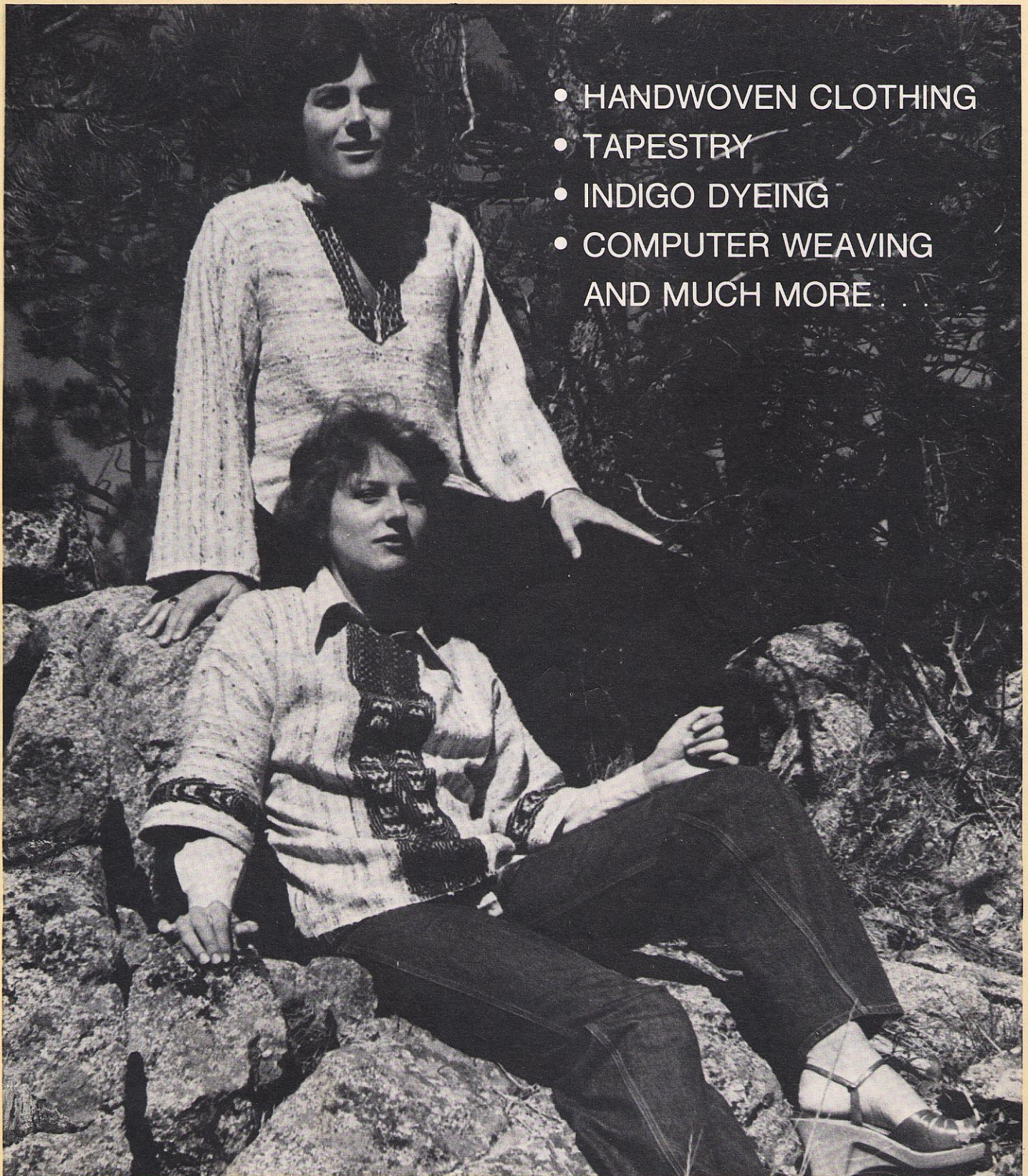


The Weaver's Journal

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VOLUME IV NUMBER 3 ISSUE 15

JANUARY 1980




- HANDWOVEN CLOTHING
- TAPESTRY
- INDIGO DYEING
- COMPUTER WEAVING
AND MUCH MORE

Letter from the Editor

In this issue we introduce the first of a series of articles on tapestry weaving by Kate O'Callaghan, a young tapestry artist who works in Arizona. Please let us know how you like them. Do you like a series of articles on one subject as well as the short articles on various aspects of weaving? Write and tell us. We read all your letters and note any suggestions you may give us.

We need your input in other things, too. Are there projects you have done using acrylic or synthetic yarns that you would like to share with other readers? Send us a good black and white photo of the finished item and information about the yarn you used, the draft and sett and any special instructions needed to make the project.

We are also interested in any experiences you have had with acrylics and synthetics in spinning, dyeing and weaving. What yarn suppliers do you use for these yarns? Have you worked with blends? What problems or advantages have you encountered? Please let us know. It is by sharing our problems and experiences that we learn the most.



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List of Advertisers

Contessa Yarns.....	3
The Cotton Squares.....	25
Hamaker, Barbara.....	6
Henry's Attic.....	4
Holroyd, Ruth.....	6
In Business.....	10
Ironstone Warehouse.....	10
Nilus Leclerc, Inc.	48
The Mannings.....	2
The Mannings.....	25
Ramus, Katherine.....	6
Romni Wools.....	13
School Products Co.	48
Serendipity Shop.....	6
Southern California Handweavers' Guild, Inc.	21
The Weaver's Market.....	47
Weaver's Way.....	25
West, Virginia.....	6

The Weaver's Journal

Quarterly Journal for Textile Craftspeople
Volume IV, Number 3, Issue 15 January, 1980

Table of Contents

Letter from the Editor.....	2
List of Advertisers.....	2
A Blouse for Her - A Shirt for Him.....	4
White Circular Wrap by Iris Richards.....	7
Tunic Made from Narrow Strips by Clotilde Barrett.....	9
Veridian Green Cape by Clotilde Barrett.....	11
Multiple Harness Weaving Course - Part I.....	14
The Ecclesiastical Weavings of Diana Lockwood.....	18
Cotton Shirts by Lynn Barnett-Westfall.....	22
Twice Woven Bolero by Iris Richards.....	24
Space-Dented Warp by Laura Fry	26
A Heritage Project: Quilted Vest by Lorna J. King.....	28
Indigo Dyeing and the Problems of Crocking by Mary Pendergrass.....	30
Computer Weaving by Clotilde Barrett.....	35
Accessories:	
Woven Clogs.....	39
Man's Scarf.....	40
Contemporary Tapestry: On Looms, Warping, Setting Up Tapestry Study Course - Part I by Kate O'Callaghan.....	41
Book Reviews.....	45
The Weaver's Market - Classified Advertising.....	47

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Cover Photo: Ingrid Barrett and Scott Hemenway modeling matching silk tops. See page 4.



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A Blouse for Her—A Shirt for Him

The two garments, illustrated in Plate 1 and 2, are woven on the same warp, set up for an overshot on a four harness loom about 30" (75 cm) wide. The stripes in the plain weave area are caused by the variegated silk blend weft yarn. If such a yarn is not available, one should substitute a yarn with a pronounced slub.

WARP: Tussah silk.

WEFT: tabby - variegated silk blend with slub.
pattern - 2/6 worsted wool.

WIDTH IN THE REED: 30 3/4" (73.8 cm).

LENGTH OF THE WARP: 6 1/4 yards (5.7 m).

blouse: 2 yards of preshrunk fabric

shirt: 3 yards of preshrunk fabric.

SETT: 12 epi (50/10 cm).

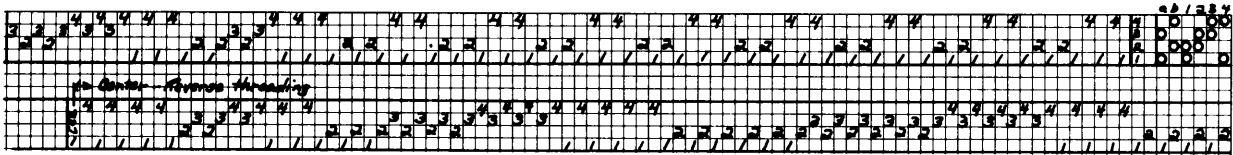


Fig. 1

THREADING AND TIE-UP: Blooming Leaf of Mexico, ref. M. P. Davison *A Hand-Weaver's Pattern Book* p. 162. See Fig. 1.

TREADLING: Tabby except for the overshot bands placed as shown in Fig. 2. For the overshot bands one must alternate a tabby pick and a pattern pick.

Treadling sequence for the pattern weft:

For the front bodice:

- (tr 2, tr 3, tr 4, tr 1)
- repeat 4 times
- tr 1 repeat 3 times
- tr 2 repeat 4 times
- tr 1 repeat 4 times
- tr 2 repeat 4 times
- tr 1 repeat 3 times
- tr 1, tr 4, tr 3, tr 2
- tr 1, tr 4, tr 3, tr 2

↓ - Center of the design for front bodice; reverse the entire sequence for the second half.

For the sleeve:

- tr 2, tr 3, tr 4, tr 1) 2 times
- tr 1 repeat 3 times
- tr 2 repeat 3 times
- tr 1 repeat 3 times
- (tr 1, tr 4, tr 3, tr 2) repeat 2 times.

Sew shoulder seams together. Sew the sleeves to the bodice. Sew underarms and side seams. Hem the sleeves. Hemming of bodice is optional.

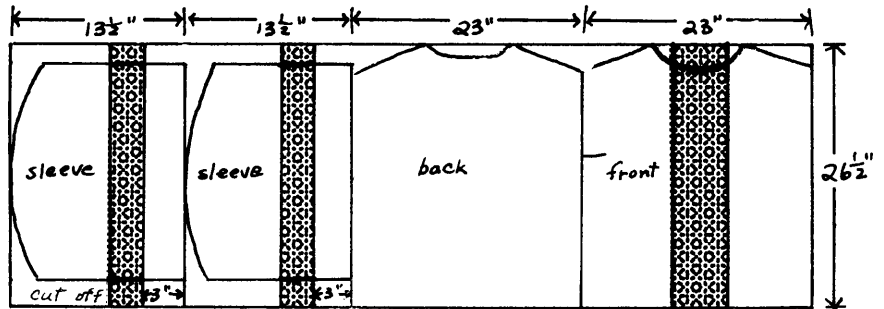
Cut a lining and interfacing for the neck opening. Sew it to the bodice as shown in Fig. 3. Turn lining and interfacing to the inside and finish the neck opening by topstitching.

Another option is to use iron-on interfacings and iron it on the wrong side of the bodice before lining the neck opening.

Man's Shirt:

Weave tabby except for a band equal in width to the front band of the shirt.

The pattern of the shirt is Butterick 3625 with some alterations.



Blouse pattern - dimensions for preshrunk fabric
Fig. 2

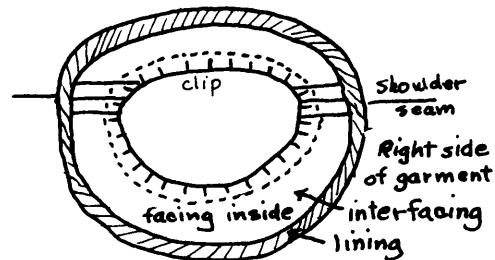


Fig. 3



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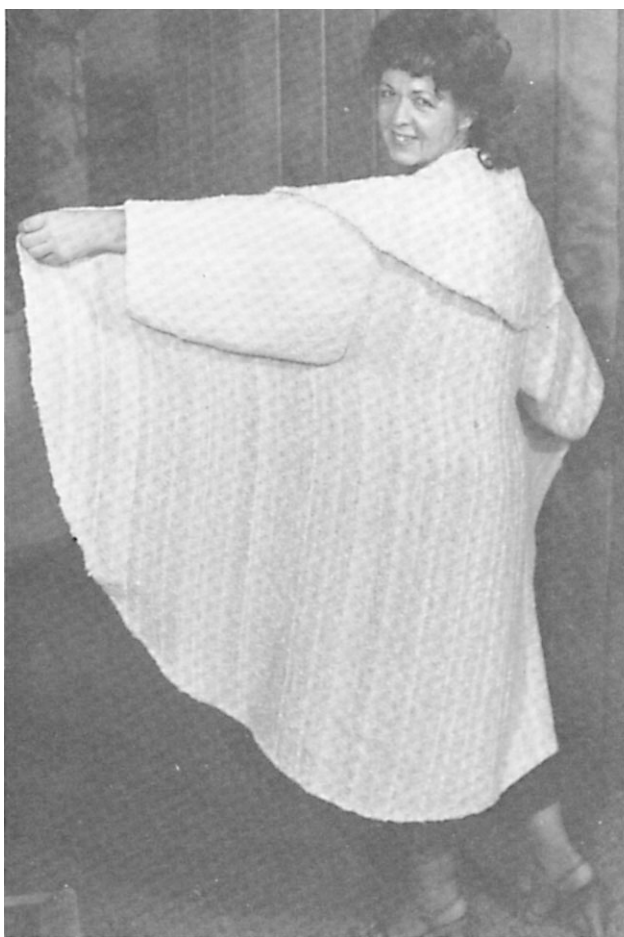


Plate 1

White Circular Wrap *by Iris Richards*

Capes are great at home to wrap oneself in for an easy evening by the fireplace; they are practical as an outer garment on a chilly night and they give an air of elegance at parties or at the theater or opera house. The cape shown in Plate 1 is all white, using several textured yarns. It is cut in a full circle. The yardage for this garment has to be very wide, 60" (152 cm) after finishing. In order to avoid any seams, this kind of fabric should be woven as double cloth plain weave on four harnesses. The technique of tubular weaving is used rather than the technique of folded cloth. There are two folded edges in tubular weave and invariably one is always more successful than the other. The tubular fabric is cut along the least successful fold and opened up.

WARP: Several kinds of off-white textured wool and mohair yarns with one shiny textured rayon yarn for accent. See Plate 2. The sequence of these yarns is random.

WEFT: One of the loopy warp yarns.

SETT: 24 epi (100/10 cm) (12 epi for each layer).

WIDTH IN THE REED: 34" (81.5 cm).

LENGTH OF THE WARP: 2½ yards (2.29 m).

WEAVE: Tubular plain weave. See Fig. 1.

PATTERN: After the tube has been cut along one side, the fabric is laid out flat in order to make a 60" (152 cm) circle on it. Sew with a basting stitch along the circumference of the circle. Using these basting stitches as a guide, machine stitch (with a small stitch) around the circle before cutting.

Single crochet around the entire edge using one of the fancy loop yarns used in the warp. This is a beautiful finish for the edge of any hand-woven garment.

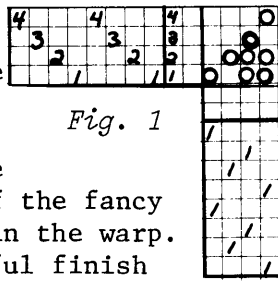


Fig. 1

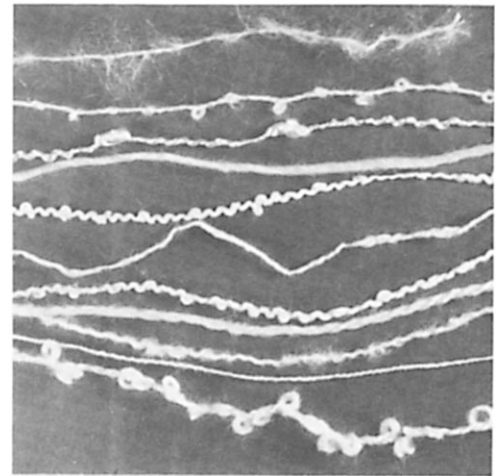


Plate 2

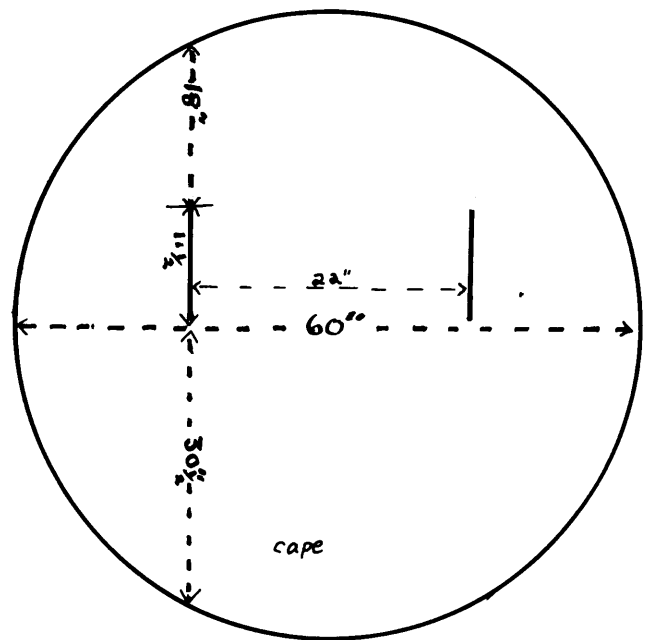


Fig. 2

A little above the center line of the circle, mark the two 11½" (29.2 cm) long armhole slits allowing 22" (56 cm) between the slits for the shoulder width. See Fig. 2. Stitch around the slits with a sewing machine before cutting.

The sleeves of the garment are optional. For the cape shown in Plate 1, the sleeves are cut and lined with satin as shown in Fig. 3. The sleeves are turned right side out and sewn in the arm slits. The seams and bottom edges of the sleeves are finished with a narrow flat braid made from one of the warp yarns.

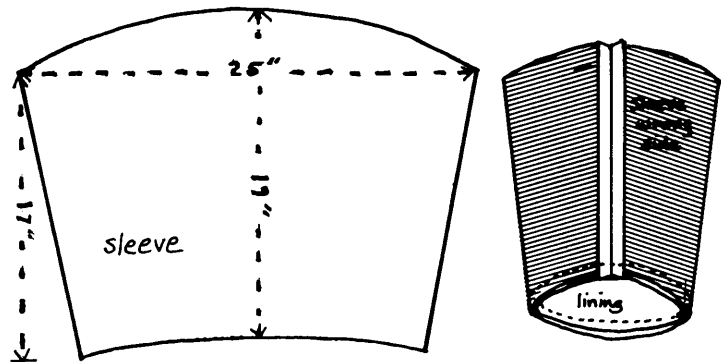


Fig. 3



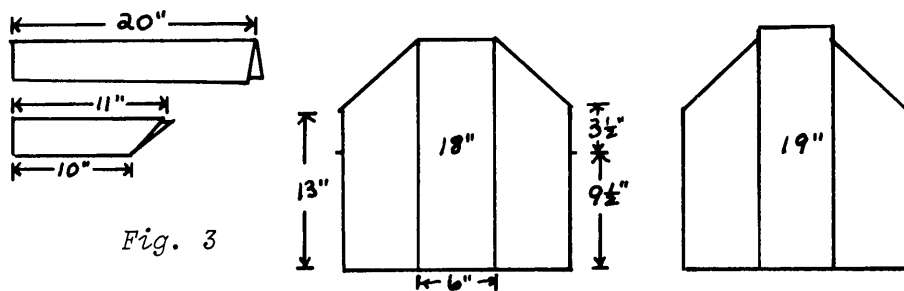


Fig. 3

edge of B. Attach the sections A by overlapping A over the raw edges of D and E.

For F and G, cut a strip of yardage in half lengthwise. Fold sections F and G in half and use it to enclose the raw edges at the collar and the bottom of the blouse.

Hem the sleeves.



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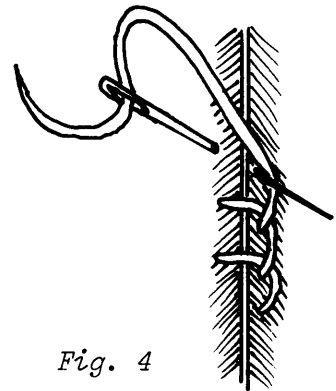


Fig. 4

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Veridian Green Cape

by Clotilde Barrett

From reading the books "Costumes of the Greeks and the Romans" and "Textile Arts for the Church" (see book reviews), I became fascinated with the idea of adapting classic garments and traditional church vestments to the use of contemporary clothing. I used the simple half-circle garment pattern and designed a cape that is easy to wear, shows off the brilliant colors and the luxurious textures of the yarn, and drapes comfortably around the figure. The plain weave cape is decorated with a band of supplementary warp patterning.

Fabric for the cape

WARP: 2 black loop mohair, 3 black 2/6 worsted wool, 1 turquoise textured rayon, 1 teal blue brushed mohair (Ironstone Warehouse), 2 blue-green 2/2½'s tapestry worsted. These 9 strands have a random distribution within each inch of the fabric but the same nine strands are repeated for every inch of the cloth.

WEFT: Teal blue mohair.

REED: 10 dent (40/10 cm).

SETT: 9 epi (one dent is always skipped next to the brushed mohair warp thread).

To prepare the warp, the yarn supplies were arranged as in Fig. 1. The three threads of A were wound together on the warping board from X to Z, the threads of B were wound from X to Z, and back. For the next inch, the yarn bundle A was wound back from Z to X and the bundle B was again wound from X to Z, and back.

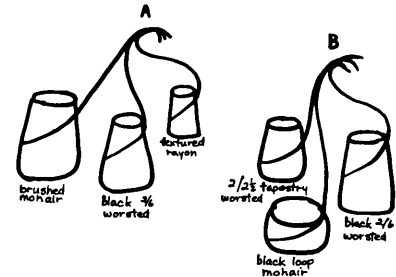
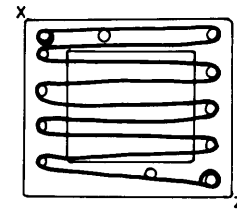


Fig. 1

LENGTH OF THE WARP: 5 yards (4.56 m).

WIDTH IN THE REED: 56" (140 cm) (for a narrower loom the fabric may have to be made with two panels).

WEAVE: Plain weave.

Fabric for the trim

WARP: Ground - 2/6 black worsted wool.
 Pattern - 2/2½'s blue-green tapestry worsted.

WEFT: 2/6 black worsted wool.

SETT FOR THE GROUND WARP: 12 epi (50/10 cm). In addition, the supplementary warp is sleyed in the same dent as the adjacent ground warp. See Figs. 2 and 3.

LENGTH OF THE WARP: 5 yards (4.58 m).

WIDTH IN THE REED: 8" (19.2 cm).

THREADING AND TIE-UP FOR A SIX HARNESS LOOM: See Fig. 2.

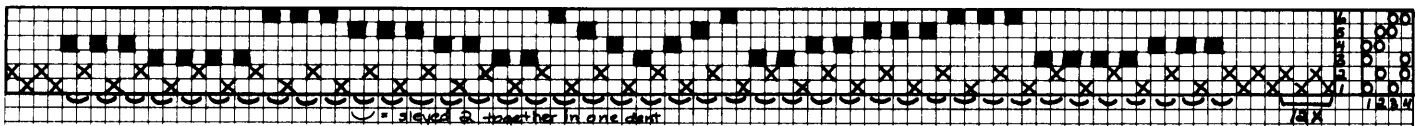


Fig. 2

For a 4 harness loom, the threading and tie-up of Fig. 3 will give a pleasant supplementary pattern.

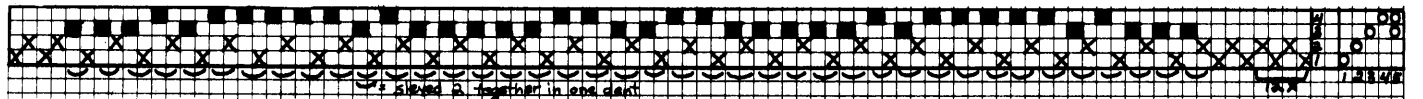


Fig. 3

DRESSING THE LOOM: For supplementary patterning it is often easier to make two warp chains; a black one with 96 ends and a blue one with 41 ends (40 for the 4 harness pattern). The loom is dressed by sleying the warp first.

Sley the black warp through a 12 dent reed. Then sley the blue warp using the same dents and referring to the sleying diagram of Fig. 2 or 3. Then thread the loom and beam.

Weaving the pattern of Fig. 2:

tr 1
 (tr 4, tr 3) 4 times
 (tr 2, tr 3) 2 times
 tr 4
 (tr 3, tr 2) 2 times
 (tr 3, tr 4) 4 times
 (tr 1, tr 2) 2 times

Weaving the pattern of Fig. 3:

(tr 1, tr 2) 2 times
 (trs 1 + 5, trs 2 + 5) 2 times
 (trs 1 + 3, trs 2 + 3) 4 times
 (trs 1 + 5, trs 2 + 5) 2 times
 (trs 1 + 4, trs 2 + 4) 4 times
 (trs 1 + 5, trs 2 + 5) 2 times
 (trs 1 + 3, trs 2 + 3) 4 times
 (trs 1 + 5, trs 2 + 5) 2 times

FINISHING: All the fabric was washed with carefully controlled agitation to produce a slight amount of fulling. The fabric was air-dried and steam pressed by professional cleaners. All the cutting lines were machine stitched before cutting.

The steps for cutting the cape are illustrated in Fig. 4. The band was folded in half and sewn to the front of the cape enclosing the raw edge.

The cape is hemmed by a row of single crochet over the line of fine machine stitching that was a guide for the cutting.

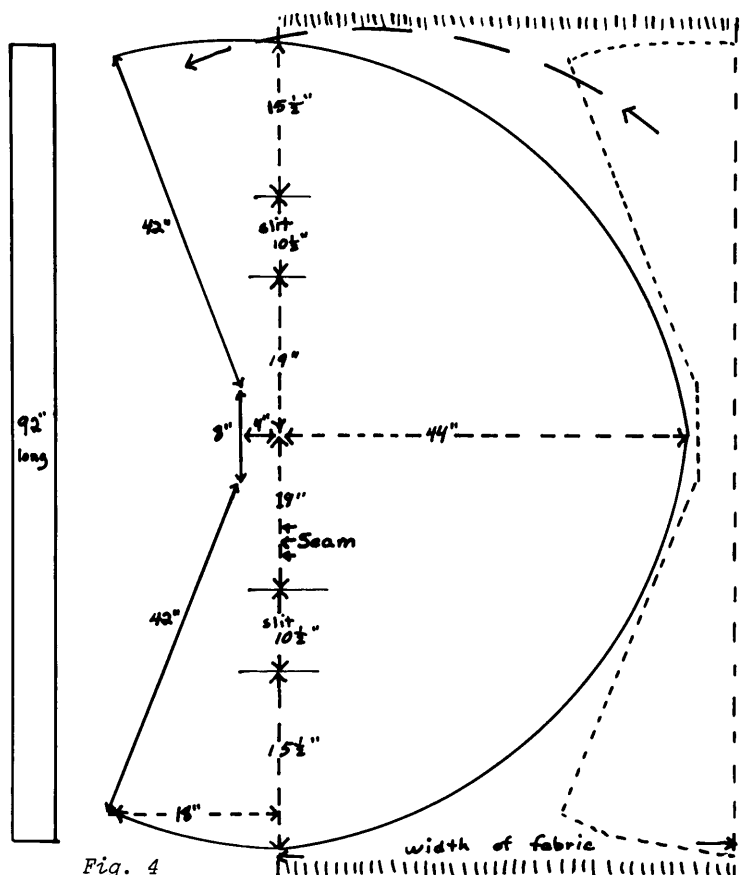


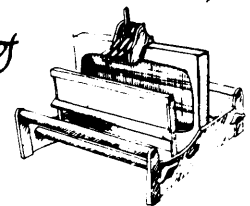
Fig. 4

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Multiple Harness Weaving Course—Part I

PRACTICAL USES FOR MORE THAN FOUR HARNESSSES.

Most weavers who have four harnesses and who want to weave plain weave will use all of their harnesses to do this. They thread their looms for a straight twill and treadle H1 + H3, H2 + H4 alternately. In the same way, weavers who have more than four harnesses should make use of what they have, even if the pattern draft calls for only four.

Here are some of the reasons why:

1. When the warp is sett very close, one should avoid crowding the heddles on one harness. Fig. 1B shows Atwater Bronson lace on 5 harnesses to avoid crowding harness 1 (Fig. 1A).

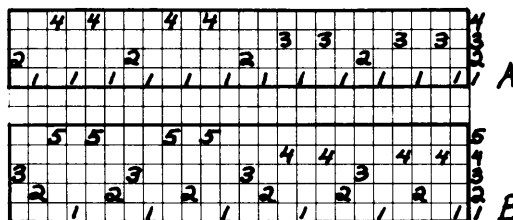


Fig. 1

2. One can make it easier to form the shed by adjusting the strain on the warp. This is important when one weaves rugs on a linen warp. In Fig. 1B two treadles may be used to lift the odd numbered warp; one lifts H1, the other lifts H2.

3. One can speed up the drawing-in of the warp when the threading draft is regular. Fig. 2 shows that rosepath can be threaded on an 8 harness straight draw because rosepath has a repeat of 8 threads. One is less likely to make mistakes when drawing in the threading 2B.

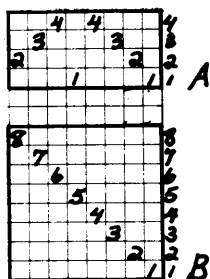


Fig. 2

In the industry, a draft with a repeat of n threads is usually on an n-harness straight draw.

4. Putting a 4 harness weave on 8 harnesses makes it possible to make more experiments. On the threading of Fig. 2A one can only weave rosepath but on the threading of Fig. 2B one can weave rosepath and a multitude of other weaves; e.g., one can experiment with all the weaves whose repeat uses 8 threads.

5. If a weave causes problems on the selvedge, one should use two extra harnesses to thread a plain weave selvedge. See Fig. 3.

Beside weaving typical 4 harness weaves on a multiple harness loom, one should study the weaves resulting from the extension of traditional 4 harness patterns to more harnesses. This often gives larger repeats, more variety in the pattern and a possibility for more blocks to use in loom-controlled design.

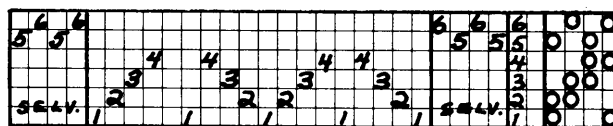


Fig. 3

The weaver should also use the loom to full capacity to experiment with combination weaves. Fig. 3 combines twill and plain weave; Fig. 4 combines two twills.

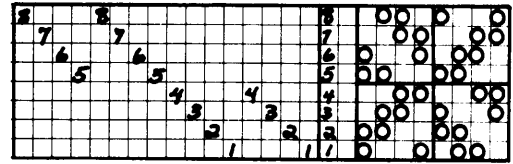


Fig. 4

Finally, the multiple harness weaver can explore structures for which there is no equivalent on 4 harnesses: for example, satin weave.

FUNDAMENTAL TWILLS

Twills and plain weave seem to be the basic weaves from which most other weaves can be derived. Therefore we will start this study with a classification of the fundamental twills:

Straight drafts.

Reversed twills or pointed drafts.

Extended point twills or multiple pointed drafts.

Broken twills.

Skip twills or offset twills

Undulating twills.

References (for bibliography, see *The Weaver's Journal*, Vol. IV, July):
 Oelsner, G. H., *Handbook of Weaves*, pp. 3-7; 16-25; 77-97.
 Landis, Lucille, *Twills and Twill Derivatives*, pp. 17-32; 44-81.

Fundamental twills are those whose threadings follow well-defined rules based on a progression from one harness to the next and whose tie-up and treading produce an interlacement of weft threads and the warp which is repeated with a progression of the pattern floats of one step to the right or to the left.

THREADING

The threading order of the fundamental twills can be read from a circular diagram which is divided into as many parts as there are harnesses (See Fig. 5). Start from any position (most frequently position 1) and progress around the circle clockwise or counterclockwise calling off the numbers which are encountered. These numbers are the harnesses on which the warp is threaded.

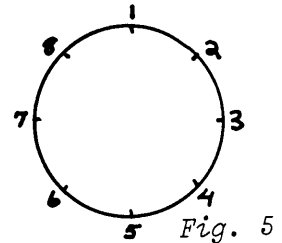


Fig. 5

Straight drafts Fig. 6.

Progress around the circle always in the same direction; for one repeat stop just before the starting point.

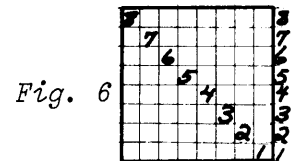


Fig. 6

Reversed twills or pointed drafts Fig. 7

Progress around the circle in one direction, stop at any number, and return to the starting point, progressing in the opposite direction.

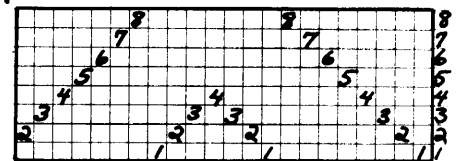


Fig. 7

Extended point twill or multiple pointed drafts Fig. 8

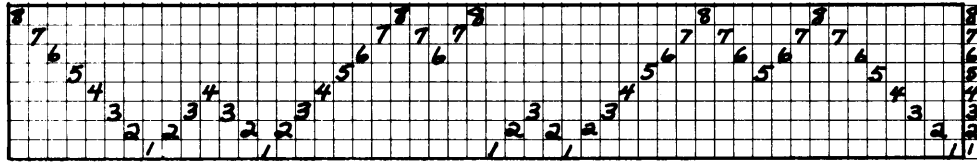


Fig. 8

The path around the circle zig-zags between several points where the progression is reversed. The distance through which the twill is carried continuously in the same direction changes.

Broken twills Fig. 9

Progress around the circle in one direction, stop at any number, cross the circle through the center and progress in the opposite direction.

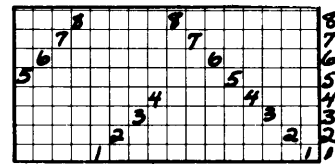


Fig. 9

Skip twill or offset twill Fig. 10

Progress around the circle in one direction, stop at any number, cross the circle (not usually through the center) skipping one or more numbers and progress either in the same or in the opposite direction.

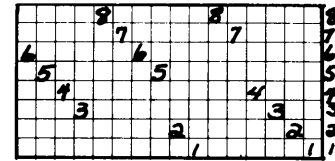


Fig. 10

Undulating twill Fig. 11

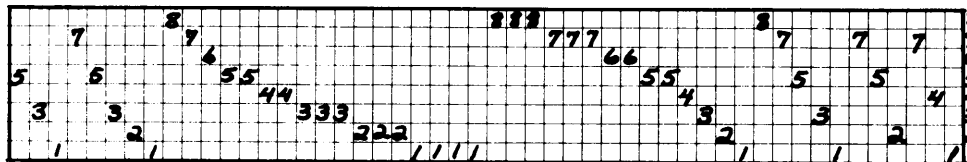


Fig. 11

Progress around the circle making skips that are gradually smaller, then progress without skips, then call off the same number two or more times. When these numbers are plotted in the threading draft, they should line up in a smooth curve.

TIE-UP

The twill tie-ups for a given number of harnesses follow definite rules. If the number of harnesses is n, the weft may float over 1 (symbolized by $\frac{1}{1}$), over 2 ($\frac{2}{2}$), over n-1 ($\frac{n-1}{n-1}$) warp threads or under 1 (symbolized by $\frac{1}{1}$), under 2 ($\frac{2}{2}$), under n-1 ($\frac{n-1}{n-1}$) warp threads. The total number of floats has to add up to n. For example if n=14, the weft may float under 1, over 2, under 3, over 1, under 5 and over 2 warp threads and 1+2+3+1+5+1=14. See Fig. 12.

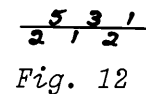


Fig. 12

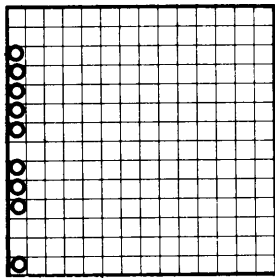


Fig. 13

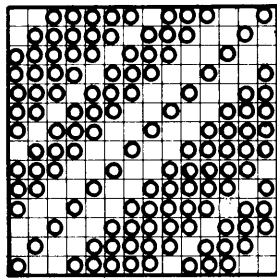


Fig. 14

Once the interlacement of one weft pick has been established, treadle 1 may be tied to the first harness, skip the next two, tie to the next 3 harnesses, skip 1, tie to the next 5 and skip 2. See Fig. 13. The other treadles are tied to weave the same pattern but there is a progression of 1 step. Compare treadle 2 with treadle 1. See Fig. 14.

The tie-up of Fig. 15 is also derived from Fig. 12. The progression is one step in the other direction. This changes the direction of the twill line.

The tie-up for $\frac{2 \quad 1 \quad 2}{5 \quad 3 \quad 1}$ would be the opposite of the tie-up of Fig. 14.

Note that $\frac{5 \quad 3 \quad 1}{1 \quad 1 \quad 2 \quad 1}$ and $\frac{5 \quad 3 \quad 1}{2 \quad 1 \quad 2}$ are the same twills.

Draft the tie-up for each!

Fig. 16 shows all the basic twill tie-ups for 8 harnesses.

Even or balanced twills: When the sum of the numbers above the line in drafts such as Fig. 12 equals the sum of the numbers below, the warp and weft will show equally in a 50/50 (as many epi as ppi) cloth.

Warp twill: When the sum of the numbers above the line is greater than the sum of the numbers below, the warp will dominate in a 50/50 cloth.

Weft twill: When the sum of the numbers above the line is smaller than the sum of the numbers below, the weft will dominate in a 50/50 cloth.

Recommended exercise.

On paper: Choose any of the tie-ups in Fig. 15 and draft the weave draft for threading 6, 7, 8, 9 and 11 using a straight 1, 2, 3, 4, 5, 6, 7, 8 treadingling sequence.

On the loom: set up a sampler with an 8 harness straight draw. Figure out the tie-up to weave rosepath on this threading. Make samples for several of the tie-ups given in Fig. 15. Make the twill line go to the left and to the right by reversing the treadingling order and study the relationship between the direction of the twill line and the twist of the yarn. See Oelsner, p. 20.

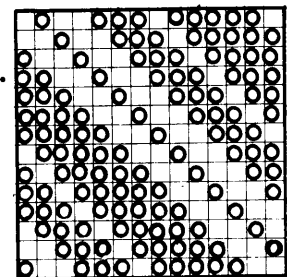


Fig. 15

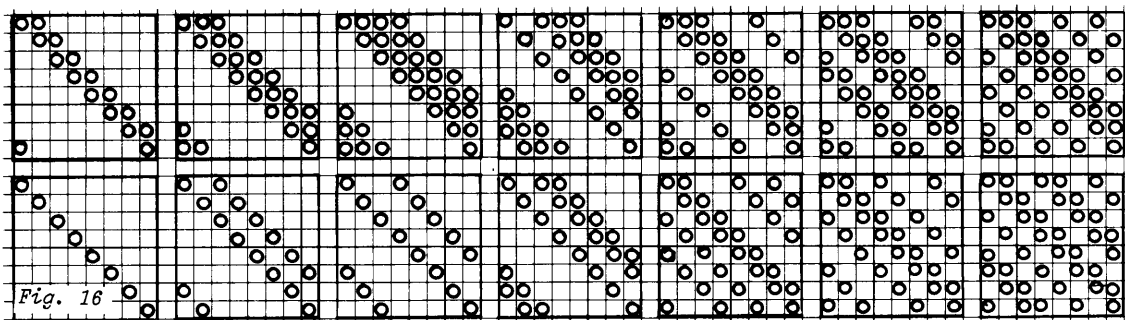


Fig. 16

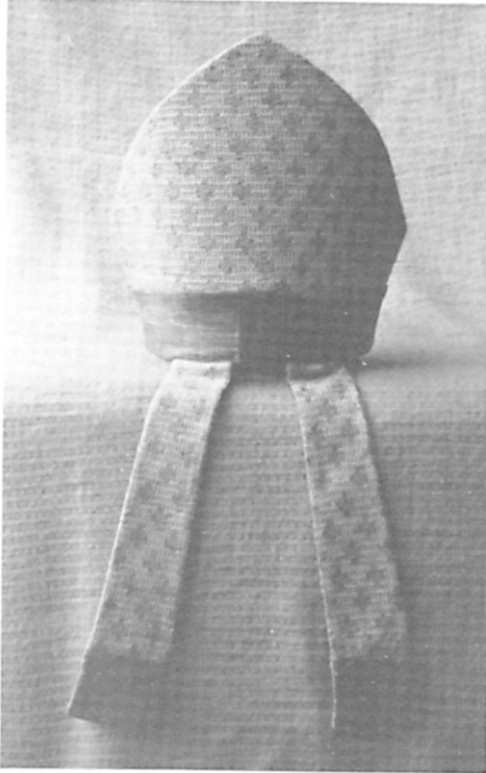


Plate 1
Backview of Miter

The Ecclesiastical Weavings of Dianne Lockwood

Like the Chasuble, the cope was originally a large weather cloak with a hood for covering the head. This vestment was in ceremonial use as early as the sixth century, when it appeared in a mosaic at St. Apollinare Nuovo, Ravenna, and at St. Apollinare in Classe. The primitive form of both chasuble and cope, the paenula, was varied in construction, sometimes open at the front and sometimes closed, with or without a hood. In the West the chasuble became confined to the celebrant at the altar, while the open form, or cope, came to be worn by others than the officiant, and at other times than the celebration of the Eucharist.

The hood of the cope was originally functional as a head covering, but by the fifteenth century it has become a mere token, a shield-shaped flap for the display of ornamentation.¹

A chasuble, a cope, two miters and two stoles comprise a set of silk vestments that I have been weaving for the Episcopal Bishop of Hawaii. Plates 1, 2, and 3.

I started the project by weaving twelve sample fabrics with cross designs in Summer and Winter weave. The bishop chose the sample illustrated in Plate 1 for the chasuble. The Greek cross design illustrated in Plate 2 was more suitable for the cope. While the chasuble can be woven in two parts, front and back, with a shoulder seam, the cope, as it drapes over the shoulder, will turn the crosses sideways. Therefore, all the arms of the crosses had to be of equal length for the fabric of the cope.

WARP: 4 ply fairly smooth silk noil.

WEFT FOR THE CHASUBLE: Tabby - smooth single-ply spun silk.

Pattern - natural tussah, used three-fold.

WEFT FOR THE COPE: Tabby - smooth single-ply spun silk.

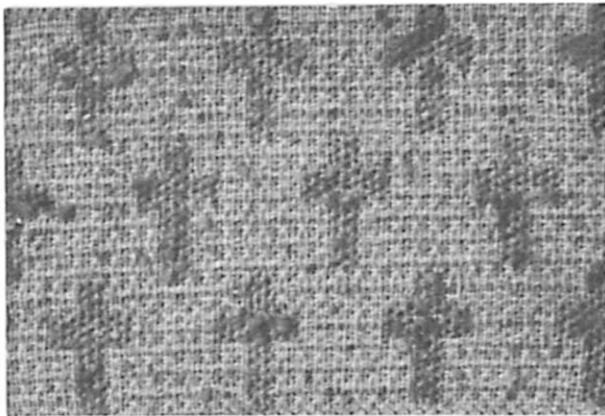
Pattern - several fine silks wound together

SETT: 24 epi (100/10 cm).

1. Reprinted from *"Textile Art in the Church"* by Marion P. Ireland; Abingdon Press.



*Plate 2 - Chasuble
Below - Fabric Sample*



*Plate 3 - Cope
Below - Fabric Sample*



WIDTH OF THE FABRIC: 61" (150 cm).

LENGTH OF THE WARP: 8 yards (7.33 m).

THREADING: See Fig. 1.

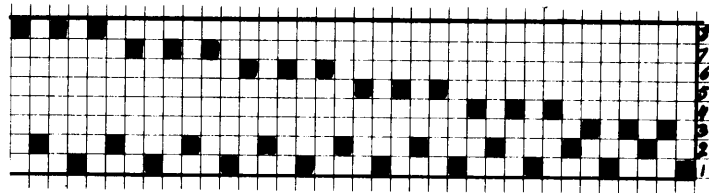


Fig. 1

Note: The Summer and Winter blocks are $1\frac{1}{2}$ units wide. Usually Summer and Winter blocks contain an integral number of units.

WEAVING OF THE CHASUBLE: See. Fig. 2

Part I ($\frac{1}{4}$ ")
lift Hs 1,3,5,6,7,8 pattern)
lift Hs 1,2 tabby) rep.
lift Hs 2,3,5,6,7,8 pattern)
lift Hs 3,4,5,6,7,8 tabby)

Part II ($\frac{1}{4}$ ")
lift Hs 1,6,7,8 pattern)
lift Hs 1,2 tabby) rep.
lift Hs 2,6,7,8 pattern)
lift Hs 3,4,5,6,7,8 tabby)

Part III ($\frac{1}{2}$ ")
Same as Part I.

Part IV ($\frac{1}{4}$ ")
lift Hs 1,3,4,5,6,8 pattern)
lift Hs 1,2 tabby) repeat
lift Hs 2,3,4,5,6,8 pattern)
lift Hs 3,4,5,6,7,8 tabby)

Part V ($\frac{1}{4}$ ")
lift Hs 1,3,4,5 pattern)
lift Hs 1,2 tabby) repeat
lift Hs 2,3,4,5 pattern)
lift Hs 3,4,5,6,7,8 tabby)

Part VI ($\frac{1}{2}$ ")
Same as Part IV.

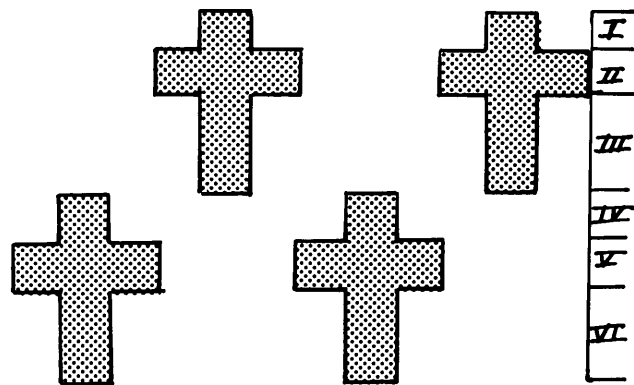


Fig. 2

The golden-tan vestments are decorated with ikat bands. See Figs. 3, 4, and 5. The shield of the cope which is attached with 5 buttons can be removed and interchanged with others. The design of the different shields is in accordance with the occasion and the season.

The ikat bands of the vestments and the stole are very colorful: Purple (the bishop's symbolic color), red and gold (the colors of the royalty in Hawaii in times past), colors of the earth, the sea and the rainbow. The bands are woven in a warp face plain weave.

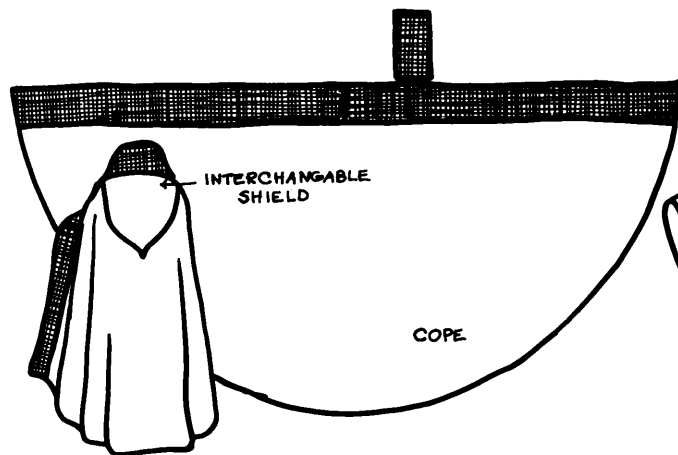


Fig. 3

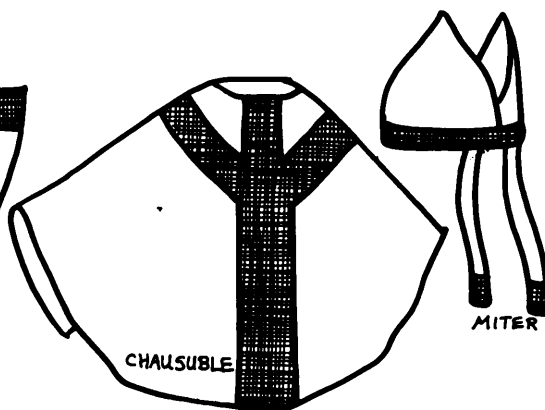


Fig. 4

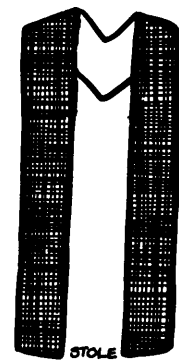


Fig. 5

WARP: Smooth spun silk, used three-fold.

WEFT: Double ply silk.

SETT: 30 epi (120/10 cm).

FOR THE CHASUBLE: Width of the warp, 8.5" (21.6 cm).
Length of the warp, 139" (3.54 m).

FOR THE COPE: Width of the warp, 6.5" (16.5 cm).
Length of the warp, 160" (4.06 m).

DYES: For the most part, Fazan.

The cope, the miters and stoles are lined with Habotai China silk. The stiff innerlining of the miter is heavy X-ray film.

The designs and techniques used in the shields will be dealt with in a follow-up article.



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Cotton Shirts

by Lynn Barnett-Westfall

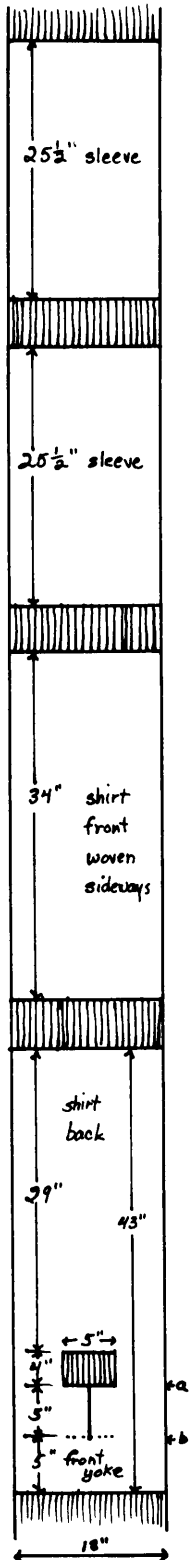


Fig. 1

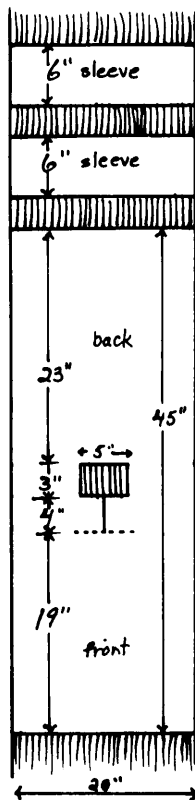


Fig. 2

PLATE 1 - LOOM-SHAPED COTTON SHIRT

WARP: 10/2 pearl cotton in seven shades of blue, burgundy and yellow.

WEFT: 10/2 pearl cotton, blue.

SETT: 24 epi (100/10 cm) in a 6 dent (25/10 cm) reed.

WEAVE: Plain weave.

PATTERN: See Fig. 1.

The neck area is shaped on the loom by weaving from a to b with two shuttles. The unwoven threads of the neck opening are sewn back in on themselves.

The sleeves are rolled up and tacked to form a cuff.

The shirt is completely handsewn. It is comfortable to wear in hot weather and washes well in the washing machine.

PLATE 2 - HANDSPUN COTTON SHIRT

WARP: 10/2 silk

WEFT: Handspun, natural dyed pima cotton; marigold gold, dandelion yellow, sumac berry gray, Queen Anne's lace medium green, parsnip dark green.

SETT: 6 epi (25/10 cm).

WEAVE: Plain weave

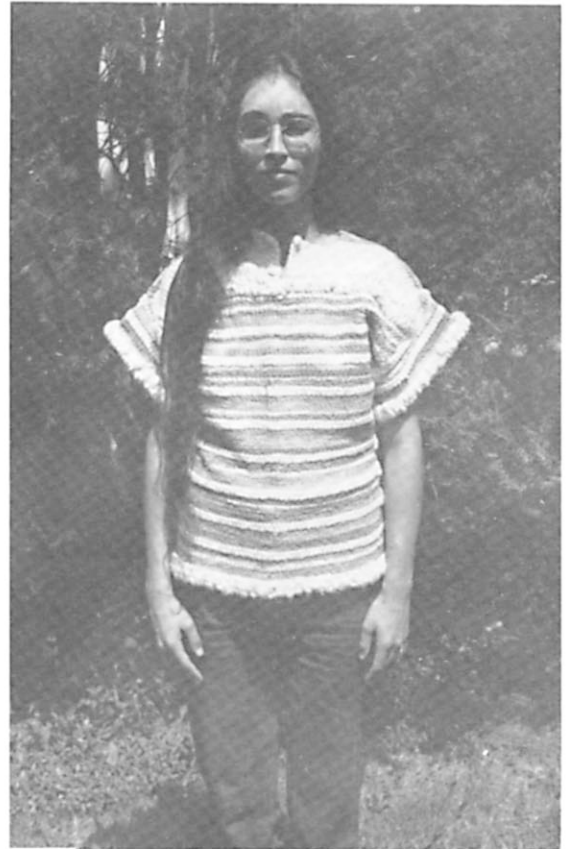
PATTERN: See Fig. 2.

The neck area is shaped on the loom by weaving with two shuttles. The unwoven threads of the neck opening and the warp threads of the sleeves and lower edge of the shirt are sewn back in on themselves.

The shirt is very soft and comfortable to wear, and has inspired me to grow my own brown and white cotton.



*Plate 1 - Loom Shaped Cotton Shirt
Woven by Lynn Barnett-Westfall
Modeled by Cathy Welch*



*Plate 2 - Handspun Cotton Shirt
Woven by Lynn Barnett-Westfall
Modeled by Cathy Welch*

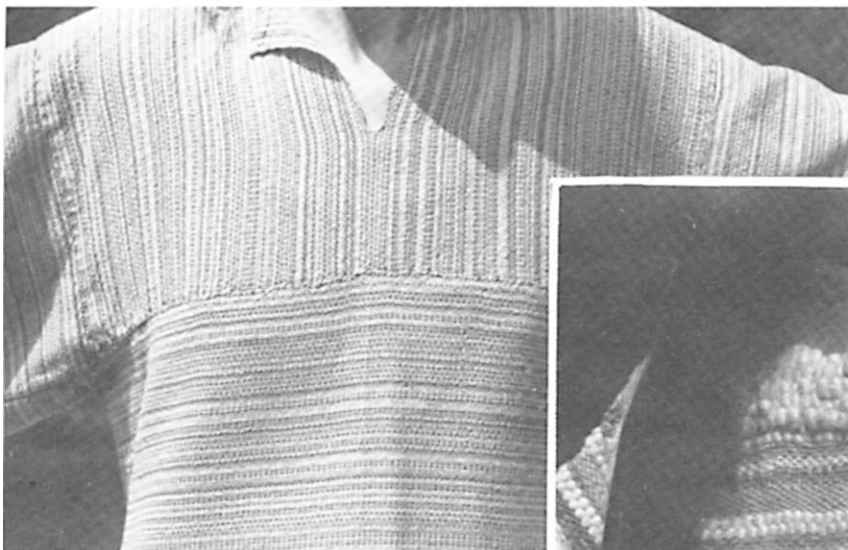




Plate 1

Twice Woven Bolero

by Iris Richards

Colorful narrow woven bands are interlaced in a plain weave to make this unique bolero. The bands for the bolero illustrated here are gros-grain ribbon but light weight inkle bands could be used as well.

MATERIALS NEEDED

Fabric for backing: firm but light weight fabric such as mulin or cotton blend.

Bolero pattern:
See Fig. 1.

Narrow bands or ribbons
Lining (optional)

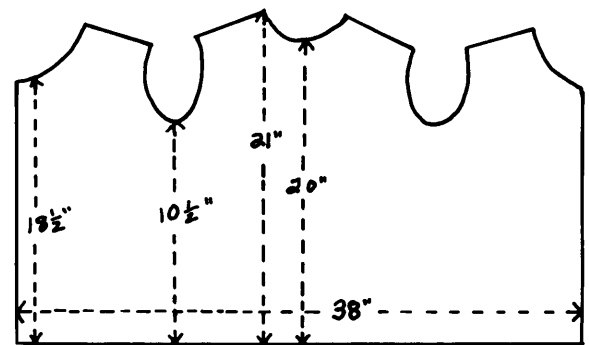


Fig. 1

WEAVING

Place the selvedge edge of the backing AB parallel to the long edge of a table. Using the shorter ribbons, pin their raw edges to the selvedge of the fabric. Vary the size and the color of the ribbons as desired. See Fig. 2. This is the "warp" of the twice woven fabric.

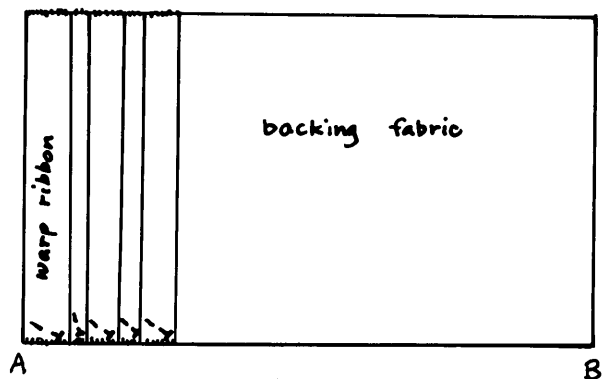


Fig. 2

Now, take the longer ribbons. Use them as "weft" and interweave them with the "warp." Pin the raw edges of the "weft" to the raw edge of the backing. See Fig. 3. Push each "weft" ribbon toward the selvedge edge as far as it will go. Machine stitch the ribbon fabric to the backing to replace the pins. Keep both fabrics flat.

CONSTRUCTION OF THE BOLERO

Pin the pattern on the fabric. Baste around the pattern,



Plate 2

then machine stitch around it. Cut the pattern out just outside the machine stitching and assemble the bolero. Line the bolero if you wish; otherwise, cover all the seams and edges with machine or handmade trim.

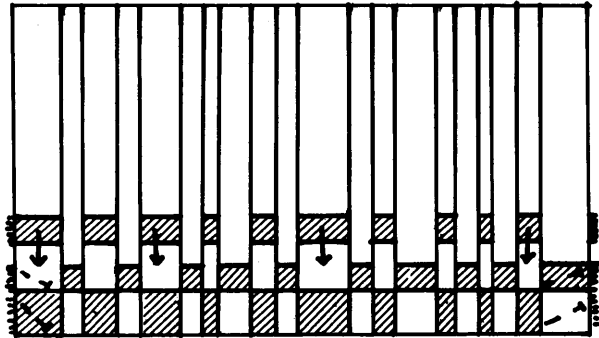


Fig. 3



by Olive and Harry Linder

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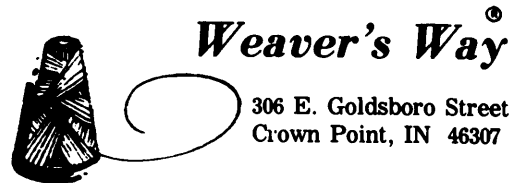
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Space-Dented Warp

by Laura Fry

My experiment with spaced denting started last spring when a windfall of 20 pounds of fine cotton slub came my way. Wanting to make the yarn last as long as possible, and also wanting to show off the yarn, I decided to try spaced denting.

I have experimented both with lace weaves and plain weave. For the lace weaves I tried the "Very Open Lace Weave" on p. 95 in M. P. Davison's *A Handweaver's Pattern Book*¹ and some huck weaves from Evelyn Neher's book *Four Harness Huck*². As it was difficult to determine the correct sett for the lace fabrics, I decided to experiment with spaced denting in plain weave.

Plate 1 shows two different pieces of yardage in plain weave. On the left, the warp is cotton slub and the weft is the same. On the right, the warp is cotton slub and the weft is boucle. I used a ten dent reed and various denting orders; e.g.

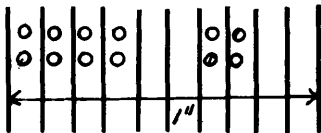


Plate 1

When this yardage was used for scarves, it was hand washed in cold water and hung to dry after the fringes were knotted. When it was used for

making garments, the yardage was put into the washing machine for a 2-minute cold wash and rinse, then machine dried on the delicate setting and ironed with a cool iron. My seamstress then enclosed all the raw edges of the seams.

Plate 2 shows a garment made with plain weave space-dented fabric. The warp and the weft are fine cotton boucle. I used a 10 dent reed and the following denting order:

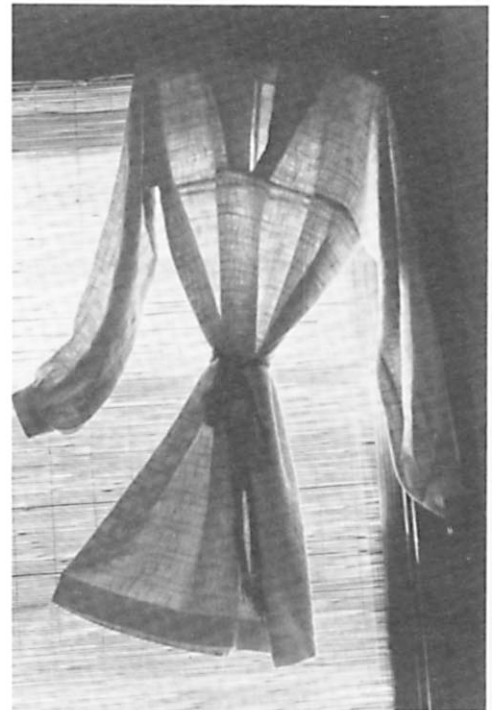
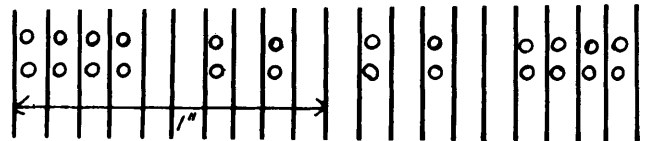
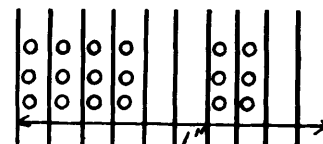


Plate 2

Plate 3 shows a space-dented plain weave fabric. The warp is 2/20 mercerized cotton and the weft is an orlon boucle. The warp is sett at 18 epi and a heavier boucle weft was used in order to achieve a textured fabric. I used a 10 dent reed with the following denting order:



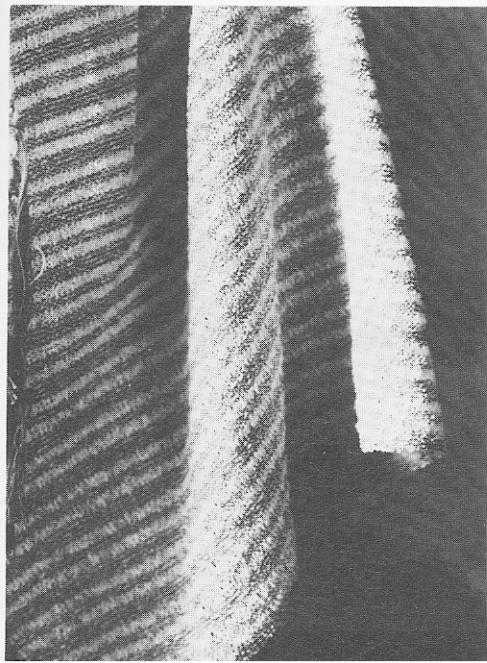


Plate 3

The gauze effect given by the spaced denting is very attractive and is surprisingly cohesive. Although it is slightly prone to snagging, the threads can be carefully worked back into place if they are not broken. An added benefit is a very nice hand to the fabric which is appealing for garments. I look forward to experimenting with other fibers and combinations.

1. Davison, Marguerite P., *A Handweaver's Pattern Book* 1944 Ninth Printing, 1971 M. P. Davison, Swarthmore, PA
2. Neher, Evelyn, *Four Harness Huck*



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Plate 1

A growing interest in our cultural heritage characterizes the beginning of our second century as Canadians. Museum, art gallery and guild exhibitions featuring displays and demonstrations of traditional crafts are well supported. Restored "heritage" houses contain fine examples of 19th century needlework and weaving. Heirloom hand-made quilts and handwoven coverlets are of special interest to me and heighten my awareness of the beauty of early Canadian textiles.

"Overshot" is a typical coverlet weave and a favorite because of its special characteristics. Three areas of color make up the design. The proportion of areas of solid pattern color, solid background color and half-tone color constantly change. It is fun to see the circles, diamonds, squares, and diagonal curved lines grow and develop the all-over pattern as the shuttle flies and the web grows. It is a versatile weave - interesting to research, draft and treadle.

When contemplating a contemporary use of a traditional weave I was attracted by the current popularity of quilted fabrics in fashion. Why not try combining the ancient art of quilting with traditional overshot weaving?

When preparing quilts we draw curved and diagonal lines on the quilt top fabric. Quilting is then done along these lines to make the design. Why not weave the design and let the weave provide the lines for quilting?

Turning the pages of *A Handweaver's Pattern Book* you will discover numerous weaves suitable for this

A Heritage Project: Quilted Vest

by Lorna J. King

use: twill combinations, barleycorn and crackle as well as large and small overshot. Larger overshot patterns such as "Wandering Vine" (also known as "Cat's Track" and "Snail's Trail") give sweeps of curved lines which seem to invite quilting! Threads to be used and the use of the quilted fabric will influence your choice and the size of pattern. Exciting contemporary original quilted fabrics may be the result of interesting experimentation on your part.

Hand quilting seems most suitable for handwoven fabric. However, since quilting can be considered as a technique of clothing construction, machine quilting could be considered acceptable by purists among handweavers!

Hand quilting is subtle and does not detract from the handwoven design. Machine quilting is more defined; the garment appears more obviously quilted and one's attention is drawn to the quilting. The choice is yours - the method of quilting to be determined by the design itself, the final use of the quilted fabric and the personal preference of the weaver and quilter.

The project shown in Plate 1 is a quilted woven vest. The vest pattern chosen is a simple one with no darts or extra seaming to produce bulk and distort the woven design. The extended shoulder sits up nicely in the quilted fabric and the wide neckline is comfortable to wear. I prefer to wear the vest over a sundress. The commercial pattern suggested wearing it over a long-sleeved peasant blouse. The front panels meet at center front and two ties of "Idiot's Delight" woven braid using the blue wool of the pattern weft are used as fasteners over concealed hook and eye closures. On all edges a small amount of edge quilting was removed, the edges were turned in on themselves and slip hemmed. This vest could be reversible.

Before winding the warp the vest pattern was chosen and the pattern pieces were carefully measured. Extra length and width was allowed for fastening the fabric to the crib quilt frame and for take-up in quilting. Because the woven design was small, allowance for matching was minimal. Double the required length was woven. After the first half was woven in overshot for the top layer the second half was woven in plain weave for the bottom layer.

The overshot pattern chosen was Weaver Rose's "Primrose in Diamonds". The loom was set up at 30 threads per inch (120/10 cm) because I preferred the smaller circle this setting produced. However, samples set up at 24 ends per inch (100/10 cm) puffed out more when quilted. I would suggest that you experiment with different settings and quilt a sample before starting your project.

cured between the layers by basting at the edges. When mounted on the quilt frames quilting was done in rows. The diagonal was only quilted between the circle units. This made the circles puff and accentuated the little design. (If machine quilted the stitching would have to go right through these circles.)



Fig. 1

Warp: 2/16 white cotton

Weft: tabby - 2/16 white cotton
 pattern- 2/20 blue worsted wool,
 double

Sett: 30 epi (double sleyed in a 15 dent reed)

Threading and tie-up: "Primrose and Diamonds",
 Ref: M. P. Davison, *A Handweaver's Pattern Book*
 p. 146, See Fig. 1.

Treading: For top layer of the vest, alternate a tabby pick and a pattern pick. The basic treading sequence for the pattern picks is:

Tr. 4 (3X), tr. 1 (7X), tr. 2 (3X), tr. 1 (3X),
 tr. 4 (3X), tr. 3 (7X), tr. 4 (3X), tr. 1 (3X),
 tr. 2 (3X), tr. 1 (7X), rep., but the repeats are adjusted so that true circles are formed.

For the bottom layer of the vest, weave tabby.

Filling: Terylene quilt bat.

The fabric was "finished" before quilting by the "London Shrink" method. To do this sheets were wet and put through the spin cycle until nearly dry. The woven fabric was placed between the sheets, rolled up and left for several hours or overnight. The fabric was pressed on the wrong side over towelling. This method of shrinking greatly improved the fabric. The weave was compacted and quilting was easier because the fabric was softer.

The material was folded crosswise in half and a single layer of terylene quilt batting was se-

Hints for machine quilting after a garment has been cut were suggested by a commercial pattern company. One inch extra should be cut on edges of all pieces to be quilted. After quilting the pattern can be relaid and extra fabric cut away before sewing construction begins. To bind the two layers of fabric securely during machine quilting fuse the edges using strips of fusible material such as "Stitch Witchery". Care needs to be taken so that areas to be quilted are not fused! When machine quilting large pieces stitch from the center out and always in the same direction. As you experiment you will probably come up with tricks of your own!

Some suggested uses for quilted handwoven fabric:

- Cuffs and collars on housecoats
- Tabards
- Vests and jackets
- Evening glamour jackets - using metallic threads
- Center panel for a bedspread - side panels woven with warp and weft same color as pattern thread and gathered onto the center panel with cording.
- Wrap-around skirts - edges bound with braid
- Jewel rolls
- Scuff slipper uppers
- Baby crib covers
- Oven mitts
- Hot plate mats
- Placemats - oval shape with edges bound with tape or solid color backing fabric. Could be reversible with colors to match tableware.
- Eyeglass cases
- Tea cosies
- Purses or bags - or panels inserted in bags.

ANNOUNCING

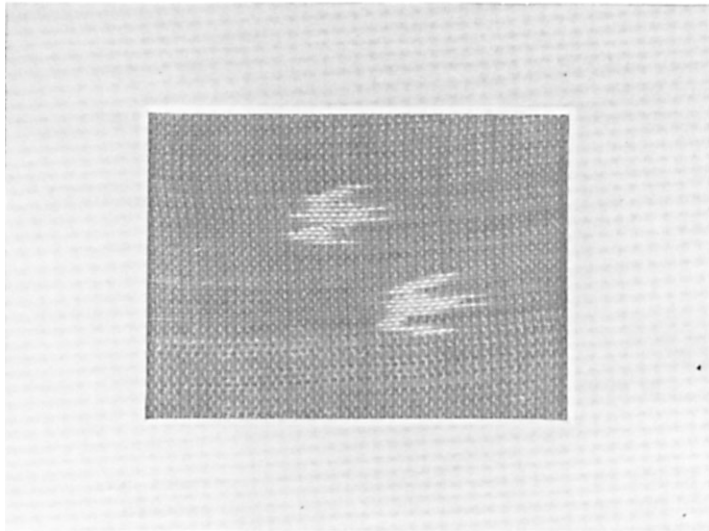
The Weaver's Journal Monograph No. 3

SHADOW WEAVE AND CORKSCREW WEAVE

by Clotilde Barrett

Understand an exciting and creative weave that can be explored on 4 and more harnesses. Unique color effects are possible - and the techniques lend themselves well to fabric for GARMENTS, RUGS, WALLHANGINGS, UPHOLSTRY and MUCH more.

Will be available in January, 1980. Price: \$5.00 plus 50¢ handling



*Greeting card by Mary Pendergrass.
Kasuri with indigo on cotton*

Indigo Dyeing and the Problems of Crocking

by Mary Pendergrass

Yarn that has been dyed with indigo by means of the traditional reduction-oxidation process often exhibits some degree of "crocking." "Crocking" can be seen when friction is applied to the dyed fiber and the indigo rubs off. This problem of crocking exists with cotton, linen, silk, wool and other fibers. It seems more a characteristic of the method of dyeing than of the

specific fiber being used. In this article we will discuss several methods for correcting the "crocking" if it is a problem.

To minimize this phenomenon, it is important to understand and effectively prepare and use the indigo vat. It is also helpful to finish the yarn by taking it through several more steps.

Indigo must be chemically reduced, that is, the oxygen must be removed. The dye in this reduced state is called indigo white. It is then put into solution before it can properly attach itself to a fiber. Next, wet fiber is introduced into the dyebath and soaked in the dye solution. The dye molecules attach themselves to the fiber in their reduced state. Finally, the fiber with the attached dye is aired and the dye allowed to oxidize. In this manner the characteristic blue color is obtained.

If too much oxidized dye is present in the bath, the dye does not attach itself to the fiber and just washes out or rubs off later. This excess crocking occurs in addition to the normal tendency of the attached molecules to wear off. The normal rubbing off or crocking is ever in evidence in indigo dyed jeans that usually lighten first in areas of high wear (for example, around knees and pockets).

The amount of unattached indigo that will wash out or rub off can be reduced by a careful review of the dye method used.

(1) The dye vat must be prepared carefully and the dye reduced properly. A green-blue colored vat indicates that the vat has much air and unreduced dye in it. Your vat should be a clear yellow color.

(2) Add only 1/4 to 1/5 of your stock solution to the prepared vat. For better color fastness it is better to dip more times than to increase the dye content of the vat.

(3) Take care not to introduce air into the vat when stirring and introduce all fiber to be dyed well wetted.

(4) Allow ample time for the fiber to soak in the vat (thirty minutes is often recommended).

(5) Allow the dyed fiber ample time to oxidize between dips (again, thirty minutes is recommended as minimum oxidation time. And allowing the yarn to completely dry between dips increases colorfastness).

Having successfully completed the dyeing process, there are several additional finishing steps that will help alleviate the crocking problem.

(1) Soak your dyed yarn in a solution of 1/2 teaspoon of the alkali used in your dye vat per 2 gallons cold water. For example, if you used the Zinc/Calx bath, make a solution of 1/2 teaspoon Calx and 2 gallons of cold water. Soak the skeins of dyed yarns just a minute and then rinse with cold water.

(2) Next, rinse the dyed fiber in a solution of 1/2 ounce vinegar and 1 gallon of cool water for 15-20 minutes. This step neutralizes the effects of the alkali upon the dyed fiber.

(3) "Soap" the fiber next by placing it in a bath prepared of water and mild soap (not detergent). Bring this bath to a simmer over heat and simmer for 15 to 20 minutes. Rinse the fiber well and dry.

The care taken in dyeing your fiber with indigo and a few extra minutes spent in finishing the skeins will be rewarded by some of the loveliest blues from the dye pot.

Some favorite indigo dyeing recipes follow:

INDIGO CALCIUM HYDROXIDE/ZINC RECIPE (suitable for cotton)

The following dye recipe, using synthetic indigo, is used in Japan to dye Kimono lengths of fabric. The solution is susceptible to depletion with continued use and relates to not only the amount and absorbency of the material being dyed, but also to the amount of stirring and the number of dips needed to achieve the desired shade of blue. For this reason, it is difficult to give an exact estimate of the quantity of dye needed for any given project. However, based on experience, the amounts listed below should dye approximately 20 lbs. of medium weight cotton fibers. It is possible to cut the recipe to 1/2 or 1/4 or whatever quantity is needed.

Equipment needed:

An accurate scale to measure grams or ounces.
10 quart enamel pot, as deep and narrow as possible.
Glass measuring cup.
Thermometer (candy or chemical).
Dowel or glass rod for stirring.
2 stainless steel or plastic spoons.
2 beakers or wide-mouth canning jars.
Plastic trash can - 26 to 32 gallon capacity with lid.
Dowel 4 feet long for dyebath.
Clothesline or drying rack.
Plastic basin or large pot for rinsing and carrying skeins.

Recipe

A. Stock Solution: (ratio 5:10:3)

<u>indigo</u>	<u>calx</u> (calcium hydroxide)	<u>zinc</u>
100 gms. (3-1/2 oz.)	200 gms. (7 oz.)	60 gms. (2.1 oz.)

Water - For every 60 grams of dyestuff, use 1 liter of water, i.e., 6 liters given the amounts above.

B. Basic Bath: (ratio 10:3)

<u>calx</u>	<u>zinc</u>
100 gms. (3-1/2 oz.)	30 gms. (1-1/4 oz.)

Water - For every 1 gram of calx, use 1 liter of water, i.e., 100 liters (approximately 26 gallons + 7 cups) given the amounts above.

Method

A. Stock Solution:

Measure the amount of water needed in the enamel pot and place on the stove to heat slowly to 90-140°F. Measure dry ingredients and mix calx and zinc in a glass jar with enough cold water to make a soft paste. Mix indigo in another glass jar with enough methyl alcohol to make a soft paste.

Dissolve the indigo paste in the heating water when it is between 90° and 100°, and stir until all lumps have disappeared. Add the calx/zinc paste and dissolve completely. Stir for 5-10 minutes without aerating the solution until the liquid reaches 140°F. Remove from heat. Cover and allow to settle for at least 4-5 hours before adding to the basic bath.

B. Basic Bath:

Measure calx and zinc with enough water to make a soft paste. Place this mixture into the 100 liters of cold water (in plastic trash can) and stir for a few minutes until completely dissolved. Cover and allow to settle for at least 4-5 hours before combining with the stock solution.

After both baths have settled for at least 4-5 hours, mix 1/5 of the stock solution (in this case 1.2 liters of the mixture) with the basic bath and stir without aerating until completely blended. Allow to settle for an additional 5 hours before using. If the dyebath appears to be exhausted, more of the stock solution can be added to the basic bath.

Dyeing

Submerge wet skeins taking care that they do not touch the sediment in the

bottom of the bath. Squeeze the fibers in the dyebath to aid absorption especially around the tied portions so that the dye penetrates equally. Squeeze out the excess dye below the surface to avoid oxidation. One dip in the dye will produce a shade of light blue. Repeat the procedure until two shades darker than the desired color is achieved (6-8 times for darker shades).

Rinsing

To increase colorfastness, rinse the skeins in a solution of 1/2 tsp. calcium hydroxide to 2 gallons cold water (made in advance like solutions A and B). Then rinse the skeins in cold water until water is clear. Squeeze out water, untie and dry. Another way of achieving even greater colorfastness is to dry the skeins completely before each successive dipping.

In Japan, a prepared vegetable dye substance called "Shibuki" (a peach tree bark) is also used in a rinse solution to modify the red overtones which invariably accompany an indigo blue.

The Life of The Indigo Bath

The life of the indigo bath depends upon the strength of the indigo dyestuff and the extent to which the bath is used. The latter involves a ratio between the number of people using the bath, the number of separate dips made by each person, and the quantity of material being dyed in one day. Obviously if these numbers are high the bath will exhaust itself very quickly. Ideally, the bath is used daily and cared for meticulously as described below. If the bath is not used on a particular day, it should still be stirred well from the bottom to release sediments and 1 Tbsp. calx should be added to the stirring. If well cared for an indigo bath should last more than six months.

Caring for The Bath

Before each use, strain flower (scum) from the surface and save until dyeing for that day is finished.

If bath still seems strong after dyeing, pour back the flower and sprinkle 1 TBsp. calx into the bath and stir thoroughly from the bottom of the bath - moving the stirring stick vigorously always in the same direction so as not to agitate the bath anymore than necessary.

If bath seems weakened after dyeing, follow the steps above but add 1 tsp. zinc as well as calx and stir well.

AFTER STIRRING ALLOW THE BATH TO REST OVERNIGHT BEFORE USING.

If the next day the bath still seems weak even after calx and zinc were added, the bath needs to be revitalized with another addition of stock solution. The solution should be added, the bath stirred and allowed to rest overnight without being used.

Note: This recipe was published in "Ikat: An Introduction" by Diane Ritch and Yoshiko Wada and is reprinted with the permission of the publisher. "Ikat: An Introduction" is available from Kasuri Dyeworks, P.O. Box 7101, Berkeley, CA 94707.

INDIGO HYDROSULPHITE VAT (suitable for wool)

Materials needed

- 1 large earthenware or stoneware crock or a wooden keg or a large white enamel container
- 1 thermometer
- 2 ounces (57.5 g) sal soda (sodium carbonate)
- 1/2 ounce (14 g) indigo - powdered
- 2 ounces (57.5 g) hydrosulphite (or a little more)
- 1 pound (454 g) of washed wool

To make the stock solution

Fill a large mouth half-gallon glass jar about 3/4 full with warm water, about as hot as you can hold your hand in, and put the jar in a warm place but not over a hot fire. Dissolve the sal soda in this water.

Mix the indigo with enough warm water to form a paste. Add this to the sodium carbonate and water. Stir.

Add the sodium hydrosulphite slowly a little at a time (1/2 hour or more). The dye will turn from blue to green to yellow with a little coppery scum. Allow the dye to stand for one hour or more. This is your stock solution.

Directions for dyeing

Soak the clean wool in water as warm as your hand or a little warmer. Fill a large stoneware crock 3/4 full with warm water (about 100°F.)

Add a small amount of hydrosulphite which has been dissolved in a little warm water. Let it stand one hour.

Add to the dyepot 1/4 to 1/2 cup of the stock solution. Immerse the wet wool and allow it to stand in the dyebath for 15 minutes. Remove the wool from the bath and allow to air for 30 minutes. The wool will turn from yellow to green to blue. Immerse the wool in the dye bath for 30 minutes and let it stay for 30 minutes. Air it for 30 minutes. Repeat this step as many times as necessary to obtain the desired color of blue. Add more stock solution as necessary and add more warm water as needed.

Finish the skeins as described in the article to neutralize the alkali.

Note: This recipe was published in "Magic in the Dyepot", Santa Fe Natural Dye Workshop, August 1961. Mable Morrow, coordinator.



Computer Weaving

by Clotilde Barrett

More and more people are geared to utilize the technology of computers in their every-day life because the availability of microcomputers has brought these systems into many households. People use them to play games, to file recipes and addresses, to take care of household accounting, and even to create and study weaving patterns.

Computer weaving can be a hobby in itself, even for people who do not have a loom. Computer weaving is a dialogue between the operator and the computer which will result in a display of patterns that can be woven but may never be. It can be an educational device used to teach oneself and others the effects that variations in threadings, tie-ups, treadlings and color have on a woven textile. It can speed up the experimentation with patterns and design and it can also be used as a filing system for weaving drafts.

Microcomputers are remarkably small; they look very much like a typewriter, keyboard and all. Inside the casing there is an assemblage of technological wonders: a microprocessor, memory chips and much more. A personal microcomputer system usually also includes a T.V. monitor so one can watch on the screen what is happening. Information is fed into the computer via the keyboard and



Plate 1

received from the computer via the T.V. screen, but when the information (such as the weaving program itself) is stored on tape or on a disk it has to be fed into the computer by means of a cassette tape recorder or a disk drive. See Plate 1.

Two microcomputer experts, Bruce Bohannon of Boulder and Howard Harawitz of Berkeley, have, independently, spent many hours developing programs for weaving enthusiasts who have access to an "Apple II". Apple II is currently one of the most popular personal computer systems. Their programs come on diskettes and have to be loaded via a disk drive into a 32 K or more memory "Apple II" computer. Written instructions on how to do this and other useful information and advice are furnished with the diskette. Once the program is loaded into the memory of the computer, step by step instructions on how to use the program appear as printed text on the T.V. monitor. These steps include:

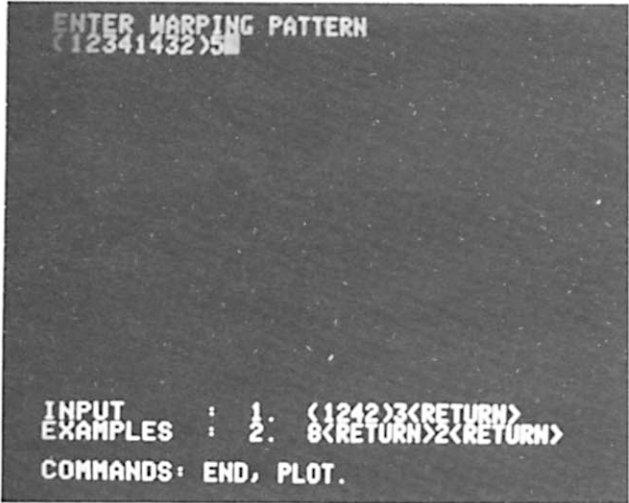


Plate 2 - Warping (Bohannon)

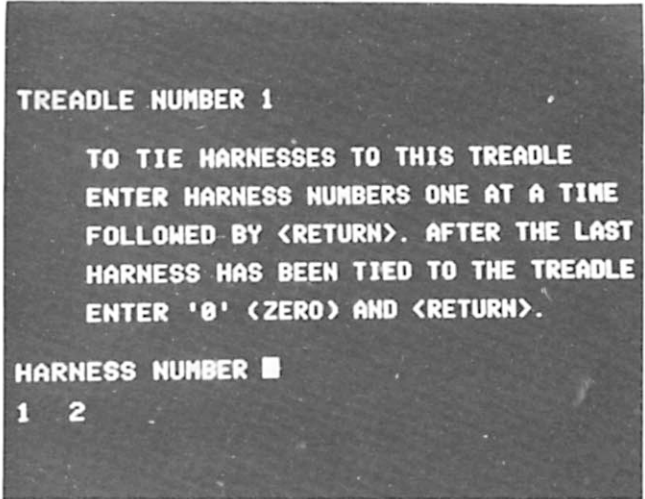


Plate 3 - Tie-up (Harowitz)

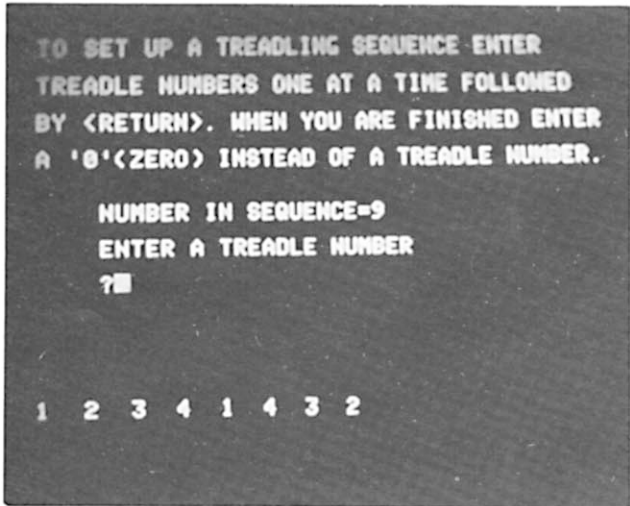


Plate 4 - Treadling (Harowitz)

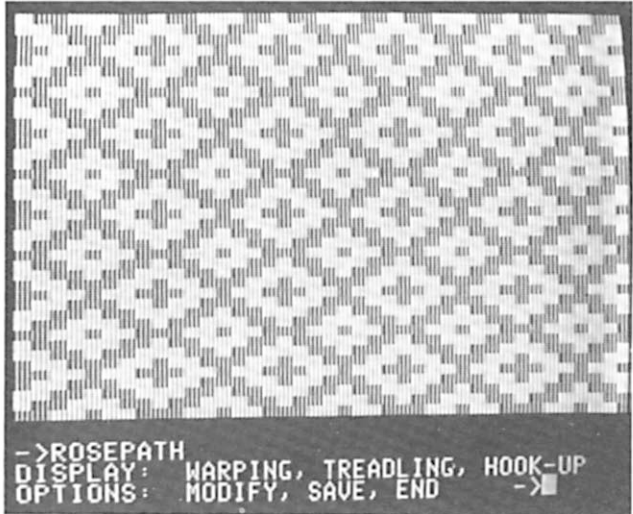


Plate 5 - Plot (Bohannon)

Warping the loom: By means of the keyboard one tells the computer what the threading order is. For "rosepath" the operator types in 1, 2, 3, 4, 1, 4, 3, 2 (repeat).

Tie-up: Next to each treadle number one types the names of the harnesses to be lifted. This gives a listing of the different sheds that will be used for the weave. For "rosepath" the operator types in

```

1 2
2 3
3 4
4 1

```

Treadling: Now one tells the computer the order in which the treadles will be used. For "rosepath" the operator types in 1, 2, 3, 4, 1, 4, 3, 2 (repeat).

Plot: This is the fun part, when the cloth weaves itself on the screen.

Save: This is the option of saving the weave. It is just like saving a sample in a work book. After giving the weave a name, it is transferred to a

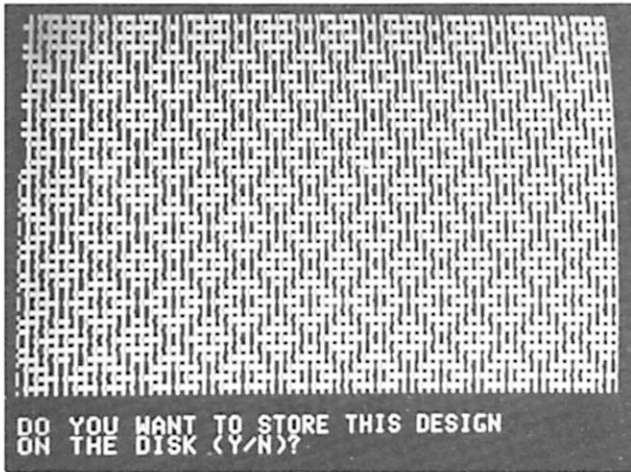


Plate 6 - Simple rosepath Plot (Harawitz)

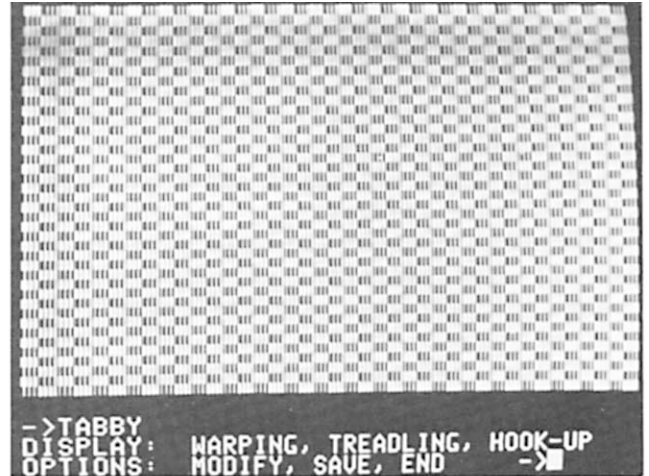


Plate 7 - Tabby (Bohannan)

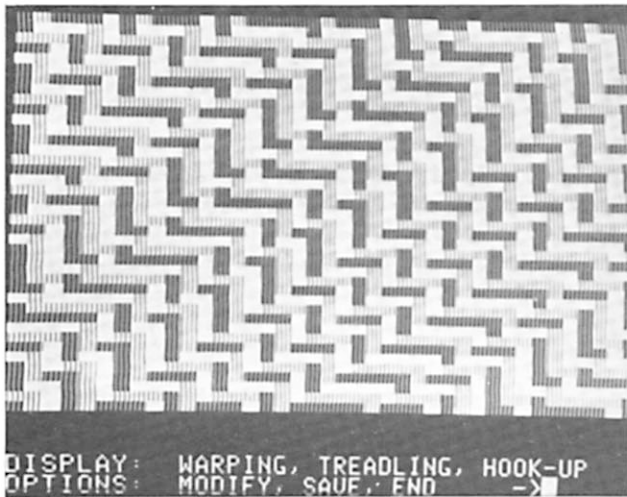


Plate 8 - color and weave effect with 3 colors (Bohannan)

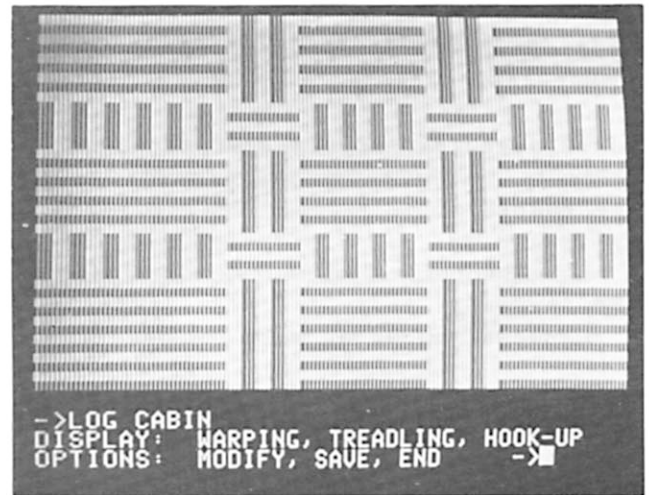


Plate 9 - Log Cabin (Bohannan)

disk from which it can later be recalled.

These are the major parts of a program. There are many other aspects of weaving that can be handled through computer weaving. However, these are dealt with in different ways by Bohannan and Harawitz; therefore, each program will now be discussed separately.

WEAVER - COMPUTER PROGRAM BY BRUCE BOHANNAN

Largest possible number of warp ends: 40

Largest possible number of weft picks: 40

The weft picks are slightly thinner than the warp ends, thus the pattern is not perfectly squared but can be read as if they were on graph paper. See Plate 7. The size of the warp and weft threads cannot be varied. Basically the weaves produced by this program are 50/50, e.g., as many epi as ppi.

If one has a color T.V. monitor, a palette with a choice of 15 colors is shown from which to pick color sequences for both the warp and the weft. A black and white monitor will show shades of grey. See Plate 8.

The "size of the loom" is limited by the number of harnesses: 24.
Advantages of "Weaver" The instructions are easy to follow; this makes the program operable by anyone without computer skills. The program produces good weave drafts (these are graphic illustrations of the interlacement of warp and weft) with great ease and speed. One just tells the computer to plot the weave with an all black warp and all white weft and presto....the conventional form of the weave draft appears on the screen.

Color effects can be studied easily. To go from the weave draft (Plate 7 for tabby) to color effects, only two changes have to be made in the input: The color of the warp is replaced by the new color sequence, and the same with the color of the weft. The effect of the color is then graphically plotted. Plate 9 shows Log Cabin, which is a color and weave effect derived from Plate 7.

When a weave is saved on a diskette, both the data and the graphic representation of the weave are saved. Both can be recalled from the filing system.

VIDEO LOOM - COMPUTER PROGRAM BY HOWARD HARAWITZ

This program uses a special capacity of the computer called "high resolution graphics". When this capability is used, some things are gained but some things are lost too.

Largest number of warp ends: 70.

Largest number of weft picks: 160.

The thickness of the warp ends is established by the program and there are spaces between them. Plate 10. The thickness of the weft pick can be chosen by the weaver. It can be chosen with or without spaces between picks.

With a color T.V. monitor, a palette with a choice of 6 colors is available.



Plate 10 - Warp (Harawitz)

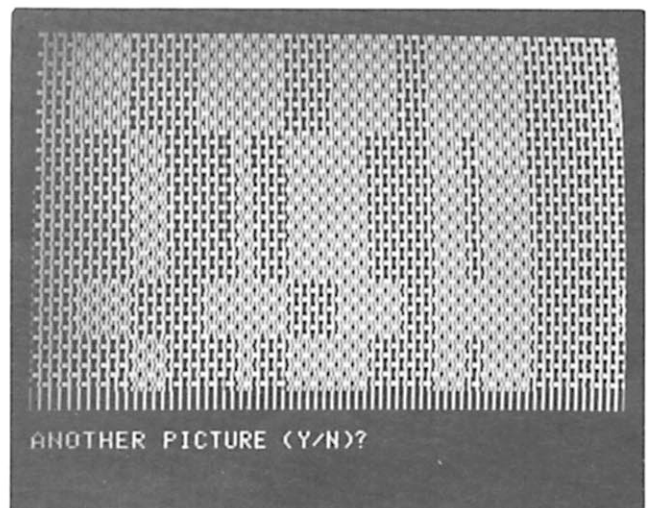


Plate 11 - S & W (Harawitz)

The warp is a solid color. A color sequence may be selected for the weft. A black and white monitor is not very sensitive to the tones of the colors.

The "size of the loom" is limited by the number of treadles: 16.

Advantages of "Video Loom": The instructions are easy to follow. The program can be operated by anyone who understands weaving terminology. Because of the larger number of warp ends one can use this program to design with "blocks". However, because only the weft can have a selected color sequence and because more weft picks are available than warp ends, it is often necessary to "turn" the weave in order to put it on the computer. For example: For the study of a two-block Summer and Winter design with color in the warp, the weave was turned, i.e., the treadling sequence of the pattern weft was fed into the computer as a warp threading. The threading and color order of the warp was fed into the computer as a treadling pattern and color order in the weft. It worked, but it required a bit of planning.

Another advantage of this program is that the plotting of the weave can be stopped to make changes in the tie-up, treadling, etc. It is little bit like weaving a sampler on a loom. After a few inches one can stop weaving, change the tie-up and then go on.

In conclusion, it has to be said that both Bohannan and Harawitz have come up with ideas that certainly will affect the thinking and working methods of some weavers. These programs do not duplicate but truly complement each other. Let's hope that more microcomputer experts remain sympathetic to the weaver's drafting problems and contribute programs for their education and their entertainment.



Accessories:



Woven Clogs

A left-over piece of off-white plain weave fabric was used to make these clogs. For the cloth, a variety of textured yarns was used. The warp was sett at 10 epi (40/10 cm). The canvas taken from a pair of wooden clogs was used for the pattern. The woven fabric was lined with a smooth, strong lining. The sides were turned under and tacked to the wooden soles with fancy upholstery tacks.

Man's Scarf

There is more to weaving a successful man's scarf than meets the eye. Above all, the scarf has to feel soft to the skin; but almost as important are the color and texture. They have to cry out "this is a handwoven scarf designed for a man". The wool scarf shown in Plate 1 is quick to weave on a 4 harness loom and is sure to please.

WARP: Navajo rug wool from Sugarloaf Fibers (Boulder) in white o, light grey x, dark grey * and brown ■. This is a soft single yarn similar to, but thinner than, Lopi.

American Pioneer yarn from Menlo Woolen Mills, brick red R.

WEFT: Navajo rug wool, brown.

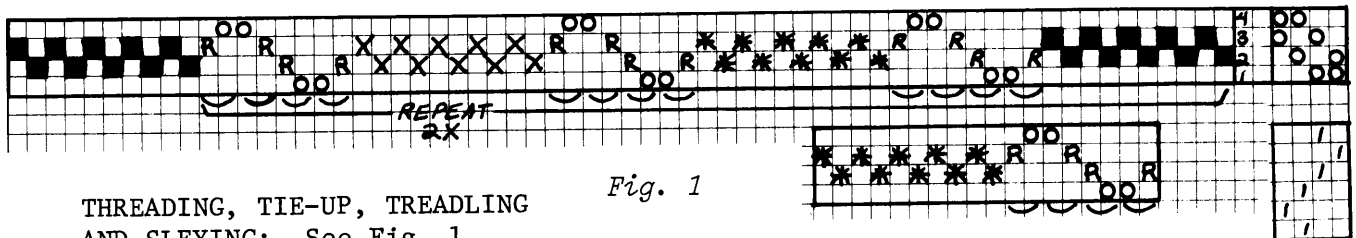
REED: 8 dent (30/10 cm) reed.

SETT: See the sleying diagram of Fig. 1.

WIDTH IN THE REED: 13½" (32.6 cm).



Plate 1



THREADING, TIE-UP, TREADLING
AND SLEYING: See Fig. 1.

Fig. 1

⤿ means that the threads are sleyed in the same dent.

The fabric has stripes of plain weave and textured stripes of huck lace. The weft is beaten in lightly and weaves a fabric in which the warp dominates.

FINISHING: Machine stitch on top of the first and the last weft pick. Handwash in cool water with soap and water softener.

IRISH LACE
80% Cotton 20% Linen

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or Inquire at Your
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Plate 1 *The artist, Kate O'Callaghan at work*

Tapestry, at once capable of being the most spontaneous and freest of weaves, is also capable of being the most elaborately and completely planned. For contemporary fiber artists, tapestry has come to be a generic term for all weaver-controlled, as opposed to loom controlled weaves. There are four major groups of weaves used by contemporary tapestry artists which comes under this term: tapestry weaves (weft-faced weaves), 50-50 weaves, double weaves, and tapestry brocades.

This is the first in a series of articles composed as a study course in contemporary tapestry. In this issue, the construction and warping of looms for tapestry will be covered. Subsequent articles will deal with weaving techniques, the elements of fiber design, the critical process of isolating design elements to embody ideas, and the planning of a piece, from sketch to cartoon, yarn selection, weave technique, sett, and plan for hanging the finished piece.

Tapestry techniques are used to produce images by weaving small segments at a time. The weaves used in tapestry require a lot of manipulation of the warp with the fingers, thus, for many of the techniques only a simple frame loom is needed. For some of the weaves a multi-harness loom may be used, but many primitive weavers accomplish even these on frame looms through the use of multiple heddle sheds.

Given these minimal requirements, many weavers set up a high warp (vertical) loom, which allows them to see the piece as a whole

Contemporary Tapestry: On Looms, Warping, Setting Up Tapestry Study Course—Part I

by *Kate O'Callaghan*

as it is woven, and to use texture without worrying about it being crushed or distorted on a cloth beam. Thus critical decisions can be made during the course of the weaving process, as the piece comes into being.

A loom is basically a frame. The loom's only requirement is sturdiness--it must be able to withstand the tremendous pressure exerted by the warp and weaving process. It must be rigid, unable to skew or to collapse in any direction. And precautions must be taken to ensure that the wood will not split or crack.

THE NAIL FRAME LOOM: SAMPLER LOOM

To learn basic techniques a small frame is all that is needed.

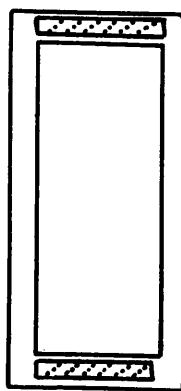


Fig. 1
Sampler
loom

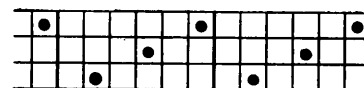


Fig. 2
Position of the nails



Fig. 3
Slope of
the nails

(1). Get an artist's canvas stretcher frame at an art supply store, or find an old wooden window frame, or build yourself a frame out of 1" x 2" lumber. Reinforce the corners with nails, bolts, staples or braces. If you make it from lumber, notch the ends to make a more solid joint. The dimensions of your frame should be about 1½' x 2½' at least. (See Fig. 1).

(2). Obtain graph paper spaced 6 squares to the inch. Cut strips about 4 squares wide and long enough to tape to the upper and lower sides of your loom. Mark the strips in 1/3" intervals, 3 marks to the inch, in staggered groups (See Fig. 2). This will prevent the wood from splitting from a long single line of nails. Tape the strips to the upper and lower sides of the loom.

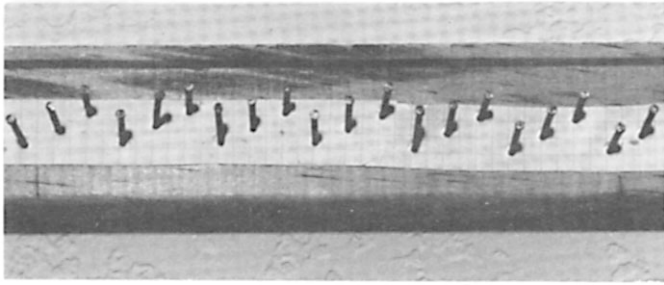


Plate 2 detail of nail frame loom

(3). Using small finish nails (size 3d), nail at the marks, measuring first two inches in from the corner and starting at the nearest mark. As you hammer the nails, slope them away from the center of the loom (See Fig. 3). Set the nails about halfway deep. Repeat at the other end, measuring first 2" in from the same side.

Warping the Frame

(1). Warp: the best warp is a medium weight (No. 24) cotton seine twine available at hardware departments. It has a hard twist which makes it durable, only moderately stretchy, and weft yarns cling well to it. Other warps: cotton rug warp or linen (10/5 or 10/2 size yarn).

(2). Warping:

(a) Tie the warp around the frame next to the nail nearest the 2" mark. Carry the warp up to the opposite end and loop around first nail by the 2" mark there, bring the warp back to the first nail (giving a double thread on outside for selvedge). Then carry the warp up to opposite adjacent nail, and back to the nail adjacent to the first nail, and so on across the loom to about 2" in from the opposite corner, again doubling the last warp and then tying around the frame.

(b) Tighten the warp by picking up the first string, pulling it out and to the side, then picking up the second and pulling it out, thus transferring the slack, warp by warp across the warp to the other side, where the knot is retied. You may have to repeat this several times to get a uniform taut warp.

(c) Chaining: cut a length of string double the width of your loom plus a few inches. Tie this string around one of the sides of the loom, about 2" above the lower nails. Put your index finger in the string and twist it to form

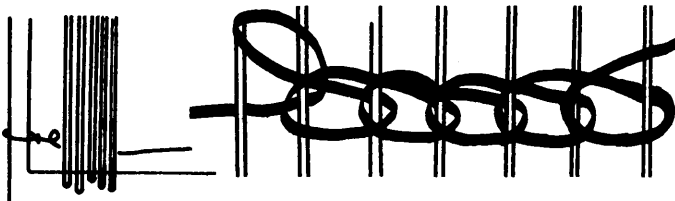


Fig. 4

Fig. 4A chaining

a loop. (See Figs. 4 and 4A) Hold this loop in front of the first warp. With your other hand push the hanging string behind and around the warp and through the loop, then tighten, forming a new loop. This is basically the chainstitch in crochet but here a warp is caught in each chain stitch. When you get to the end of the warp, pull all the string through the last loop, forming a knot. Then tie the string tautly to the side of the loom.

(d) Twining (instead of chaining): Take two long strings and tie them, as above, to one of the sides of the loom a couple of inches above the nails. Hold one in each hand. Take one string and put it behind and around the first warp. Take the second string, cross the first and put the second behind and around the second warp. Take the first string, crossing the second, and put it behind and around the third string. And so on, alternating strings all the way across the warp, then tie both strings tautly to the opposite side of the loom. (See Fig. 5).

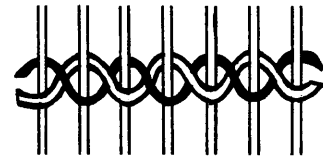


Fig. 5
twining

Chaining or twining across the warp creates a primitive reed to space warp threads evenly. It also gives you a firm foundation on which to begin weaving, if you chain or twine quite tautly. Repeat the process at the opposite end of the loom. Now weave a 1" heading with the cotton string. You are ready to begin weaving.

CONSTRUCTING A LARGE SCALE FRAME LOOM:

The same careful methods outlined above may be translated to a large scale. Many of the most famous fiber artists, such as Magdalena Abakanowicz, Josep Grau-Garriga, etc., have used simple frames. Because of its simplicity a large frame is inexpensive and easy to make.

Two approaches:

(1) Built-In Loom: This loom will be bolted to your existing structure. Get two pine 4" 4"s at a lumberyard, of the height you wish your loom to be. Bolt these directly into the studs in your wall with 6" lag

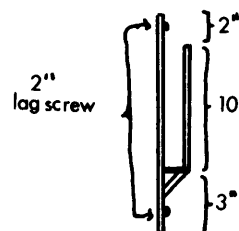


Fig. 6
bracket

screws. Go to your local welder and have him make you at least four but preferably six brackets out of 1/8" steel strapping which is 3" wide. (See Fig. 6).

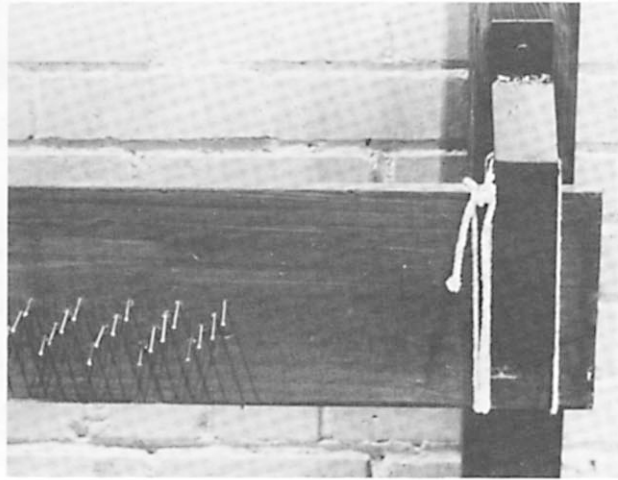


Plate 3 Lower bracket and nail beam
Note staggered nail spacing

Bolt two of these brackets upside down at the lower end of your 4" x 4"s, two rightside up halfway up the 4" x 4"s, and two at the upper end.

For warp beams, get two fir 2" x 10"s with as few knots or splits as possible, cut to the width of your loom. Drill nail holes for 6d finish nails in a staggered pattern (to avoid splitting the wood) as you did for the sampler loom, at whatever intervals you may decide, say three per inch (giving 6 e.p.i. maximum). Set the nails in halfway, again slanting them away from the center of the loom. One nail beam may be placed in either the middle or upper brackets, the other will be tied with rope into place in the lower brackets. The lower beam thus acts as a further weight on the warp.

(2) Freestanding Loom:

To assemble a freestanding loom according to the figure (See Fig. 7), you need only: two fir 2" x 10"s, five pine 2" x 4"s, one pine 2" x 6" (cut in half), twenty 5" carriage bolts with nuts, two 3" lag screws, and two pounds 6d finish nails, a saw, hammer, drill and T-square. Be sure the fir 2" x 10"s are as free of knots and splits as possible. Then follow the guide, first cutting the wood to the sizes you determine for length and width, drilling out the bolt holes, and assembling. Also notch the four 2" x 4" uprights at the base to join them more solidly to the

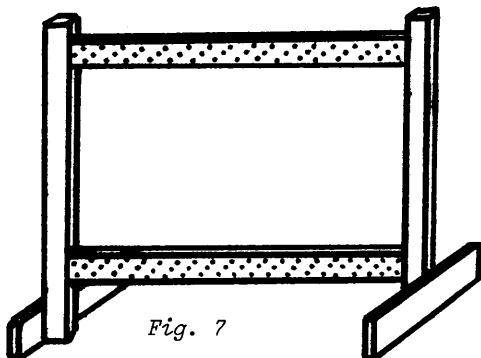


Fig. 7

free standing large scale loom

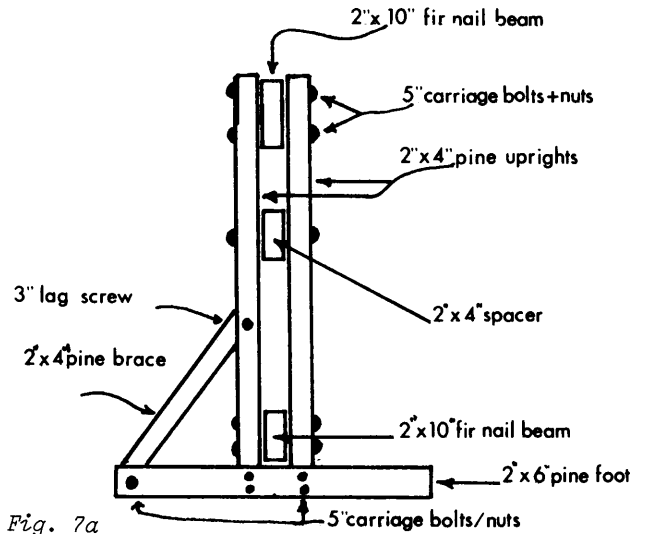


Fig. 7a

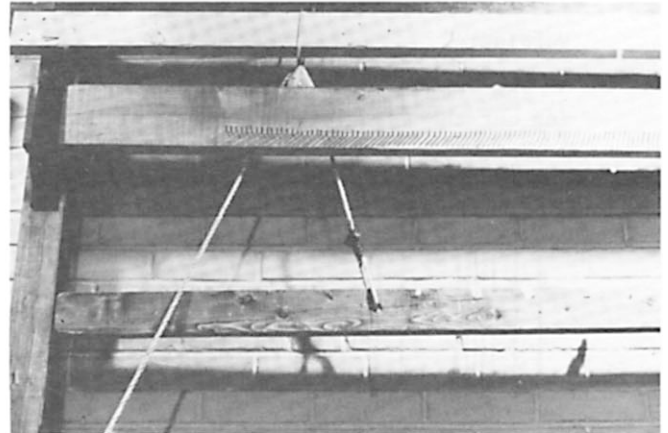


Plate 4 Upper bracket, nail beam on pulley system for hanging cartoon

2" x 6" foot at each side. This loom is quickly dismantled for moving. We made one in about four hours time with dimensions 9' wide by 7½' tall, with 4½' foot for only \$45.00 in materials. It is completely solid and functional.

Where to Sit:

With a loom as basic as this you have to improvise. When you are working on the small sampler loom, sit upright in a chair with the upper edge of the loom resting against a wall. This is the most comfortable and easy-to-maintain position. For the large scale loom again use what comes to hand. If you have room, you can set up two small ladders with a board through the steps. This board can be moved up as you do.

The nail frame loom is good for tapestry techniques for weft-faced weaves. Six or eight e.p.i. may be the upper limit at which you can set nails without splitting the wood. The result is that the tapestry weaves achievable are *relatively* coarse, compared

to the classic Gobelins tapestries with a range from 7 e.p.i. to 22 e.p.i. The images achievable with the classic techniques tend to be graphic and painterly. But the solid color areas can be infinitely varied through shading, hatching, color blending, specially dyed yarns, textured weaves, and the like.

THE NAIL-LESS FRAME LOOM: THE SAMPLER LOOM

You may wish to forego using nails to stretch your warp in order to increase your e.p.i. for a finer delineation of your image, or for warp-faced or 50-50 weaves. Warp-faced weaves are usually quite simple weaves on a space-dyed or ikat warp, whereas 50-50 weaves can produce transparent images when fine warp and weft are used, or coarse, grainy images in subdued colors where colored warps and heavy wefts are used.

Warping:

The frames are exactly as those above, leaving out the nails. On this loom you will wish to mark the warp beams at one inch intervals in order to space the warps manually with the marks as a guide, as you wind the warp on the beams.

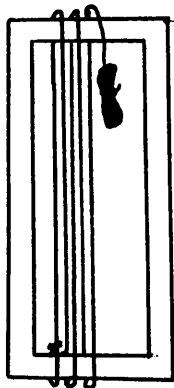


Fig. 8 nail-less warping

Then tie the warp string around the beam next to an inch mark, at least two inches in from the side. Then wind the warp up, behind and over the upper beam at the corresponding mark, then back down, behind and over the lower beam. (See Fig. 8). Repeat, setting the desired number of ends per inch between each inch mark as you proceed, and tie around the beam. You can tighten the

warp as you do a nail frame loom warp but it is most desirable to try to put this warp on consistently and uniformly to begin with. Here the warp is not as taut as on the nail frame because allowance has to be made to unite the warp spread apart by your warp beam. To unite the warp, take a large butterfly or shuttle of string and tie the end to your upright beam, several inches above the beam. Then weave this string across the warp and tie it around the opposite upright beam. Then weave this string across the warp and tie it around the opposite upright beam. Now weave a heading of several inches with the cotton string. Repeat the process of tying another string and weaving it across the warp at the upper end, to stabilize and space the warp threads properly.

The warp possibilities for this loom include the ones used on a nail frame, but are actually better with stretchier warps of wool, cotton, or synthetics. Here the limiting factor of your warp yarn is the density of the yarn and your own patience!

FORMING SHEDS MECHANICALLY:

In order to avoid over-manipulating the warp, thus causing it to fray, stretch or break, you may wish to use shed and heddle sticks. However, I totally deemphasize the use of these tools (except for dense or sticky warps) because I feel that they interfere with the creative process. The more quickly you learn to move and use your hands, the freer you become in manipulating the yarn. Should you need them for a warp-faced weave, however, here they are:

The Shed Stick:

You will need a flat stick with smooth sanded edges for use as a shed stick. Weave the stick over and under the warp threads, one by one. When the stick is raised on its edge, it creates a "shed" in which one shot of yarn is woven. When the shed is lowered the weaver picks the lower "shed" by hand, to insert the second shot of yarn.

Heddle Stick: (See Fig. 9)

An alternative to picking the lower shed by hand is to make a heddle shed. using a dowel or stick and cotton string. A length of cotton string is placed in the heddle shed, with a long tail of string hanging out to the

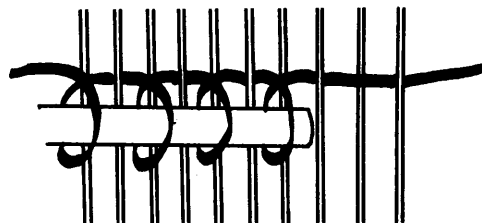


Fig. 9 heddle stick

right. The end of the string on the left side of the warp is tied around the dowel. Pull out the string in a loop, beginning at the space between the first two warps on the left and working across to the right, putting the loops on the dowel as you go, and tying it to the dowel when you reach the other end.

Beater:

A simple table fork may be used to beat the weft yarn into a dense weave, but quite often your fingers will do the job as well, and more quickly.

These preparations are sufficient to begin several different types of tapestry weaves. The next issue will be concerned with the techniques of tapestry weaves.

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Book Reviews

CLOTHING A HANDWOVEN APPROACH by Barbara Hamaker, 1978. B. Hamaker, 1243 North Formosa Ave., Los Angeles, CA 90046, 40 pp. \$6.95 (paperbound).

The author offers a very practical approach to making simple garments based on ethnic patterns. She discusses the selection of yarns, the arrangement of design stripes, the choosing of a style, size adjustments, sewing tips and the washing instructions.

Eight different garments are explained in great detail. They are easy to sew; some can be woven on simple narrow looms and they are practical to wear.

This book will surely stimulate the weaver to want to make wearables.

Clotilde Barrett

SPIN SPAN SPUN, FACT AND FOLKLORE FOR SPINNERS by Bette Hochberg, 1979, B & B. Hochberg, 333 Wilkes Circle, Santa Cruz, CA 95060, 66 pp. Paperback.

When Bette Hochberg writes or talks about spinning, she casts no doubt about the fact that her involvement with spindles, spinning wheels and fibers goes into the greatest depth.

In this book, her true love for spinning is expressed in an unusual and poetic way. This is a collection of sayings, poems, songs, short anecdotes and quotations, all related to spinning and fiber. Once one starts reading these bits and pieces of information and advice, one can hardly lay the book down. It is great entertainment, even for the non-spinners.

Clotilde Barrett

SPANISH TEXTILE TRADITION OF NEW MEXICO AND COLORADO, 1979 Museum of New Mexico Press, Santa Fe, NM, P. O. Box 2087 Santa Fe, NM 87503, 263 pp. \$14.95.

Ten distinguished historians, anthropologists and textile specialists have contributed the chapters that make up this book about the early Spanish settlers along the Rio Grande and their textile tradition.

The material for this book has been painstakingly researched by the authors and assembled to include all the information available today and to build a solid foundation for further study.

Of special interest are the discussion of cross-cultural influences between the Indians and the Spanish settlers, the historical development of the design elements and the analysis of the types of fabric, equipment and dyes.

The text is well illustrated with color and black and white photographs.

This book is a must for the scholar interested in Southwest textiles and a good resource book for the contemporary weaver.

Clotilde Barrett

COSTUMES OF THE GREEKS AND ROMANS by Thomas Hope, 1962 (originally published in 1812). Dover, 300 pp. paperbound, \$4.50.

The author laments the inaccurate representations of the attire of the classic eras of Greece and Rome by the artists of his time (1800's!). He painstakingly studied ancient vases, sculpture and paintings and assembled some 700 beautiful illustrations of ancient costumes for this book which was to be a documentation to be used by artists.

Today these costumes should be thought-provoking and inspiring for textile artists who all too often ignore the beauty of the draping quality of woven cloth.

Clotilde Barrett



Four illustrations from costumes of the Greeks and the Romans.

Illustrations 27, 29, 78, 92

MULTIPLE HARNESS PATTERNS FROM THE EARLY 1700's, THE SNAVELY PATTERNS by Isabel I. Abel, 1979, I. Abel, R.D. 12 Box 282, York, PA 17406, 75 pp \$7.95.

Old weaving records always fascinate later generations of weavers, but so often they are squirreled away in inaccessible niches of museums and libraries. Furthermore, these old drafts look like hen tracks and the notes are often difficult to read. Therefore, weavers are always grateful when someone takes the time to analyze one of these old record books and publish its content in a form that is familiar to us.

This book is a transcript and rearrangement of a 250-year-old German pattern book in the collection of Lebanon Valley College, Onnville, Pennsylvania. Most weaves are 8, 12, 15, or 16 harness fancy twills. One hundred and ten drafts are given; most are tie-up diagrams for extended point twills, some are schematic drawings of twill threadings, other are drafts for block weaves. There are illustrations of woven samples using some of the drafts of the pattern book.

The author has not rewritten this old find into a modern workbook for today's weaver but has retained a lot of the character of an old personal pattern book. Some interpretation will have to be done by the weaver who uses this book.

Clotilde Barrett

CREATIVE CASH - HOW TO SELL YOUR CRAFTS, NEEDLEWORK, DESIGNS AND KNOW-HOW by Barbara Brabec, 1979. Countryside Books, 299 James St., Barrington, IL 60010, 215 pp. paperbound, \$8.95.

This book is written for people who like to work at crafts (any kind) and are ready to earn some money from their skills but have no training in business. This includes many, from the homemaker who sells a few objects at a church bazaar to multi-faceted family enterprises that keep on growing. The author takes on all the angles of making money through crafts such as: How to find a market and how to progress on the road to success. Her straightforward discussions, illustrated with stories about real people, will certainly help the talented person make some important decisions of his own. The style of writing of this book is engaging. Even the duller aspects of business, such as rules and regulations, are handled with a touch of humor and enlivened with wonderful illustrations.

An important feature of this book is its research chapter. It includes names and addresses of craft and business related publications and organizations.

This book is bound to be very valuable to anyone who is wondering about money making potentials of his craft skills.

Clotilde Barrett

1980 CRAFT WORKER'S MARKET by Lynne Lapin, editor, Writer's Digest Books, Cincinnati, OH, 684 pp., \$11.95.

In its second year, Craft Worker's Market has grown into a valuable book. All the sections of the book are longer and it includes more than 300 new markets.

The short first section, The Profession, contains concise essays on using the book, advice on working with retailers, and ways to promote yourself and your work. The editor's short, optimistic overview of today's craft market is very heartening.

The main section of the book consists of listings of places where craft items can be sold. These are grouped under headings that range from architectural and design firms, through shops and galleries to apprenticeship programs. The shop and gallery listings are quite complete. They include the kinds of crafts the shop sells, purchase sale terms and other pertinent information. Included under a separate listing are 100 colleges and universities which sponsor craft shows, offer exhibit space, and sometimes have bulletin boards on which craft artists can advertise.

Even the apprenticeship section has grown and now contains announcements of six weaving apprenticeships as well as one in non-woven fabric.

This 1980 Craft Worker's Market is a valuable book which any professional or would-be professional will find a worthwhile aid to success.

Mary L. Derr

TEXTILE ART IN THE CHURCH - VESTMENTS, PARAMENTS, AND HANGINGS IN CONTEMPORARY WORSHIP, ART AND ARCHITECTURE by Marion P. Ireland c 1966, 1967, 1971. Abingdon Press, Nashville, TN. 285 pp. clothbound, \$27.50. Currently out of print.

Ecclesiastical design is an important facet of textile art. There is so much to be said about its history, symbolism, and interpretation that one would expect to be able to fill an entire library with books on textile art for the church. Yet there is very little literature on this subject and almost none from the viewpoint of a contemporary artist.

Marion Ireland tries to fill that gap and offers a well-illustrated book on the subject. She stimulates the artist to create work which will inspire and challenge the church to restate the values of religious art as an important part of worship.

More books on this subject, illustrating important contemporary commissions for the church, and workbooks with listing of the textile items used by various religions and their patterns and design requirements, would be welcome additions to the textile literature.

Clotilde Barrett

The Weaver's Market— Classified Advertising

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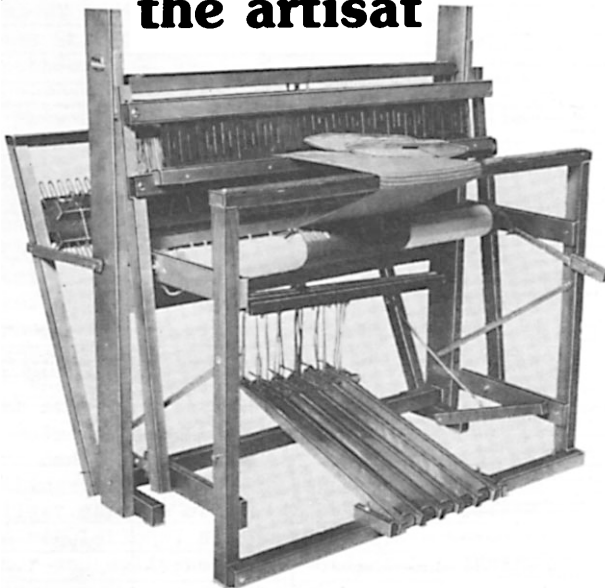
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No. 61 Warm Beige	No. 109 Medium Blue
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