

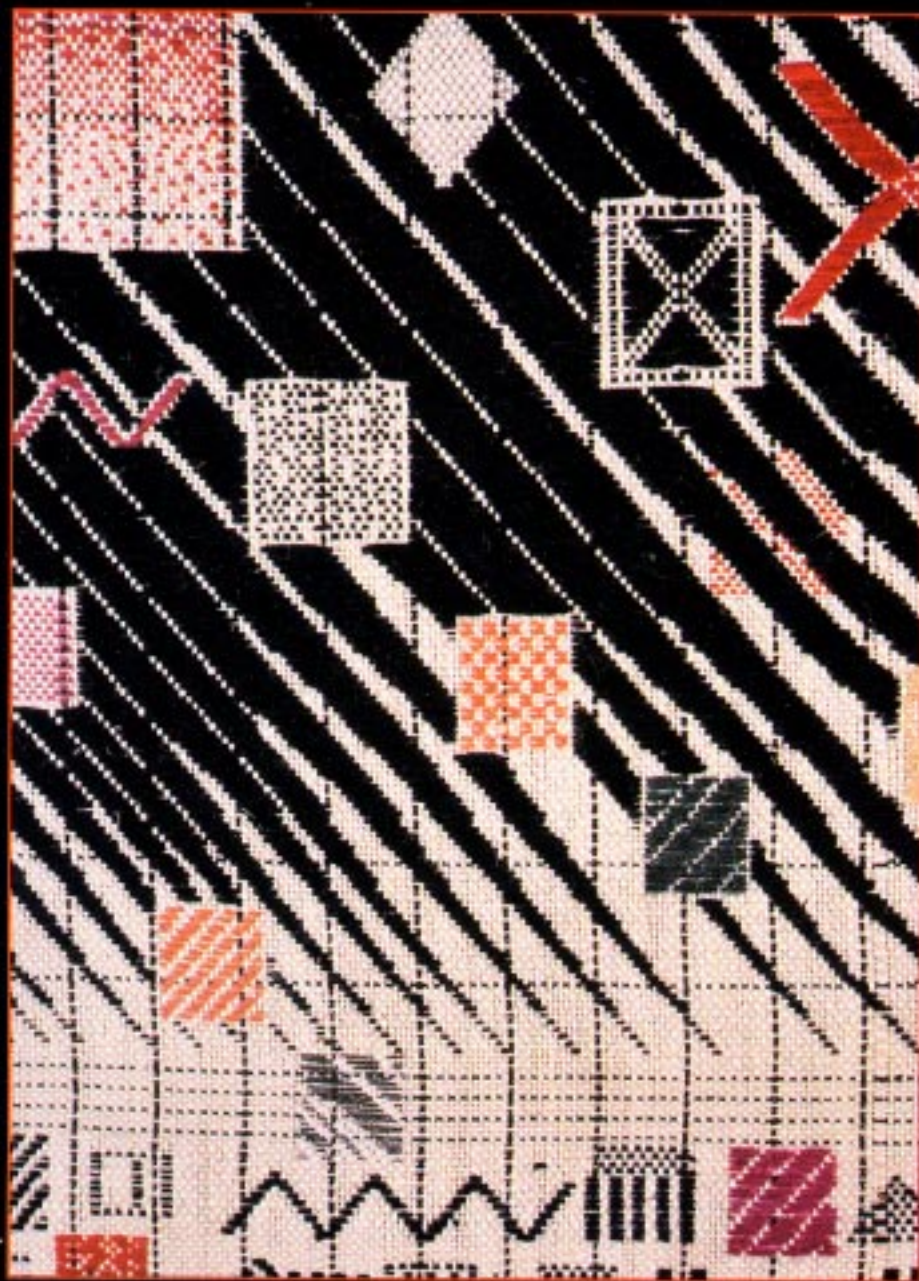
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THE WEAVER'S JOURNAL

Spring 1987

Volume XI, Number 4, Issue 44



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Fall 85 \$4.00

Figures in boardweave, scaffold weaving, complex weaving, medieval card loom, card woven fringe, preparation of silk in Japan, silk dyeing, planting a dye garden, Chamo sheep, Equipment Forum. *Series:* Color Theory, part 1.



Winter 86 \$4.00

Clothing issue. Anita Mayer on weaving handweaves, Vadmal, silk tapestry necklaces, Cassel jacket, ribbon soft jacket, historical changes in Guatemalan clothing, vestments, shod regulator, random warp dyeing. *Series:* Color Theory, part 2.

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Teeth Anniversary issue. Clotilde Barren, multi-harness hark, warp-faced doublecloth, fabrics for interiors, Shaker towels, hemstitching, twined rag rugs, sock top bathmat, sauna towels, loom-woven baskets, custom fabrics for 1930s Cadillac, West African textiles, Boardweave, the shed, hanging your weaving. *Series:* Color Theory, part 3.

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Images of the Southwest. Noel Bennett interview, Kate Peck Kent, new Lenaxa fabrics, Nasajo saddle blanket, New Mexico fiber artists, Chiricahua weaver, contemporary Nasajo weaving, Spanish colonial loom, Southwestern finishes, dresses from ramos

looms, Museum & shop Directory for Arizona and New Mexico. *The Weekend Weaver:* twill cotton towels. Index to Vol. X. *Series:* Color Theory, part 4.

Fall 86 \$4.75

Cotton! Cotton history, fiber information, glossary, spinning Cotton with the Ladies, handspun cotton shirt, cotton lace shawl, cotton baby blankets, tapestry weaving with unspun flax, antique spinning chain, guide to textile research in Paris. *The Weekend Weaver:* double corduroy rug.

Winter 1987 \$4.75

Clothing issue. Paisley shawls, Chinese brocades, crocheted trims, half-shawl, summer & winter fashions, Ukrainian skirt on oppifanta loom, twill block cape, hat & scarf set, European perspective on American handweaving, Jacob sheep wool. *The Weekend Weaver:* silk shirt with Dukagjan on narrow loom.

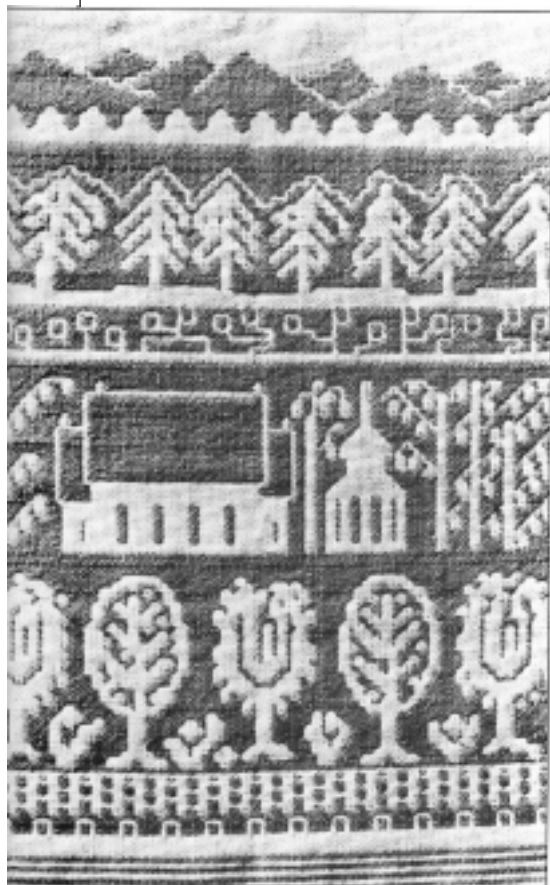
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Finnweave, page 25.

On The Cover

"The Players and the Play," a contemporary art weaving in brocade by Morgan Clifford. The article begins on page 40. *Photo by Peter Lee.*

THE WEAVER'S JOURNAL

Spring 1987

Volume XI, Number 4, Issue 44

- 7 Looming Thoughts *by Allen Fannin*
- 8 Computer Aided Design Analysis *by Susan Poague*
- 13 An Excerpt from *Geometric Design in Weaving*
by Else Regensteiner
- 21 Listening to Threads *by Coby Reynders-Baas*
- 24 Sprang on the Loom *by Karen Searle*
- 25 Finnweave *by Clotilde Barrett*
- 31 Marketing Handwoven Fabric for Apparel & Interiors
by Leonore Alaniz
- 36 Velvet Ikat *by Lotus Stack*
- 40 Morgan Clifford: New Directions in Brocades
by Sandra Gue
- 46 Name Draft Contest Winners
- 48 The Moebius Vest *by Audrey Homme*
- 55 Plaited Twill Projects *by Philis Alvic*
- 59 Haptic Visions *by Paul Brubaker*
- 62 Klara Johnson: A Weaver's Vision Realized
by Connie Magoffin
- 65 Loom Maintenance *by William Koeppe*

Departments

- | | | |
|-----------------------|-------------------|----------------------|
| 4 From the Editors | 64 Products | 77 Classifieds |
| 5 Letters | 68 Calendar | 78 Advertisers Index |
| 12 Meet the Authors | 71 Study & Travel | 78 Errata |
| 48 The Weekend Weaver | 73 Publications | |

FROM THE EDITORS

WITH THIS ISSUE we depart from our recent emphasis on themes to bring to you a potpourri of weaving-related topics, some food for thought, some new techniques to try.

Leonore Alaniz continues the exploration of contemporary weaving she began in the Winter issue, this time from a marketing standpoint. Back with more loom tips, our carpenter and mechanic, William Koepp gives us some valuable loom maintenance pointers. Regular columnist Allen Fannin shares his "Looming Thoughts" on weaving terminology.

As a special treat for our readers, we are privileged to publish an excerpt from a new book by Else Regensteiner, *Geometric Design in Weaving*. We have selected material from Chapters 1 and 4 of this new work. (For more information on this book, see the Publications section of this issue.)

Morgan Clifford is a weaver who uses geometric design in her work, adapting classic weaving techniques for her own unique expressions. Her profile is by Sandra Gue. You will be especially interested in how Morgan's recent experiences as a student at Cranbrook Academy of Art have influenced her work.

A special pair of articles illustrates the topic of "ability despite disability." Paul Brubaker shares with sighted weavers a deeper way of seeing in his article entitled "Haptic Visions." His bibliographic information is meant to assist anyone with marginal vision or individuals not receiving information from a social service agency. Klara Johnson works beautifully within her special limitations. We are introduced to her in an article by Connie Magoffin.

For our readers seeking stimulating new techniques, we have several articles:

Ikat velvet will be a new technique for most of you, one which adds dimension to your weaving. Lotus Stack provides background on ikat velvet and gives instructions for a sampler in this patterned warp-pile weave.

Audrey Homme assumes the role of "The Weekend Weaver" for this issue, showing interesting variations on a vest pattern.

Susan Poague writes on computer-aided design. Even those who do not use a computer at the loom will be interested to see the potential of this tool to translate designs from one medium to another.

Clotilde Barrett provides an introduction to the challenging and popular topic of *Finnweave* for both four and more harnesses, including an explanation of how to diagram patterns for use with this technique.

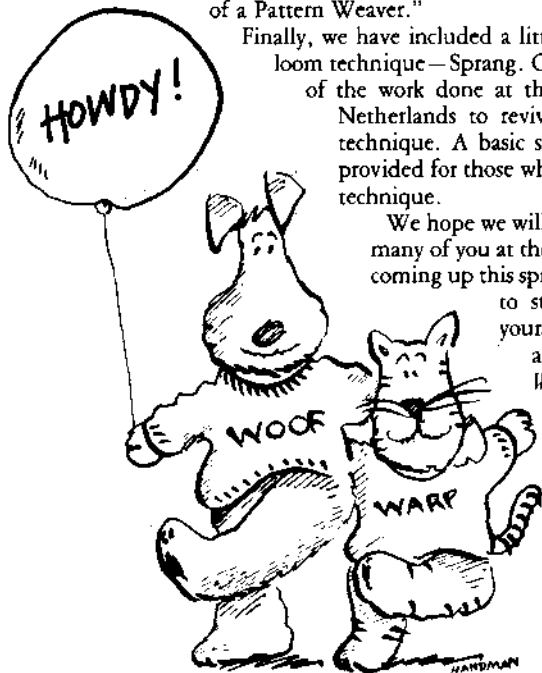
Philis Alvic describes small projects in double two-rie weave in "Notes of a Pattern Weaver."

Finally, we have included a little-known and fascinating off-loom technique—Sprang. Coby Reynders-Bass reminds us of the work done at the turn-of-the century in The Netherlands to revive knowledge of this ancient technique. A basic sprang-on-the-loom sampler is provided for those who may be unfamiliar with this technique.

We hope we will have the opportunity to meet many of you at the regional weaving conferences coming up this spring and summer. Don't forget to stop by our booth, introduce yourself, and let us hear your ideas about weaving and *The Weaver's Journal*.

Karen Searle &
Suzanne Baizerman

Join us in welcoming our friends Warp and Woof to the pages of *The Weaver's Journal*!



THE WEAVER'S JOURNAL

SPRING 1987

VOL. XI, NO. 4, ISSUE 44

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Stanton Publication Services, Inc.

PRINTING

St. Croix Press

COLOR SEPARATIONS

R & S Litho

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The Weaver's Journal (ISSN 0160-3817) USPS 384-210 is published Winter, Spring, Summer and Fall by Araña Press Inc., 2395 University Ave., P.O. Box 14238, St. Paul, MN 55114. Telephone (612) 646-7445.

Subscription rates: \$18.00 1 year; \$35.00 2 years; *Foreign:* \$22.00 1 year; \$41.00 2 years; **Cover price:** \$4.75.

Second class postage paid at St. Paul, Minnesota and additional mailing offices.

Postmaster: Send address change form 3579 to *The Weaver's Journal*, P.O. Box 14238, St. Paul, MN 55114.

The editorial committee takes no responsibility for goods advertised in this journal. ISSN 0160-3817

U.S. newsstand distribution by Ingram Periodicals, Inc., 347 Reedwood Dr., Nashville, TN 37217 and Cornucopia Distribution, P.O. Box 85627; Seattle, WA 98145-1627.

LETTERS

I'M WRITING TO SAY that I love Allen Fannin's articles. They make me think about weaving, not just of weaving a specific piece. His book on spinning made me feel familiar with the craft long before I made my first thread. I don't know if I think he is "controversial," but rather stimulating. He puts things into perspective. Thank you for giving him a forum to present his ideas.

Your magazine has always been a special one, from the time I first saw it years ago. Please keep it that way.

Gail Troy
Shipman, Virginia

THANK YOU so much for featuring my mail order business, STUFF, in the PRODUCTS section of *Weaver's Journal*. I suppose it goes without saying that write-ups such as yours are a great boon to ALL businesses and especially new ones.

Sue Bella
Califon, New Jersey

IN RESPONSE TO MR. HAUSNER'S letter about my article, "Examining the Shed," there are many weavers that do pull the lease sticks after warping up, but many others leave them in, for a variety of reasons.

There are myriad loom designs in use today, with a multitude of weavers using numerous techniques involving various kinds and sizes of warp. To restrict everyone to a single philosophy would unduly hobble the inquiring weaver, whose experiments should not be limited, whose explorations must not be restrained.

It takes very little research to discover that weaving with the lease sticks in place was and is an accepted practice; it is not always necessary, true. Shed rods are precisely described as far back as 1873 by John Watson in *The Art of Weaving*, Chapter VI. The sticks and rods used in the warp were coated with a hard baked-on finish which reduced friction to almost nothing.

The mere fact that we have discussions of this nature shows that weaving is a very healthy craft, still growing, still expanding. A great hobby, I love it!

William Koepp
Bakersfield, California

AS A CHARTER SUBSCRIBER to *The Weaver's Journal* I would like to tell you that it just gets better and better and it is so useful. Thank you again for all your work.

Grayce Montrose
El Segundo, California

THIS SPRING, I was able to realize a cherished dream. I was able to order a 12 harness countermarche loom from Toika in Finland. My savings just covered the price and transport. However every kind of setback seemed to happen: There was a 6 week mail strike in Finland and no one knew where my order and check were. Eventually things started moving. But my loom did not arrive in Duluth, Minnesota where I could have picked it up but in Milwaukee, Wisconsin. After a lot of red tape and another 3 weeks of delay, it finally arrived.

In the meantime, I had to move some furniture in my very cramped quarters. The loom was easy to put together. Everything just fit, except they had forgotten that 12 harnesses, jacks lams and treadles take a lot of cord to tie-up. There was not enough. So I scrounged: I spun some very heavy linen rug warp into cord and found some seine twine in a dime store and used that until I could find a source of more linen tie-up cord.

None of the translated instructions mentioned locking pins. To have everything work the way I felt it should, I kept tying and untying knots for days. My considerable weaving library could shed no light on anything. I finally found "Countermarche: Pure and Simple," by Joanne Tallarovic (*Weaver's Journal*, Issue 31, Winter 83-84). Never did I appreciate an article more!! Having by now a very intimate knowledge of every hole, nut, bolt, cord and knot I figured out in no time how to make the needed fine adjustments.

I still have only 8 harnesses completely tied up. It does work beautifully—no noise, no great physical effort, the lightest beat, treadles just the right height. The shed is fine.

Thank you Joanne Tallarovic and *The Weaver's Journal* for publishing the one and only set of instructions that make this marvelous system pure and simple. It beats any instructions I have seen so far.

Ursula Schramm
Hurley, Wisconsin

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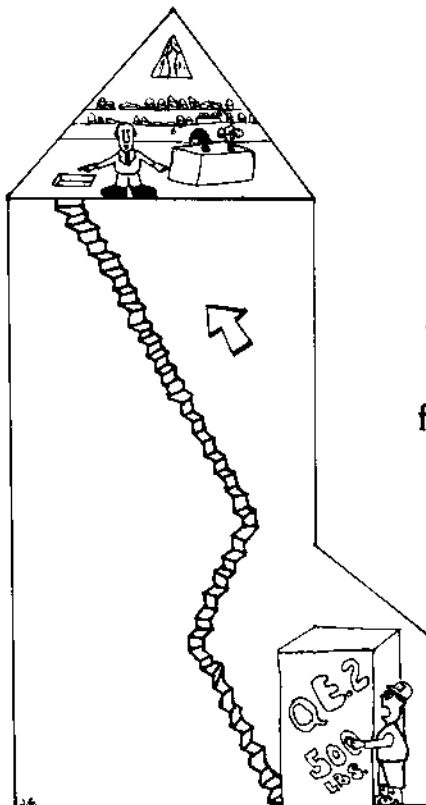
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Looming Thoughts

by Allen A. Fannin

THE ETYMOLOGY of many specialized textile terms used only by handloom weavers has always been intriguing to this writer, particularly given the continuing, almost osmotic barrier between these terms and those used in the larger textile world, of which handloom weaving is a real part. If pressed, we would have to admit that our linguistic interest is most highly piqued by the term "multi-harness." (We will resist any impulse and temptation, however strong, to digress along the "harness" vs. "shaft" path, for that conflict we have long ago resolved in favor of "shaft," a resolution increasingly being shared by others in the field.)

The word "multi" is the focus for the present discussion because of its completely erroneous application here and the conceptual handicaps it causes for the majority of handloom weavers who accept this application so totally and unquestioningly. Historically, the term "multi-harness" was institutionalized by Mary Atwater when she applied it to looms and related weave structures of or requiring more than four shafts. Now, to the most strictly logical of minds, the word "multi" really only has application to anything greater than unity, or one. Therefore to apply the term "multi-harness" to looms at all is, in point of argument moot, for by definition, a loom *must* carry more than one shaft for harness-activated shedding to be possible at all. Therefore, all looms are in fact "multi-harness."

Lest we be thought merely to be descending into semantic quibbling, it is essential to point out just how this patently wrong and misapplied term has crippled generations of handloom weavers who, feeling comfortable at four shafts, fear even discussion of what to them is "multi," when there is clearly no substantive difference between four shafts and forty. This little-understood question is so well-codified that loom makers themselves, responding as they must to market requirements, however irrational, separately catalogue their offerings as "four" and "multi" shaft, thereby all but setting this illogic into stone. This situation and our collective understanding thereof is particularly germane as a growing number of handloom weavers, both neophyte and veteran, bring intelligent approaches to the field and seek greater mental challenge than that offered by the fearful approach/avoidance conflict over more than four shafts. In recent times, a new term, to wit, "complex" (albeit somewhat limited and illogical in its own way) has come to signify this newly confident and intelligent approach.

It has always been our position that the separation of weaving and weave structures and thus, their attendant equipment into such meaningless categories as four and "multi" places an arbitrary, artificial and uncalled-for conceptu-

al barrier between the handloom weaver and his/her full understanding of weave structure, regardless of the mechanics of how that structure might be realized in yarn. To the argument that this dichotomy must exist out of deference to the many handloom weavers who have only four shafts and thus who have no interest and/or need for anything greater, we submit first that as a truly complete weaver, handloom or otherwise, the interest should be in *all* parts of the trade. Second, we submit that one could easily question whether so many handloom weavers have only four shafts because of the dichotomy in the first place. The final barrier to the removal of this false division has been handloom weavers' recipe-like dependence upon specific loom set-up drafts which rarely convey direct weave structure information. This may provide a security of results on the cloth-roll but an absence of fundamental comprehension in the mind of the weaver.

Because of the growing interest in weaving that is less dependent for its effect on the novelty yarns and more dependent on the varied inter-connections of the warp and filling yarns, now may be a very important time historically to begin eliminating the four vs. "multi" distinction. While the present situation has developed over many generations of handloom weavers, the remedies for it are simple and accessible.

Our more obvious point of beginning would be to advocate a greater emphasis on the on-paper study of weave structures separated from the mechanism of producing any structure on the loom. Contrary to popular thought, it is quite possible and even preferable to examine the way in which warp and filling intersect with one another without ever producing so much as a swatch, so as to avoid the mechanical and (to some students) the visual confusion warp and filling yarns can cause. Actually, it has always been our contention that a highly skilled weave designer should be capable of reading a weave draft on paper and "seeing" it in a variety of yarns and end and pick counts much as a highly skilled musician should be able to "hear" the sounds of notes on a page of music. While we are not by any means suggesting that a weaver studying structure as structure should never carry the procedure to the point of fabric, we are, on the other hand, strongly suggesting that the past and present emphasis on the tangible fabric must be initially overcome by a future, temporary emphasis on graphic study until a balance is reached. By this

There is clearly no substantive difference between four shafts and forty.

FANNIN to page 76.

Computer-Aided Design Analysis

by Susan A. Poague

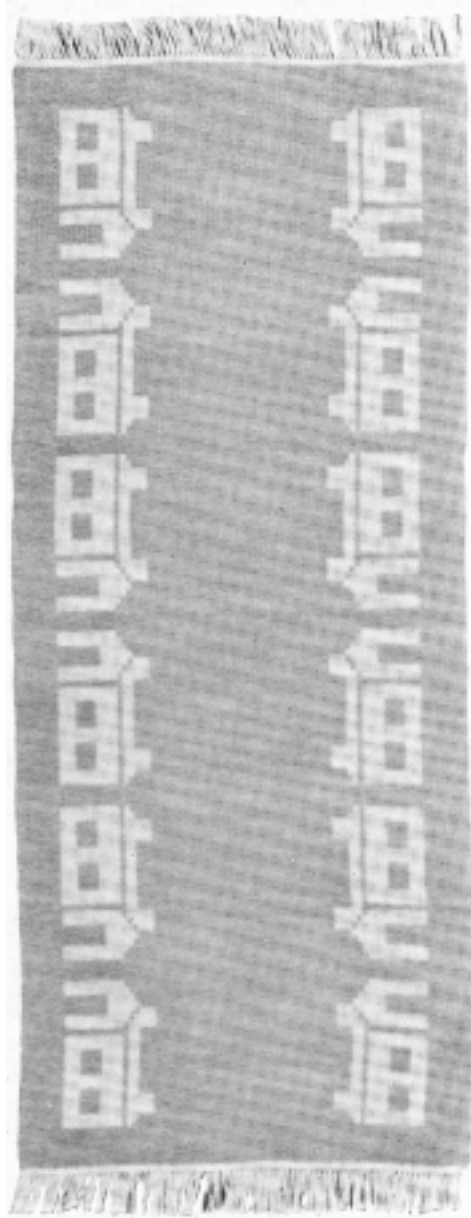
WHAT WEAVER hasn't flipped through a pattern book of potential overshot designs and committed at least one or two of them to graph paper to see what image results. Learning to do drawdowns is one of the basic tasks weavers confront. From the known elements of threading order, tie-up and treadling order, we can generate a previously unknown image. We also know that the process of doing drawdowns, filling in all those little blanks on sheets of graph paper, can be tedious and fraught with error. Computers have been shown to be very powerful tools when used for this purpose. However, what happens when a *design* is known, but the elements which could make that design come alive—the threading order, tie-up and treadling order—are unknown? Discovering these design elements through the process of fabric analysis is actually a reversal of the weaving process. It means tediously "unweaving" the fabric, pick by pick, and noting on graph paper where each weft crosses over or under the warp. From this graph paper record the threading order, tie-up and treadling order can be inferred. Again, computers can be very helpful if we use a generally available fabric analysis program and re-apply it in the role of design analysis.

Fabric analysis programs exist in both commercially available software and in "free" programs (i.e. those published in weavers' magazines), which can be very useful for anyone with access to a computer and with some good ideas to be tested and analyzed. Very simply, computer fabric analysis programs request data in a particular form. This data is used to produce on the display screen a visual image of the design to be woven. When the image is complete, the computer begins its calculations, which may take from thirty seconds to three minutes. The output provides complete drawdown information

(threading, tie-up and treadling) for the design. This output will appear on the screen and may also be directed to the printer. Depending on the program, the result may be saved on a floppy disk.

As a graduate student in weaving at Iowa State University, I have been working with a number of weaving software programs. I became interested in using fabric analysis programs for translating a folk art image used in quilt patterns—the "little schoolhouse" motif—for applications to table linens. This was an interesting test case since the image I chose is not commonly seen in woven form. I chose the block weave of Summer & Winter because of its appropriateness to traditional design, and the country feeling it evokes. Working with a ten harness Macomber loom, I was limited to eight pattern blocks and two ground harnesses necessary for the Summer & Winter weave structure, so I had to make the design "fit the loom." Since I was weaving with an electronic dobbie attachment however, I had virtually all the treadles I could ever want: My computerized tie-up was unlimited.

I used my Apple IIe computer with Pattern Master IV software for the initial design which was a straight-on view. This was a challenge; I knew I had to keep the necessary blocks to a minimum. The Pattern Master IV analysis program will give a design in the simplest form possible, with the least number of harnesses. Even pared down, however, the design required 13 harness blocks and 8 treadling blocks. I then exchanged the threading order with the treadling order by rotating the design 90° (using one of the selections possible in the Design Edit menu). When I re-analyzed the image it showed me that I could use 8 harness blocks and 13 treadling blocks. I was well within my loom's harness capabilities for the chosen weave structure.



"Little Schoolhouse"
runner, front view.

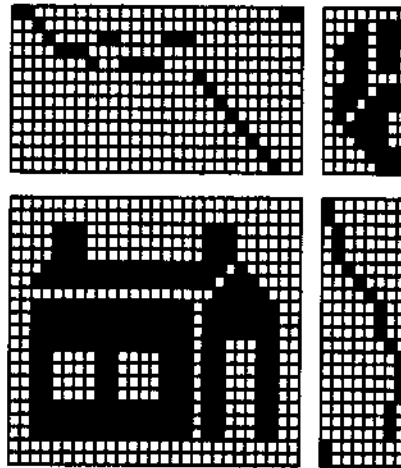


Figure 1.

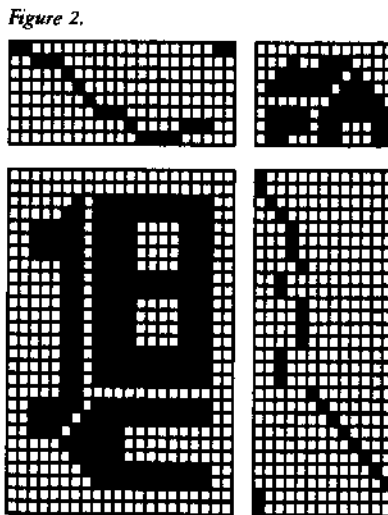
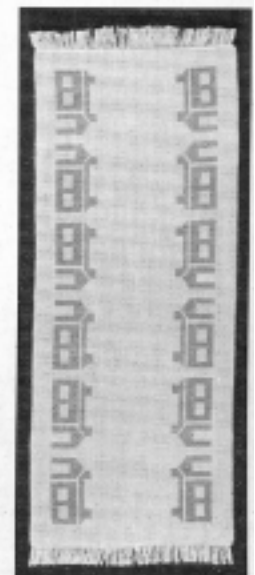


Figure 2.



"Little Schoolhouse"
runner, back view.



Pattern Master IV is powerful software which performs many functions in addition to fabric analysis through a series of menus. It was written by Janet A. Hoskins and is distributed by AVL Looms. When using Pattern Master IV to analyze an image, it must first be entered into the computer by filling in the squares on the design grid appearing on the screen. The program designates certain keys for this purpose. The grid resembles graph paper and like graph paper has several possible grid sizes. The grid is selected according to the design proportions and can vary from 85 squares by 47 squares to 25 squares by 14 squares. At any time during this process, before analysis begins, the design can be changed. The analysis can be for either dobby or treadle looms. It will analyze as many as 41 harnesses and 23

treadles for treadle looms. With extra software, the analysis can be increased to 150 harnesses.

I used Pattern Master IV for this design, but there are two "free" programs giving essentially the same result if some minor adjustments are made for their limitations. Janet Hoskins described a "primitive" version of the Pattern Master IV fabric analysis function in an article and program listing published in *Shuttle, Spindle & Dyepot* in 1982.¹ It was written in Applesoft Basic to run on the Apple II, II+ or IIe series of computers. (This kind of software is "free" in the sense that anyone can use it for the price of the magazine in which it appears. It can be stored on a floppy disk, but one must invest some time typing it into a computer.) This program requires that the design be entered in the form of a series

NUMBER OF ROWS = 28
 NUMBER OF COLUMNS = 20
 ENTER DRAWDOWN, ONE ROW AT A TIME, STARTING WITH THE TOP ROW,
 ENTERING FROM LEFT TO RIGHT

```

70000000000000000000
70000000000000000000
70000000111111111100
70000000111111111100
70000001111100000000
70000001110000000000
70111011110000000000
70111101111111111100
70111101111111111100
70000011000000000000
70000011011111111100
70000011011111111100
70000011011111111100
70000011011111111100
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70000000000000000000
    
```

A

Figure 3.

B

```

NUMBER OF ROWS = 28  

NUMBER OF COLUMNS = 20  

DRAWDOWN
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00000000000000000000
00000000111111111100
00000001111111111100
00000011110000000000
00000111110000000000
00110111110000000000
00110111111111111100
00111011111111111100
00001100000000000000
00001101111111111100
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00001101111111111100
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00001101111111111100
00001101111111111100
    
```

TIE-UP
 0110001101001
 0110001101111
 011111101111
 0011111000000
 0001101111111
 0000101111110
 0000011100010
 00000000000

TREADING
 100000000000
 100000000000
 010000000000
 001000000000
 001000000000
 000100000000
 000010000000
 000001000000
 000000100000
 000000010000
 000000001000
 000000000100
 000000000010
 000000000001
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000
 000000000000

THREADING
 00000000001110000
 0000000000100001100
 0000000011000000000
 0000000100000000000
 0000010000000000000
 0000010000000000000
 0000010000000000000
 0011100000000000000
 110000000000000011

of 0's and 1's to represent the warp and weft. An image of up to 40 rows and 40 columns may be entered. The loom capacity here is for 16 harnesses and 18 treadles. Once the image is complete the computer takes over, making its calculations. This program takes a long time to run—sometimes up to three minutes! The drawdown information from this program appears in a non-traditional form. It is outputted in the same manner as it was inputted, that is, in the form of a series of 0's and 1's. First it tells how many rows and columns have been entered. Then it gives a drawdown, a threading, tie-up and a treadling order. It is necessary to designate one of the symbols for the warp. The weft is assumed to be the other symbol. It is best to use a printer for this program, because the solution is outputted to the screen quickly and it flips by

Little Schoolhouse Runner

Warp and Tabby Weft: 12/2 mercerized cotton, natural.
 Sett: 24 e.p.i.
 Pattern Weft: 5/2 Verel in "Wedgewood".
 Total Warp Ends: 344.
 Weave Structure: 10 harness, 8 block summer and winter.
 Number of Treadles: 28
 Width in Reed: 14".
 Length of Warp: 2 yards.
 Dimensions After Washing: 13 3/4" x 36"
 (includes fringe).

ENTER PATTERN TO ANALYZE!
 START FROM BOTTOM OF CLOTH.
 ENTER PATTERN LINE FROM LEFT TO RIGHT.
 FOLLOWING '1' ENTER EACH LINE BY
 USING '1' FOR WARP THREAD, AND
 USING '2' FOR WEFT THREAD.
 PRESS 'RETURN' TO END EACH LINE.
 PRESS 'RETURN' TWICE AFTER LAST LINE.

B

8 HARNESS AND 13 TREADLES REQUIRED

```

                1 X
                1 X
                XXXXXXXXXX 1 X
                XXXXXXXXXX 1 X
                XXXX 1 X
                XXXX 1 X
                XXX XXXX 1 X
                XXXX XXXXXXXXXX 1 X
                XXXXX XXXXXXXXXX 1 X
                XX 1 X
                XX XXXXXXXXXX 1 X
                XX XXXXXXXXXX 1 X
                XX XXXXXXXXXX 1 X
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                XX XXX XXX 1 X
                XXXX XXX XXX 1 X
                XXXX XXX XXX XXX 1 X
                XX XXXXXXXXXX 1 X
                X XXXXXXXXXX 1 X
                X
                X
                XXX 1 00 00
                X 1 00000 0
                X 1 00000 00
                XX 1 00000
                XX 1 0000 00000
                XX 1 000 0 00
                X XXX 1 0000 0 00
                XX 1 XX:
    
```

A

Figure 4.



Figure 5. Profile draft.

before one may even realize what has happened. One inconvenient aspect of this program is that there is no provision for editing out errors before the fabric analysis begins. This is especially problematic for larger designs. Nor is there provision for rotating images; if this is desired the image must be entered a second time.

Another "free" fabric analysis program was published in *Handwoven* in 1986 by Scott G. Jones.² This program may also be run on Apple computers or any computer which understands BASIC. The image capability of this program is 80 rows by 80 columns with a loom capacity of 32 harnesses and 32 treadles. The design is entered in much the same way as the Hoskins program, but the number 1 serves as the symbol for warps and 2 for wefts. The computer makes its calculations and outputs the drawdown information in a more traditional form. First it tells how many harnesses and treadles are required. Then the familiar quadrant appears showing the drawdown on top left, the treadling order on top right, the threading order on bottom left and the tie-up on bottom right.

It is interesting to note that my schoolhouse image analysis by Jones' program still required 8 harness blocks and 13 treadling blocks on the rotated design. However, the tie-up, and thus threading and treadling orders, was different. This program proved to be faster than the early Hoskins program, but the same inconveniences still held true: There was no provision for editing errors once the image was complete, and no means for rotating it.

While I have used what are primarily fabric analysis programs for design analysis, I have

skirted an important issue: what about fabric structure? I handle this by using the computer generated draft as a profile draft. I consider the squares of the threading draft as units. In this way, all the possibilities of block weaves, such as Summer & Winter or Bronson Lace, are available. If I want to use the new draft just as it comes out of the computer, I would have to determine whether a tabby foundation is appropriate, or whether there are floats which might be too long to be practical. Not least, the final aesthetic decisions must be made.

While there has been some controversy about the appropriateness of computers to the world of weaving and fiber arts, I believe that weavers can only benefit from their use. With the tedium and errors from hand-done drawdowns on graph paper eliminated, and the possibility of making designs come alive on the computer screen, weavers can turn their full attention to weaving!

Notes

1. Janet A. Hoskins, "Computerized Fabric Analysis," in *Shuttle, Spindle & Dyepot*, Vol. XIV, Issue 53, Winter 1982, 26-27.
2. Carol and Stewart Strickler, "A Fabric Analysis Program," in *Handwoven*, Vol. VII, No. 1, Jan./Feb. 1986, 76, 92.

Bibliography

- Hoskins, Janet A. "Computerized Fabric Analysis, in *Shuttle, Spindle & Dyepot*, Vol. XIV, Issue 53, Winter 1982.
- Hoskins, Janet A. *Pattern Master IV*. Chico, California: 1984.
- Strickler, Carol and Stewart. "A Fabric Analysis Program," in *Handwoven*, Volume VII, No. 1, Jan./Feb. 1986.

Note: Pattern Master is no longer marketed by AVL.

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MEET THE AUTHORS



ALANIZ

Leonore Alaniz has been weaving fabrics for twenty years since her apprenticeship at the Master Weaving School in Germany. After many years in industry designing textiles for fashion and interiors, she turned to clothing design. She is the originator of the Chemise Diagonal™, the nucleus of her patented Collection Diagonal™.

Fiber artist, teacher and writer **Phyllis Alvic** graduated from the School of the Art Institute of Chicago in 1967. Since that time she has frequently exhibited her work. She shares her experiences and opinions about weaving through lectures, workshops and writing.

Clotilde Barrett is the former publisher of *The Weaver's Journal*. Since selling the journal three years ago, she has spent her time traveling and teaching internationally.

Paul Brubaker, Monterey, Virginia, was blinded in Vietnam. He studied weaving under Veterans Administration auspices in an experimental tutorial program. For eight years he has created, demonstrated and exhibited weaving. In 1985 his work was part of "National Exhibits by Blind Artists."



ALVIC

Allen Fannin lives in Westdale, New York, where he and his wife Dorothy own and operate a small textile mill producing a line of woven accessories as well as piece goods for retail fabric stores. He also assists handloom weavers in the large scale production of their fabric designs. He is the author of *Handspinning: Art & Technique* (1970), and *Handloom Weaving Technology* (1979).

Sandra Gue has been a freelance feature writer on arts and environmental topics for the past seven years. She has a M.A. in Zoology from the University of California—Berkeley and is currently Public Relations Director for the Textile Arts International gallery in Minneapolis.

Audrey Homme is a production weaver in Eau Claire, Wisconsin, specializing in wearables. She has developed a bog shirt pattern called "Beyond the Bog", teaches and gives workshops on woven garments.

William Koepf is a "hobby weaver" with interests in backpacking, woodworking and chess. He lives in Bakersfield, California.



BARRETT



KOEPP

Connie Magoffin is editor/publisher of *From Woods and Fields*, a natural dye newsletter. She is also a consultant, lecturer and demonstrator of natural dyeing, spinning and weaving and coordinator of the dye garden at the University of Minnesota Landscape Arboretum. She is activities director at the Ebenezer Home in Minneapolis.

Susan Poague has been weaving since 1971. In spring, 1987 she will finish her M.A. in Weaving at Iowa State University in Ames. Her weaving interests are focused on block weaves and computer applications to weaving.



GUE



POAGUE

Else Regensteiner was born and educated in Munich and has studied and taught weaving in the United States since 1942. She is Professor Emerita at the School of the Art Institute of Chicago, where she was head of the Weaving Department until 1971. She is the author of *The Art of Weaving* (1970) and *Weaver's Study Course: Ideas and Techniques* (1975), as well as many articles.

Coby Reynders-Baas has long had an interest and expertise in sprang and is a leader of sprang enthusiasts in The Netherlands.



HOMME



STACK

Lotus Stack is the Textile Curator at the Minneapolis Institute of Arts. Lotus was a National Museum Act intern in the Metropolitan Museum of Art, Textile Conservation Department and has done further studies in Europe. Her special interests are woven structure and the history of textile technology.

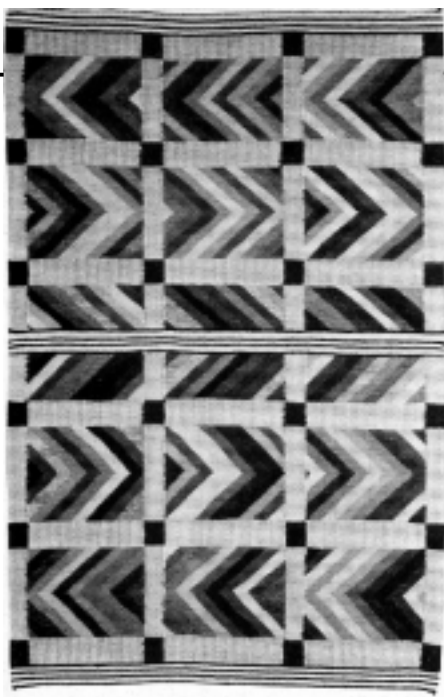
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An excerpt from

Geometric Design in Weaving

by Else Regensteiner

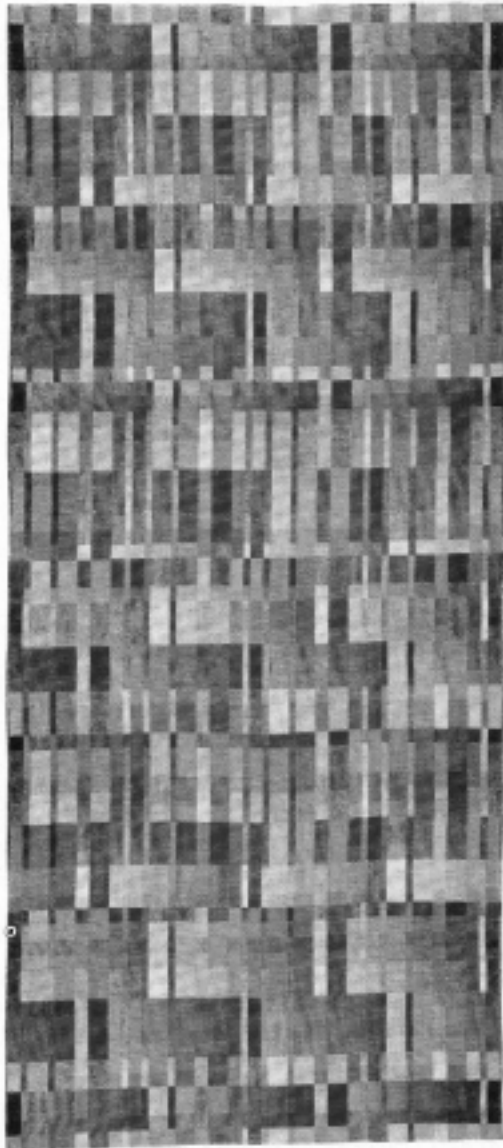
THERE IS A WEALTH of geometric designs and shapes suitable for interpretation in textiles. The term geometric however, conjures up visions of high school mathematics classes, where, with ruler and compass, one learned logical relationships of forms and sizes.

I never appreciated the science of geometry as such, but I always found the visual beauty of orderly arrangements striking and the interaction of forms and shapes, spaces and proportions, fascinating. In time, I became aware of the wonderful symmetry in the stable and dynamic systems that are ever-present in nature and in art.

Geometric forms, as a basis of design, are applied by every artist in endless combinations, may he or she be a painter, sculptor, architect, or weaver. It was Voltaire who stated, "There is a hidden geometry in all the arts the hand produced". Lines define spaces and lead the eye to points of interest; intricate geometric compositions evolve from squares, rectangles, circles, triangles, and hexagons. The weaver uses these basic shapes to express ideas in woven forms, be they functional, decorative, conceptual, sculptural, realistic, or abstract.

Combinations of shapes may form the content of the principal figure, as seen in compositions by Picasso, Miró, or Gris; or they may stand on their own, as demonstrated by Piet Mondrian or Josef Hoffman. They may be repetitive, as used by Jack Lenor Larsen; or present theme and variations, as shown in the designs of oriental rugs.

While color and texture play a major role in woven textiles, the emphasis in this book is on structure as such. Color illustrations, however, are included to show how basic geometric shapes are enhanced, changed, softened, or blurred by the influence of color and texture.



Tufted Rug by David Cress.

Top, *Palette*. Woven rug by David Cress.

Split Entry 1969, by Richard Landis

Ratios and Dynamic Symmetry

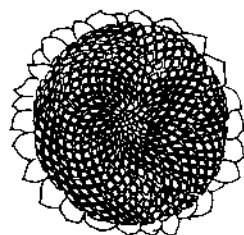


Figure 1. Sunflower head.

The beauty of a work of art is based on a sense of perfection that appeals, consciously or unconsciously, to the sensitivity of the viewer or user. A true work of art, whether a painting or sculpture, a textile or a building, never loses its harmony and balance with the passage of time. In analyzing the intrinsic qualities of such a work, we soon realize that the secret of its eternal value lies in its proportions and the relationships of its parts to one another.

The ancient architects and master builders were the first to use specific geometrical proportions to produce the greatest examples of Greek art. An early statement of this aesthetic order can be found in *De Divina Proportione*, written by Fra Luca Pacioli in 1509. These proportions later became known as "The Golden Section", "The Golden Rule", or "The Golden Mean". The scientist Johann Kepler called them a "precious jewel." The ancient Greeks defined the *Golden Mean* as the point that divides a line in such a manner that the smaller part is in the same proportion to the larger part as the larger part is to the entire line. The ratio determined to be the ideal relationship of space division was the proportion of 1 to 1.618, or an approximate simplified proportion of 5 to 8. The Parthenon in Athens, Greece is a perfect example of this theory.

In 1202, a mathematician from Pisa published a study of progressive numbers known as the *Fibonacci series*. It is said that through a study of the propagation rate of a pair of hypothetical rabbits, Leonardo Fibonacci established a relationship of numbers in nature that correspond, after the fourteenth number in the series, to the ratio of the Golden Rule. Starting with 1, 1, each progressive number in the series is the sum of the two previous numbers. Therefore the progression of numbers is 1, 2, 3, 5, 8, 13, 21, 34, and so on, continued indefinitely. This constant ratio is found in ancient as well as contemporary design proportions, from the Greek Parthenon to modern architecture, from great paintings to commercial shapes of rugs, windows, and doors. It is also the proportion in all nature and is found in the distribution of seeds and petals of flowers, in the progression of spirals in shells and snails, in the arrangements of leaves and branches on a stem, and, most strikingly, in the division of the human body. Any numbers in the series will work together and can be used as a guide for proportions in measurements of inches, for space divisions, for the number of threads in a border, and for distribution of shapes. The result is always pleasing.

Jay Hambidge, whose book *Elements of Dynamic Symmetry* was first published in 1920,

has spent years studying Greek art and architecture, seeking to derive empirical design principles to support his theory that great art of the past did not derive so much from instinctive art ability as from a standardized body of design principles with considerable scientific base. Analyzing art forms and architectural shapes, Hambidge noted that as the length of rectangles (with similar heights) increased, the increments were proportional increases corresponding to the symmetrical growth patterns found in man and nature. Arriving at conclusions such as Fibonacci had drawn in his series of numbers, Hambidge then applied them to graphic divisions of space. Two design principles are distinguished: static and dynamic symmetry. *Static symmetry* has a fixed entity or state. It is rigid in the orderly arrangement of units around a center and appears in nature most obviously in the structure of infinite varieties of snowflakes. *Dynamic symmetry*, as found in all growth of plants and shells, is moving and flowing.

Reduced from complex mathematics to simplified explanations, the principles of dynamic symmetry can be presented in a concrete way in a series of root rectangles. Exercises by which dimensions of dynamic symmetry can be established help the weaver to find excellent divisions of space for many projects. Once the perimeter of a piece, planned by the weaver, is established, the space within can be subdivided by constructing appropriate diagonals, horizontals, verticals, and curves according to the dynamic symmetry system. These spaces can then be used for the placement of motifs, colors, and textures for a successful design.

The square root of a quantity is a number that, when multiplied by itself gives that quantity. The square root of 16 is 4 because 4×4 is 16. Or the square root of 25 is 5 because 5×5 equals 25. When the square root of a number is graphically expressed in exact parts of one, a perfect square is root one. From this square other units are developed.

Constructing Divisions of Space

Constructing divisions of space based on dynamic symmetry must be done with a compass. This simple instrument for describing circles or transferring measurements consists of two pointed branches (one of them holding a pencil), joined at the top by a pivot.

Start with the basic unit of root one, the square, and draw a diagonal line through it from corner to corner. With the compass, measure the length of that diagonal and draw a curve with this length from the lower left-hand corner of the square. This adds an extension to the original base line of the square. When the horizontal and vertical lines are drawn in, a root 2 rectangle is established.

Once this first step is understood and practiced a few times, the next steps, which establish



Figure 2. Snowflakes.

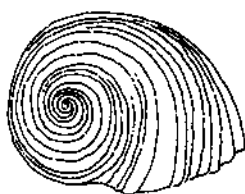


Figure 3. Growth of spiral in a shell.

progressively larger dimensions are easy. The mathematical numbers become the proportions of dynamic symmetry.

Rectangles Constructed from the Diagonal of a Square

1. The basic unit is the square, which can be any desired size. From this basic unit (root 1), a rectangle is constructed by drawing a diagonal from one corner to the other (figure 4a).

2. This diagonal of the root 1 rectangle becomes the base of the root 2 rectangle. The compass, using the length of the diagonal as measurement, extends the baseline out to establish the size of the root 2 rectangle (figure 4b). The extended space is 0.414. The area of this rectangle is therefore 1 (the square) + 0.414 or $\sqrt{2} = 1.414$.

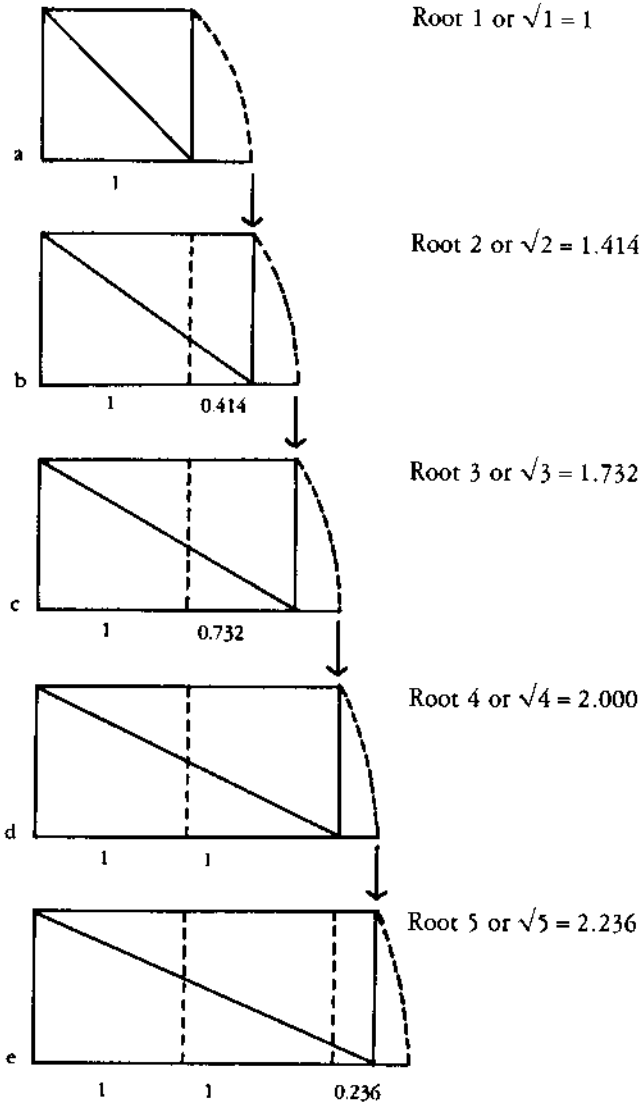
3. The diagonal of the root 2 rectangle becomes the base of the root 3 rectangle (figure 4c). The extended space is 0.732. The area of this rectangle is therefore 1 (the square) + 0.732 or $\sqrt{3} = 1.732$.

4. The area of root 4 rectangle ($\sqrt{4} = 2.000$) is two square units (figure 4d).

5. The diagonal of the root 4 rectangle establishes the base of the root 5 rectangle (figure 4e). This area is two square units + 0.236 or $\sqrt{5} = 2.236$.

6. The diagonal of the root 5 rectangle becomes the base of the root 6 rectangle and so on. However, root rectangles higher than root 5 are rarely used, although combinations of the basic rectangular shapes are utilized. A wide variety of space divisions can accommodate any number of designs.

Figure 4. Rectangles of dynamic symmetry.



Rectangles Constructed from the Diagonal of Half a Square

The diagonal constructed from half a square adds a dimension of 0.618 to the square. This converts the rectangle into an area of 1.618, which Jay Hambidge named a *Whirling Square* (figure 5). It is also the *Golden Section* of classical proportions. By adding a 0.618 rectangle to the opposite end of the whirling square rectangle, the rectangle becomes a root 5 rectangle ($0.618 + 1 + 0.618 = 2.236$). The 0.618 section is itself a whirling square rectangle. The root 5 rectangle and its *Golden Section* were used extensively in Greek art and architecture. The relationships within and among the rectangles become an intriguing study for the designer (figure 6).

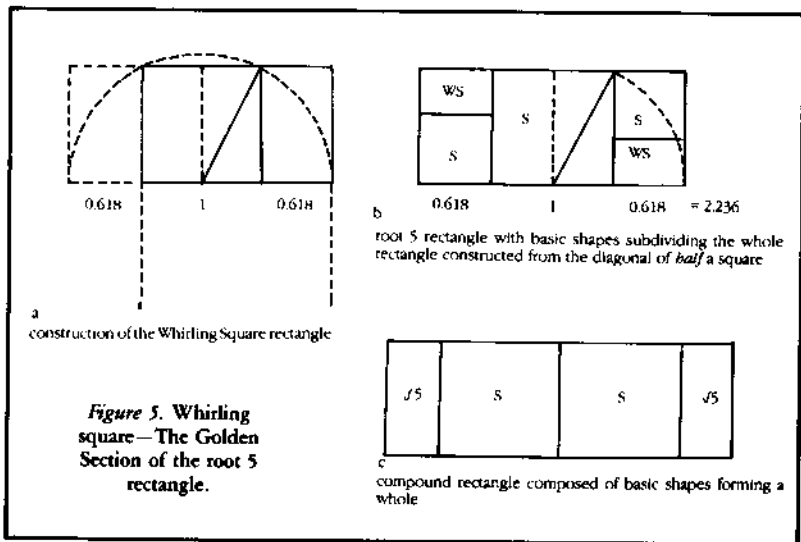


Figure 5. Whirling square—The Golden Section of the root 5 rectangle.

Design Approaches: A Basic Rectangle as a Design Unit

In any design unit—square, root rectangle, or whirling square rectangle—variety can be introduced through the construction of diagonals, horizontals, and verticals within the linear bounds in order to produce rhythmic themes. Logical subdivisions are made by using diagonals of the square and of the root rectangles and by constructing horizontals and verticals at the point of intersection of the diagonals or at the point of intersection of a diagonal with the perimeters of the shape.

Compound Rectangles

A unit square, root rectangle, or whirling square rectangle may be used in combination with itself or with other units as multiples or additives to produce a compound rectangle. Variety within the compound rectangle can be introduced through the construction of diagonals, horizontals, and verticals within the linear bounds of the compound rectangle, as well as within the linear bounds of basic rectangles or squares (figure 7).

A weaving design based on objective rules of symmetry is well on the way to becoming a good design. Exploring and experimenting with those rules offers many rewarding possibilities. They are a great help and challenge to the weaver but should never limit the creative approach. The choice of colors, textures, materials, and weave structures, applied to true and proven dimensions, will do their share to assure a personal expression and creative statement in every woven work of art.

Tessellation

The term *Tessellation* is derived from the Latin word "tessellare", to pave with tiles. Webster's definition is "a careful juxtaposition of elements into a coherent pattern". Weavers are familiar with mosaics in floor tiles, tiles for decoration, and quilt patterns derived from ancient designs. A characteristic of most tile design is repetition. A line figure may be used repetitively to cover a surface, or a given design motif may be used as the repeat element. Only three figures—squares, triangles, and hexagons—will combine in an all-over pattern; intervals occur when combining other regular figures, octagons, or pentagons, for example. Contemporary books such as *Geometry of Art and Life* by Matila Ghyka or ancient works such as *The Thirteen Books of Euclid's Elements*, *The Works of Archimedes*, and *Conics of Apollonius* give mathematical explanations and many figures that suggest tessellation designs in never ending variations.

Experimenting with tessellation designs can be easy and enjoyable. Use cut paper or pencil sketches and place small shapes on a contrasting background. As interesting designs or motifs occur, place one or several small hand mirrors next

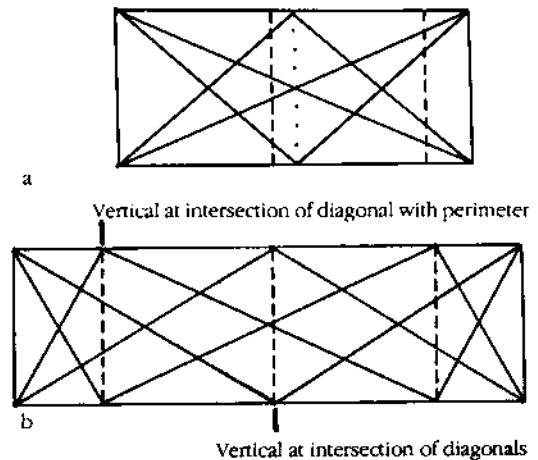


Figure 6. A. Root 5 rectangle with subdivisions; B. Two Whirling Square rectangles subdivided.

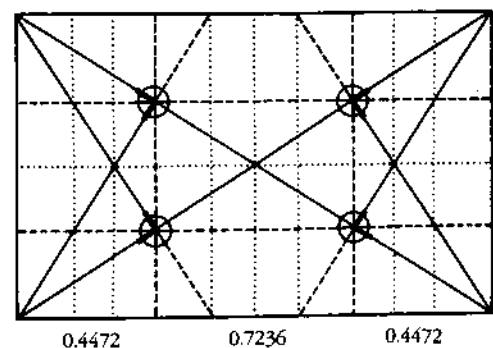


Figure 7. Dynamic symmetry. Divisions constructed from points where diagonals cross.

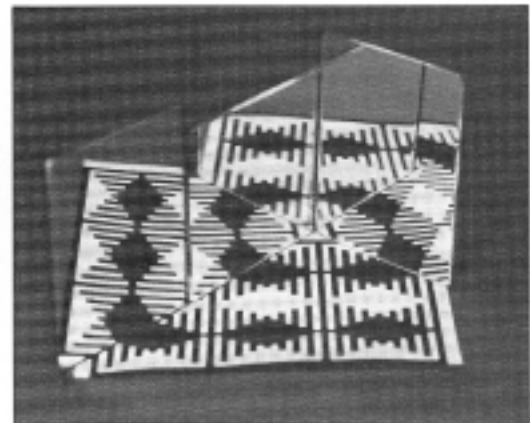
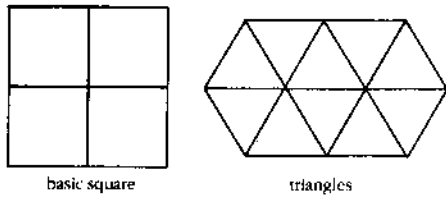


Figure 9. *Tessellation Design with Three Mirrors*, by Sadye Tune Wilson.

to or around the design to see the repetition of the patterns. Kaleidoscopic pattern changes may be seen by slowly moving the mirrors left, right, up, down, or diagonally over the design surface. Additional pattern changes are achieved by holding the mirrors at various angles to each other as they move over the design. *Tessellation Design with Three Mirrors* (figure 9) demonstrates the many magical results performed with mirrors. Figure 10 shows basic tessellation line elements.



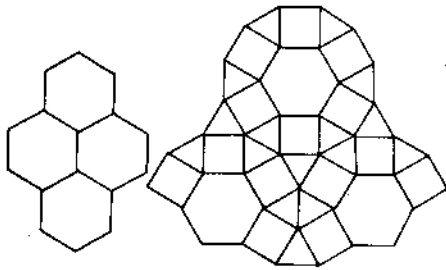
Figure 8. Rug by Sadye Tune Wilson, based on dynamic symmetry divisions of space.



basic square

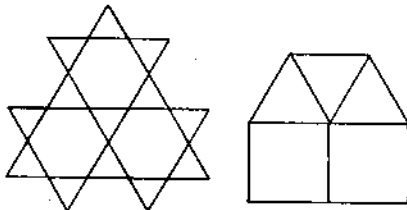
triangles

A



hexagon

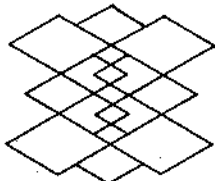
hexagon-square-triangle



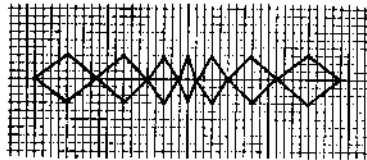
hexagon-triangle

square-triangle

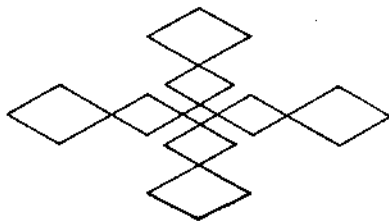
B



C



one dimension



two dimensions, especially useful in designing radiating patterns

D

Figure 10. A. Tessellation. B. Plane partitions combined in all-over design. C. Tessellation design modifications: expand or contract the design element. D. Graduate size of pattern in one or two dimensions progressively. Eliminate lines to create new elements.

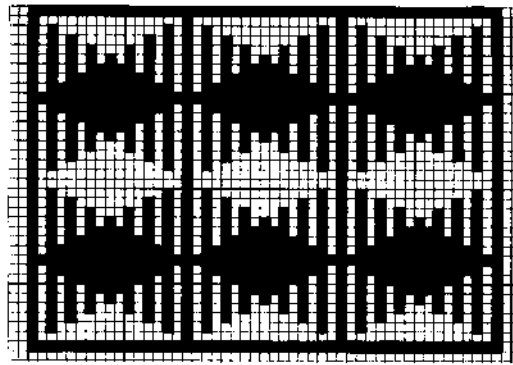
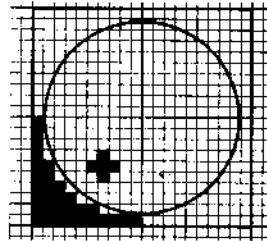
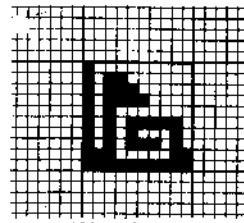


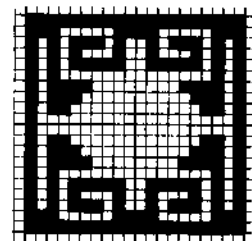
Figure 11. Use color or shading to create shapes within shapes.



Motif based on circle inscribed in square



Motif based on square circumscribing design element



Rotate design element to create pattern

Figure 12. Plane partitions inscribing and circumscribing design element.

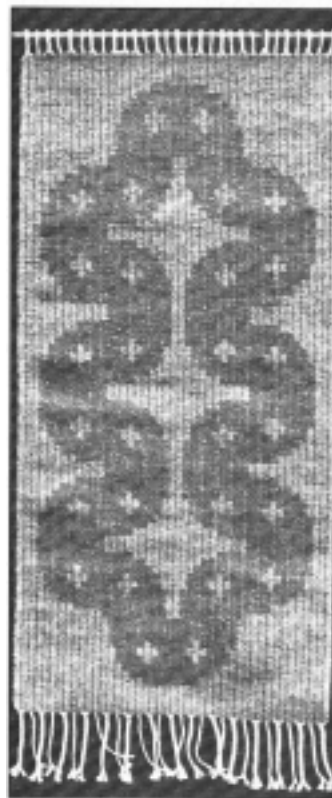


Figure 13. Rug in tessellation pattern by Sadye Tune Wilson. Rotation of the design element is used to create pattern in a motif based on a circle inscribed in a square.

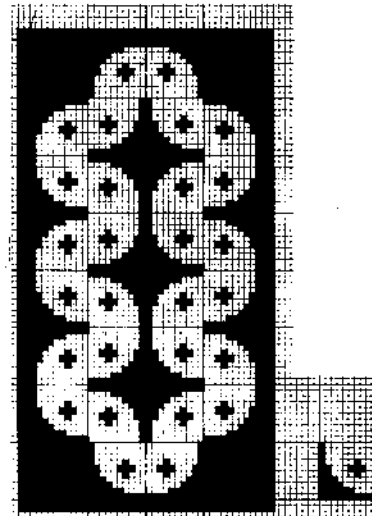
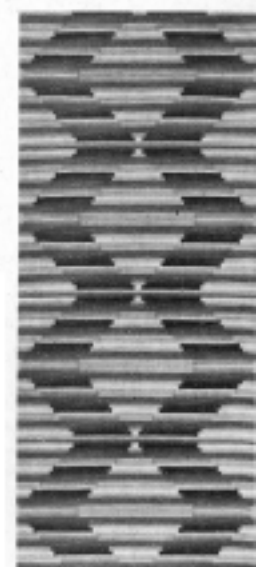


Figure 14. Ekinrode, by Merle Hillary Shusner. Tessellation design in interlocking tapestry technique.



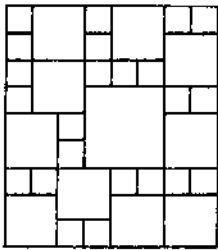


Figure 15. Modular design.

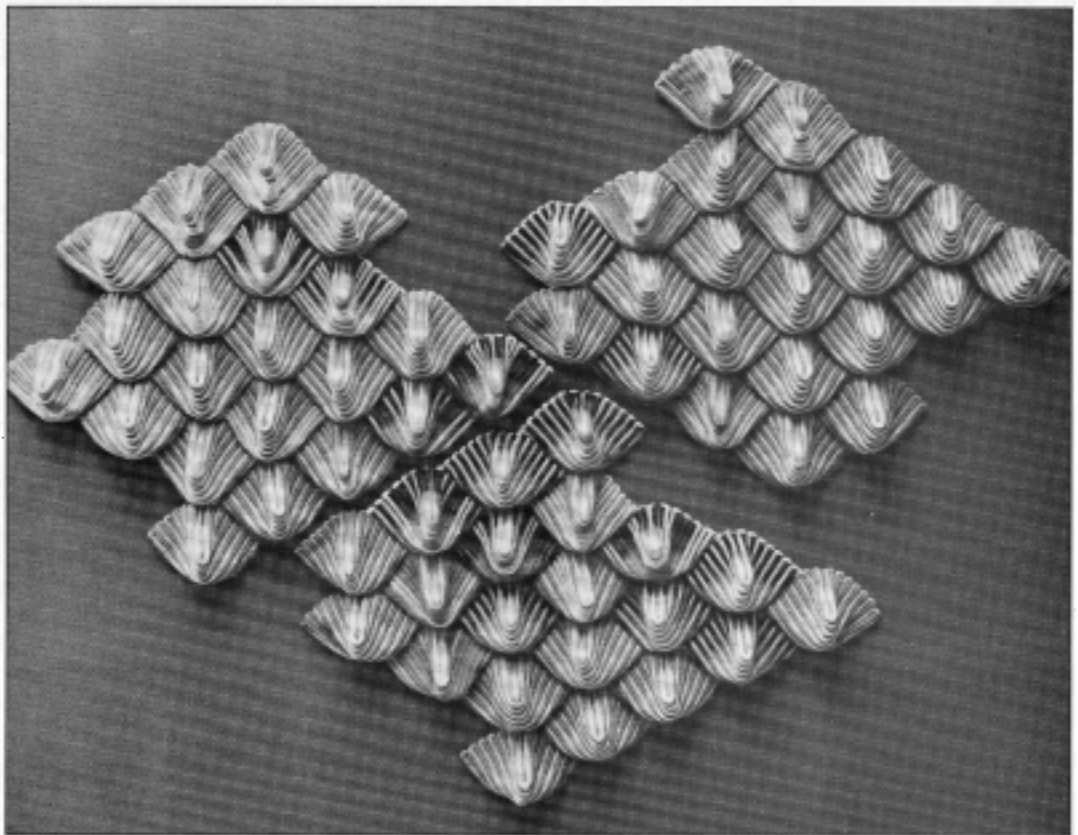


Figure 16.
Cone Forms, by Ken Weaver. Modular wall piece in three sections based on the diamond shape.

The Module

Modular units are well known in many fields of art, architecture, and design. Furniture manufacturers offer modular units for combinations of shelves, cabinets, and desks. Le Corbusier, the modern architect, became famous for establishing the module as a valid form of composition. Children play with modules of flat pieces of cardboard or plastics that fit together for creative designs and shapes.

The module, as defined by Webster, is "a standard unit of measurement". Units of a size and shape with common measurements will fit together to fill a given space and can be arranged and rearranged in many different ways. The weaver, too, can use modules to express decorative design ideas. They are often separate pieces, which can be arranged in any number of combinations.

Ken Weaver composed multiple panels of bright rep weaves and three sections of *Cone Forms* in woven, sewn, and shaped units for a commissioned wall piece of strong geometric design (figure 16). Characteristic of rep weaves are ridges made by alternating heavy and thin yarns. His units consist of tightly woven warp-faced rep strips with warps of 36 to 42 ends per inch, crossed with wefts of 30 to 40 ends of two-ply wool wound together for the large pick and one end of 20/2 linen in between for the thin pick. The strips are cut into small pieces, which are machine sewn into "cones"; these are then sewn together for the final hanging.

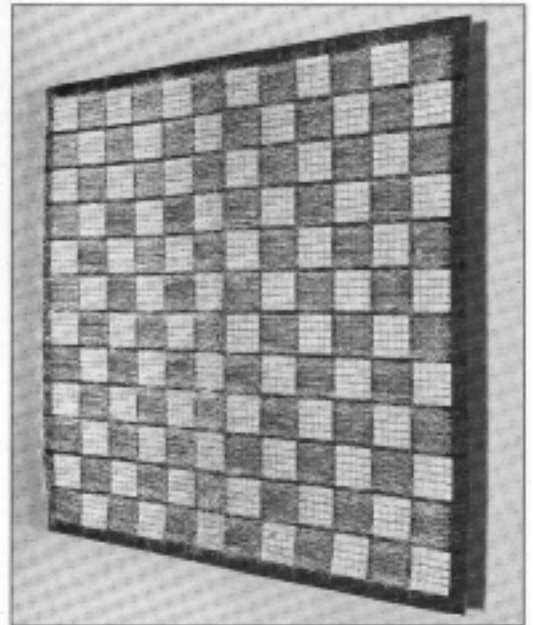


Figure 17.
Chicago Checkerboard, by Anne Wilson. Wall hanging in linen, rayon, abaca.

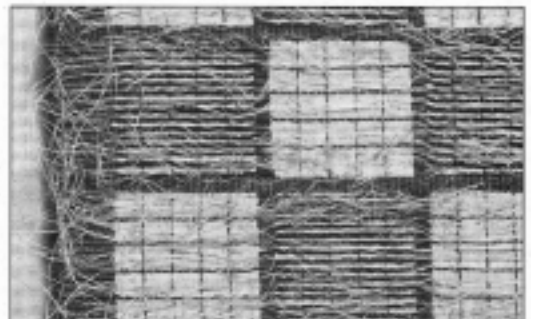


Figure 18.
Detail of *Chicago Checkerboard*, by Anne Wilson.

The Grid

Weavers use the grid for drafting patterns and plotting designs. It is a network of uniformly spaced horizontal and perpendicular lines and is used extensively by artists for scaling geometric shapes and proportions. Classic architects used the grid to compose perspective and size relationships, and graphic designers ancient and modern, used it to design letters and the layout of the printed page.

The grid can be visible or invisible in the final design. It can be simple or complex and can have regular spaces of squares, rectangles, hexagons, diamonds, and free divisions, but its main characteristic is the regularity with which a surface is covered. Although the grid is usually used simply as a design guide, some artists have made it an integral part of their designs. One such person is artist-weaver Anne Wilson, who uses the visible grid extensively in its most basic form, the square, giving it life and substance through imaginative selection of materials and textures (figure 17). The static background, in contrast with the fluid and lively surface, gives Wilson's weavings a thoroughly satisfying unity.

The grid can be used in plain weaves, double weaves, and tapestry techniques. The Navajo blanket shown in figure 19 uses squares and rectangular grid background, and includes geometric designs in unusually exciting combinations.

Illustration Credits

Palette. Photo courtesy of David Cress.

Tufted Rug. Photo courtesy of David Cress.

Split Entry 1969. Courtesy of the Art Institute of Chicago.

1. Drawing by Irene Suyeoka.
2. Drawing by George Suyeoka.
3. Drawing by George Suyeoka.
- 4.-6. Diagrams by Sadye Tune Wilson.
7. Diagram by George McVicker.
8. Photo courtesy of Sadye Tune Wilson.
9. Photo courtesy of Sadye Tune Wilson.



Figure 19. Navajo blanket. Geometric shapes on grid divisions.

10. Diagrams by Sadye Tune Wilson.

13. Collection of Dr. and Mrs. Carl Kuttruff; photo courtesy of Sadye Tune Wilson.

14. Photo by John Herr; courtesy of Merle Hillary Shusner.

15. Diagram by Anna Day.

16. Photo courtesy of Ken Weaver.

17. Photo by Dean Jacobson; courtesy of Anne Wilson.

18. Photo by Dean Jacobson; courtesy of Anne Wilson.

19. Courtesy of Denver Art Museum, Denver, Colorado.

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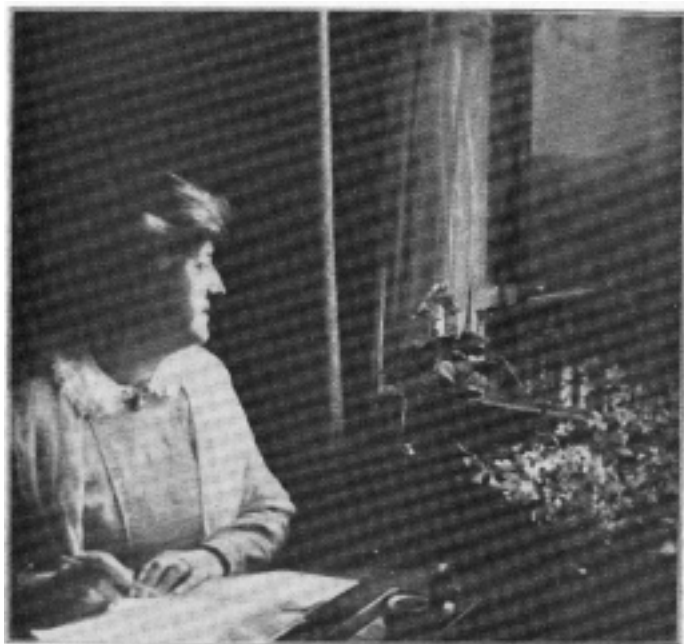
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Listening to Threads

Turn-of-the-century Dutch textile expert Elisabeth van Reesema revives the long-forgotten technique of sprang

by Coby Reynders-Baas

THE PHRASE "LISTENING TO THREADS" was coined by Dutch textile expert Elisabeth Siewertsz van Reesema (1860–1922) to describe her lifelong involvement in textile research. Threads with their intricate interweavings continuously occupied her time, so consequently she had learned to "listen" to these threads unlike anyone else. Her activities led to the development of a course covering "Egyptian plaiting" or *sprang*. The text which she produced in conjunction with this course is still consulted by Dutch *sprang* enthusiasts.

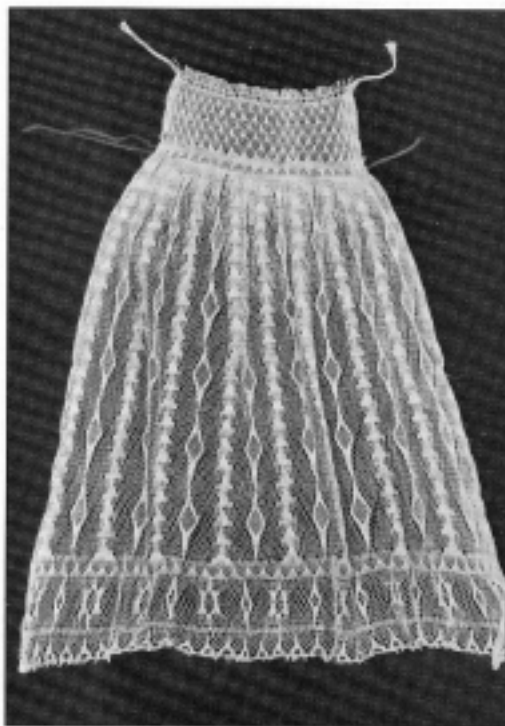
Sprang is defined as a technique using only warp threads fixed into a frame. These threads are then manipulated to create fabric. Twistings at the top of the frame produce simultaneous twistings at the bottom. This creates a mirror image effect, typical of *sprang*.

Van Reesema has been credited in Europe with bringing *sprang* back from obscurity. Through her research she fostered renewed interest in *sprang*. In 1926 she documented her research in *sprang* and other early textile techniques in "Contribution to the Early History of Textile Techniques." Samples she produced in testing her research are in the collection of the Rijksmuseum voor Volkenkunde in Leiden, The Netherlands. This collection of textiles includes not only the samples but other products of van Reesema's textile dexterity. The Siewertsz van Reesema family also retains examples of her work.

Newspaper accounts from 1906 also detailed van Reesema's textile involvement. She at one time ran an interior design workshop with E. Nierstrasz which produced high quality hand-

crafts, curtains and furniture which won prizes at national and international exhibitions. The women had entered the interior design field in part as a response to the poor quality of products being produced for the home market. Their inspiration came from nature: ". . . we drew plants in whole or in detail. We made sections, observing the fine vein patterns through a magnifying glass. And we always discovered the great diversity alongside the greatest simplicity. Some-

Elisabeth Siewertsz van Reesema, 1860–1922 (above).

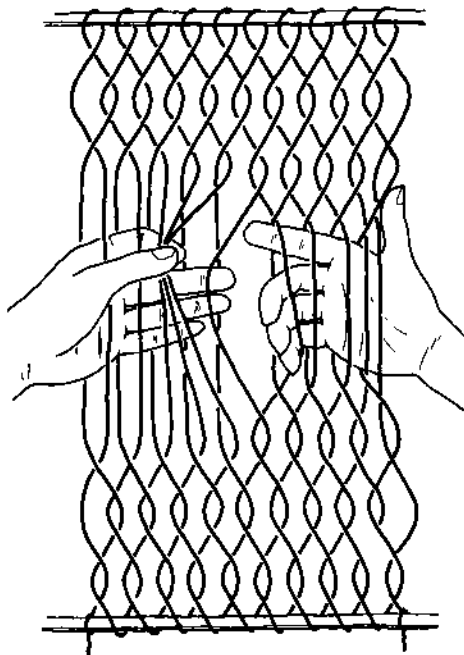


Baptismal gown from Napoleonic times, property of Rijksmuseum voor Volkenkunde, Leiden, The Netherlands.



Copy of an original plaited bonnet by van Reeseema.

one asked us later 'How do you get so many straight lines as well as all the simple, sometimes almost sober designs, because one surely does not find these in nature?' My answer [was that these were found] exactly in nature and nowhere else. From a blade of grass to the most exquisite flower, we have found the simplest lines, sections of flowers and fruit are often geometrically correct.



Twisting threads on a sprang frame.

Mayor H. A. van den Broek, Honorary Dean at the Guild of St. Jan in Soerendonk (Netherlands) wearing a sprang sash made in 1741.



And everything must fulfill its function, it must do so in order to fit in with the design. That was our basic discovery. All our activities now lead to the designing of furniture, fabric, table linen, doormats — items focusing on interiors."

Van Reeseema came to sprang after reading an Austrian pamphlet by Louise Schinnerer entitled *Antike Handarbeiten* (Antique Handcrafts). She made test samples which she sent to Schinnerer. As their correspondence progressed they discovered that they used quite different working methods. Van Reeseema designed an apparatus on which long pieces of sprang could be produced, such as sashes worn in the 18th and 19th centuries by high ranking military officers during traditional guild functions in the south of the Netherlands.

The two women, van Reeseema and Nierstrasz called their business "tSpinnewiel" (The Spinning Wheel) and opened a shop in the Dutch city of Arnhem. Here they sold needlework. Van Reeseema noted that "our ideal goal is to prevent female hands from producing thoughtless, inferior quality designs that originate with foreign manufacturers. This ideal is still respected by the "Goed Handwerk" Foundation, 80 years after its first expression.

In their workshop at The Spinning Wheel they also made sprang. The female employees made it with "extraordinary cheerfulness" even making sprang frames to use at home. The work-

Phrygian bonnet, from the collection of Rijksmuseum voor Volkenkunde, Leiden.

Phrygian bonnets were worn in the Mediterranean area in antiquity. During the French Revolution, the bonnet symbolized freedom.



shop produced purses, colors, handbags, tea cozies, stitch-in lace, caps, decorative strips for dresses and doilies.

Van Reesema and Nierstrasz were very active in the Dutch Arts and Crafts Association (V.A.N.K.). Van Reesema gave sprang demonstrations and wrote articles to familiarize and remind the public about this craft. Eventually

sprang became a compulsory subject for those in The Netherlands seeking a technical diploma in Textile Design. This was the only place in Europe formally teaching sprang in a degree program.

A Phrygian cap on an old terra cotta plate kindled van Reesema's interest in plaiting horizontal patterns. She discovered double-sprang. Her article "Contribution to the Early History of Textile Techniques" produced a response from the Metropolitan Museum of Art in New York. They sent her a collection of photographs of plaited bonnets found in the Egyptian tombs of Akmin and Sakkara. Van Reesema was especially intrigued by one of the photographs which showed cloth in a plaited pattern, one half decorated with stripes puckered at one end, the other half showing the same plaited patterns but without stripes and with much looser plaiting.

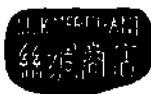
Van Reesema copied this bonnet herself (now in the collection of the Rijksmuseum voor Volkenkunde, Leiden). She believed that an accurate review of ancient textile work is only possible through a thorough understanding of the technique used. It was later discovered and noted in *The Bulletin of the Metropolitan Museum of Art*, (Oct. 1939) that the bonnets were worn by women turban fashion during the 3rd and 4th centuries A.D.

Four years after van Reesema's death her book entitled "Contribution to the Early History of Textile Techniques" was published through the enthusiasm of archaeologists and ethnologists. Many textile scholars such as Nobuko Kajitani, conservator of textiles at the Metropolitan Museum of Art, have made use of her research. Noëmi Speiser, author of *The Manual of Braiding* (1983) and Peter Collingwood, author of *The Techniques of Sprang* have also noted their indebtedness to her enthusiastic and thorough research on the topic of sprang.



Multicolored double-layer sprang. In the collection of Rijksmuseum voor Volkenkunde.

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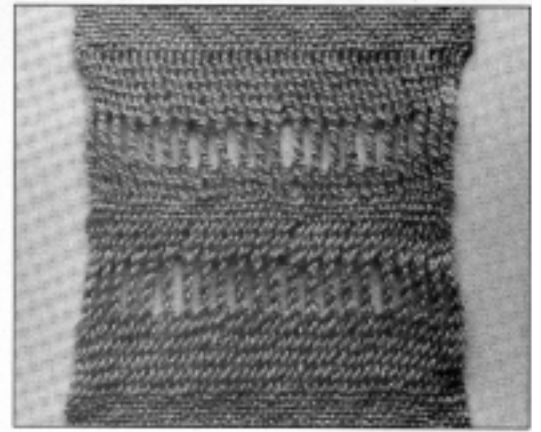
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Sprang on the Loom

by Karen Searle



SPRANG is a mesh fabric produced by twisting and crossing warp threads, inserting a temporary place holder such as a small rod or knitting needle, and then twisting and crossing the warps again. Each row of twists forms a mirror image of itself on the other side of the shed, so sprang textiles are usually worked from both ends to the center. It is not necessary to use a weft until the final row to lock everything in place. It is a very pleasing and rhythmic process, and I enjoy making entire sprang pieces in the traditional manner, using a figure-8 warp on a simple frame device. I also like to use sprang motifs as decorative elements in a simple weaving, such as a scarf or stole. Any type of loom is suitable, and the shedding device of the loom aids in setting up the twists for the sprang pattern.

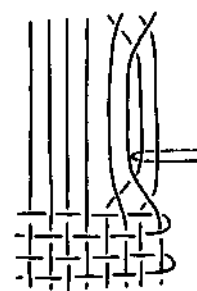
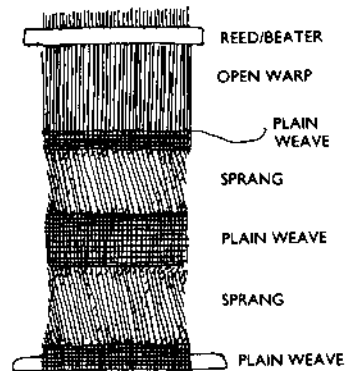
The scarf pictured uses single and double twists to form the motifs in the sprang bands. The single twist is the basic sprang mesh structure. The maximum length of each sprang band can be as long as the amount of space between the fell of the fabric and the shedding device. Always make twists in the plain weave shed that has the top layer of threads set to the right of the bottom layer.

Single twist

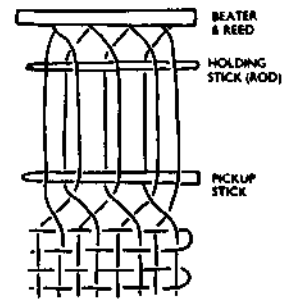
Open the proper plain weave shed. Use a pickup stick to hold the twists as they are made.

First row: Pick up the first two threads from the lower shed and bring them up to the right of the first thread in the upper shed; push down the first upper shed thread. Insert the stick in this crossing. (An extra thread is always picked up at the beginning of odd-numbered sprang rows. The remaining crossings will be worked with single pairs.) Repeat the process with the next lower-upper pair. Repeat across. There will be two threads left at the end of the row. Place them under the stick. When the entire row of crossings has been completed, insert two small rods into the crossed shed—push one down firmly, and push one up toward the shedding device.

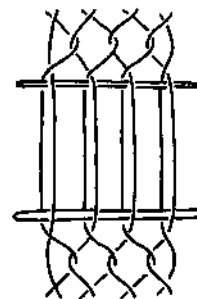
Second row: Open the same shed. Pick up



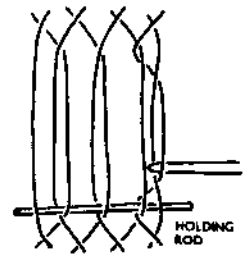
Single twist, row 1: Begin with 2 lower threads up, 1 upper thread down, then 1 lower up, 1 upper down.



Row 1 of crossings completed.

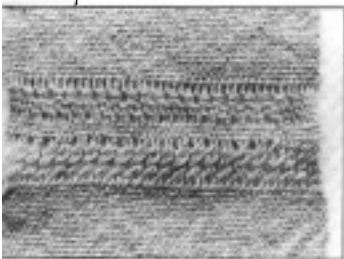


Row 2: 1 lower thread up and 1 upper thread down.

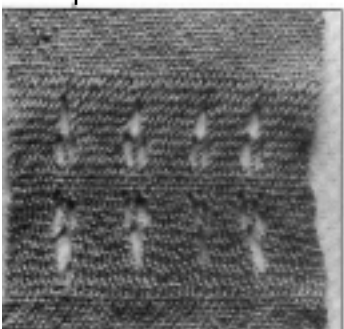


Row 2 of crossings completed.

Detail showing single twists with "ropes" of double twists.



Detail showing single and double twists.



Detail of scarf/sampler showing single twists with slits.

SPRANG to page 75.



Finnweave

by Clotilde Barrett

FINNWEAVE belongs to the class of two-layered cloth (double-weave), with each layer woven in plain weave. The two layers contrast in color—D (dark) and L (light).

Each layer has the same picks per inch (p.p.i.) and ends per inch (e.p.i.) The structure is set up "in pairs," for example, the threading alternates two dark ends and two light ends; the wefting (picking) alternates two dark picks and two light picks.

Let us assume that the top layer of double cloth is woven with a dark warp and weft and the bottom layer is woven with a light warp and weft. This cloth will be the background on which patterns will be woven.

Patterns occur when there is a change in the position of warp and weft, for example when the light warp and/or weft moves to the top layer or when the dark warp and/or weft moves to the bottom layer. This type of patterning can be drafted on graph paper and such a graph serves as a guide when the weaver is at the loom and wishes to produce intricate designs.

Finnweave Graphs

In figure 1a, each vertical line stands for *one pair* of background warp ends (dark), in this example,

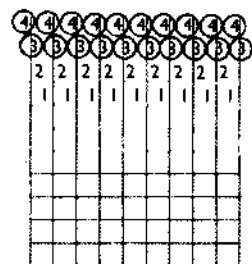


Figure 1a.

10 pairs. Each blank column between the lines stands for *one pair* of pattern warp ends (light), in this example, 9 pairs.

Each horizontal line stands for *one pair* of background picks (dark), in this example, 5 pairs. Each blank row between the lines stands for one pair of pattern weft picks, in this example, 4 pairs.

Figure 1b shows the threading and tie-up for a 4-harness loom. The warp alternates 2 D (on harnesses 3 and 4) and 2 L (on harnesses 1 and 2), ending with 2 D. The weft alternates 2 D (start at the bottom of the diagram) and 2 L.

Background Cloth

Figure 1a has no patterning.

To weave:

- lift H3; weave D
- lift H4; weave D
- lift H1 + 3 + 4; weave L
- lift H2 + 3 + 4; weave L

Start the D shuttle and the L shuttle from opposite sides. Interlock the weft at the selvages.



Swedish non-reversible Finnweave in blue and white. Note the difference between front and back (top and above). From the collection of Ruth Segolson, courtesy of Muriel Johnson.

Figure 1b.

repeat

Moving the Light Warp to the Face

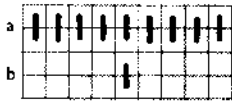


Figure 2.

In figure 2 each vertical stripe that crosses the horizontal line stands for a pair of pattern ends (L) which are lifted above a pair of dark wefts. This lifting is usually done with a pick-up stick.

In figure 2a, all the pattern pairs (L) are lifted.

To weave:

- lift H1 + 2 + 3; *weave D*
(all the L's + half of the D's)
- lift H1 + 2 + 4; *weave D*
(all the L's + other half of the D's)

In figure 2b only the central pattern pair is lifted.

To weave:

- lift H1 + 2 and with a pick-up stick, pick up the central L pair.
- Put H1 + 2 down and slide the pick-up stick back, close to the reed.
- lift H3; *weave D*
- lift H4; *weave D*

Moving the Light Weft to the Face



Figure 3.

In figure 3, each vertical line which is crossed by an horizontal stripe represents a pair of background ends (D) which are kept to the bottom layer so that the light weft can weave on the face and weave pattern. The dark pairs of ends which are not crossed are in the top layer. These are usually lifted to the top by means of a pick-up stick.

In figure 3a none of the background pairs (D) are lifted.

To weave:

- lift H1; *weave L*
- lift H2; *weave L*

In figure 3b every other D pair is lifted. In figure 3c all the D pairs are lifted except the center two pairs.

To weave:

- lift H3 + 4 and with a pick-up stick, pick up all the D pairs that are not crossed
- put H3 + 4 down and slide the pick-up stick back, close to the reed.
- lift H1; *weave L*
- lift H2; *weave L*

To Weave a Light Pattern on a Dark Ground

Graph: The vertical and horizontal lines of the graph paper represent pairs of D warp ends and weft picks. The vertical and horizontal spaces of graph paper represent pairs of L warp ends and weft picks.

Pattern: Pattern is created:

1. By bringing light warp pairs to the top. The horizontal line of graph paper is crossed by a vertical stripe, and
2. By bringing light weft pairs to the top. The vertical line of graph paper is crossed by an horizontal stripe.

Weaving: For each horizontal line of graph paper weave two D picks: lift all the light pairs (H1 + 2), pick up the pairs which correspond with the pattern (the crossed) and sink the others. Weave two D picks, one by lifting H3, the other by lifting H4.

For each horizontal space of graph paper weave two L picks: lift all the dark pairs (H3 + 4), pick up the pairs which correspond with the background (the uncrossed) and sink the others. Weave two L picks, one by lifting H1, the other by lifting H2. Note that the design on the back of the cloth is not the negative of the pattern front.

Practical Considerations

Use a narrow pick-up stick. A knitting needle works well.

There is a tendency for the web to draw in at the selvage. Avoid this by leaving a weft loop at the selvages.

Start shuttles from opposite sides. For example, weave D from right to left, at the left selvage interlock with L weft and weave from left to right. Weave L weft from left to right, at the right selvage interlock with D weft and weave from right to left.

The method of weaving described here does not allow beating after each pick because the pick-up stick is in the way. Figures 4a and b show the sheds for the two D picks. The weft cannot be beaten in.

Beating after each pick is possible if the pick-up stick is transferred to the area in back of

Figure 4a.

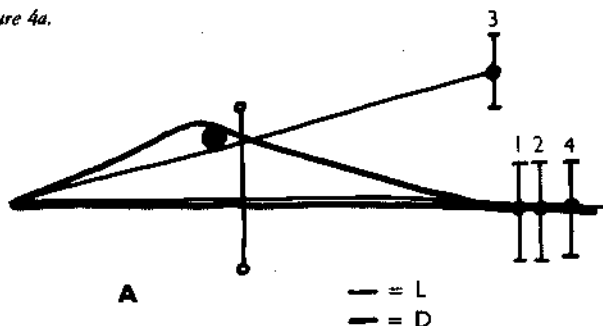


Figure 4b.

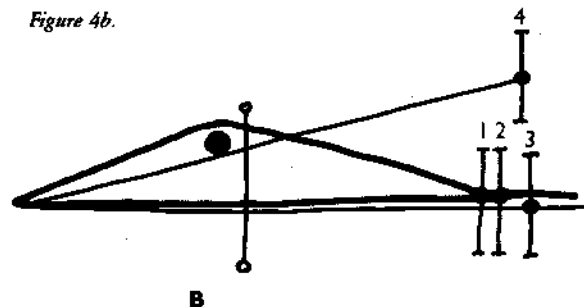


Figure 5a.

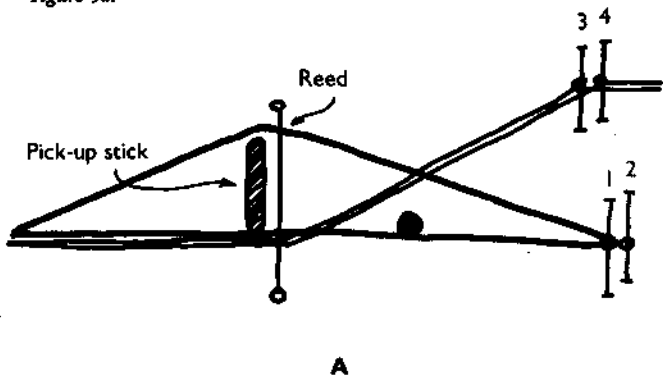
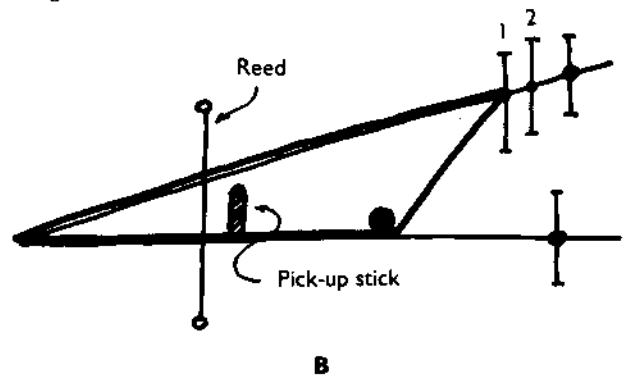


Figure 5b.



the reed. To weave the D weft: lift all the L pairs (H1 + H2) and pick up the pattern pairs with a *wide* pick-up stick. Lower H1 + 2 and put the stick on edge. Lift all the D ends (H3 + 4) (figure 5a) and insert a round stick behind the reed under the warp cross. Remove the pick-up stick.

Lift H1 + 2 + 3, weave D. Beat. Lift H1 + 2 + 4, weave D. Beat. It is sometimes difficult to see the shed, so try to find the right shed *behind* the reed (figure 5b), insert a sword in the shed behind the reed and put it on edge in order to transfer the shed to the front of the reed.

Sampler

Warp: 10/2 perle cotton in two colors D and L, 242 dark ends, 240 light ends.

Threading: (see figure 1b)

Sett: 36 e.p.i. in an 18 dent reed. Sley a D and a L in the same dent.

Tie-up: (see figure 1b)

Weave sequence:

Solid D ground: (see figure 6a)

- lift H3; weave D
- lift H4; weave D
- lift H1 + 3 + 4; weave L
- lift H2 + 3 + 4; weave L

Solid L pattern: (see figure 6b)

- lift H1 + 2 + 3; weave D
- lift H1 + 2 + 4; weave D
- lift H1; weave L
- lift H2; weave L

L pattern on D ground: (see figure 7)

- lift H1 + 2; pick up pattern
- drop H1 + 2
- lift H3; weave D
- lift H4; weave D
- lift H3 + 4; pick up ground
- drop H3 + 4
- lift H1; weave L
- lift H2; weave L

Four-Harness Loom-Controlled Patterning

If the pattern of figure 7 goes from selvedge to selvedge, it does not have to be done by pick-up (photo 1).

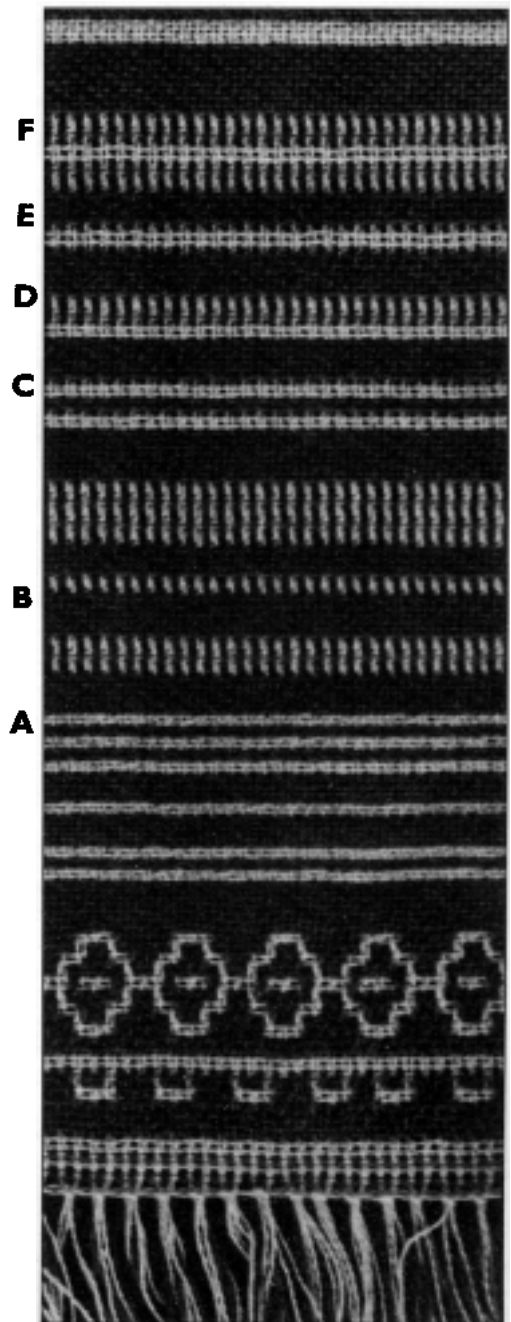
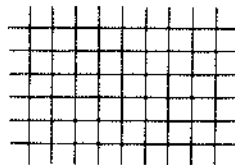


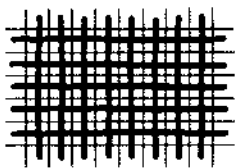
Photo 1.

DDDDDDDDDD
DDDDDDDDDD
LLLLLLLLLL
LLLLLLLLLL



A

Figure 6a.



B

Figure 6b.

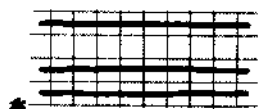


Figure 7a.

Figure 7a (L line across the web):

- lift H3; *weave D*
- lift H4; *weave D*
- lift H1; *weave L*
- lift H2; *weave L*
- repeat for each line of pattern

Refer to the previous description of background cloth for the areas where there are no lines.

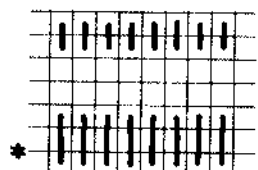


Figure 7b.

Figure 7b (L bars across the web):

- lift H1 + 2 + 3; *weave D*
- lift H1 + 2 + 4; *weave D*
- lift H1 + 3 + 4; *weave L*
- lift H2 + 3 + 4; *weave L*
- repeat for longer bars.



Figure 7c.

Figure 7c:

- lift H3; *weave D*
- lift H4; *weave D*
- lift H1; *weave L*
- lift H2; *weave L*
- lift H1 + 2 + 3; *weave D*
- lift H1 + 2 + 4; *weave D*
- lift H1 + 3 + 4; *weave L*
- lift H2 + 3 + 4; *weave L*
- repeat for each pattern

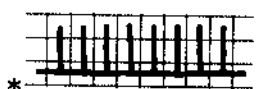


Figure 7d.

Figure 7d:

- lift H3; *weave D*
- lift H4; *weave D*
- lift H1; *weave L*
- lift H2; *weave L*
- *lift H1 + 2 + 3; *weave D*
- lift H1 + 2 + 4; *weave D*
- lift H1 + 3 + 4; *weave L*
- lift H2 + 3 + 4; *weave L*
- repeat from *



Figure 7e.

Figure 7e:

- lift H1 + 2 + 3; *weave D*
- lift H1 + 2 + 4; *weave D*
- lift H1; *weave L*
- lift H2; *weave L*
- lift H1 + 2 + 3; *weave D*
- lift H1 + 2 + 4; *weave D*
- lift H1 + 3 + 4; *weave L*
- lift H2 + 3 + 4; *weave L*

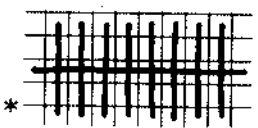


Figure 7f.

Figure 8, photo 2 is a more complex pattern inspired by a Peruvian double cloth from *Double-Woven Treasures from Old Peru* by Adele Cahlander with Suzanne Baizerman.¹

Comparison of Non-Reversible Finnweave with other Double Weave Patterning Techniques

Figure 9 and photo 3 show a border design, as similar as possible to the bottom border design of figure 8, but graphed for the more common double weave which is reversible (the back design is the exact negative image of the front). The technique is as follows:

- lift H1 + 2, pick up a pair of L warp ends for each black square of the first row of the design (pattern)

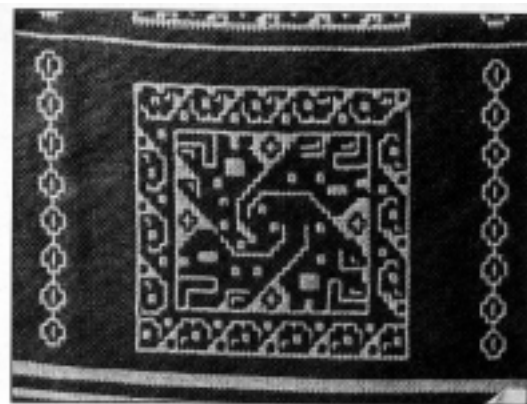


Photo 2a.



Photo 2b.

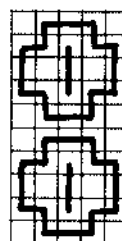


Figure 8.

- drop H1 + 2
- lift H3; *weave D*
- lift H4; *weave D*
- lift H3 + 4; pick up a pair of D warp ends for each blank square of the same row of the design (background)
- drop H3 + 4
- lift H1; *weave L*
- lift H2; *weave L*

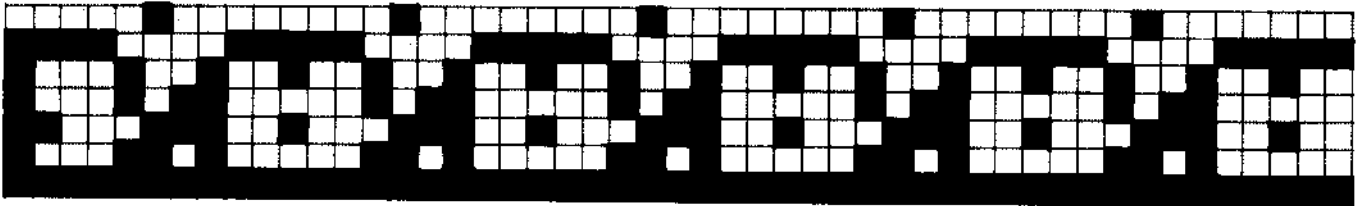
In the example shown, the method of "split pairs" was used to preserve the symmetry of the design. The D weft is woven as described above. To weave the L weft, pick up the background as follows for the design of figure 10a:

- Lift H3 + 4. Do not pick up the D pairs behind the pattern area (pair c, d) nor the

Photo 3a.



Photo 3b.



single D end on either side of the group of L pairs which were picked up for the two previous D shots (b, c). Thus the (a, b) and (c, f) pairs of D ends (background) have been split.

The small squares on top of the sampler (photo 3) show the difference in appearance of the split pair technique (symmetric bottom squares) and the straight-forward technique (asymmetric top squares).

Note that most reversible double weave pick-up is done on a warp that alternates one D end and one L end. The weft alternates either 2 D, 2 L or 1 D, 1 L.

8-Harness Loom-Controlled Finnweave Patterning

The loom is set up for two layers of plain weave cloth with two colors D and L. The L cloth, usually at the bottom is threaded on harnesses 1, 2, 5, 6. The D cloth, usually on top, is threaded on harnesses 3, 4, 7, 8.

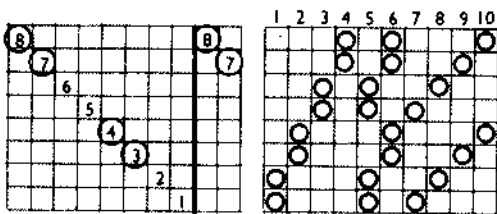
The patterning is L on a D ground. The warp is threaded in pairs, D, D, L, L, D, D, L, L, etc., end with D, D. The weft is woven in pairs D, D, L, L, etc. The threading and tie-up is shown in figure 11.

Sampler

Warp: 10/2 perle cotton in two colors D and L, cut 242 D ends, 240 L ends.

Sett: 36 e.p.i. in an 18 dent reed. Sley one D and one L in the same dent.

Threading and Tie-up: (see figure 11)



repeat Circled numbers = dark Figure 11.

Weave Sequence:

Solid D ground: D on top (figure 12)

- lift TR 9; weave D
- lift TR 10; weave D
- lift TR 6 + 7; weave L
- lift TR 6 + 8; weave L

Solid L pattern: L on top (figure 13)

- lift TR 5 + 9; weave D
- lift TR 5 + 10; weave D
- lift TR 7; weave L
- lift TR 8; weave L

L Pattern on D ground: The graphs of figures 14 through 41 should be interpreted as any other Finnweave graph. * marks the first two picks which are D. Horizontal line of graph paper—pair of D weft.

If not crossed by vertical stripe:

- TR 9; weave D
- TR 10; weave D

If crossed by L pairs on harnesses 1 and 2 (figure 19):

- TR 1 + 9; weave D
- TR 1 + 10; weave D

If crossed by L pairs on harnesses 5 and 6 (figure 18):

- TR 3 + 9; weave D
- TR 3 + 10; weave D

If crossed by L pairs on harnesses 1, 2, 5 and 5:

- TR 5 + 9; weave D
- TR 5 + 10; weave D

Horizontal space on graph paper—pairs of L weft.

If none of the vertical graph paper lines are crossed by a horizontal stripe:

- TR 6 + 7; weave L
- TR 6 + 8; weave L

If graph paper lines on harnesses 3 and 4 are crossed by horizontal stripes:

- TR 4 + 7; weave L
- TR 4 + 8; weave L

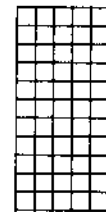


Figure 9.

Background dark in this example

Figure 10a.

Pattern area light in this example

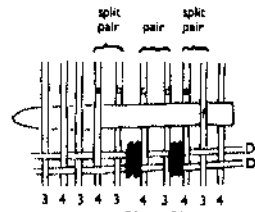
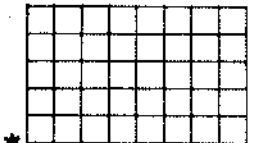
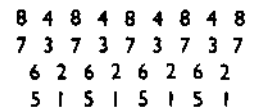


Figure 10b.



* = The first two picks which are D

Figure 12.

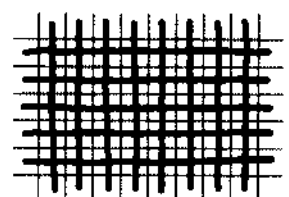
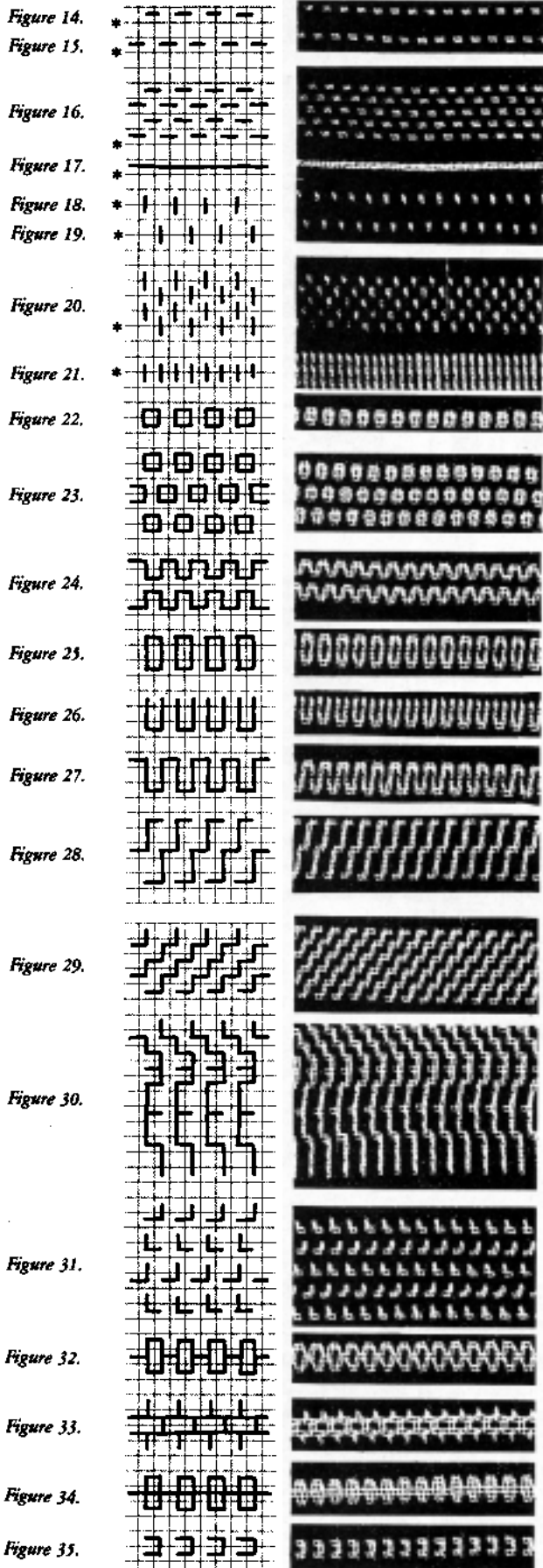


Figure 13.



If graph paper lines on harnesses 7 and 8 are crossed by horizontal stripes:

- TR 2 + 7; weave L
- TR 2 + 8, weave L

If graph paper lines on harnesses 3, 4, 7, and 8 are crossed by horizontal stripes:

- TR 7; weave L
- TR 8; weave L

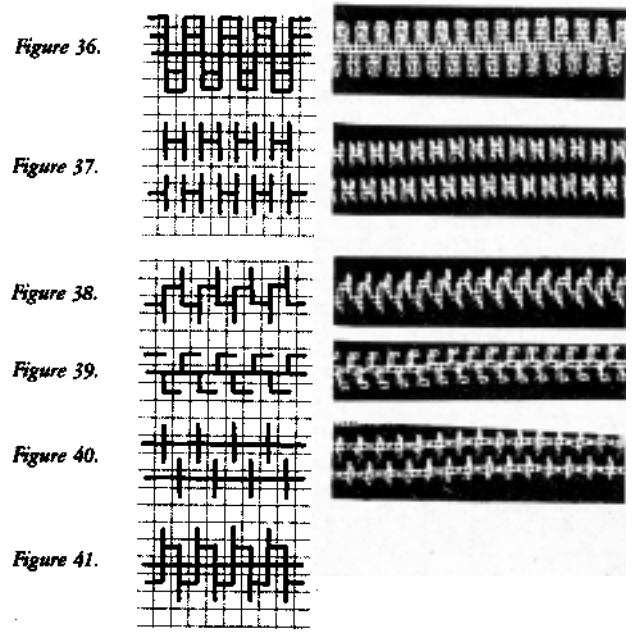
Example: Figure 41

TR 1	9	weave D
TR 1	10	weave D
TR 2	7	weave L
TR 2	8	weave L
TR	5 9	weave D
TR	5 10	weave D
TR	7	weave L
TR	8	weave L
TR	5 9	weave D
TR	5 10	weave D
TR	4 7	weave L
TR	4 8	weave L
TR 3	9	weave D
TR 3	10	weave D

All of these designs are suitable for placemats, drapery fabrics, bed covers and yardage for garments. The effects are more exciting when the D and the L yarns are chosen to make stripes or color gradations or if the technique is used together with space dyeing and/or pick-up.

Note

1. *Double Woven Treasures from Old Peru*, by Adele Cahlander with Suzanne Baizerman. Dos Tejedoras, 3036 N. Snelling, St. Paul, MN 55113). Other recommended books on the subject are: *Finnväv* by Ingrid Arlenborg and Ulla Feltzing (LTs Förlag, AB, S-105 33 Stockholm, Sweden), *Väva Finnväv* by Annelie Machscheffes (LTs Förlag), *Die Kunst des Doppelwebens* by Annelie Machscheffes (Verlag M & H Scaper, Postfach 8106 69 D 3000 Hannover 81, West Germany).



Marketing Handwoven Fabric for Apparel and Interiors

by Leonore Alaniz

THE DIVERSE *modus operandi* of American handweavers reflects the vitality of their craft. Some show continually evolving collections of yardage or apparel, others specialize in items with standardized qualities such as rugs, scarves, upholstery or drapery fabrics. In my second article, intended to inspire artisans and retailers alike, I will describe the marketplaces, conditions of employment and business practices prevalent among weavers producing and/or selling utilitarian textiles. A survey which I conducted in 1984 among established U.S. handweaving businesses rounds out the information. While it was not possible to establish conclusively how many handweavers support themselves with their craft, it is known that in the U.S. they often discover and develop their craft into a business after working for years in unrelated fields.

American handweavers may work in the following business situations

- As a proprietor/weaver/designer who (a) has an exclusive collection of textiles tailored for a specific market and distribution network, or (b) specializes in one-of-a-kind commission work for apparel, interiors or art objects;
- as a proprietor/production weaver, weaving designs established by a client or a delegating weaving business;
- as an employee in an above mentioned firm;
- as an independent contract weaver for hourly hire;
- as an independent cottage weaver, weaving yardage for a larger weaving business in her/his own home/studio; or
- as a designer/consultant to the industry.

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Leonore Alaniz at work in her San Francisco studio.

The Workplace and Compensation

Handloomed fabrics for interior use are generally woven by the weaver/proprietor in-house, meaning in a weaving studio or semi-industrial environment, or by employed weavers. Yardage for apparel and accessories is frequently woven in-house, by cottage weavers working out of their homes, or by independent contract weavers when the need arises. Cottage weavers often learn the basics for their craft from the delegating weaving business. Although they are taught the act of weaving for the assigned fabric, they often do not participate in the entire process of weaving. Warps, for example, are often beamed at the



Yardage.

Success requires the wearing of many hats, inside and outside the studio.

"home" company. (The word "employer" is not used because it necessitates other remuneration and tax regulation than those described here.) Independent contract and cottage weavers enjoy a special status in the tiny infrastructure of textile crafts: they are numerous and sought after for their flexibility in work schedule and locale, their ability to "crank out" yardage fast, and their willingness to be paid by the piece or yard. The relationship between provider of work and weaver is completely self-regulating and largely non-committal. Hourly compensation for piecework varies within U.S., whereby California and New York lead with up to \$8 to \$16 per hour.

Handweavers with national sales distribution live and work throughout the U.S. Some years ago the collections of New Mexico weavers were prominently featured by department stores. As with all businesses, commercial success and continued consumer awareness of handcrafted textiles is obtained with a focused marketing and advertising strategy. These may be pursued collectively, as New Mexico's weavers demonstrated, or through individual, finely attuned public relations work. In either case, success requires the wearing of many hats, inside and outside the studio. It is often the understanding of popular consumerism and its craving for the new,

for beauty and for heroes that makes or breaks a business. Success attracts success.

Marketplaces and Trade Partners

For handweavers who seek to sell their textiles directly to the consumer, there are craft fairs throughout the United States organized for all kinds of occasions. Publications such as *The Crafts Report* give information on where to sell. It requires some research on the part of the weaver to ascertain which markets and fairs promise to be most appropriate and financially rewarding. Although craft fairs are still popular places to *buy* crafts, they are, with the exception of the ACC fairs, hardly the place to sell more expensive and sophisticated textiles. At the four ACC fairs held annually, the first of four selling days is open to wholesale businesses only, and it is then that most business can be generated. Here retail buyers and gallery owners alike find new craft talent and merchandise.

The World of Fashion a.k.a. "The Rag Business"

Weaving businesses selling yardage but more often garments constructed with their handloomed fabrics are the most numerous. While they have the closest contact with the consumer, they are financially more vulnerable than weaving businesses catering to the interior design trade. The reason for this is that a garment-oriented business finances the production of the fabrics *and* sample garments. The weaver/designer of decorative yardage finances samples from which orders are taken. Weavers selling garments to retail stores or galleries frequently wait 30 or more days for payment after shipment. Department stores have their own complex terms of sales (including discounts), and the reputation of paying within 60 to 90 days after delivery. It is standard procedure in the clothing business to add 8% to one's wholesale price for accounts "uncollectable."

Producing and selling handwoven fashion presents a far greater business challenge than selling or weaving to order furnishing fabrics. A weaver selling fashion is judged by her/his ability to deliver stylish clothing that fits well, not by the ability to weave beautiful and well-crafted fabric. The creation of new seasonal looks and the presentation of a cohesive collection are imperative. The weaver selling apparel does well to establish a "bread and butter" item which may help cushion the lack of response to a newly developed collection. Today, this weaver must have the ability to integrate a variety of textile techniques, to coordinate colors, textures and drape

and to master the skills of fine tailoring or better yet, be skilled in work delegation.

Once ready to tackle the fickle world of fashion, it is largely the presentation which determines whether or not an order will be written with a store. (And "this is the time when you hear it from the horse's mouth," that "Honey, you really *are* in the rag business.") But don't be discouraged. The quality of slides, phone or mail introduction, follow-up, and a self-confident conduct all contribute to the weaver's company identity and her/his ability to reach ultimately, the future owner of her/his creations.

Retail buyers, usually those who are the least sensitive to crafts, will not place an order with the weaver, but instead prefer to get a showing in the presence of a representative. The reason for this is that the buyer may feel put on the spot when meeting face to face with the proud and hopeful creator of the textiles. There is neither much room for easy talk, nor for explanations if the merchandise is "rejected." Retail buyers who believe in the value of crafts as well as their saleability are attracted to that personal aspect and on occasion invite artisans to make personal appearances during so-called "trunk shows." The craftsperson receives media and/or mail coverage, and the details of p.r. and sales terms are agreed upon in advance.

To find a representative who in turn knows how to "merchandise" one's work is difficult. Some reps work out of their homes and travel regionally, others work as teams, offering nationwide representation and a following amongst retailers. Few representatives maintain a showroom in the marketplaces of major cities (such as New York, Dallas, L.A., Chicago), to which buyers flock by the thousands during frequent "market weeks." Representatives earn 15% to 20% commission on the orders written, and they are to be paid promptly upon receipt of payments for merchandise. Reps have a close network amongst each other, they are familiar with the reputation of stores, they negotiate terms of sales, sometimes a dispute. It is a good policy to ask for c.o.d. for any first orders; 30 days net credit may be given thereafter. Furthermore, credit references may be requested.

Galleries

In the U.S. there are several well managed and committed galleries which promote "fabric art" in utilitarian form. Their owners work closely with artisans, usually under a consignment agreement. The decision, whether to consign or to wholesale one's work is not always a rational one. A set of guidelines which will help the weaver to arrive at her/his business policies follows.

A reputable gallery will feature the work of select artisans in group shows or in one-person shows complimenting a concurrent group show.

These events are for a limited timespan and frequently advertised in the media. Invitations describing the work and intent of the gallery and participating artisans will be mailed. News coverage is solicited and copies thereof are distributed. In short, gallery and artisan identify with each other, and a solid p.r. campaign involving the triage of gallery/artisan/collector is conducted.

Work of gallery quality is superior in craftsmanship and use of material. It is one-of-a-kind or produced in limited editions; it reflects the artistic signature of the artisan. Its aesthetic quality is timeless. Work which remains unsold after a gallery showing is returned to the creator. Although it has been exposed to a wide audience it does not lose value.

On Consignment

To consign textiles for the sake of exposure (on the rack or shelf) is a financial disservice to one's business because being in business means that you have something to offer. The work is tied up without distinct cause and there is virtually no control over dates of sales and inventories. The sales personnel may or may not promote the work (often for personal reasons), and without the visible and tangible investment such as a gallery display, a store "taking" the merchandise has little incentive to feature consigned work. This is true regardless of whether the consignment arrangement is a 20/80 split or the more unreasonable split of 50/50. "Trial" consignments with a promise of future purchases are highly questionable and ultimately they threaten the artisan's confidence in her/his work. Furthermore, consigning and wholesaling one's textiles simultaneously sabotages those store buyers who trust their judgements and abilities and who place orders. Consignment in retail stores can work if the craftsperson and store owner meet and are urged to communicate personally with each other, even over long distances.

From personal experience I know that a weaver in search of suitable marketplaces (there are usually more than one), may find that one and the same handwoven piece may be perceived as an art object, as too commercial to be handwoven, as a cute novelty, or as an "artsy-craftsy" item, all depending upon the setting and the people to whom it is presented.

The Interior Trade

Weavers/designers of fabrics for interiors cater to a vastly different clientele than their colleagues selling garments constructed of their fabrics. Chiefly, they work either closely and directly with the consumer or interior designer commissioning the fabric, or they receive orders through trade showrooms in which the weaver placed samples

It is the fabric's appeal, good presentation, consistent quality, follow-up and rapport with an enthusiastic sales staff which assures the success of a fabric collection.



Banquette for Gensler & Associates.

of her/his fabric collection. Fabric samples require a substantial investment on the part of the weaver. They must be: large enough to make a visual impact (they are frequently displayed on doorsized "wings"); coordinated to have the appeal of a collection; and numerous enough to be loaned by interior designers for approval by prospective clients. In the interior trade, the use of contracts are common practice. Orders are accompanied by a 50% downpayment. Trade showrooms, clustered in the interior design centers of large U.S. cities, are not open to the public. They are accessible in the presence of an interior designer who has agreed to accompany the interested party or who is engaged as consultant in the refurbishing of a client's residence or commercial space.

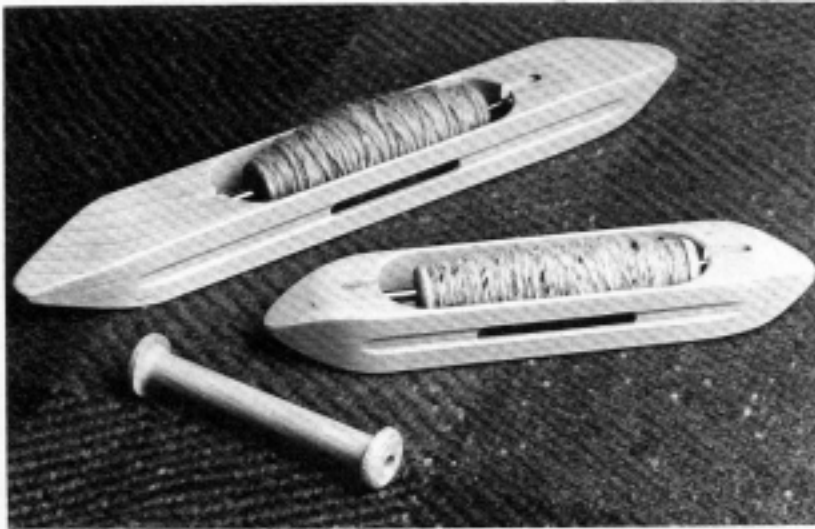
While it is not difficult for the handweaver to make contact with and display fabric samples in the palatial showrooms of interior design centers (a business card is necessary to identify oneself), it is the fabric's appeal, good presenta-

"In Homage to George Seurat." Wool fabric samples for clothing.



tion, consistent quality, follow-up and rapport with an enthusiastic sales staff which assures the success of a fabric collection. In exchange for their work and the display area given, showrooms receive an average of 20% to 25% commission on the net amount of sales. Weaving interior fabrics means rendering a service. Because the fabric is usually woven or cut to order, a 50% down payment is collected on receipt of an order. When selling to the interior trade, the weaver is on occasion asked to produce a strike-off (a one-of-a-kind sample meeting weave and color specs), which requires customer approval before production begins. It is to the weaver's advantage to work with a sales contract specifying minimum orders, terms of payment and delivery and a clause providing for deviations in dye lots or weaving irregularities. Interior fabrics are required to meet certain quality standards, particularly upholstery for commercial (contract) usage. The weaver does well to inform herself/himself of ways to meet such requirements (flameproofing, for example). In summary, in the furnishing market, the weaver is appreciated for her/his ability to construct and design a quality textile. Here the fabric speaks for itself, fetching higher yardage prices than apparel and accessory fabrics are able to command.

I can assume that the readership of this magazine is familiar with the work and organization of the U.S. textile guilds and their regional conferences. What is lesser known, however, is the reason why the majority of business-oriented handweavers choose not to belong to a guild, but instead to a business-promoting organization such as a fashion design network or an interior design association. More women now pursue careers, which contributes to a decline in guild membership. I would like to encourage U.S. guilds to realize their potential, and bring together all issues related to the vitality of textile crafts including business, economics and management. Such business-oriented efforts will certainly establish weavers as trade partners and further strengthen their profession.



Shuttles . . .

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Velvet Ikat



by Lotus Stack



Floor Mat, Persia, XIX Century. Ikat velvet, silk warp, weft and pile. MIA 20.54. 3/1 twill, warp proportion 2 to 1; primary warp—72 e.p.i., pile warp—36 e.p.i., paired wefts—48 p.p.i. (16 rows of pile per inch).

I SAW MY FIRST VELVET IKAT while visiting the Whitworth Museum in Manchester, England in 1977.¹ It had a typical Central Asian pattern, but the texture of the pile and intensity of color demanded my attention and compelled further study. Later that same year I saw the warp-painted velvets of Gaspard Grégoire (1751–1842), the innovative French weaver who refined this technique to a high art.

As is true of standard ikat textiles, the dyed design is visible on the reverse of the fabric as well as the face. This characteristic differentiates the ikat or warp printed/painted velvets from the surface painted or printed velvets.

During the last ten years I have looked in museums, art galleries, antique shops and any other likely place for ikat velvets. I have found examples that were woven in Flanders, Persia, and Japan as well as France and Central Asia. As ikat

dyeing and velvet weaving were known in many other areas as well, it is most likely that that the technique was more widely practiced than indicated by the number of examples I have seen to date.

During the last decade the ikat technique has become popular and has been employed by both craftspersons and industry in many innovative ways. However I have seen few ikat velvets. The technique is relatively simple and the scope for creative expression in terms of texture and visual dynamic is extensive. I have studied historical and technical references and have experimented with some of the mechanics involved in this technique. I am communicating the results of this research and experimentation so that some of today's hand weavers may become interested in further developing the real potential of the velvet ikat process.

1. Throughout this article the term "ikat" is used in the extended meaning indicating a patterned thread which creates the design element of the finished textile, rather than the weave structure. The patterning of the thread can be achieved by several techniques: resist dyeing, dip dyeing, warp printing or warp painting. Natural or chemical dyes can be used with any of these techniques.

Dyeing

Creating the pattern on the threads of the pile warp which will determine the design of the velvet is basically the same as standard ikat dyeing. However, the initial design must take into consideration the vertical elongation necessary in the unwoven thread and its relationship to the final product. Depending on the height and density of the pile, the dyed area of the thread may be five to fifteen times longer than the pattern on the finished velvet. For instance, if the final design required a one-inch square, it would necessitate the dyeing of a series of threads which, when on the warp beam, would create a rectangle measuring one inch wide and five to fifteen inches long.

Upholstery Fabric, Flanders, XVII or XVIII Century. Ikat velvet, linen and wool. MIA 85.6.1. Gift of Sheldon and Ellen Struges. Plain weave, warp proportion 2 to 1; primary warp—linen, 40 e.p.i.; pile warp—wool, 20 e.p.i.; weft—linen, 22 p.p.i. (10 rows of pile per inch).

ery pile warp there are usually two or more primary warp threads.

2. Professional European velvet weavers indicate that it is wise to protect the more fragile pile warp from reed abrasion. This is done by threading the reed with a minimum of three threads.

For all intents and purposes velvet is a warp-faced fabric. When creating textiles of this type it often facilitates the weaving process to use more shafts than are necessary to produce the weave structure to spread the warp ends and facilitate lifting. In terms of the structure, shafts three and four never act independently, yet in the actual weaving it is less stressful to the threads and to the weaver if only half of the pile warp is raised at one time.

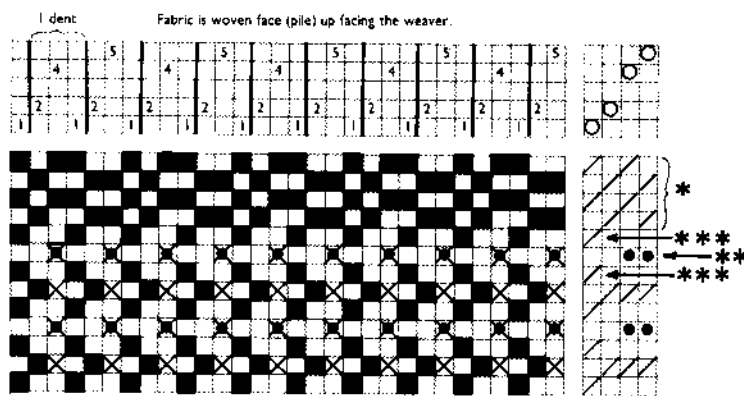


Left, *Hours of the Night (after Raphael)*, Gaspard Grégoire, 1751-1842, France. Warp painted velvet, silk. MIA 82.14. Anonymous Gift.

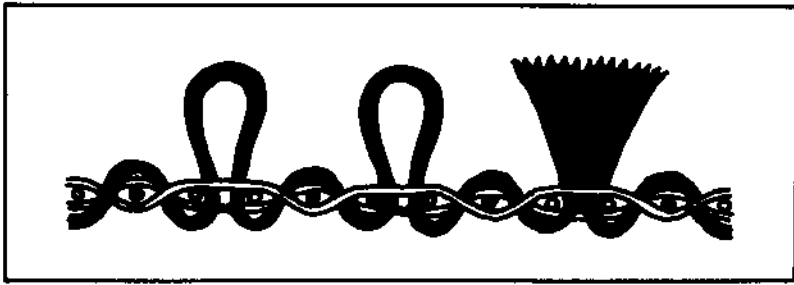
Weaving

The actual woven structure of velvet has been used to produce textiles designed for use as rugs, wall and window coverings, upholstery and clothing fabric. For the most part these variations are created by the choice of materials, the structure and dimension of the yarn, the set of the warp and the height and density of the pile. While experimenting with these variables it is helpful to keep in mind a few basic principles.

1. All velvets require at least two independent warps which must be tensioned separately, preferably on two warp beams. One warp is used to create the base fabric which supports the pile created by the second warp. It is this second or pile warp which is dyed to produce the ikat pattern. As can be noted in the accompanying descriptions of the illustrated ikat velvets, for ev-



- primary warps (1 & 2 shafts)
- ⊗ pile warp (3 & 4 shafts)
- ⊠ pile warp raised rod inserted in place of weft
- ⊞ Integrate both warps in a flat weave to establish tension and provide a protective edge for the velvet.
- ⊞⊞⊞ Indicates pile warp is raised and a rod is inserted in place of weft. As can be seen there are three weft shots between each rod insertion. The pile formed is frequently called a "w" velvet. (See profile of weave structure.)
- ⊞⊞⊞⊞ Here the primary warp is functioning as a brace or clamp to secure pile warp in an upright position. As can be seen there are 3 weft shots between each rod insertion. The pile formed is frequently called a "w" velvet. (See profile of weave structure.)



Weave structure.

3. A narrow flat selvedge should be woven on each side of the velvet fabric to protect the edge of the pile. Take care that the selvedge structure accommodates and properly secures all weft shots of the velvet fabric.

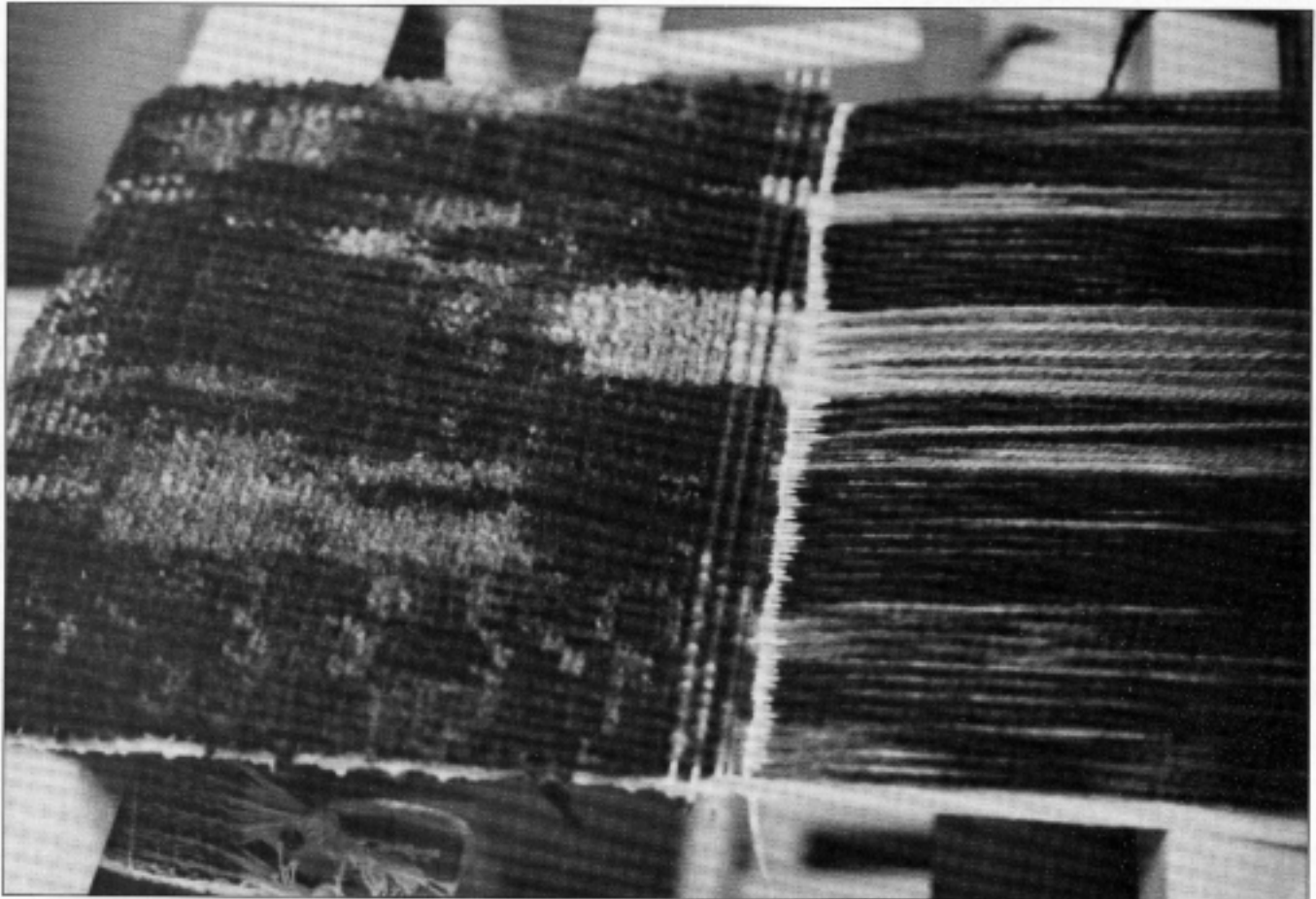
4. The tension on the pile warp should be considerably less than the tension on the primary warp. If the tension is too loose, an uneven or pebble-like surface will appear on the reverse of the fabric. If the tension is too tight, it will create spaces between the pile rows of the fabric creating a thin and uneven velvet surface. After weaving a few inches the weaver will become sensitive to the tension needs of each warp.

5. The pile itself is created by the insertion of either one grooved or two flat wire rods. It would be ideal to have the wire which is specifically made for this purpose, but I have been unable to locate a supply source. Therefore with the

assistance of friends, I have adapted readily available materials. Metal rods of various dimensions ($\frac{1}{16}$ " to $\frac{1}{4}$ " diameter) were scored to create a guide for a cutting tool (razor, exacto blade, etc). The end of each rod was bent at an angle to indicate the cutting guide line which is hidden when covered by pile warp during the weaving process. As an alternative to the scored rod/wire, I have also used $\frac{1}{4}$ " strips of very thin sheet metal. These are inserted in pairs during the weaving process, and the space between the two is used as a cutting guide. Care must be taken here not to cut too deep and thereby damage the primary warp.

Depending on the gripping power of the material used for the pile warp and the height of the pile being woven, only three to five velvet wires are necessary. As the initial weaving of the pile begins, three to five wires are used as the structure demands. When an additional wire is required, the first wire is cut free and rotated into the woven structure. If loops are desired rather than the cut pile, the wire is simply withdrawn from the fabric at the selvedge edge. If desired, only partial areas of the pile warp can be cut thus varying the surface of the velvet. I have seen this option utilized very successfully in Japanese ikat velvets where the veins in green foliage have been delineated with the use of uncut pile.

A velvet ikat sample shown on the loom. Cotton carpet warp, 2-ply rug wool. Weaving instructions at right.





Another wool velvet ikat sample by Lotus Stack.

Wool Velvet Sample

Primary Warp: 5-ply cotton string.

Pile Warp: 2-ply rug wool yarn (factory remnants) resist dyed with chemical dyes.

Warp proportion: 2 to 1.

Structure: Plain weave with supplementary ikat warp.

Sett: 30 e.p.i. (20 primary and 10 pile) in a 10 dent reed.

Weft: 5 S-ply cotton string 15 picks per inch plus 5 pile forming rods/wires (with 1/4" flat wire pile gage take-up of pile warp is approximately 5 inches to 5 inch of primary warp. Fabric is woven pile side up.

For notes on weaving, see p. 37 and 38.

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Algoud, Henri. *Gaspard Grégoire et ses Velours d'Art*. Paris: Société Française d'Imprimerie et de Librairie, 1908.

Watson, William. *Advanced Textile Design*. London: Longmans, Green and Co., 1913. (See chapter 18, "Warp Pile Fabrics.")

Exhibition: "Pattern Threads: Ikat Traditions and Inspirations", Minneapolis Institute of Arts, June 28 to September 6, 1987.

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Morgan Clifford

New Directions in Brocades

by Sandra Gue

WHAT WOULD MAKE a 34-year-old full-time artist exchange a well-lit, three-story studio and a backlog of unfilled commissions for a 8 x 10-foot room, no privacy, and a \$15,000 debt?

Morgan Clifford's warp ikat dyed hangings and kimono forms are displayed in places ranging from private homes and St. Mark's Cathedral to financial and medical centers in the Twin Cities. The process of creating the subtle color changes in ikat was very seductive to her.

"The irregularities give a painterly quality — one like watercolor — which is normally difficult to get in weaving," she said recently, pointing to the inherent grid in the weaving process. The blurred edges of colors is achieved through a partly planned, partly spontaneous process.

Ikat also had an appeal for her through the physical nature of the dye process. "Weaving itself can be so fussy. So many small muscles are involved," she said. "With dyeing, literally my whole body was involved. I would haul buckets

of wet warp up the stairs, stretch the warp, unwrap the tapes. I loved the length of colored string stretched across the room."

Clifford's warps were tied across her 30 x 40-foot studio on the second floor of a restored century-old building in Stillwater, Minnesota on the scenic St. Croix River, 30 miles from the Twin Cities. Shared only with rustic English antique furniture stored a floor below, the cleaned brick walls and the new Prairie-style windows opened in four directions to give light to her work. Stairs leading to the rafters above gave a bird's eye view of the progress of her work.

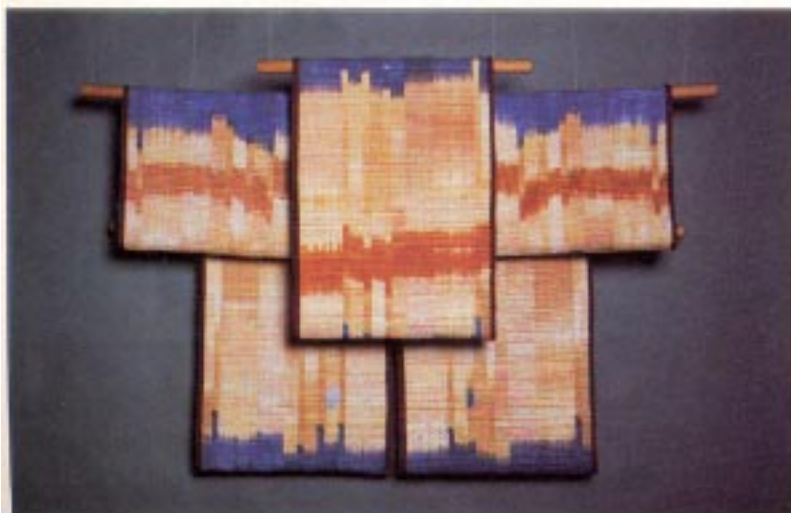
Still, after five years she started getting bored with ikat.

"I began to be interested in more detailed drawing and print-like qualities," she said. "It was hard to maintain a sense of spontaneity in the weaving process. I missed putting down marks, I missed drawing.

"Up to that time I had been interested in making works that were contemplative and calm. Ikat is so soft. I got tired of not being able to

"Backwaters" (1983),
59" x 39" x 9".

Clifford in her
Stillwater Studio.



JERRY MATHASON



JENS GUNELSON

FERRY MATHIASON



"Cranbrook Calendar"
(1986), 43" x 44".

throw in some surprises." With the ikat process, Clifford finished her design before the loom was ever threaded. All that remained was to structure the cloth by adding the weft.

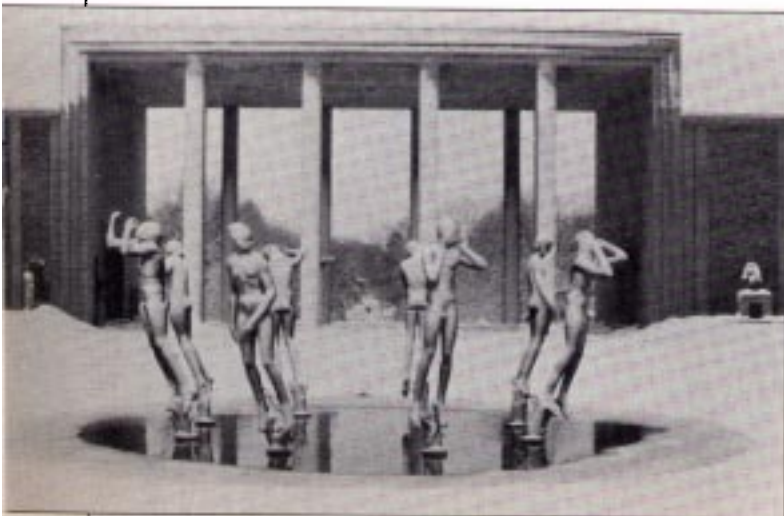
Clifford found herself looking at prints and drawings. When she discovered the paintings of Minneapolis artist Stuart Nielsen she thought, "If I could do weavings as wonderful as Nielsen's

pieces, I would be satisfied. His works have a 'textile consciousness' to them. They are collage-oriented and seem like cut-and-paste, which I love. The imagery is much more defined than with ikat."

Clifford knew that the sense of layering found in cut-and-paste was very important to her, but so was the sense of cloth. She wanted to

The "Orpheus" fountain at
Cranbrook.

Morgan Clifford in her
Cranbrook studio.



JOHN SKAU



JOHN SKAU

stay within the woven structure.

"I found myself open to something new, but I didn't know what that was."

She had developed her weaving technique through workshops and study with Walter Nottingham at the University of Wisconsin at River Falls, but she had missed a more formal grounding in art while an undergraduate. Cranbrook Academy of Art in Bloomfield Hills, Michigan was one of the few graduate schools she felt had an exciting textile program, with artist-in-residence Gerhardt Knodel as the one teacher in the fiber department. Clifford considered other aspects of the school:

"There were no formal classes," she said, "and the same group of students stayed together throughout the two-year graduate program." A student body of only 150 and an attractive rural setting also made Cranbrook attractive. But she wasn't certain if this would give her what she wanted.

During the summer of 1983 she served an assistantship with weaver Cynthia Schira at Haystack in Maine, Clifford leaned on Schira for advice about schools. "I can't tell you whether or not you should go to school," Schira said, "but if you go, then Cranbrook would be the place." That cinched it. She applied and was accepted.

The move to Cranbrook was difficult for Clifford. It was not just the sorting and storing of things for "school," "next summer," or "two years," but her rental studio/living space would likely not be available when her graduate program was over. She was plagued with questions of whether she was too old to be a student again, too independent to get along with roommates, and if she could survive on "horrible cafeteria food," as it had been described to her.

These concerns proved secondary, however, when she saw the space that was to be her studio for the first year: an 8 x 10-foot room with a huge desk.

"I couldn't have gotten a loom in there," she said, thinking of the large Cranbrook looms she had left behind. "And even if I could, there would be no room to put the warp on."

She was ready to repack her Datsun, tie bicycle and trunk to the roof, and return to Minnesota.

The students in the program came to her rescue. One exchanged studios, others helped move walls, and a larger space was created. Now at least a 20-inch, 8-harness Macomber loom would fit in.

During the first week of class the eight first-year and nine second-year students in the class introduced themselves to each other by showing slides of their past and current work. The unspoken message Clifford got was, "Don't do what you did before." Considering the size of her new studio, that was easy for her.

The first group assignment was to do an outdoor installation to "amplify and enhance the meaning" of a given space. The assignment completely loosened Clifford up. Selecting for her "space" a Fellini-like pink stucco boathouse with vaulted doorway and formidable-looking entry walk, she added tribal-looking posts decorated with gauze-covered castings of her face to which she had added a rotted look.

She continued in this vein in the studio, doing "tribal, gutsy things, inner Gestalt things. I thought I couldn't weave, because that's what I'd done before," she continued. "I made dark, shrouded mummies and tortured doll pieces—everything awful."

When Knodel looked at her heavy, shaman-like figures, he said to her, "Just because you're coming to Cranbrook doesn't mean you have to jump off the deep end. I accepted you *because* of your work; you don't have to give it up."

Clifford dropped her new work like the proverbial hot potato.

Knodel then asked her if she had ever seen

A class with Gerhardt Knodel.



MORGAN CLIFFORD



Tampan or ship cloth.

MORGAN CLIFFORD

Detail of "The Players and
the Play" (1986),
89" x 13".



PETER LEE

animal mummies. She had not, and he directed her to the Field Museum of Natural History when the class made a trip to Chicago.

"You are imitating cultures," he pointed out to her. She saw her new work as not authentic. Clifford then considered the kimono-like forms she had been doing. They seemed to her representational but too far from the original source of inspiration. She saw the form as being more like a symbol of a symbol.

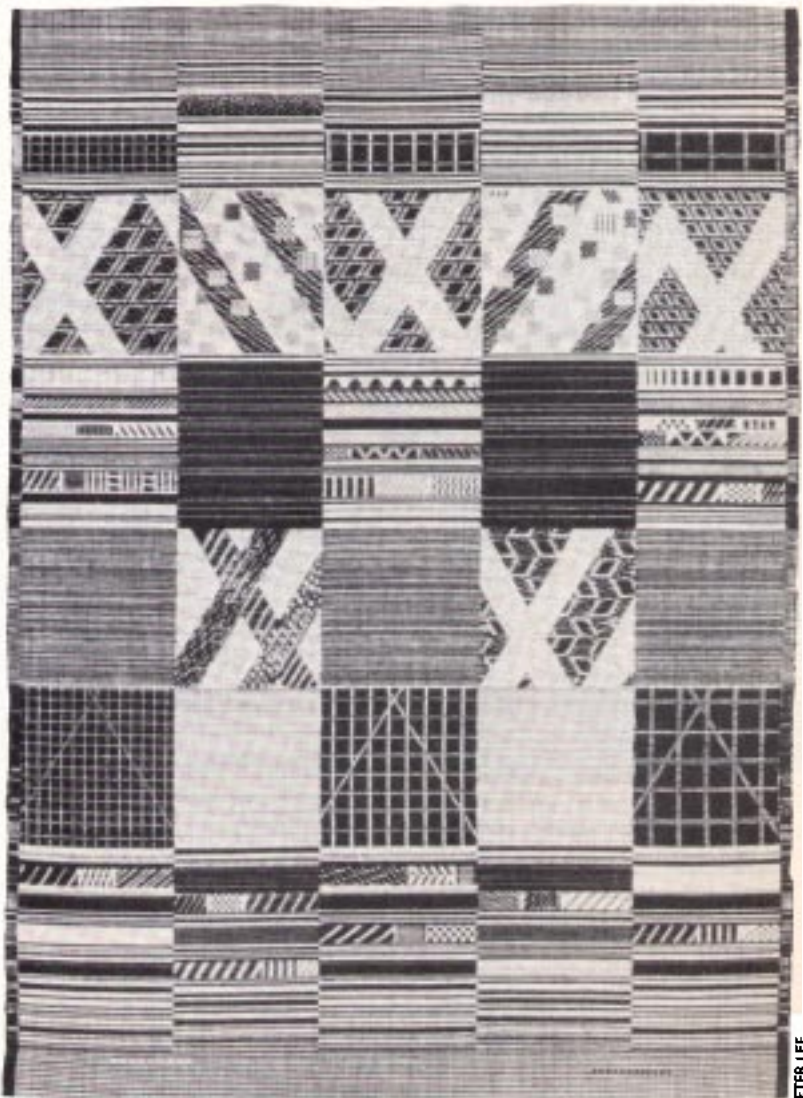
Knodel urged her to find references for her work within her own world. For example, pointing to the cloths and pictures with which Clifford had plastered the walls of her studio, he said it was apparent she liked pattern. She was aware that she lived with pattern but had never before considered incorporating it into her work.

Knodel showed her Indonesian ship cloths from his own collection of textiles. These brocaded pieces illustrate ships symbolically used to carry people during rites of passage—dangerous times like birth, puberty, marriage, and, in particular, from death into the afterlife. He also showed her the work of former Cranbrook student, Sandra Brownlee Ramsdale, who did brocaded animal forms—some abstract, many in black and white.

"These pieces were like a Woody Guthrie song," Clifford said, "telling a simple story. And I love common things, like themes to songs and stories. I just didn't think that anyone else would be interested."

Not just the brocade technique was discussed in her meetings with Knodel: He also pointed out that her kimono fabric was very stiff. "Why not let it be cloth?" he asked her. Why not indeed?

"I like cloth—tablecloths, dish towels, napkins," she said. "Mattress ticking and dish towels are the only industrial cloths in our culture which over the years have kept the same pattern, but we take these forms for granted. A few years ago I



"Inside/Outside" (1987),
45" x 63".

PETER LEE

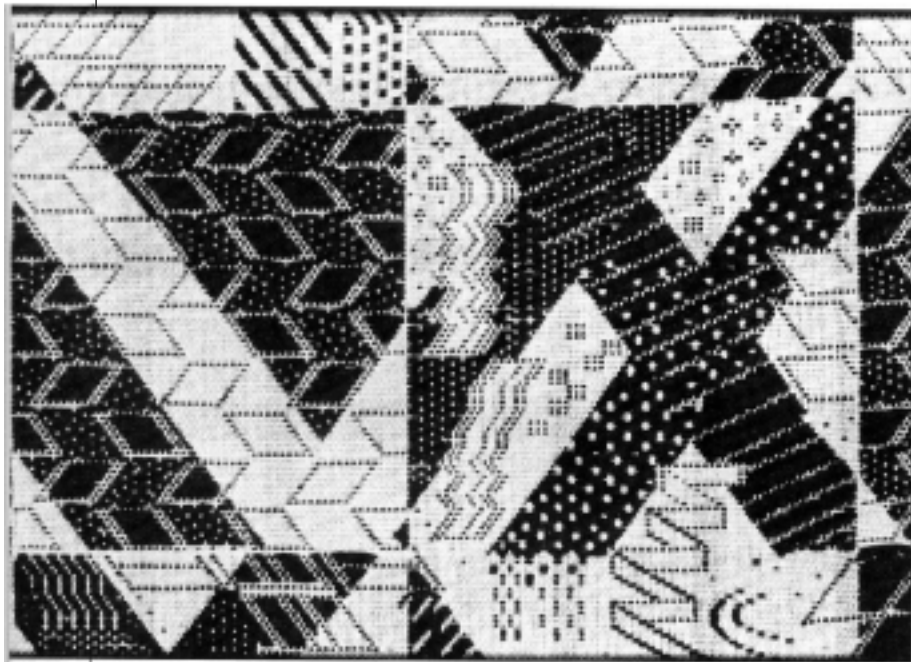
wouldn't have been caught dead doing this type of pattern weaving; I would have thought it so boring."

Using doubleweave and plain weave as basic threadings, the cloth she wove began to take the form of grid and checkerboard patterns of dish-towels as "ground" with brocaded figures illustrating a "story" on top. She put image atop image, achieving the layering aspect that had eluded her in ikat. Spontaneity became possible as figures took shape and interacted with one another as she added row upon row of weft. No longer was the design complete when the warp was tied onto the loom.

By restricting herself to the limited palette of black and white, she became more conscious of her imagery. "It has forced me not to depend on color for my composition," she said, although she is beginning to add color back into her work.

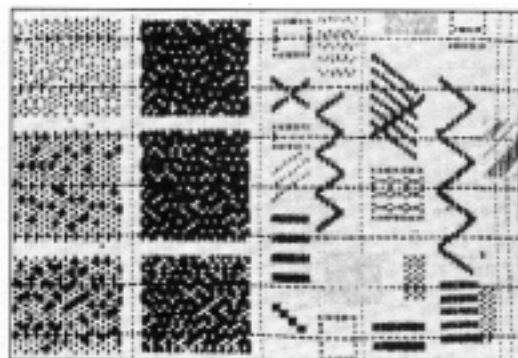
"Color for the sake of color has always been the most enticing part of weaving for me. Now I'm looking for meaning beyond the aesthetics. I have reference to things in my world, other than just shapes."

Detail of "Cranbrook Calendar."



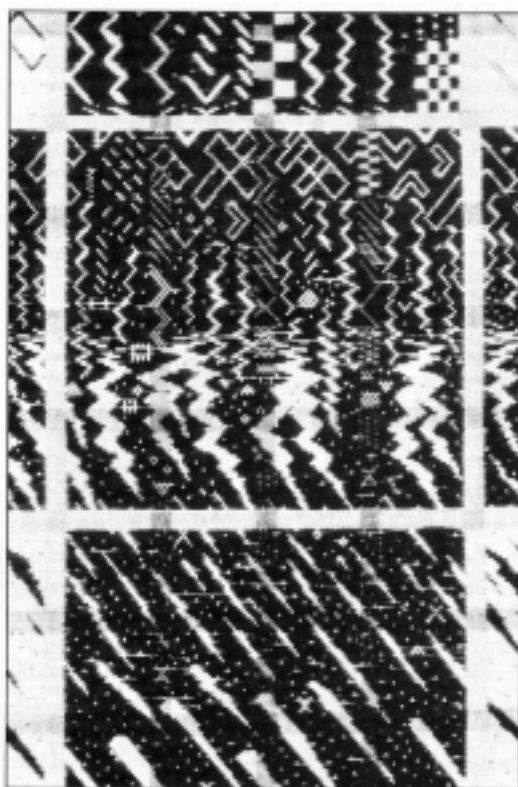
JERRY MATHIASON

Detail of "The Players and the Play."



PETER LEE

Detail of "Weathermap" (1986).



PETER LEE

Such references were the core of class critiques at Cranbrook. With two scheduled each semester, all new work since the last critique was put up.

"It forced me to articulate what I was doing," Clifford said, "not just to be intuitive. I had to talk about what was meaningful. I had to put up work I was not comfortable with. I had to 'bear witness' to what I was doing."

"Cranbrook is concept-oriented, not technique-oriented. The comments were, 'Why that image?' not 'Gee, your selvages are straight.'

"Sometimes the critiques were painful, but they were always helpful. You felt that not only

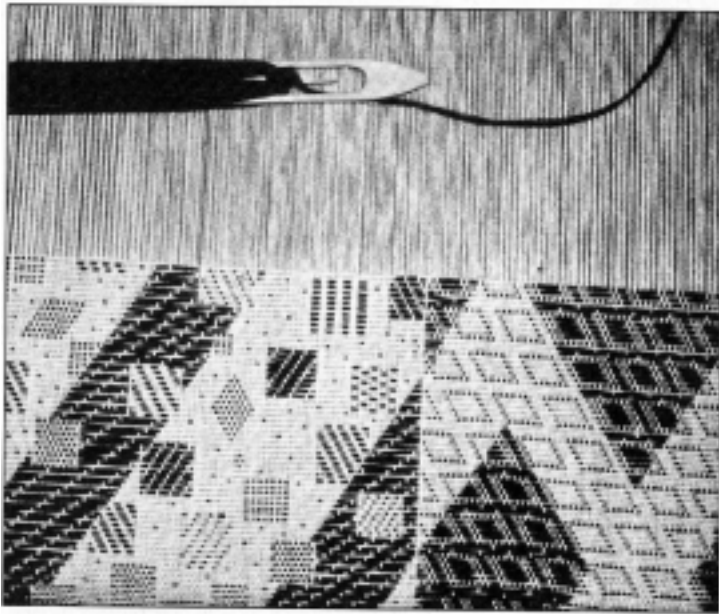
your work but what you said about others' work was being judged."

Cranbrook gave Clifford exactly what she wanted. "Even though I couldn't articulate why I was going there, it gave me so much. It forced me to figure out for myself what I was doing with my art. I had already gained skills in weaving. Now, what did I want to say? I was looking for meaning in my content."

In the end she realized how much she had accomplished. "I was producing an incredible quantity of work under pressure from Gerhardt because he was pushing me," she said. "I saw how I could use pressure as a tool."

After seeing earlier graduates who had gone

Supplementary Weft Brocade

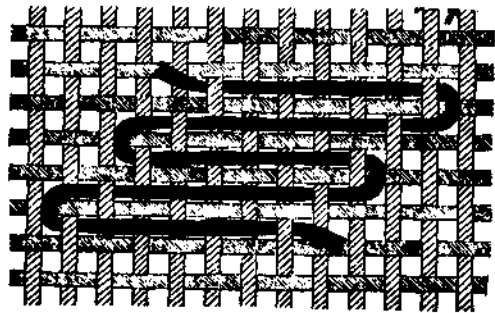


Detail of "Inside/Outside"

Right, a type of inlay used by Morgan Clifford. From *Latin American Brocades* by Suzanne Baizerman and Karen Searle. St. Paul, MN: Dos Tejedoras, 1980, p. 26.

To create images (figures) on cloth (ground), Morgan Clifford employs various supplementary weft brocading techniques, sometimes on double-weave ground fabric. After the shuttle is thrown to create a row of ground, a netting needle threaded with multiple ends of fine linen is passed over and under selected warp threads to create the desired pattern on the top layer of warp. This process of creating images is faster than tapestry. Because the supplementary weft brocade is independent of the structure of the cloth, it's freer than tapestry in the kind of image that can be added. Even after the piece has been taken off the loom additional images can be added through stitchery.

Clifford uses all linen rather than cotton or rayon for the ground to give more body to the piece.



into teaching having little time to do their own work, Clifford decided against that field for herself. Faced with no home and no studio, she looked around the country for a place to settle.

"I found I was in love with the Twin Cities' artistic community. It's tremendously active, the right size, an interesting mix, and one that doesn't take itself too seriously. It's worth going away to find that out."

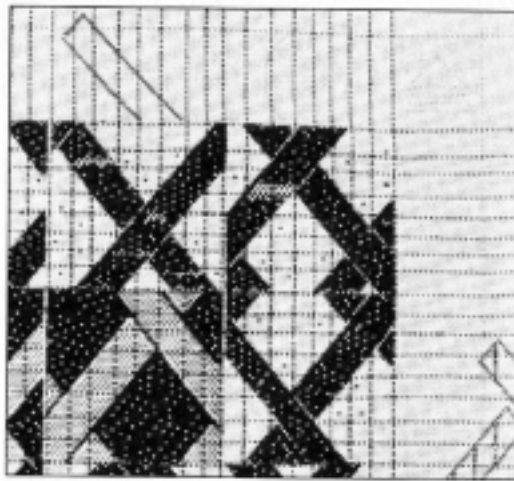
When she returned to Stillwater, she found that her former studio/living space was once again available to her.

She accepted a part-time position as artistic consultant at Textile Arts International, Inc., a Minneapolis gallery featuring historic, indigenous and contemporary textiles. There she promotes artists whose work she feels deserve recognition and helps to promote the community awareness that textiles are more than just "macrame and ropey airport art."

She feels she is putting into practice what she has learned and what she loves. Knowing how long it takes to get beyond technique and into content, she is able to point up good quality.

"This is important," she said, "because there are fewer than a half dozen outstanding contemporary textile galleries in the country."

Clifford's current work shows the addition of color to the black and white pieces that charac-

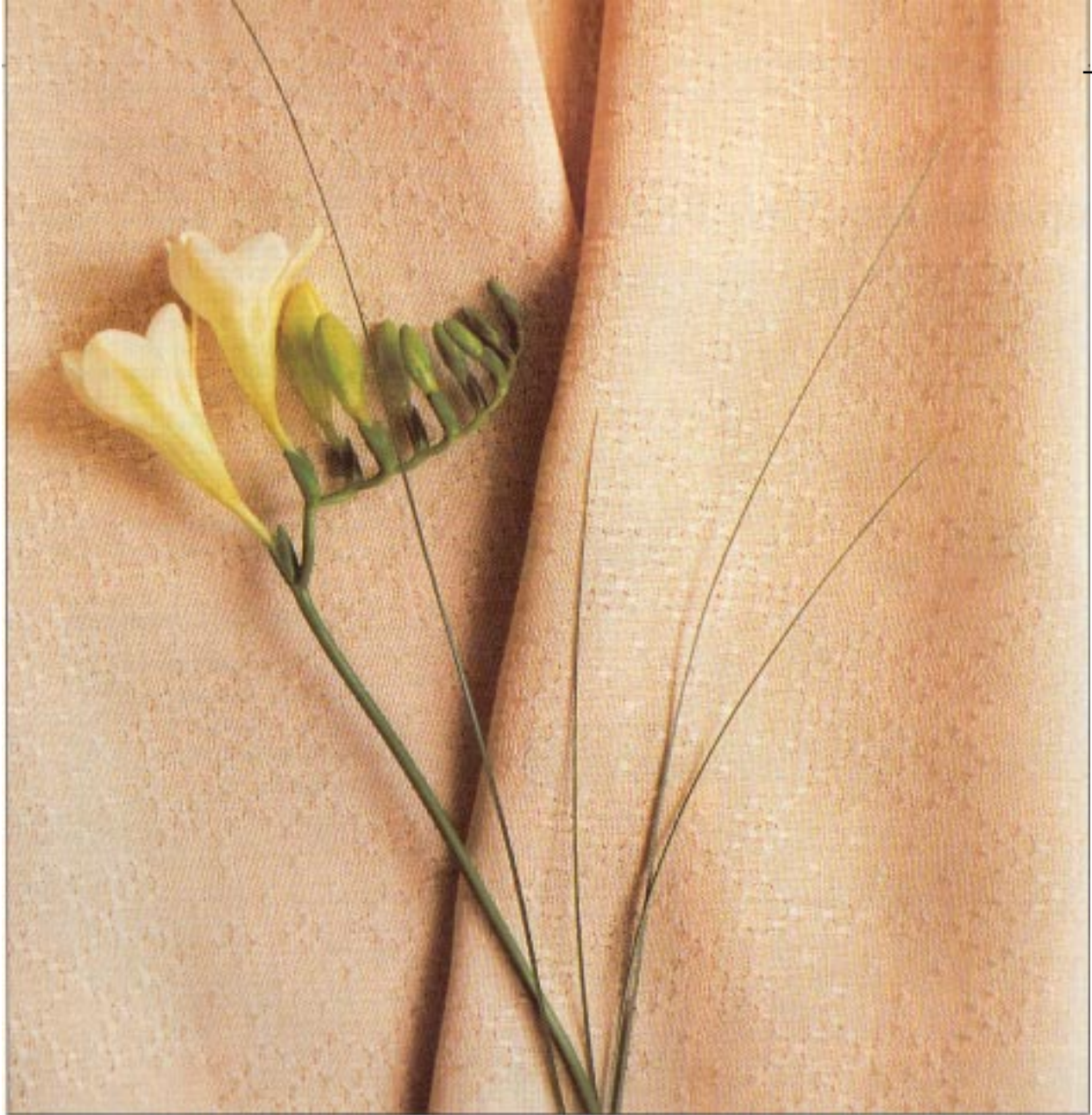


Detail of "Letter to Margot" (1987).

terized her work at Cranbrook. More and more, her images look as if they are telling a story.

"I'm working with the structure of the cloth and the imagery at the same time, engineering them together like a musical composition," she said.

The enthusiasm with which she describes the directions she is exploring with her new work gives witness to the rightness of her decision to give up successful work to take a chance that Cranbrook Academy of Art would point her in a challenging new direction.



Name Draft Contest Winners

WE RECEIVED MANY fine entries in our *Weaver's Journal* name draft contest. Thank you all for your enthusiastic response. First prize went to Kathryn Turner of Cranbury, New Jersey for her delicate linen table runner. Honorable Mention went to Sister Joan Marie Lovett, OSB of Petersham, Massachusetts for her handsome double-woven table runner. Our judges were Susan Mansfield, author of the name draft article (Vol. 10, No. 3, Issue 39, p. 15) and Linda Madden, a Minnesota production weaver of fine table linens and garments. Statements by our winners and instructions for their projects appear below.

Linen Table Runner *woven by Kathryn Turner*

First Prize. Linen table runner by Kathryn Turner.

"This piece was designed as a runner for an antique dry sink in my dining room."

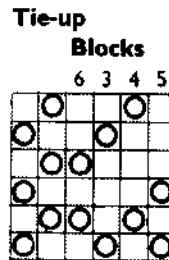
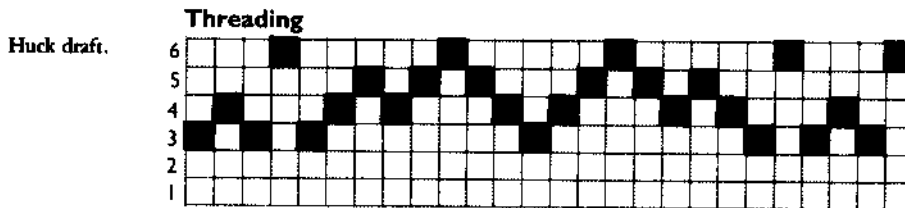
Warp: 40/2 natural linen

Weft: 40/2 bleached linen

Sett: 30 e.p.i., sleyed double in a 15 dent reed.

Technique: Huck

Comments: "I wove 4½" of tabby at both ends to form a double hem. The linen was finished by hemming and then washing in warm water and Ivory Liquid™. After a thorough rinsing I gave it



the shock treatment to soften the linen: drop into boiling water and boil for 2 minutes, remove and immediately drop into ice water for 2 minutes. Repeat this two more times and then carefully squeeze out the water, place in a Ziplock™ bag and keep in the freezer until ready to iron."

Double-Weave Table Runner in Linen and Cotton

woven by Sister Joan Marie Lovett, OSB.

"When I was first looking at the various drafts and drawdowns, several motifs began to emerge. I thought they would work well in double-weave pick-up, a technique I have been wanting to try for some time. Later when working in our monastery chapel I noticed that several of the oriental runner rugs which we have there had motifs of a similar shape. I started arranging mentally the motifs that had pleased me in the article in the style of the oriental rugs. The central, corner and side motifs on my runner are derived from Draft 5 and the end motif from Draft 8."

Warp and Weft: White 16/2 linen used double (counted as 1 thread hereafter); beige cotton of unknown size, approximately 8/2.

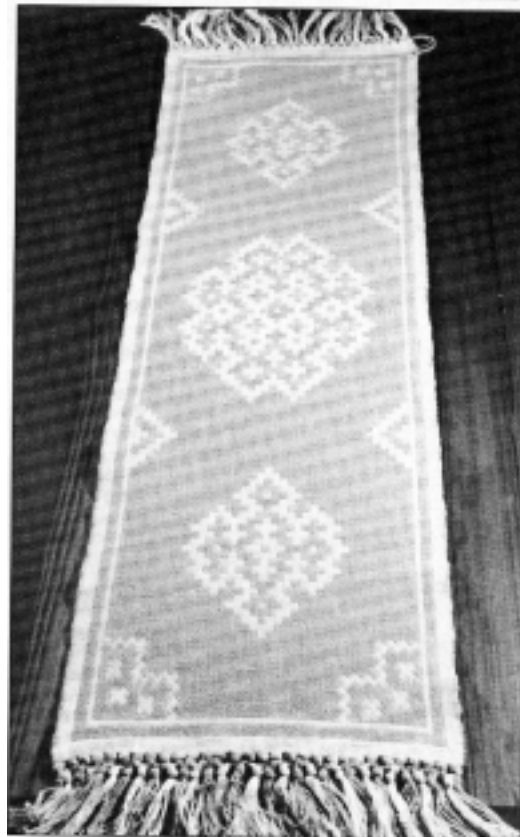
Sett: 24 (12 per layer) e.p.i., sleyed 2 per dent in a 12 dent reed.

Width in reed: 15"

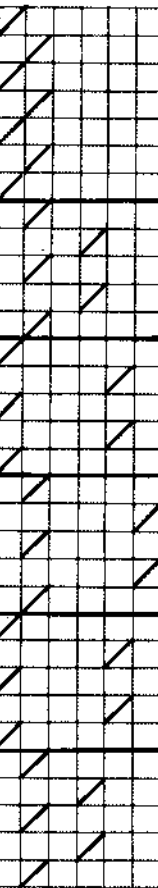
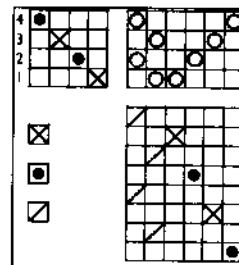
Total ends: 360

Warp length: 2 yards including take-up and loom waste (used for fringe).

Technique: Double-weave pick-up.



Honorable Mention.
Double-Weave Table Runner in Linen and Cotton woven by Sister Joan Marie Lovett, OSB.



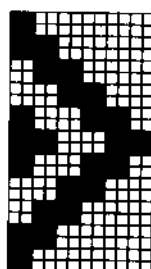
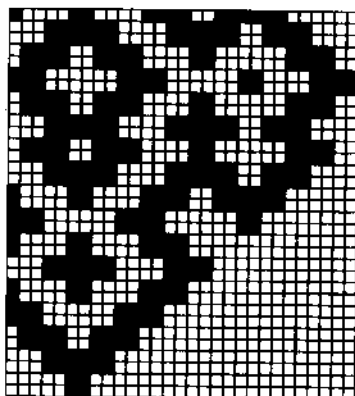
tabby 4 1/2" each end of runner

repeat for desired length

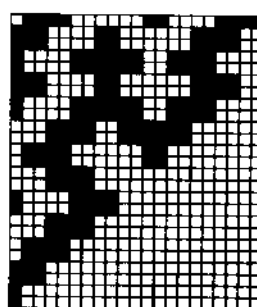
end with block 6 to balance

Draft for double-weave pick-up.

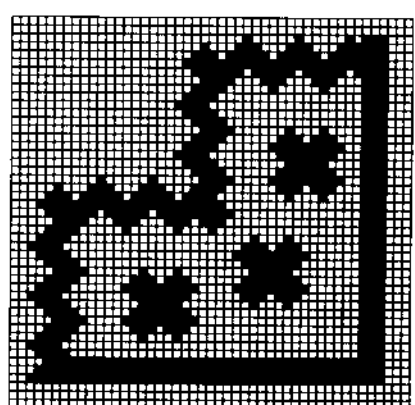
CONTEST to page 72.



Block diagrams for interior of piece.



Block diagram of corner motif.



The Weekend Weaver



The Moebius Vest

A new twist on a classic garment

by Audrey Homme

THIS STYLISH VEST is made from a rectangle of fabric that is slit halfway and the two front panels "twisted" to form a collar-like effect before attaching them to the sides. The twisted-front vest is not a new idea. An upper midwest mania for weaving it was sparked by knitter Elizabeth Zimmermann's pattern for a knitted "moebius" vest introduced in her workshops in 1981 and published in 1983. A warp-striped twisted-front vest appears in *Handwoven's Design Collection 4*, (1982) and I was inspired by a similar garment modeled at a meeting of the Wisconsin Federation of Handweavers a few years ago.

I have been intrigued by the versatility of this simple-to-weave vest pattern, and have developed several variations and improvements on it—a better fit in the shoulders, a way to weave pockets into the design, and a special technique for eliminating "sag" from the back of the armhole, one of the drawbacks of the woven version.

This article will give you a basic vest pattern, instructions for fitting it to your body, finishing techniques and closings.

Plan on allotting one evening to winding the warp, one morning for warping and threading, and two afternoons (about 5 hours) for weaving. Finishing can be done the following week.

Materials

Any combination of medium-weight yarns in wools, cottons or silks. A total of 2 lbs is ample for both warp and weft. A nice effect is created by using a mixture of smooth and textured yarns.

Warp: Warp requirements will vary. 3 yards is an average length.

Weft: 12-16 oz. weft yarn is needed, depending on fiber used.

Sett: 10 e.p.i.



Left, Red and purple vests with textured patterning on lapels by Audrey Homme. Pockets are woven-in.

Above, White vest with overshot patterning and warp-painted vest by Audrey Homme.

Determining Size

Width: The vest fabric is made on a narrow warp. A small size requires 20" width, medium size 22" width, and large sizes 24" width. The size you select will depend on whether you want the vest to meet or overlap in the front. Contrary to what you might expect, the way to make this vest fit more generously is *not* to weave wider fabric! Instead, if extra width is required, plan on adding narrow side panels, either woven or crocheted. Consider the narrowest width for a loose, tie-front, no-overlap vest; a wider width for a style that overlaps and is belted or buttoned.

Length: Style and body height will dictate vest length. All suggested allowances are approximate. To determine the amount of snapback (relaxation of warps when removed from loom): weave 24"; release tension and leave overnight; measure in the morning. The difference will be

the amount of snapback you can expect to have on the full vest piece.

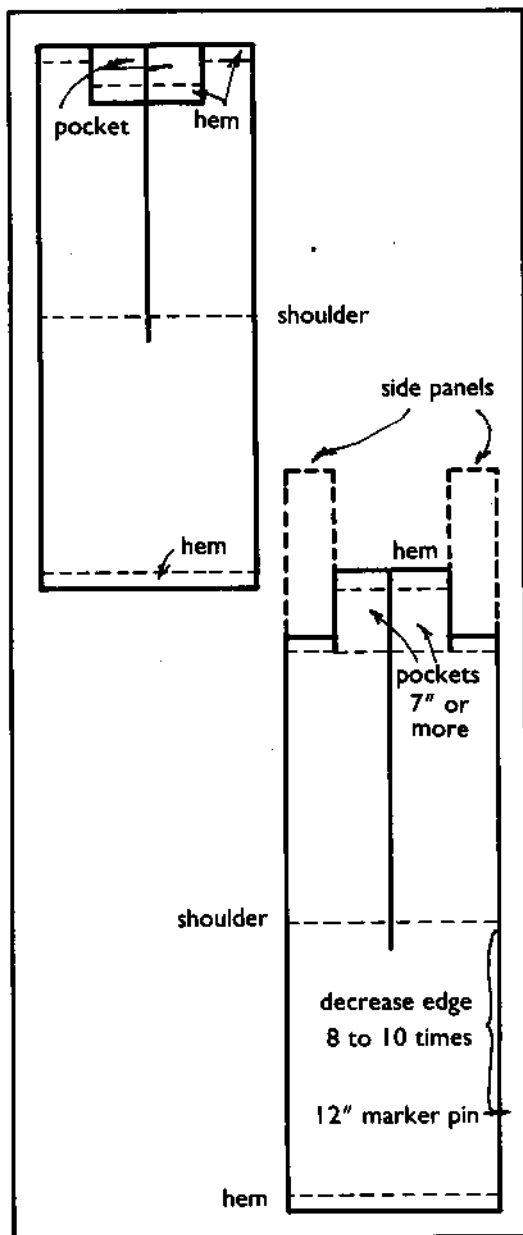
<i>Average finished length:</i>	54"
<i>Add snapback and shrinkage:</i>	6"
<i>Add allowance for twist:</i>	2"
<i>Add hem allowance:</i>	2"
<i>Add pocket allowance (if desired):</i>	7"
Total woven length:	71"

Weaving

Use any threading that will produce plain weave and a pattern that you like. The size of this project makes it ideal for the rigid heddle loom as well. Determine warp length requirements by adding loom waste to the total woven length you have determined, based on your height and desired vest length.

Weaving the back: Weave plain weave to within 3" of midpoint of vest panel.

Pattern Diagram.



Method 1: Working the slit with two shuttles.



Method 2: Working the slit by adding a contrasting thread to mark the center stitching line when vest is woven in one piece.

Working the front slit: Method 1. Begin slit by dividing the warp in two at this point and working the rest of the piece with two shuttles. This method requires an additional hour or so of weaving time but less finishing time.

Method 2. Weave the entire panel as one piece and create the slit by machine stitching and cutting. This method reduces weaving time, but increases finishing time, as the raw edge will need to be covered. It helps to mark the stitching line by adding a contrasting warp at the center of the weaving, threading it through the reed and heddle and weighting it at the back of the loom. Pin it into place on the weaving.

Design placement: (optional). Design can be added by changing color in plain weave stripes, by treadling a pattern or even by warp painting. An effective color or design placement uses the shoulder line as a guide. Design areas can be placed about 6" into the front sections and ending before the last 12" of the fronts. Using a darker weft color in the first and last 12" of the vest has a wonderful slimming effect at the hips. This is a piece you can experiment with.

Pockets and hems: Pocket panels are woven at the center 12" of the warp. Use two small shuttles and 6" of warp for the left pocket and 6" for the right pocket. Weave for at least 7". At the same time use a separate butterfly for weaving 1" to 1½" for each hem on the remaining portions of the warp.

If woven side panels are desired (for large size only) they can be woven in the portions of warp beyond each hem. Make them at least 14" long (weave more for a long vest).

Assembly

Machine stitch raw edges at each end of the vest. Wash fabric, if desired.

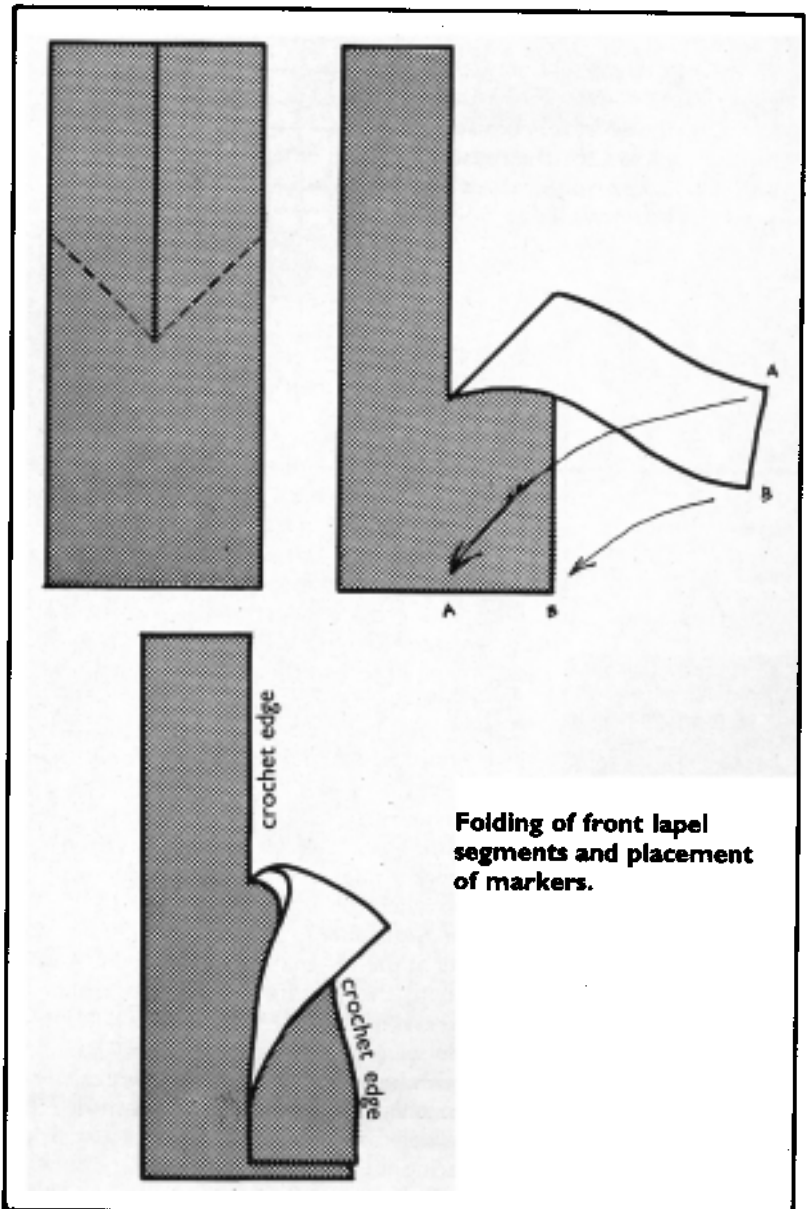
Lay the vest panel flat. Measure and mark back 12" from back hem. Mark shoulder lines. Twist the two front panels, folding under at slit, as illustrated. Pin the fold into place with safety pins. (Note that in the fronts, the underside of the fabric as it was on the loom is now the outside and pocket panels are now located at each side). Pin vest hems and pockets into place with safety pins. Hems will be folded under to inside and pocket panels will be folded up to outside.

For one-piece version: Wash fabric first so stitched lines will not ripple. Reinforcement-stitch on each side of the marked center with a three-stitch zig-zag done three times. If you do not have this type of zig-zag stitch, use three rows of straight stitching ¼" apart. I also like to reinforce this area with Fraycheck™. Single crochet over these raw edges. Follow the remaining instructions.

Removing the Sag: Remove two or three warp threads at each side selvedge. You will see a series of loops on each edge. Pick up the first



Detail of vest showing pocket and crocheted side panel.

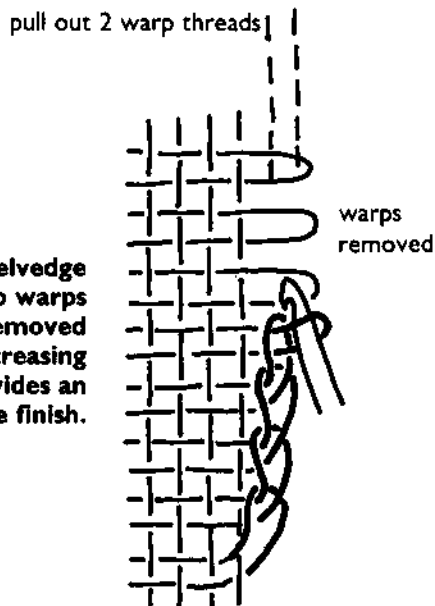


Folding of front lapel segments and placement of markers.

Back armhole of this style vest has a loose, sagging fit that is remedied by the looping process developed by Audrey.



Crocheting the selvage loops after two warps have been removed allows for decreasing sag and provides an attractive edge finish.



Front closing option: Crocheted button band with crocheted buttons, by Karen Searle (top right).

Front closing option: Small crocheted button band with pewter buttons, by Phyllis Schrotke (below right).

loop at the bottom back with a crochet hook and loop it through the next loop. Continue in this manner to the 12" marker. From the 12" marker to the shoulder line, loop 2 loops into one at 1 1/2" intervals 8 times to "decrease" and shape edge. Finish the looping process without further decreasing to end of front edge. Repeat for other side. This looping process not only eliminates a sagging, too-loose armhole in back, it gives a lovely finished look to the edges of the armhole and collar.

Hand stitch the pocket edges to vest body at center front and sides. (If front slit has been cut, baste pocket sides in place. These edges will be finished when the edges are crocheted.)

Fit Adjustment: Pin the side edges of vest together at the 12" marker and try it on. Adjust the pin to the waistline or above waistline—whatever is comfortable for you, and determine the side seam or side panel position. Join side seam with hand sewing or crochet.

Size can be adjusted at side seam with the addition of rows of crochet, a woven panel, or with lacing.

A final pressing will neaten the edges and

block out any puckering that may have occurred in the "sag removal" process.

Closings: There are a number of closing options for this vest. Crochet buttonholes into the front edge, or apply pewter hook closings. To make easily attachable (and movable) 12" braided ties, cut 40" strands, double them over a 1" dowel or broomstick to braid. The resulting braid will have a 1" loop at the end that can easily be pulled through the fabric and knotted in larks-head fashion to attach the tie. These ties can be easily placed and replaced to achieve proper fit.

A vest that overlaps and is belted may not need additional closings. Belts can be woven or crocheted or braided with matching yarn. Working with 150" yarn length to braid or twist makes a 60" belt length.

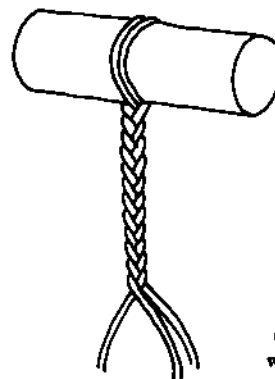
Wear it in good health!



Front closing option:
Crocheted button loops
worked into selvedge loop
edging, handmade ceramic
buttons, by Audrey
Homme



Crocheted ties for front
closing can be easily at-
tached and moved with
larks head knot (right).



Front closing option:
Crocheted ties attached
with buttons, by Audrey
Homme



Origami Vest

by Phyllis Schrotke

This twisted-front vest with a woven-in neck opening was submitted by Phyllis Schrotke of West Richland, Washington. We include it here, as it gives a somewhat different fit at neck back and at the shoulder line.

Warp: Wilde & Woolly Soft Clothing Yarn, 1 cone each Elderberry and Raisin; novelty yarn accents one skein each Clove Tumbleweed and white Tumbleweed.

Width in Reed: 24" (60.96 cm)

Warp Length: 2½ yards (2.25 m) includes one yard loom waste.

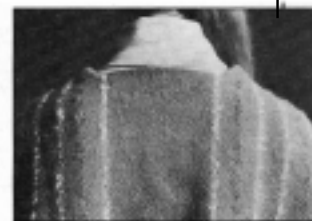
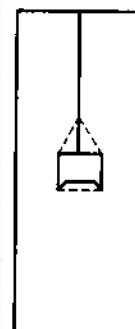
Weft: 1 cone Clove.

Sett: One thread each dent in 8 dent reed. Except for Pattern group.

Pattern Group: Skip 1 dent, White TW, White TW, Skip 1 dent, 6 threads Raisin, Skip 1 dent, Clove TW, skip 1 dent, Clove TW, skip 1 dent, 6 threads Raisin, skip 1 dent, white TW, White TW, skip 1 dent.

Threading: 2" Elderberry, Pattern group, 1" Elderberry, Pattern group, 8" Elderberry, pattern group, 1" Elderberry, Pattern group, 2" Elderberry.

Weave: Plain Weave with Clove for 26". Weave neck opening using 3 shuttles; 1 for facing, and



Detail of back neckline in Phyllis' vest.

2 for shoulders. Facing is woven for 1" and hemstitched. Continue weaving until neck measures proper length, then weave front with 2 shuttles for 21". Finish bottom with hemstitching.

Finishing: Full by washing in hot water for about 15 minutes. Dry flat, press.

Construction: Turn back neck facing under and stitch. Fold front "lapel" flaps to the outside and tack in place. Make collar twists and attach sides as described in *The Weekend Weaver*. Back is plain.

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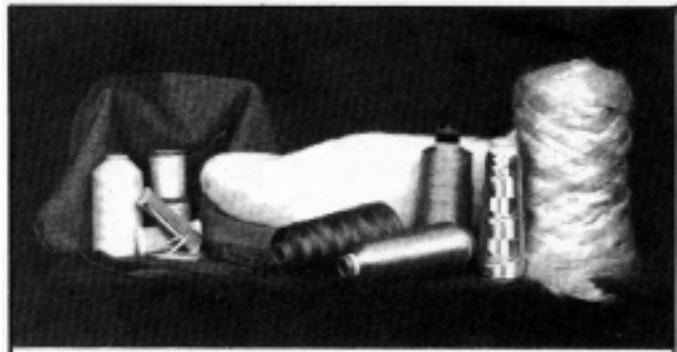
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NOTES OF A PATTERN WEAVER

Plaited Twill Projects

by Philis Alvic

INFORMATION SHARED BY FRIENDS, research in monographs and magazine articles, previous experience, sampling and serendipity all came together in my final product. The seeds for this purse were planted while I was visiting Madelyn van der Hoogt in Missouri. She asked if I would accompany her to her "More than Four" study group. Hearing, talking and just being around weaving is a pleasure, so I readily agreed. Members of the group reported on their research into two-tie unit weaves. Madelyn discussed her efforts to decipher the intricacies of plaited twills and passed around a hand-out. When I examined the samples, I was hooked. I too wanted to weave twills at different angles that appeared to be strips woven in and out on diagonals.

Back at my studio I looked over Madelyn's materials. By then I had also acquired an article by her as well as Clotilde Barrett's monograph, *Double Two-Tie Unit Weaves*. As I read through these items on plaited twills, I was struck by two things. First, designing would take some concentrated effort. I grasped the basic concept, but I was unable to visualize the actual product. To come up with an original pattern, I would have to carefully follow the procedure for designing and then do a drawdown on graph paper. My second thought was that this threading was what I had always called Double Summer and Winter. This meant that I could treadle both weave structures on the same warp.

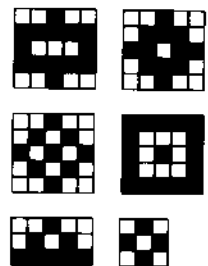
As the weather got colder, I thought it would be nice to have some small, special hand-woven Christmas gifts. My ideas on double two-tie surfaced. The plaited twills seemed ideal for bookmarks. It would give the illusion of intricacy while actually being fast one-shuttle weaving. And, as a special bonus, I could place a small Summer and Winter figure at the top of each bookmark.

In reviewing the technical problems this would present, the biggest was the number of treadles needed to weave the two structures. I could retie the treadles part way through each book mark, but I have never liked crawling under the loom. The easiest solution was to use most of the treadles on my 16 harness loom while limiting the harnesses employed.



Plaited twill purse.

Motifs used in purse.



solid bookmarks.



2 color bookmarks.



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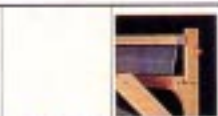
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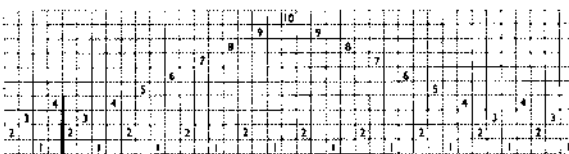


I figured that I would need at least three blocks to construct interesting shapes at the top of each bookmark. So with the addition of another block for the ground, a total of 10 harnesses would be used—two for each block plus the tie threads.

Since more blocks would also require more treadles, the decision to work with four appeared to be the most sensible. After deciding the number of blocks, I began to hunt through Clotilde's book for ideas of what I might possibly use. I found a twill pattern that I liked employing 10 harnesses and using a small number of treadles in the the weaving sequence. Choosing an already-designed pattern was much easier than going through all the work of creating one of my own. I did alter the threading slightly by extending the width of the block on both ends by one unit. By doing this, my Summer and Winter figure had more space around it and the plaited twill was not changed appreciably.

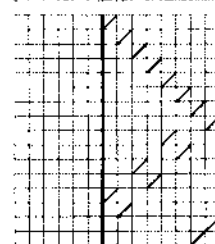
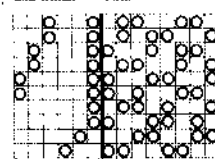
I wanted a thin bookmark stiff enough to hold its shape. I had some nice shiny rayon that worked well sett at 20 e.p.i. I decided that the fabric would look richer if I used three pastel colors in random stripes rather than choosing one of them for the warp.

Setting up the treadles was not difficult after the design concept was worked out. The plaited twill section was set up on the right side of the loom to be treadled by my right foot. On the left



Addition

Summer and Winter Twill



Threading for bookmark. Repeat 4 times for purse.

were the block treadles and the tie thread treadles, and one tabby comprised of the block harnesses. The two separate tie thread treadles were stepped on together for the second tabby—thus saving a treadle. Treadling some of the block designs did require some gymnastics. The blocks were all tied singly so at times it was necessary to depress several treadles at one time. Occasionally the design required blocks that were not adjacent, so I would step on one, slide my toe under a treadle and catch the desired one.

The figure in Summer and Winter at the top of the bookmark was a two shuttle weave. I did the designing of these three block figure at the loom and made each one different. The straight Summer and Winter treadling in singles was used rather than the Double Summer and



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Winter, because I wanted a bold figure rather than a busy one that would compete with the plaited twill. I used the same pattern weft as for the plaited twill, three times the weights of the warp. I added sparkle to the figure by using a fine lurex yarn as the tabby. A happy accident occurred when I ran out of tabby yarn just at the changing point between the two weave structures. I did not have enough to complete the top so I used another color. Now, this does not seem earth-shaking or even clever, but I had been happy with my single-color bookmarks and would not have changed if I had not been forced to stop and seek another bobbin. I liked the two-color one much better and finished off the remaining third of the warp in two-color bookmarks.

At about the time the bookmarks were finished, I decided to make a new purse. The prospect of soon being among a group of weavers acted as a motivating force: Only then did I realize how shabby my present purse had become. I needed to weave something rapidly and the plaited twills fit the bill. I decided that several bookmarks side-by-side would form an interesting fabric for a purse. Executing this idea of multiple connected bookmarks would be fast because I already had the design and even the treadles on the loom already set up to weave it.

My purse-making experience is not extensive but I have a style that I particularly like to carry—a not-very-large shoulder bag. I make the

strap by weaving a strip of fabric and folding it in thirds. This strap then angles out for the sides of the purse. The body of the purse is usually one continuous piece closing in a generous overlap of the front.

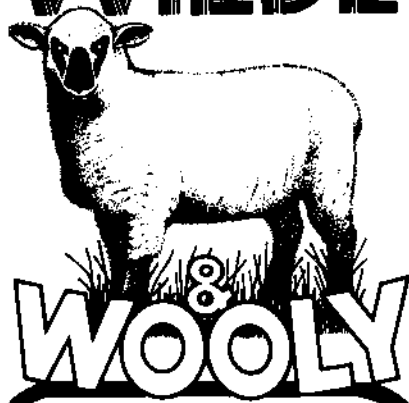
The design for the body of this purse and the strap was the same extended plaited twill I used for the bookmarks. By repeating my bookmark threading, I got an irregular hexagonal shape where the two units connected as a bonus. This made my copied twill design very different from the original. The overlap portion had rows of Summer and Winter figures on different colored grounds. I wanted the stability of two selvages for the strap, so I decided to do the body on a narrow warp in two separate pieces and sew them together. To cover the seam and to serve as part of the closing device I commissioned my son and inkle-weaving expert, Ezra Schroeder, to weave a narrow inkle band. I formed a loop with the band at the bottom of the overlap to close the purse by slipping a handmade ceramic bead through it. The body of the purse was padded with polyester batting and lined.

This purse has proved very serviceable. It is lightweight, the fabric has worn well and the colors coordinate with most of my wardrobe. I still like the design of the fabric and am happy that the forces came together as they did to make it happen.

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Haptic Visions*

by Paul Brubaker

A BLIND WEAVER, like his sighted counterpart, is engaged in translating and manifesting intensely personal feelings and ineffable ideas in such a way that the resulting perceptible ambience conveys something to the observer through its integrity of design. But what happens to the knowledge and experience of a weaver when blindness or deterioration of vision impairs perception?¹ What are the prospects and options available to one devoted to excellence in craftsmanship? Of those weavers who became adventitiously blind, most have either neglected habitative accommodations or abandoned their skills entirely.

Of those blind persons introduced to weaving through rehabilitation or occupational therapy, there is little incentive toward either mechanical proficiency or design mastery. The prevailing attitude on the part of both teachers and students is that the subject is entirely too complex, the mechanisms too intricate and the challenge too daunting.² Too many blind weavers are content to be complacent automata competing with computerized power looms or are too timid to explore viable alternatives to their passive acquiescence.

The weaver who fulfills an artistic impulse by creating a unique fiber piece is inspiring civilization to advancement and need never fear relegation or usurpation by industry. Aesthetics are the bane of employment because they demand fruition and gratification. But because weaving is labor-intensive, one must use all possible or feasible innovations to reduce waste, duplication, repetition and idle devices or specialized mechanisms—just like a factory.

Tools

The loom is not an adversary! This mechanical contrivance is a tool—an adjunct to creative expression. No craftsman can competently produce a work without intimate knowledge of a tool's potential and expertise in its efficient application. To execute pile weaves, one must have a device for stabilizing and ordering the warp, a cutting implement, a hand beater or tapestry comb, and the necessary yarn in appropriate colors and/or textures.

Beautiful, intricate, and enduring pile rugs have been woven by what moderns would call "improvised techniques": a warp-weighted, or ground-stake loom, using rolled or drop-spindle

spun fibers tied in hanks or butterflies and cut with a knife. While "primitive" techniques should not be denigrated, it would be improper to reject technological advances without sufficient cause (such as religious atavism, cultural purity, or superfluous loom complexity). A modern weaver would, for the sake of convenience, want a substantial floor loom having rigid beams, a heavy beater (ballast or weight bar added if necessary) holding a reed, and foot-powered shedding harnesses (from two to eight). The construction materials and exact style of this loom must be individually selected or modified to facilitate the weaver's preferences (i.e. jack vs. counterbalance, high vs. low warp, axial vs. pivotal beater, front vs. rear-mounted cloth beam, accessory tray vs. supplemental rack, etc.).

The weaver may also want the following as tools: pick-up stick or sword, flossa gauge(s), rag or stick shuttle(s), tapestry fork, swift, ball winder, accessory tray or rack, storage bench, warping devices (such as reel or board, raddle, creel and tension box, lease sticks), scissors or knife. Tactile/visual aids may include large alligator spring clips with marking tags, sley hook(s), measuring tape(s), raised-line drawing supplies (i.e. foam or felt pad, stylus, fibrous paper or resilient plastic film, adhesive), a tactile design board or plotting device (pegs, beads, blocks, sticks, string, etc.). Other tools need only be purchased or manufactured when and if the need for them arises.

Pile-Rug/Tapestry Design and Execution

Because any handwoven fiber piece—especially a pile tapestry or rug—requires a considerable investment of time, labor, psychic energy and expensive materials, the artificer should plan each project thoroughly. It is false economy to employ any but the best and most suitable materials in the weaving of a tapestry because good materials will enhance the work and be most durable. The use of inferior yarns can embarrass the artist's finest technique and detract from the item's sensuous power. One should never be ashamed to weave for posterity, because aspiration and determination can enrich method sufficiently to inspire a superlative product.

The typical design progression for both visual and visually-impaired artists entails five stages:

What happens to the knowledge and experience of a weaver when blindness or deterioration of vision impairs perception?

**haptic*: (neologism) by touch, by manipulation, tactile, tangible, palpable; a non-visual sensory perception.

*One should never
be ashamed to
weave for posterity.*

1. *ideation*: inspired by sensory input, extrapolated from experience, or developed from previous work;
2. *planning*: mapping the idea, deciding upon technique(s), determining densities and materials, and anticipating problems;
3. *preparation*: selecting and measuring the materials, dressing the loom, loading shuttles or making butterflies;
4. *execution*: implementing the idea by problem-solving and applied procedure modification;
5. *completion*: concluding techniques, finishing and/or mounting, labelling, and reference notes.

While it is possible to weave an eclectic design based upon intuition or caprice, such experiments are usually deficient in some manner, even when assembled by an experienced weaver. The construction of a tapestry can take from a month to a year, depending upon size and complexity, so it is essential to compose both a prospectus and progress notes using such aids as brailled index cards attached to the castle, tabled plots and schematics, tabulated books and references, and accessible inspirational models. To manage the supplies amassed for a project efficiently throughout the process, one must organize an accessibility or replenishment system as an adjunct to good routine work habits.

Pile Knot Options

A blind weaver will find the following pile knots to be most useful because they tend to "lock" against the fell and are most easily discriminated tactually: Ghiordes (including Argentinian, Rya, Lark's Head), Moroccan, Icelandic, Old French (related Egyptian), Greek Soumak, Cavandoli Soumak, Swedish Soumak, Oriental Soumak, Double Oriental Soumak, Twining. Many blind persons will find a flossa gauge to be an encumbrance because it obstructs tactile access to the fell during multiple color-texture changes. It does, however, have the advantage of consistency in pile length, ordering pile alignment, eliminating post-weaving shearing, and securing the pile during the placement of the succeeding ground or foundation weft.

In addition, the following knots may be "tied" when stabilized by a flossa gauge: Sehna, Spanish, Tibetan, Highland Guatemalan, Eigg (related Czech), Boutonné. While the combination of high and low pile, or of pile isolated on a ground weave, is an effective manipulative technique, one derives little benefit from combining various high-pile knots in the same piece because the subtleties are usually obscured. Likewise, the pile rug weaver will discover that most designs require some degree of exaggeration (distortion, magnification, or extension) to effectively represent the proportional depiction to either

visual or tactile scrutiny.

In order to weave some techniques comfortably, such as chaining, Argentinian, Czech, Eigg, Icelandic, Granitos, or Boutonné, the weaver may want to modify the loom so the shed remains open without persistent pressure applied to the treadle(s). This will spare excessive fatigue and enable extremely wide rugs to be worked without uncomfortable stretching.

Craftsmanship

That each fiber piece is unique is axiomatic. However, each must conform to exacting and rigorous standards of craftsmanship, so that the applied technique transcends the materials to embody the design. Good weaving demands attention to detail, functional rhythm, and subliminal awareness of all applicable parameters. The repetitious tying of thousands of similar knots must not become either distracting or enervating, because each element is an essential and integral part of the gestalt matrix, and can impair the whole by its aberrance. The design, which embellishes upon basics, should never neglect finishing details as integral parts of the major structure and the primary motif depicted. These can be cardwoven argatch, patterned grounds, woven or knotted decorative fringes.

Color Selection

The selection of color must be either interpretive or abstract, *interpretive* being those associative colors conventionally assigned to objects by the sighted world, and *abstract* being those arbitrary or emotive selections for which substitution or transmutation would be irrelevant to the design. In practice, the blind weaver must communicate the design's intent to an aide or assistant to assure some modicum of color relativity (or, for those with remaining color discrimination, to accept the inherent distortions present in abnormal perception as a characteristic style).

The blind weaver may need to accommodate any abstract chromatic representation with respect to relative availability of hues in specific sizes, types, runs, counts, and compositions of yarns. Thus, a project definition is arrived at by a process of elimination in the determination of priorities. Such is the case with fiber-textural discrimination in particular.

Adaptive Modifications Used by Blind Weavers

Adaptive modifications preferred by blind weavers are effective for normally-sighted artists as well. These include a foot-powered bobbin winder to employ both hands in proper guiding; higher-density reeds to facilitate good beating

and permit segmental grouping and/or skip-denting for orientation. Persons with presbyopia, as well as some other visual impairments, would benefit from enhanced or directional lighting, head- or castle-mounted magnifiers, color-coded harnesses and/or heddles, large-print notes and instructions.

The blind weaver cannot afford the luxury of disorientation because it is inefficient, distracting, and taxing. It is better to anticipate interruptions (by working consistently to a personal methodology for functional repetition, such as shuttle placement, heddle pattern groupings, color or technique priority, spring-clip markings, unbeaten weft placement, etc.) than to improvise solutions spontaneously. The blind handweaver may use any of the following orienting techniques, singly or combined, for discerning pattern or design placement:

1. *tactile pattern markers*: the use of spring-clips or other contrivances to establish boundaries, which are moved as weaving progresses;
2. *textural differentiation*: the use of disparate yarn fibers, spins, and counts to isolate motifs;
3. *segregated techniques or densities*: the use of contrasting properties to define motifs;
4. *methodical or sequential counting*: the use of cyclical or linear repetitions, aided by a logical treadling arrangement, or a consistent shuttle format, or a counting device (abacus, number cube, etc.) or mnemonics;
5. *tactile cartoon*: the use of a photographic enlargement, a raised-line and/or bold-line drawing or diagram on film or paper which parallels the advancing warp;
6. *ancillary pattern board*: the use of a supplemental plotting device which displays both the current position and the complete design, separate from the loom but easily accessible;
7. *dobby mechanism*: the use of a mechanical or electrical patterning device which, after programming, automatically maintains the treadling sequence for the basic or foundation weave.

Once the weaver has inculcated the skills coincidental to the exemplary production of a fiber relief-mosaic, the only remaining question is how to evoke continuing inspiration from one's milieu. That color videation** and interpolated descriptions are useful guides is uncontested, but they impose detachment and leave the creative process passive and peripheral—a handicap no artist can endure. For art to transcend convention and embrace spiritual essence, the "vision" must be so thoroughly internalized that the artist's expression can convey its meaning to other cultures and other times without dilution by interpreters and translators. Blindness imposes a unique perspective upon the sensory receptors, and, if honestly and passionately represented in non-pareil tapestries, can vitiate unwarranted pity and sympathy; and can enlighten many because all of us are vulnerable.

Notes

1. The statistics for American blindness have remained relatively consistent in recent years, being average for a technologized culture. Depending upon the agency, its definitions and intent, the sociometric data will vary from differing sources due to survey methodology, demographic alterations and distributions, etiology, remission, and funding. The preponderance of blind people (approximately ninety percent) do not conform to the stereotype of "total blindness" since they retain residual vision to various degrees, which may fluctuate due to medication, metabolism, or illumination.
2. Those persons introduced to weaving through rehabilitation facilities or trained to perform repetitive "weaving" functions in sheltered workshops are neither encouraged to explore construction/fabrication theory, nor to familiarize or adapt weaving mechanics to improve competence and efficiency. Those aspiring to independence or proficiency are often patronized, denigrated, or subjected to various forms to censure. cf. *The Making of Blind Men, A Study of Adult Socialization* by Robert A. Scott, ©1969, Russell Sage Foundation; #AG566 (02).

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The blind weaver cannot afford the luxury of disorientation.

**videation: (neologism) the visualization of unseen or unmanifest objects and scenes; may be abstract, interpretive, representational, distorted, or exaggerated.

Klara Johnson: A Weaver's Vision Realized

by Connie Magoffin



Klara Johnson of Minneapolis, Minnesota, with the knitted cotton bedspread that she made.

IMAGINE A WEAVER having so many orders that she hesitates to take another commission. That is the situation for Klara Johnson, 78, who has lived at Ebenezer Society's Luther Hall, a long-term care facility in Minneapolis, Minnesota, for the past eleven years. What is even more incredible is that Klara is completely deaf and blind.

Before I was first introduced to Klara I couldn't imagine trying to communicate with someone who could neither hear nor see. My concerns quickly vanished. Because Klara was not born deaf, she can speak well and she is quite intelligent and articulate. She offers several means of communication. For those who do not know braille or tactile finger spelling, you can print each letter of the word in her hand or you can type messages on her teletouch machine. While Klara places her finger over a set of blunt pins, each letter typed pushes the pins up to form the

corresponding braille letter. To facilitate the speed of the conversation and to reassure you that she understands, Klara usually repeats each word. More often than not, she knows the word from the first few letters and anticipates the sentence from the first few words.

Klara began losing her sight at age seven; she lost her hearing at age fourteen. In 1953, while she could still distinguish color and shapes if held closely and positioned properly, she decided to pursue weaving as a source of income. She attended the Lighthouse for the Blind in Austin, Texas for six months. There she learned the mechanics of weaving, a number of different weaving patterns and received information on yarn sources. The Wisconsin Rehabilitation Department provided her with a Macomber loom and the other necessary equipment.

Klara is extremely independent and does not see her limitations as a barrier to maintaining

a high level of involvement in her areas of interest. She does her own housekeeping and has a busy daily routine which includes reading about her favorite topic, current events, corresponding with numerous other deaf/blind friends and, of course, weaving.

Independence in her weaving means that Klara is involved in every step of her production from start to finish. She needs help winding the 30-50 yard warp onto her sectional beam, but Klara ties the new warp onto the old one herself. Her selvages are straight (she does not use a temple), the patterns are perfect. Klara jokingly adds, "a perfectionist is one who takes great pains and gives them to others!" When I asked her how she knows where she is in her pattern if interrupted, she answered, "I just know." When the rugs or placemats are done she knots the warp in groups for fringe and only then again needs help in trimming it evenly.

At first Klara had marketing problems and she has had to make do with materials she can afford. She developed her own rug and placemat samples, each carefully numbered for ordering purposes. Her loom is always threaded in a Double Diamond pattern because that is what most clients prefer. The color choices she offers have also been developed according to demand. She learned to use a fine metallic thread as weft at the school in Texas. For her placemats, she decided to wind it together on the bobbins with another weft for added strength. Braille labels allow her to distinguish the yarn colors she needs for filling her orders.

When Klara moved to Ebenezer in 1976, it was understood that along with Klara they were accepting her loom, and they have always provided a home for both of them. She weaves in a small room that also has storage space for her materials. Klara and her loom have been partners for over thirty years and her weaving has become more than a source of income. It is an outlet for creativity, a legacy, a source of pleasure, a way to

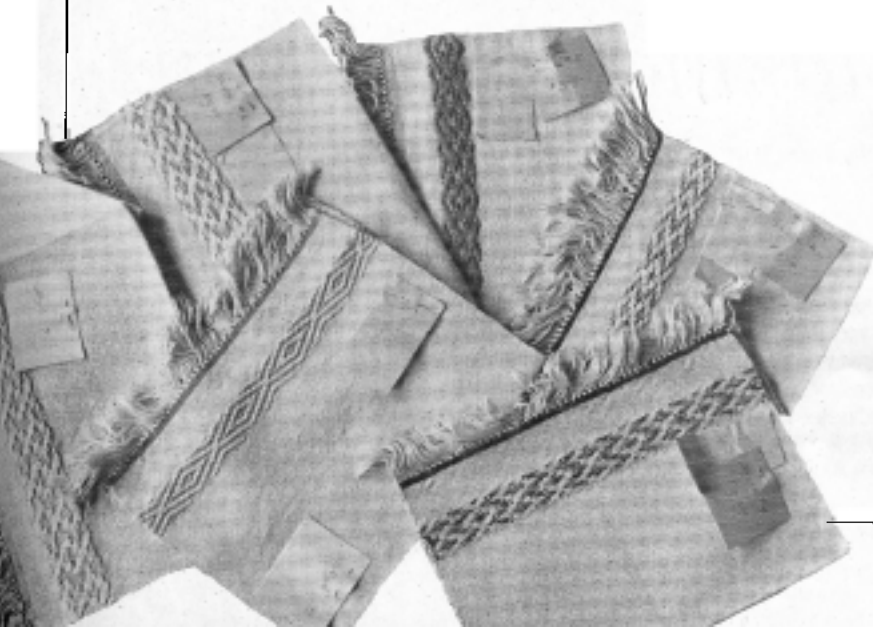


Klara works on placemats at her loom.



Connie Magoffin communicates with Klara via her teletouch machine.

Klara's line of placemat samples with both written and braille labels.



pass the time, but it is also a friend and a companion.

The world of the deaf and blind can be a lonely one, even for someone like Klara who is constantly challenging herself, reaching out to the world. Klara has found the inner peace and tranquility that allows her the patience she needs. The following poem which hangs above her bed reflects two very important parts of her life: religion and weaving.

Master Weaver

When gray threads mar life's pattern,
And seem so out of line,
Trust the Master Weaver,
Who Planned the whole design.

For in life's choicest patterns,
Some dark threads must appear,
To make the rose threads fairer,
The gold more bright and clear.

The pattern may seem intricate
And hard to understand.
But trust the Master Weaver
And his steady guiding hand.

Review

Handwoven Designer Patterns

Simple Tops 101—designed by Jean Scorgie (Loveland, Colorado: Interweave Press, 1986. \$12.00.) Exciting and practical packaging of the *Handwoven Designer Patterns, Simple Tops*, in its sturdy, reuseable box (12" x 9" x 1") provides a forecast of a total and well planned complete pattern and instruction package for handweavers. Patterns included are a loose-fitting, oval neck tunic or dress, double-breasted top and an accessory triangular scarf. Also available in the series are *Overlays* and *Simple Skirts*.

Open the box to find: 1. A printed 6-page instruction guide; 2. A 32-page *Designing to Weave & Sew* booklet; 3. Multi-size patterns for the four versions; 4. Two yards of pattern tracing cloth.

The multi-size pattern is intended as a permanent resource with the garment maker using the pattern tracing cloth for the actual pattern. The multi-size lines and markings are very clear and give a good visual explanation of the pattern grading sizes 8 to 18.

The pattern tracing cloth is a transparent non-woven material marked at 1" intervals. It is easy to work with and there is enough included for making patterns of all garment views except dress (lengthened tunic) and scarf. Additional pattern tracing cloth is available at fabric stores.

The instruction sheets include design ideas with sketches for highlighting of texture, pattern and color; a draft and a set of instructions for using a Marguerite Davison weave structure; pattern layouts; and brief, concise construction instructions.

The *Designing to Weave and Sew* booklet is a gem—a real treasure of information. Use it in conjunction with the instruction sheets for full elaboration and description of seam finishes and finishing techniques. It is filled with all the vital information that a teacher would want to share with a class of students eager to create successful garments including yarn selection (emphasis on creating lighter weight fabrics), sett chart, weave structure, weaving a sample, making a trial garment, weaving and finishing fabric, sewing, seams and seam finishes and hems, crochet and knit edge finishes.

Located conveniently on the box back is a comprehensive chart indicating various finished measurements of the garment pieces and also the widest measurements for pattern

pieces for both lengthwise and crosswise layouts.

The easy narrative style used throughout promotes confidence of working with handwoven fabric. For "first-time" garment weavers there is a wealth of information. For experienced garment weavers the presentation may confirm many of your own best-from-experience approaches and is certain to add many valuable details to your own repertoire of creative solutions for sewing with handwoven fabric.

Ruth Arnold

Ruth Arnold is a Twin Cities weaver, teacher, seamstress and designer of handwoven clothing.

News

Catalogs

Cerulean Blue, Ltd. of Seattle, Washington has just printed its 1987 catalog. The catalog offers basic description, prices and technical information as well as safety precautions, alternate applications, adaptations for production studio and school use plus photos of works of artists using their products. Available for \$3.50 (U.S. funds only) from Cerulean Blue, Ltd., P.O. Box 21168, Seattle, WA 98111-3168.

Handweaving

Kitty and Jim Smith, owners of **Keelor Handweaving** of Arrow Rock, Missouri specialize in the preservation of the handweaving of

colonial times as a utilitarian art/craft. For information: Keelor Handweaving, Arrow Rock, MO 65320-0008.

Weaving Equipment

AVL Looms announces its retail line of hand and fly shuttles with the following features: adjustable tensioner at the tip, fixed bobbins, and interchangeable tensioners. For information: AVL Looms, 601 Orange Street, Chico, California 95928.

Yarn

Green Mountain Spinnery now offers a luxury yarn of 30% mohair/70% wool. The mohair, all from New England, is shorn from yearling angora goats, then hand-scoured at the mill in Putney, Vermont. For information: The Green Mountain Spinnery, Box 568, Putney, VT 05346.

Marr Haven was recently featured in the January 1987 issue of the *Greater Kalamazoo Business Digest*. Marr Haven features luxurious yarn from their flock of purebred Rambouillet Sheep, raised in Allegan County, Michigan. For information: Marr Haven, 772 39th St., Allegan, MI 49010.

Robin and Russ Handweavers features silk in their latest sample sheet, #467. Included are 3-ply Chinese silk noil, Bourette, Tusah, roving type spun silk. For information: Robin and Russ Handweavers, 533 N. Adams St., McMinnville, OR 97128.

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Loom Maintenance

by William Koeppe

ALL LOOMS need periodic care. An annual "tune up" will ensure smooth operation of mechanical functions and also that no problems are developing. A new loom should also receive a check-up—especially if it has been recently moved—if only to see that all of the shafts and cords are aligned correctly. Even if your floor loom spends most of its life as a beautiful piece of furniture, it still needs some care to maintain it so that it will be ready to weave when you are. A few minutes spent in precautionary work could save you a great deal of time later on when you are weaving that prize winning project.

You might think, "Well, since my loom is a Gibraltar 12, it never requires maintenance." A floor loom is a machine and machines need care and attention to function at their highest potential. Perhaps you have noticed that your Gibraltar 12 now takes a little more effort than it used to to give a good open shed. Maybe you hear little scraping or squeaking sounds that were not present a year ago.

I like to work *with* my loom so I do not rush through my annual maintenance routine, which could be called S.T.A.L.L.—square it, tighten it, adjust it, level it, lubricate it.

Square the loom frame

Hold a large carpenter's steel frame against the inside corner of the rear of the loom. Check to be sure that it is square, that is 90°. Any angle other than a true 90° could create problems such as increased friction, bearing wear, and warp misalignment. If you do not have a steel square, or if the construction of the loom frame prevents the use of one, a measuring tape can be used to check for squareness. Measure diagonally through the castle from the inside left rear corner of the loom frame to the inside right front corner. Now measure the opposite diagonal from the inside right rear corner to the inside left

front corner. Compare the results and if the figures match, the loom frame is truly square. If not, one end of the loom frame has to be moved slightly to bring it back to square. To do this, loosen the frame bolts, screws, or wedges, and carefully move one end of the loom sideways about one inch. Now remeasure the frame diagonals and if they match, tighten the bolts firmly.

Tighten the loom frame

Check all of the frame bolts to be sure that they are of the same tightness, or torque. Be sure not to over-tighten, as this will damage screw threads. To tighten any fastener, use the correct tool or wrench that fits the bolt or screw in order to avoid damaging the fastener or the finish of your loom, should the tool slip under pressure.

Do not use pliers on your floor loom. They leave marks wherever they grip, so use them only for mending fences or other outdoor activities, but not for loom maintenance. If your loom has Phillips, hex or square drive fasteners, these screwdrivers are available in hardware stores or from mail order suppliers. Keep all of the tools for your loom with your other weaving implements.

Some floor looms use tenons and wedges instead of bolts. Sometimes these wedges need regular hammering with a rubber or plastic mallet (a steel mallet can split a wedge) to keep them firmed up. The tenon itself is not a fastener, but an anchor point. Only the wedge should move so it is the part that needs attention. You might also try some "Chair-loc"™ or "Swel-Lock"™ on the wedge. This liquid swells the wood cells to hold the parts in a tight grip, but it is not a glue. Eye protection should be used, so read the directions carefully.

Adjust the loom

If you have a ratchet and pawl on your warp or cloth beam, check the pawl to

see if it has worked loose. You might consider adding a second pawl half a step behind the first pawl to give you a finer adjustment. Be sure that each pawl alternates holding the ratchet in place.

Check the treadles. Do you like the angle? Sometimes the treadle angle can be changed, which may mean making new tie-up cords or chains.

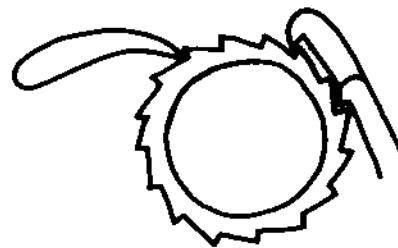
Treadle the tabby sheds, checking to be sure that you have good shed. If



Some basic loom maintenance provisions.

one shaft is low, adjust your tie-up cords. If this adjustment cannot correct the problem, and if you have jacks you may be able to add a new hole in the jack to raise the shaft higher. However, this is a drastic measure. If the loom sheds were uniform to begin with, check out other possible solutions to this problem first.

A good adjustment point on a



Ratchet and pawl mechanism.

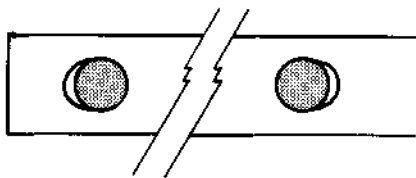
counterbalance loom is the cord or chain between the shaft and the lamm. Merely turning a screw eye will give some adjustment.

Adjust the warp beam brake so that it holds firm when you want it to. If a friction brake is slipping, a small amount of powdered rosin will probably stop the slipping. Athletic suppliers sell powdered rosin for gymnasts. "Cramer" Rosin™ is made by Cramer Products in Garner, Kansas 66030.

Check the loom for any damage. If the loom (not the weaver) has a loose screw that will not tighten, remove it. Cut a piece of toothpick long enough to reach the bottom of the hole. Coat the toothpick with Alphatic Resin™ glue (yellow woodworkers glue) and put it into the hole, large end first. After 24 hours you can replace the screw and it should tighten up. Do not use an epoxy glue to fix a loose screw or bolt, as it rarely solves the problem for very long.

A loose bolt caused by an oval-shaped hole should be attended to, as it will always cause problems. If the bolt is one of the common 1/4" variety, you may be able to drill the hole out to 5/16" and replace the 1/4" bolt with a 5/16" bolt. If the only problem is a nut or wing nut that is forever loosening, replace it with a locking nut that has a nylon insert designed to hold under vibration. You can also put a drop of Lock-tite™ on the bolt threads, which will help secure the nut. This product is sold in auto-supply stores in a small squeeze bottle.

If your loom has a bearing hole that has worn to an oval shape, it is time to fix it. One way to do the job is to glue a short dowel into the original hole using Alphatic Resin™ glue. Since the old hole was worn oval, there will still be a small space below the dowel. After 48 hours you should drill through the remaining space and glue in a short dowel to close up this space. Let this second dowel dry for 48 hours. Sand everything flush with the frame and oil or finish the area to match the rest of your loom. Now you are ready to make a new bearing hole.



Oval-shaped bearing holes. Bearings have shifted into worn areas.

Using the measurements of the original hole, drill into the dowels, refit the bearing and replace the cloth or warp beam.

Heddles get old and worn, whether made of wite or string. Replace any heddles that look bad before they break during weaving. Wire heddles require a lot of hardware to hold them onto the shafts. Check every little piece of this system, and remove excess heddles. Remove any repaired heddles you may have used, replacing them with new ones. String heddles, too, should be replaced if they look misshapen or fuzzy. If your shafts slide in grooves, lightly wax the grooves and check the shafts for any defects.

Level the loom

Place a small level, perhaps a foot long, on the horizontal members of the frame. Watch the bubble to see which end is higher. Be sure that the warp, back, breast and cloth beams are all level, and thus, parallel. If you own a very old floor loom, level the warp and cloth beams under tension to check for oval bearing holes, especially with wooden bearings, as they tend to wear in the direction of the force. Shim up any short legs, if necessary, using a material that is not slippery, so the loom will stay in place while weaving. If you have a counterbalance loom, level the rollers and check to see that the cords all wrap around the rollers in the same direction. Now level all of the shafts, adjusting the tie-up cords where necessary.

Lubricate the loom

Lubrication should be used sparingly on bearing surfaces. You could go out into the garage, get the old oil can and squirt some 30 weight oil here and there—right? No! Take some time to determine the kind of lubricant to use for each part. There are many light oils on the market. Some are "penetrating" oils that are mainly designed to loosen rusty bolts, and are too thin for our purposes



Original hole and worn area to be drilled.

(unless you *do* have a rusty part on your loom that is frozen tight).

A "sewing machine" oil is commonly available, and hobby shops sell little oilers for model trains. These have a long thin spout that is very handy to use. For heavier work such as the main beam bearings I like to use a *white* grease called "Lithium"™ in a squeeze tube, and a silicone *white* grease stick, both from Panef Manufacturing Co., Milwaukee, WI 53218.

A little lubricant goes a long way indeed, and a dot of grease stays put—it does not run or drip. Petroleum jelly is *not* designed for this use. I do not suggest it for a loom because it melts in a warm room and will run out of a bearing. And, of course, you should *not* put any lubricant into a friction brake, be it a wire, rope or a strap brake.

If the loom has a wood-to-wood bearing surface anywhere, force *wax* into the bearing, not grease or machine oil. If the treadles, harness frames, lamm, or jacks rub against other surfaces wax them in these areas. A paste wax such as Johnsons,™ is good for this purpose.

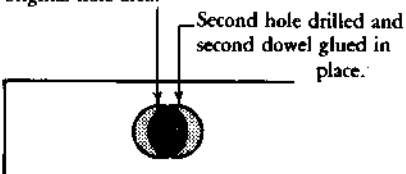
I am not telling you to dismantle the entire loom to get at every last surface. As you look at a loom part ask yourself, "Does it turn?" If it does, friction is generated and thus, wear.

Sealed ball bearings need no care other than replacement when they wear out. Ball bearings that are not sealed may have a grease fitting on them. These are a heavy duty type of bearing. Some bronze bearings have an oil cup, and some use a plastic plug or a rubber port for the oil intake. The most obscure oil point to locate is the tiny unmarked hole that may be filled with lint or covered with paint. Hopefully there will be some hint in the owner's manual to guide you to it. As you find these fittings, make a note of their locations for future reference.

Other items to check

Check the reed. Does it have any bent blades or rust? There are some good rust

Dowel glued into original hole area.



dissolvers available, "Naval jelly" being one choice. With any of these products use eye protection, rubber gloves and follow directions. Remember, if it is a really beat-up reed it may be wiser to replace it. In humid climates it is worth the small extra charge to order a reed made of stainless steel to avoid rust problems.

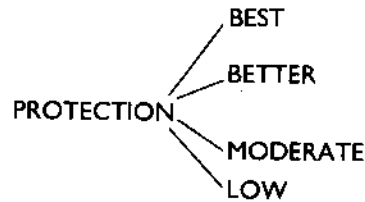
If you happen to find a used reed that is too long, you can pry off the caps from one end and cut the reed top and bottom with a hacksaw to the required length (about 1/2" longer than the desired weaving width). Remove one or two blades so that the end caps will fit back into place. Add a bit of glue (contact cement or another glue intended for use on wood) and reassemble.

If you own a contremarche or counterbalance loom, kneel down and sight through the shafts, checking the heddle alignment with the breast and back beams. Adjust the harness level if necessary.

A good finish is important on a loom because wood is not a static material. The long thin cells in wood absorb and release moisture from the air, causing loom components to expand or contract as a function of its moisture content. Not all finishes are good moisture barriers, however. I use Deft™, a lacquer/sealer finish that goes on fairly easily. Several coats (usually four or five) are needed to give a smooth surface with the last three coats well rubbed with fine steel wool. Do your wood finishing out of doors to avoid fumes and follow the directions exactly.

Most looms start out as *kiln-dried* wood, which means the moisture content of the wood has been brought down to about 3% in a drying oven. This dry wood is then transported, stacked, transported again, cut and

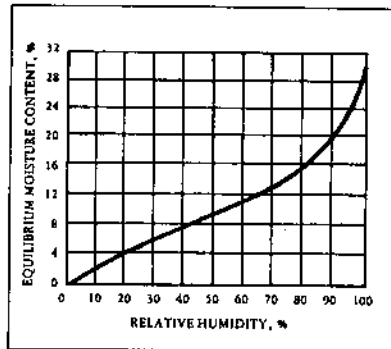
Finishes as Moisture Barriers



Varnish—urethane
Varnish—urea alkyd
Lacquer
Shellac
Oil—penetrating*
Oil—linseed*

*Depends on number of coats applied.

Courtesy of *Fine Woodworking Magazine*, The Taunton Press, Newtown, CT 06470.



Curve shows the approximate relationship between relative humidity and equilibrium moisture content for most woods. Courtesy of *Fine Woodworking*, The Taunton Press, Newtown, CT 06470.

finished by which time it could have picked up water vapor, bringing the moisture content up to perhaps 12% in a humid area. *Kiln dried* is not a permanent state, merely a treatment. A floor loom standing in a heated basement room in winter is in a dry climate, but the same basement room in summer will be more humid.

This temperature and humidity fluctuation may loosen the joints, make parts rub, cause internal or external splitting and encourage rust. Keeping track of the relative humidity in your weaving room can be done with an inex-

pensive hygrometer. Keeping the humidity within reasonable limits will benefit your loom, your favorite furniture and perhaps also your temper.

My grandmother kept a big pan of water on the stove in the winter, but now other methods are available to adjust the humidity inside your home. The cells of the wood are responsive to the water vapor in the air, so it is partially the air that controls the tightness of your loom joints and the rigidity of the loom frame.

To quote *Practical Loom Fixing*, by T. Nelson, "Efficient weaving depends on the looms. Every part must be nicely adjusted and work in harmony with other parts . . . all lost motion should be taken out."

As you weave, your muscles push and pull against several forces, friction being one of these. If some friction and extraneous movement can be alleviated, the weaving requires less effort and goes on smoothly to the end.

Mail Order Suppliers

Glue, Chair-Loc, Finishes: The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374.

Hygrometers, oilers, Chair-Loc: Klockit Co. P.O. Box 629, Lake Geneva, WI 53147.

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CALENDAR

EXHIBITS, FAIRS, FESTIVALS

ARIZONA

Flagstaff: "Fibers Celebrated," a juried fiber exhibit in conjunction with the Intermountain Weavers Conference, will be held at the Northern Arizona University Art Gallery, July 1–August 1, 1987.

ARKANSAS

Mountain View: the 25th annual Arkansas Folk Festival, featuring the Ozark Foothills Craft Guild's Spring Show and Sale, will be held April 17–19, 1987 in Mountain View.

CALIFORNIA

Monterey: The Monterey County Fair Wool Show will be held August 11–16, 1987.

Orland: The Glenn County Fair Sheep & Wool Show will be held June 11–14, 1987. Events include the national handcrafted wool showcase.

CONNECTICUT

Guilford: Guilford Handcrafts Exposition, July 16, 17, 18, 1987 at Guilford Green.

Guilford: "A Birthday Celebration," in honor of the 30th birthday of the Guilford Handcrafts Exposition and the 20th birthday of the Guilford Handcrafts Center, May 3–May 23, 1987 at The Mill Gallery, 411 Church St.

DISTRICT OF COLUMBIA

Washington, D.C.: "Turkish Treasures: Highlights from the Collection," featuring the Textile Museum's Turkish rugs, opened December 16, 1986 and will run through summer, 1987 at the Textile Museum.

Washington D.C.: "First Flowerings: Early Virginia Quilts," July 20–Oct. 11, 1987 at the DAR Museum, 1776 D St. N.W.

HAWAII

Honolulu: "WeARTable," an exhibition of handwoven garments, sponsored by the Hawaii Handweavers Hui, will be held March 31–April 18, 1987 at the Kirsch Gallery of Punahou School, Honolulu.

ILLINOIS

Bloomington: "Needle Expressions 1986," June 1–June 26, 1987, Bloomington Park District Museum.

Chicago: "Historic Textiles and Pottery from Sub-Saharan Africa," March 20–April 24, 1987; "Art of Oceania," May 1–June 30, 1987 at Douglas Dawson Gallery, 341 W. Superior.

INDIANA

Columbus: The Bartholomew County Historical Society announces a craft show at the Breeding Farm, County Roads 800N and 100W, May 30–31, 1987.

Fort Wayne: Festival Arts and Craft Show, July 11 & 12, 1987 at Freimann Park, downtown Fort Wayne.

KANSAS

Kansas City: "Fibre Trends '87," the annual juried membership exhibit sponsored by the Fiber Guild of Greater Kansas City will take place April 2–30, 1987 at Union Hill Arts, 3013 Main St., Kansas City.

Wichita: "Fiber R/evolution," May 15–June 15, 1987 at the Wichita Art Museum.

KENTUCKY

Bowling Green: "Needle Expressions 1986," April 13–May 8, 1987, The Jackson Museum, Kentucky University.

MARYLAND

Hagerstown: The Washington County Museum of Fine Arts will present a weaving show in the Ceramic Gallery during the month of April.

MASSACHUSETTS

Cambridge: "Wearables: Creative Knits by Robin L. Bergman & Fine Wovens by Nan Rogers," April 7–May 30 at Friends Gallery, 383 Huron Ave. (617) 547-1267.

Pittsfield: "Shaker Workmanship 1987," a juried exhibition showcasing recent pieces by contemporary craftspeople whose work reflects the designs and skills of the Shaker community industries will take place May 31–September 30, 1987 at Hancock Shaker Village, located on Route 20, five miles west of Pittsfield, Massachusetts.

MINNESOTA

Minneapolis: "Tradition, Fashion and Prestige: Elements of Asian & African Dress," Apr. 3–May 2, 1987 at Indigo, 212 3rd Ave. N.

Minneapolis: "Pattern Threads: Ikat Traditions and Inspirations," June 28–September 6, Minneapolis Institute of Arts.

St. Paul: The Raymond Avenue Gallery, 761 Raymond Ave. features a continuing exhibition of crafts and photography by twelve leading Minnesota artists. Included are fiber artists Marit Lee Kucera, Mary Anne Wise and Nancy Gipple.

St. Paul: "The Magic Knitting Needles of Mary Walker Phillips," March 15–May 10,

1987 at the Goldstein Gallery of the University of Minnesota, St. Paul Campus.

NEW MEXICO

Los Alamos: Fuller Lodge Art Center presents the following exhibitions in 1987: April 3–May 3, Second annual juried "Que Pasa: Art in New Mexico"; May 8–31, "Textures," including the work of weaver Irene Yesley; October 2–November 1, "Personal Images," including the hand-made paper of Dana Salmond.

NEW YORK

Binghamton: "Goddesses and Their Offspring," an exhibit of 19th and 20th century Eastern European embroideries will be held February 8–April 19 at the Roberson Center for the Arts and Sciences, Binghamton.

Lockport: The Weavers' Guild of Buffalo, New York Fiber Show, April 26–May 17, 1987 at Kenan Center, Lockport, New York.

New York City: "Fiber R/evolution," July 11–September 5, 1987, American Craft Museum.

New York City: "Folding Fans from the Cooper-Hewitt Collection," February 3–May 31, 1987 at the Cooper-Hewitt Museum, 2 East 91st St.

OHIO

Columbus: "Garment Design: In Celebration of Body & Soul," a month-long celebration will be held in June, 1987. Events include a statewide exhibition at the Columbus Cultural Arts Center, May 30–June 28, 1987; a national invitational exhibition, May 30–June 28, 1987 at Ohio Dominican College, Wehrle Art Gallery; an ethnic garment exhibition, June 6–28 at the Artreach Gallery. Zandra Rhodes will have a one-woman exhibiton, May 30–June 28 at Gallery 200.

Oberlin: The Loom Shed will sponsor its 5th Annual Handweaving Show, May 17–31, 1987 at the Loom Shed, 278 S. Pleasant St., Oberlin.

OREGON

Portland: "From Ancient Roots: Contemporary Basketry," September 24–November 5, 1987 at the Oregon School of Arts and Crafts, Hoffman Gallery.

Salem: The grand opening of the finishing room exhibition at the historic Thomas Kay Woolen Mill will take place June 6, 1987. This is the second phase of the Woolen Mill Museum and showcases the finishing processes for wool fabric.

RHODE ISLAND

Bristol: "Costume as Communication: Ethnographic Costumes and Textiles from Middle America and the Central Andes of South America," March-December, 1987 at the Haffenreffer Museum of Anthropology, Mount Hope Grant, Bristol.

TENNESSEE

Gatlinburg: The Arrowmont Spring Faculty and Staff Exhibition will be held February 20-May 2, 1987.

VIRGINIA

Alexandria: "Color, Texture, Form: Fiber '87", Potomac Craftmen's annual fiber show will be held at the Torpedo Factory Art Center, 105 North Union Street, May 13-29, 1987.

WISCONSIN

Madison: The first annual spring sale of the Madison Weaver's Guild will take place May 2-3, 1987 at Hilldale Mall, Midvale Blvd., Madison. The annual exhibition of the Madison Weaver's Guild will take place May 1-29, 1987 at the Lutheran Campus Center, 325 N. Mills St., Madison.

Neenah: "Facets. Fiberworks by Joyce Marquess Carey," May 25-June 21, 1987 at the Bergstrom-Mahler Museum of Art.

Sheboygan: "From Hardanger to Harleys. A Survey of Wisconsin Folk Art," will be held March 8-May 17, 1987 at the John Michael Kohler Arts Center. Also at the Center, the 17th Annual Outdoor Arts Festival, July 18 and 19, 1987.

Whitewater: "A Celebration of Creativity," the 12th annual fiber and textile exhibit sponsored by the Whitewater Spinners and Weavers Guild will be held July 20-August 7, 1987 at the Crossman Gallery, University of Wisconsin-Whitewater.

WYOMING

Douglas: "1987 Fiber Affair," June 18-20 at the fairgrounds in Douglas.

CANADA

ONTARIO

Toronto: An exhibition of baskets by British basketmaker Lois Walpole opens at The Craft Gallery of the Ontario Crafts Council April 1 and will run until May 3, 1987.

CONFERENCES

ALABAMA

Auburn: Alabama Fiber Conference of 1987, sponsored jointly by the Auburn Fiber Guild and Auburn University School of Home Economics will be held August 13-16, 1987 at Auburn University. Ken Weaver is the featured speaker. *For information:* Linda Silvern, 143 Norwood Ave., Auburn, AL 36830 (205) 887-7534.

ARIZONA

Flagstaff: The Third Biennial Intermountain Weavers Conference will be held on the campus of Northern Arizona University, July 16-20, 1987. Keynote speaker will be Anita Mayer. *For information:* Lois Fronk, 1104 Stover St., Ft. Collins, CO 80524.

CALIFORNIA

Los Angeles: The 16th Biennial Conference of Southern California Handweavers, "Threads of Time," will be held at the UCLA campus and the Los Angeles Airport Hilton, July 7 through 12, 1987. Dates include pre-conference workshops. *For information:* CSCH '87, P.O. Box 194, Pacific Palisades, CA 90272.

Mendocino: The 4th International Fiber and Fungi Symposium and Exhibition will be held January 11-15, 1988 on the Mendocino coast. An exhibit of mushroom-dyed fiber art will open January 9, 1988 at the Highlight Gallery in Mendocino. *For information:* Miriam Rice, International Mushroom Dye Institute, Box 703, Mendocino, CA 95460.

COLORADO

Denver: "Fashion Fabrics 2," a forum sponsored by Interweave Press on designing and weaving fabrics for apparel, will be held on May 21-24, 1987 at the Westin Hotel in Denver. *For information:* SASE to Interweave Forum, 306 Washington Ave., Loveland, CO 80537. Canadian residents may call (303) 669-7672 to request information.

FLORIDA

Maitland: The Florida Tropical Weavers Guild will hold their annual conference, April 24-26, 1987, at the Sheraton Hotel in Maitland. Albertje Koopman is the keynote speaker with fashion show commentary by Nancy Harvey. *For information:* Kathleen Lee, 738 Wildmere, Longwood, FL 32750.

KANSAS

Lawrence: "Crossroads '87," the Midwest Weavers Conference will be held at The

University of Kansas, Lawrence, June 5-7, 1987. Sponsored by the Kansas Alliance of Weavers and Spinners, featured speakers will be Albertje Koopman and Lois Ericson. *For information:* Bill Dysinger, 207 3rd Ave., Leavenworth, KS 66048.

KENTUCKY

Berea: The Precious Fibers Foundation has announced the presentation of The National Fibers Cottage Industry Congress, to be held at Berea College in Berea, Kentucky, May 27, 28, 29, 1987. The conference will concentrate on preparing people to be in the fiber cottage industry. Speakers include Allen Fannin, Linda Berry Walker and Paula Simmons. *For information:* Precious Fibers Foundation, Inc., P.O. Box 511, Berea, KY 40403. (606) 986-1495.

LOUISIANA

Baton Rouge: Gulf South Fiber Conference, "Cotton Daze—Summer Haze," June 24-28, 1987. Sponsored by the Bayou Yarn Benders and Baton Rouge Fiber Guild. *For information:* Mary Lynn Jackson, 9326 Cal. Rd., Baton Rouge, LA 70809.

MASSACHUSETTS

Amherst: The 17th Biennial New England Weavers' Seminar will be held July 20-23, 1987 in Amherst. Featured speakers include Allen Fannin, Diane Ister, Malin Selander, Nell Znamierowski, Ed Franquemont and Patrice George. Pre-conference workshops will be held July 17-19. *For information:* Kathryn Bardwell, R.D. Box 291, Craryville, NY 12521.

MICHIGAN

Ann Arbor: "Divergence '87—Pattern with Panache," the 1987 conference of the Michigan League of Handweavers will be held June 12-14, with workshops following on June 15-17, 1987 at Concordia College, Ann Arbor. Speakers include Helene Bress, Lenore Davis and Victoria Rabinowe Oppenheimer. *For information:* Mrs. Pat Chipman, 5015 Brookside Drive, Jackson, MI 49203.

MINNESOTA

Minneapolis: The Textile Council of the Minneapolis Institute of Art will sponsor "Artwear '87," April 1-4, 1987. Featured speaker will be Zandra Rhodes. *For information:* The Textile Council, Minneapolis Institute of Art, 2400 Third Ave. S., Minneapolis, MN 55404. (612) 870-3047.

Virginia: The Range Fiberart Guild is hosting the annual conference of the Minnesota Federation of Weavers and Fiber Artists, September 25-27, 1987. Featured speaker is Nell Znamerowski. *For information:* Kathy Rensink, 320 S. 2nd St. W., Aurora, MN 55705.

NEW JERSEY

Montclair: The MidAtlantic Fiber Association 1987 conference will be held July 10-12, with preconference workshops July 8-10, at Montclair State College. *For information:* Harriet Serenkin, 57 W. 68th St., New York, NY 10023.

NEW YORK

Chautauqua: The Eastern Great Lakes Fiber Conference will be held May 11-17, 1987 at Chautauqua Institution. Featured speaker is Malin Selander. *For information:* Mrs. Rachel Robertson, 44 Glade Ave., Warren, PA 16365.

RHODE ISLAND

Bristol: The Haffenreffer Museum of Anthropology, Brown University, announces a symposium, "Current issues in Ethnographic Costume and Cloth: Middle American and the Central Andes of South America," in March, 1987. The symposium will coincide with the opening of the exhibition "Costume as Communication." *For information:* Margot Schevill, Haffenreffer Museum of Anthropology, Mount Hope Grant, Bristol, RI 02809.

TENNESSEE

Smithville: The Appalachian Center for Crafts and Shereen LaPlantz will sponsor a conference at the Appalachian Center for Crafts in Smithville, August 10-14, 1987. *For information:* Shereen LaPlantz, LaPlantz Studios, 899 Bayside Cutoff, Bayside, CA 95524. (707) 822-6009.

WASHINGTON

Coupeville: "Fiber Forum," sponsored by the Coupeville Arts and Crafts Festival Association, will be held September 18-20, 1987 at the Coupeville Arts Center at Coupeville on Whidbey Island, near Seattle. *For information:* Coupeville Arts Center, P.O. Box 611, Coupeville, WA 98239 (206) 678-4606.

CANADA

BRITISH COLUMBIA

Vancouver: The 13th Biennial Conference of the Association of Northwest Weavers' Guilds, "Fibres Forever," will be held June 20-28, 1987, at the University of British Columbia, Vancouver. The keynote speaker will be Virginia West. *For information:* Allen Sanderson, 4535 61st St., Delta, B.C., Canada V4K 3X6 (604) 946-1883.

ONTARIO

St. Catharines: The Ontario Handweavers and Spinners Conference 1987, "Pot-pourri '87," will be held May 22-24, 1987 at Brock University, hosted by the Niagara Handweavers and Spinners. *For information:* Esther Teal, 2613 Ott Road, Stevensville, Ontario L0S 1S0 Canada.

NEW ZEALAND

Christchurch: "National Woolcrafts Festival Canterbury-1987," the annual festival of the New Zealand Weavers and Spinners and Woolcraft Society, will be held May 12-16, 1987 at Lincoln College, near Christchurch. *For information:* Jackie Bain, National Woolcrafts Festival, Canterbury 1987, Private Bag, Sumner, Christchurch, 8, New Zealand.

TO ENTER

Deadline May 11, 1987 for slides for "Night Screams/Day Dreams," a national juried exhibition in all mediums to be held October 9-November 5, 1987. *For information:* "Night Screams/Day Dreams," Galeria Mesa, P.O. Box 1466, Mesa, Arizona 85201-0904, (602) 834-2242.

Deadline May 30, 1987 for slides for "Access to the Arts" 7th annual juried fiber show to be held July 12-August 7, 1987. Open to U.S. residents. *For information:* legal size SASE to Adams Memorial Gallery, 600 Central Avenue, Dunkirk, NY 14048, (716) 366-7450.

Deadline May 31, 1987 for inclusion in the 1987 Goodfellow Christmas Catalog. This is a retail mail order catalog of handmade items mailed free to ca. 40,000 shoppers. *For information:* send legal size SASE to Goodfellow Catalog Press, P.O. Box 4520, Berkeley, CA 94704 or (415) 845-2062.

Deadline June 20, 1987 for "A Celebration of Creativity, the 12th annual fiber and textile exhibit sponsored by the Whitewater Spinners and Weavers Guild, July 20-August 7, 1987 in the Crossman Gallery, University of Wisconsin-Whitewater. *For information:* Jacqueline Nicholson, Rt. 2, 541 Main St., Eagle, Wisconsin 53119.

Deadline July 1 for "Wearable Art Show," a juried competition sponsored by the Bellevue Art Museum, Bellevue, Washington. This is an annual event open to textile artists in the United States. All art should be available for sale. *For information:* LaMar Harrington, Director, Bellevue Art Museum, 301 Bellevue Square, Bellevue, WA 98004.

Deadline July 14, 1987 for "Spotlight '87: Southeast Crafts," a juried exhibition sponsored by Arrowmont School of Arts and Crafts and the Southeast Region of the American Craft Council, to be held October 15-December 12, 1987. Open to artists 18 and over living in Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia or

West Virginia. *For information:* Margaret McGavin, Spotlight '87, Arrowmont School of Arts and Crafts, P.O. Box 567, Gatlinburg, TN 37738.

Deadline August 1 for "Fibers Minnesota '87," the 3rd annual show and sale for fiber arts and "Artbreak '87," a runway artwear show to be held in conjunction with Fibers Minnesota '87. All accepted exhibitors in Fibers Minnesota may exhibit in Artbreak '87; it is also possible to apply only for Artbreak '87. *For information:* Fibers Minnesota, c/o Minnesota Crafts Council, Hennepin Center for the Arts, 528 Hennepin Ave., Suite 308, Minneapolis, MN 55403.

Deadline August 17 for "The Doll Show," at the Mill Gallery, Guilford Handcrafts Center. Open to all craft media. *For information:* SASE to The Doll Show, Guilford Handcrafts, Inc., P.O. Box 221, Guilford, CT 06437, attn. Amy Lentz or Patricia Seekamp.

Deadline September 4, 1987 for "Kansas Fiber Directions '87, October 18-November 15, 1987 at the Wichita Art Museum. Open to all Kansans, former Kansans and residents of metropolitan Kansas City, Missouri. *For information:* Kansas Fiber Directions '87, 2424 Gouverneur, Wichita, Kansas 67226 or Ann Enix, (316) 722-2312.

ANNOUNCEMENTS

Arrowmont School of Arts and Crafts is now accepting applications for the position of assistant director. Responsibilities include operational, management and staff supervision of educational program; coordination/facilitation of workshops, conferences, seminars and community outreach; exhibition coordination/installation. *For information:* Sandra Blain, Director, Arrowmont School of Arts and Crafts, P.O. Box 567, Gatlinburg, TN 37738.

Fiber Designs, a new gallery on Cape Cod specializing in handwoven art and crafts, is seeking weavers to represent. All kinds of weaving considered. Consignment basis, with frequent exhibition. *For information:* SASE to Rebecca Smith, 260 Gulf Road, Belcher-town, MA 01007 (413) 256-6078.

The Crafts Council of Ireland opened its 11th National Craft Trade Fair in Dublin on January 19, 1987. Direct exports account for 50% of orders taken, with the United States being the largest market. This year's exhibits included ceramics, knitwear, jewelry, wooden toys, lamps, woven goods, fashion, handcrafted paper, dolls, printed textiles and candles.

STUDY & TRAVEL

STUDY

ARIZONA

Mesa: The Mesa Cultural Program offers an ongoing series of classes in the fibers arts. *For information:* Mesa Cultural Program, P.O. Box 1466, 155 N. Center, Mesa, AZ 85201.

CALIFORNIA

Mendocino: Mendocino Art Center will offer several textile classes during its summer session, beginning June 29. Among the classes are rug weaving, shibori, tapestry and ikat. *For information:* Lolli Jacobsen, Textile Programs Coordinator, Mendocino Art Center, 45200 Little Lake Street, P.O. Box 765, Mendocino, CA 95460 (707) 937-0228.

CONNECTICUT

Brookfield: Brookfield Craft Center will offer fiber classes including basketry, weaving and lap quilting during their Summer 1987 session beginning June 6. *For information:* Brookfield Craft Center, Inc., P.O. Box 122, Brookfield, Connecticut 06804.

DISTRICT OF COLUMBIA

Washington: "Off the Wall, On the Body: A Look at Contemporary Wearable Art," is an all-day seminar at the Renwick Gallery, Smithsonian Institution, April 25, 1987. Speakers include Mary McFadden, Arline Fisch, Robert Lee Morris, Ivy Ross and Julie Schaffler Dale. *For information:* S.I. Resident Associate Program, Smithsonian Institution, Washington, D.C. 20560 (202) 686-5262.

INDIANA

New Harmony: Harmonie Weavers, Inc. with the support of the Indiana Arts Commission and the National Endowment for the Arts, announces the following workshops: Betsy Blumenthal on Double Weave, May 2-3; Sallie Guy on Finishing Techniques plus a lecture on Color Usage, June 12-14. *For information:* Harmonie Weavers, Box 277, New Harmony, IN 47631 (812) 682-3578.

MAINE

Deer Isle: The session at Haystack Mountain School of Crafts begins June 7 and continues through September 4. Classes will be offered in weaving, fibers and fabrics. There will be a special session on "Surface and Pattern." *For information:* J. M. Michaud, Haystack Mountain School of Crafts, Deer Isle, ME 04627-0087 (207) 348-2306.

MARYLAND

Hagerstown: A decorative arts seminar will be held at the Washington County Museum

of Fine Arts, April 25, 1987. Speakers include Sigrid Piroch, Pat Hornafius, Patricia Herr and Pat Brousil. *For information:* Decorative Arts Forum, Washington County Museum of Fine Arts, P.O. Box 423, Hagerstown, Maryland 21740.

MASSACHUSETTS

Amherst: Horizons, The New England Craft Program will offer several fiber workshops beginning April 25. *For information:* Horizons, Jane Sinauer, Director, 374 Old Montague Rd., Amherst, MA 01002 (413) 549-4841.

MINNESOTA

Grand Marais: "Tapestry Weaving Techniques," taught by Merle Sykora, will be offered August 17-21 and August 24-28 as part of the summer session at the Grand Marais Art Colony. *For information:* Grand Marais Art Colony, P.O. Box 626, Grand Marais, MN 55604 (218) 387-1195 or 2737.

St. Paul: The following lectures will be offered in conjunction with the exhibit "The Magic Knitting Needles of Mary Walker Phillips," at the Goldstein Gallery, The University of Minnesota, St. Paul Campus, March 15-May 10, 1987: Lizbeth Uptis, "A Creative Knitter's Influence," April 21; Walter Nottingham, "Fiber Arts—The legacy of the Cranbrook Experience," April 28; Christa Thurman, "The Art of Knitting," April 30. All lectures at McNeal Hall on the St. Paul campus.

MISSOURI

Fayette: The Weavers' School provides an intensive weaving experience for those interested in exploring beyond the four shaft loom. Classes include: Introduction to Complex Weaves, The Weaving and Finishing of Coverlets, and The Drawloom. Classes are restricted in size to insure maximum individual progress. *For information:* Madelyn van der Hoogt, The Weavers' School, Route One, Fayette, Missouri 65248. (816) 248-3462.

NEW HAMPSHIRE

Harrisville: Harrisville Designs summer workshops begin June 22. Classes include: Color Values in Weaving; Rugweaving Techniques; The Reproduction of Early American Coverlets. *For information:* Leslie Voiers or Sharon Driscoll, The Weaving Center at Harrisville Designs, Harrisville, N.H. 03450 (603) 827-3996 Tues.-Sat.

NEW YORK

New York: A lecture series on Islamic tex-

tiles will begin April 20 at the Cooper-Hewitt Museum. The series will be held on 5 Monday evenings.

New York: "Crafts/Design: The Fine Art of Business," is a special seminar to help craftspeople learn how to market their work successfully at The Fashion Institute of Technology 227 W. 27th St, May 6, 13, 20.

NORTH CAROLINA

Penland: The spring session at Penland School runs from March 23-May 15. Summer session begins June 1. Fiber classes are included in both sessions. *For information:* Penland School, Penland, NC 28765-0037 (704) 765-2359.

OHIO

Oberlin: The Loom Shed will offer workshops in drafting, shaftswitching, overshot and Moorman during its summer session. *For information:* The Loom Shed, 278 South Pleasant St., Oberlin, Ohio 44074 (216) 774-3500.

OREGON

Clackamas: Damascus Pioneer Craft School will offer several fiber classes beginning July 6. *For information:* SASE to Damascus Pioneer Craft School, 14711 S.E. Anderson Rd., Clackamas, Oregon 97015 (503) 658-2704.

Portland: The Oregon School of Arts and Crafts will offer Arashi Shibori—Japanese resist dyeing, May 2-3 as part of its spring session. Weaving classes will be offered as part of the summer session which begins June 15. *For information:* Oregon School of Arts and Crafts, 8245 S.W. Barnes Road, Portland, Oregon 97225 (503) 297-5544.

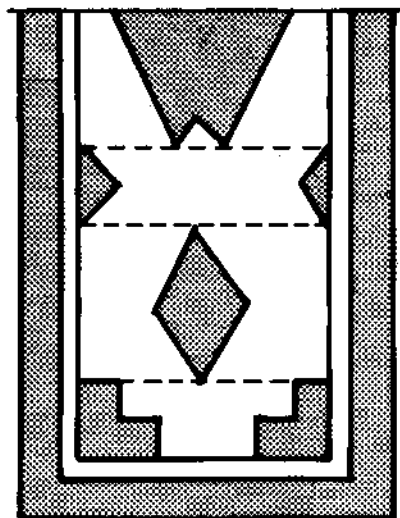
RHODE ISLAND

Bristol: In conjunction with the exhibit, "Costume as Communication," opening at the Haffenreffer Museum of Anthropology in March 1987, the following lectures will be offered: Kate Peck Kent on "Prehistoric and Contemporary Pueblo Textiles," April 27; Sara Smith on "Meaning in and of Navajo Weaving," May 17.

TENNESSEE

Gatlinburg: Arrowmont School of Arts and Crafts Summer Workshops begin June 8, 1987. Fiber workshops include multi-layered weaving, supplementary warp, tapestry, wearables, basketry. *For information:* Arrowmont School of Arts and Crafts, P.O. Box 567, Gatlinburg, TN 37738 (615) 436-5860.

Placement of motifs.



Comments: "I found that the cotton pulled in more than the linen so I angled the cotton more than the linen in the shed. I wanted a more pronounced diagonal line on the corner motif, so I played around a bit. I decided that each "x" on the graph of the corner motif would stand for 1 warp thread rather than 2 and that each row would be 2 picks instead of 4 (i.e. 1 pick per layer, not 2). The change caused some elongation in the design and sacrificed some of the crispness of the technique but the overall effect of the diagonal was what I wanted."

Finishing: Size on the loom: 14½" x 47½"; Size after washing in cool water and Woolite™: 13¾" x 45½"; Shrinkage: 10%. "Two problems occurred in finishing, one foreseen and one unexpected. The use of cotton and linen in the same piece in two layers will inevitably lead to shrinkage differences. I had hoped that a very good pressing after blocking the piece would minimize the problem. This worked fairly well but it took a lot of ironing.

The second problem almost caused despair! After washing I found to my horror that what I had thought was an unbleached cotton was bleeding around the motifs into my white linen! After the initial shock I decided to finish the piece anyway and see if there was any way at all to make this new development work for me. After the piece was completed I put it on a table to see the overall effect. I realized that the bleeding had a softening effect on the whole piece. It gave it an antique look that I found pleasing."

VERMONT

Plainfield: Summer classes at the Marshfield School of Weaving begin June 1. Beginning in June, the School will institute a 3 month internship program. For information: Marshfield School of Weaving, Plainfield, Vermont 05667 (802) 426-3577.

WISCONSIN

Washington Island: Sievers School of Fibers Arts will offer a vast array of fiber and fiber related classes during its summer session. For information: Sievers School of Fiber Arts, Jackson Harbor Road, Washington Island, Wisconsin 54246.

AUSTRALIA

QUEENSLAND

Brisbane: The Australian Flying Arts School announces a new Weaving Correspondence Course; written by Janet De Boer, and sponsored by the Crafts Board of the Australia Council. For information: The Coordinator, Correspondence Courses, Australian Flying Arts School, c/o Brisbane CAE (Kelvin Grove), Victoria Park Road, Kelvin Grove Q 4059.

CHINA, JAPAN, MEXICO, NEPAL

Folkways Institute, a U.S. based international school which develops and offers field courses and workshops in Adult and Continuing Education within and outside the U.S. will offer the following workshops in 1987: Festivals and Folkcraft of Nepal, May 2-17; Native Arts and Crafts of Mexico, June 19-28; Chinese Crafts: A Journey for Artisans, June 21-July 12; Festival and Folkcraft of Japan, July 27-August 12. For information: Kyle Cook, Folkways Institute, P.O. Box 68257, Oak Grove, Oregon 97268.

DENMARK

Haderslev: The Danish Weaving Center will offer 1 to 4 week classes during its summer session beginning June 1. For information: Danish Weaving Center, c/o Turid Uthaug, Fjelstrupvej 34, 6100 Haderslev, Denmark, telephone 04 527675.

ENGLAND

Gretton, Northamptonshire: Malcolm and Elizabeth Palmer offer weaving, spinning and dyeing courses at their home on a live-in basis. Courses are all planned individually, from beginners to more advanced. For information: Malcolm and Elizabeth Palmer, Crown Cottage, Gretton, Northamptonshire, NN17 3DE, England.

NORWAY

Voss: Vesterheim, The Norwegian-American Museum will conduct workshops for experienced rosemalers, weavers and wood-

carvers in Voss, Norway, June 21-July 8, 1987. For information: Lila Nelson, Curator of Textiles, Vesterheim, 502 W. Water St., Decorah, Iowa 52101 (319) 382-9681.

SWEDEN

Leksand: Swedish-American Heritage Seminars will be offered at Hantverkets Folkhögskola, June 13-21 and July 18-26. Included will be visits to local weaving studios. For information: Margarethe Hedblom, Hantverkets Folkhögskola, S-79300 Leksand, Sweden.

TRAVEL

New Guinea: "New Guinea: The Art of Weaving, Primitive Art and Exotic Photography," led by Dr. Brian M. du Toit, August 1-17, 1987. For information: Holbrook Travel, Inc., 3540 N.W. 13th St., Gainesville, FL 32609. (904) 377-7111.

British Isles: Marolyn Downing of the International Design Center will lead a tour to Ireland and England, April 22-May 6, 1987. For information: Schilling Travel, 722 2nd Ave. S., Minneapolis, MN 55402-2464. (612) 332-1100. Outside MN (800) 328-0302.

France: Helen Brewer, tapestry weaver and teacher will lead a tour entitled "Tapestries of France," April 20-May 3, 1987. For information: Schilling Travel, 722 2nd Ave. S., Minneapolis, MN 55402-2464. (612) 332-1100. Outside MN (800) 328-0302.

China: Textiles Tour to China, May 18-June 8, 1987, under the auspices of the U.S./China Peoples Friendship Association, led by Penelope Drooker. For information: Penelope Drooker, P.O. Box 220, Sanbornville, NH 03872 (603) 522-3144 or Joanna Cameron, USCPFA Tours Office, (202) 296-4147 or (800) 368-5883.

Turkey: Walter Denny will lead a tour sponsored by The Textile Museum entitled "Carpets & Columns of Asia Minor," June 7-23, 1987. For information: Academic Travel Abroad, Inc., 3210 Grace St., N.W., Washington, D.C. 20007.

Scandinavia: Joanne Tallarovic will lead "Scandinavian Art Tour—A Weaver's Dream," June 11-July 2, 1987. For information: call collect to Cathy Harris at Flagstaff Travel, (602) 774-9104.

The Arctic: Holman Eskimo Co-operative presents "1987 Arctic Experience for Spinners and Dyers," June 30-July 7 or July 7-July 14, 1987. For information: Wendy Chambers, 21 Boxwood Cr., Whitehorse, Yukon, Y1A 4X8 Canada. (403) 633-2530.

Kenya: Linda Hendrickson, owner of Fashion Fibreworks in Portland, Oregon will lead a tour to Kenya, July 23-August 18, 1987. For information: Linda Hendrickson, (503) 239-5016.

Reviews

KUMIHIMO, JAPANESE SILK BRAIDING TECHNIQUES.

by Catherine Martin

Great Britain: Old Hall Press, Hatfield, Leominster, Herefordshire HR60SF, 1986. 93pp. £8.95 + postage: Air, £3, surface, £1.5.

Japanese culture has held fascination for westerners for a very long time. Artifacts of sober design and impeccable workmanship associated with the Japanese way of life have found many admirers in the West for more than a century. A little-known aspect of the Japanese textile arts is *kumihimo*, a general term referring to all kinds of narrow braided structures used for a variety of purposes. Cords and braids fulfill a need in every culture, but rarely do they achieve the degree of practical and aesthetic excellence of Japanese examples.

For a long time the complex craft of *kumihimo* remained the secret of relatively few workshops and schools in Japan. The braids reached the West as part of armour, weapons and fastenings on lacquered boxes. Most people studying Japanese art were not really aware of them, and even in Japan the craft was not generally known. One of the first westerners investigating *kumihimo* in Japan was the Swiss braiding expert Noémi Speiser, who spent several months in Japan in the early seventies. She saw many traditional workshops, collected samples and studied their structures and working methods. In Japan itself the interest widened in the seventies. Simple forms of *kumihimo* became popular as a hobby. Courses were given and instruction manuals with clear diagrams and photographs described both traditional and newly developed structures. The fact that *kumihimo* braids replaced other fastenings for the sashes worn with kimonos gave the craft a new life.

Slowly the craft spread outside Japan, partly through traveling Japanese teachers, partly through American and European proponents. One of the first English publications was *Kumi Himo*, published in Berkeley, California by Jules and Kaethe Kliot (1979). Noémi Speiser's *Manual of Braiding*, published in Basel, Switzerland in 1983, contains a lot of information spread through many of the book's chapters. Another book, a Japanese publication entitled *Kumihimo in Japan; The Round Track*, by Hoko Tokoro (Ogaki Unesco Association, 1983), discusses making braids in the Japanese tradition.

Catherine Martin's book really fills a gap.

It is written by an expert. Mrs. Martin lived in Japan and completed a four year course at the prestigious Domyo braiding school in Tokyo. *Kumihimo* is an intricate art, using at least four different braiding stools, on which an infinite variety of round and flat braids can be made. Braiding is worked upward, with the working threads on weighted bobbins. The book gives full instructions for 12 braids made on the simplest tool, a round stool known as the *marudai*.

After a brief introduction describing Mrs. Martin's training and the aim of the book, a historical section places braiding in the Japanese cultural context. Then four types of braiding stools are briefly presented. The *marudai*, a simple but versatile piece of equipment is treated in detail. The *marudai* consists of a round top with a hole in the center, resting on four legs fastened to a base. While working on the flat surface of the *marudai* the braid is pulled downwards through the hole. A weight is attached to it, in order to counterbalance the weight of the bobbins on which the braiding elements are wound. From the sketches and measurements given, it is not difficult to construct your own *marudai* and counterweight. The only problem are the bobbins. According to the braid structures and the thread types, different weights are used with a 70 gr. bobbin being the average. The very smooth rounded bobbins weighted with metal must have exactly the same weight to get an even braid. Martin states that only the Japanese bobbins are good enough to make fine silk braids. But for experiments using coarser materials you might try to devise your own weighted bobbins.

In Japan the braiding elements nearly always consist of many fine strands of very fine natural or artificial silk. Detailed instructions for warping these are given. Braiding can be done with thicker one-strand elements but these do not give the firmness and smoothness characteristic of all Japanese braiding.

The mounting of the *marudai* and the winding of the bobbins is treated, followed by an important section on the correcting of mistakes made during braiding. Twelve braid structures are described in detail. For each one a working diagram with dots and arrows indicating the working sequence, a description and a photograph of the finished braid are given. A sketch of what the point of the braiding (the portion of the elements near the completed structure) should look like after each sequence of movements is extremely helpful in detecting mistakes early. Even if you do not have the benefit of a teacher, the instructions are detailed enough to work it out for your-



self. The simplest braid has four bobbins, the more intricate ones, sixteen.

Making samples in different colors and materials will help you to determine how to use the braids in your projects, be it as a piece of jewelry or as a functional part of a woven or embroidered textile. The last part of the book gives suggestions and a few (not very clear) black and white photographs.

Kumihimo is an invaluable technique to know especially for those craftspeople who consider appropriate finishes an essential part of their work. Catherine Martin's book gives good basic information about this technique. It is to be hoped that the author will keep her promise of more books on the intriguing craft of *kumihimo*.

by Frieda Sorber

Ms. Sorber is Curator of Textiles at Het Sterckshof, Provinciale Museum voor kunstambachten, Deurne, Belgium.

GEOMETRIC DESIGN IN WEAVING

Else Regensteiner

West Chester, Pennsylvania: Schiffer Publishing Ltd., 1986. 222 pp. ISBN 0-88640-078-7 hardcover. \$29.95.

Else Regensteiner's two previous books, *The Art of Weaving* and *Weaver's Study Guide*, have served textile artists as sources of design ideas and as guides to achieve those designs in fiber. This book continues in that style with a large number of photographs, drawings and weaving drafts that do not duplicate any from the two earlier books. Textile artists can benefit from close examination of the textile pieces presented in this work.

The book is divided into three sections entitled "Design", "Weaver-Controlled Techniques", and "Loom-Controlled Techniques." In addition there is an appendix of

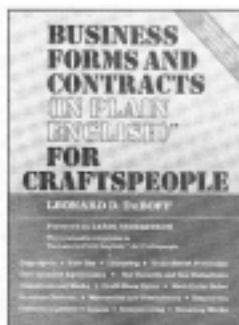
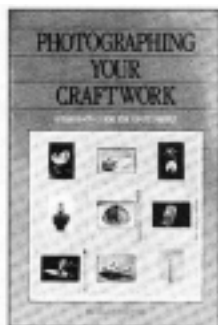
study problems, a glossary, a bibliography, and an index. Each section gives an overview of the subject and there are a number of weaving drafts and weaving techniques that might allow the reader to duplicate some of the textile pieces. This reviewer feels, however, that none of the topics is presented in more than an introductory fashion. It is true that the bibliography presents sources to turn to for more extensive treatment, such as art history books showing design ideas of painters such as Picasso, Klee, and Mondrian, citations on

working with the loom must be wedded to the elements of design. All must be controlled by the personal concerns of the weaver.

To this end she has divided her book into three sections. Chapters 1-4 come under the heading of "Technical Aspects of Woven Design." Included here is basic drafting, creating original drafts, color drafting and block drafting and designing. Chapters 5-7 deal with "Aesthetic Aspects of Woven Design," and include color theory, color in weaving, and basic design for weaving. Chapter 8 concludes

standable to the novice photographer. One of his suggestions that I particularly like is: "Do not take your craftwork for a romp in the woods"—by way of cautioning us against the overuse of natural settings for natural materials. The scenic backgrounds usually distract attention from the work being presented. Some good suggestions are given for lighting textiles.

The chapter on setting up a tabletop studio is probably the most valuable part of the book. His suggestions for lighting setups and



nature objects as sources for design, and information on geometry and symmetry in two dimensional design. There are also sources noted dealing with the technical aspects of weaving, particularly block design for multi-harness weaving.

Most of the examples in this book appear to be rugs and small wallhangings (dimensions are not given). One wonders why geometric design in clothing has been omitted. Moreover, one misses examples showing the wide acceptance during the last decade of fiber art as an integral part of architectural design in large buildings and outdoor spaces as well as in private homes. This book would be more valuable if some examples were shown where the design and the structure of fiber art enhanced the architectural design of its location.

Certainly the most satisfying feature of this book is the excellent photography of textile art that can serve as guides for good design. Like the earlier books by Else Regensteiner, *Geometric Design in Weaving* presents a wide ranging discussion of design that would allow the intermediate or advanced level weaver to build on the ideas.

Paul O'Connor

Paul O'Connor is the author of *A Twill of Your Choice*.

DESIGNING FOR WEAVING: A Study Guide for Drafting, Design and Color
Carol S. Kurtz

Loveland, Colorado: Interweave Press, 1985. 96pp. paper. ISBN 0-934026-21-1. \$12.00.

This is the second printing of a book first published in 1981. Ms. Kurtz's purpose is the "identification and clarification of the 3 aspects of woven design . . . technical, aesthetic, personal." For Ms. Kurtz the technical aspects of handweaving such as drafting and

the book with a study of creativity in weaving.

Although the book is directed to the beginning and intermediate weaver, Kurtz warns her readers that she provides no formulas but rather sees the book as a source of inspiration and guidance. She assumes that the reader can warp a loom.

Because of its structure the book can quite readily be used as a course of study for the individual weaver, a guild study group, or in a classroom situation. The chapters are developed sequentially and are thus best read consecutively. Every chapter except chapter 8 concludes with study problems. I particularly liked the chapters on drafting and felt much more comfortable with drafting's mysteries after I had worked out the study exercises.

Other than its oversize paperback format this edition is unchanged from the hardcover version published by Hastings House Publishers in 1981.

Susan Larson-Fleming

PHOTOGRAPHING YOUR CRAFT WORK
Steve Meltzer

Seattle: Madrona Publishers, Inc., 1986. 144 p. ISBN 0-88089-12-6. \$9.95.

Steve Meltzer is a professional photographer and the craft photography columnist for *The Crafts Report*. He has written an easy-to-understand basic manual for the craftspeople who is striving for good-quality slides to represent his/her work, for jurying or for publication.

Meltzer's experiences as a juror made it clear to him that to survive in the marketplace, craftsmen simply cannot afford bad photography. The approach he outlines uses a minimum of expensive equipment. He presents a clear synopsis of lighting basics easily under-

backgrounds are inexpensive and practical. There is also a chapter on dealing with problem subjects, such as highly reflective objects and very small objects. Helpful hints are given for composing pictures, using filters, printing from slides and the making of a good portfolio.

Photographing Your Craftwork is a gold mine of useful information. It can be ordered for \$10.95 ppd. from: Madrona Publishers, Inc., P.O. Box 22667, Seattle, WA 98122.

Karen Searle

BUSINESS FORMS AND CONTRACTS (IN PLAIN ENGLISH) FOR CRAFTSPEOPLE
Leonard D. DuBoff

Seattle: Madrona Publishers, Inc., 1986. 144 p. ISBN 0-88089-011-8 paper. \$14.95.

This book of forms is intended to assist the craftspeople and his attorney in understanding legal issues that can occur in a craft business. It provides a set of basic forms that can be tailored to suit specific situations. In addition, Mr. DuBoff explains the need for contracts in certain situations, what issues need to be addressed, why particular clauses are important, what the craftspeople needs to know before consulting a lawyer.

Subjects covered include incorporation, leases, copyright protection, licensing of products, commission agreements, consignment agreements, craft show and mail-order sales situations, contracts with employees or independent contractors and teaching contracts.

While the book is a valuable reference aid to protecting the artist in various situations, it is not a do-it-yourself substitute for an attorney familiar with the particular local laws that would apply to these situations.

Karen Searle

Publication News

PRINT

EVOLUTION IN TEXTILE DESIGN FROM THE HIGHLANDS OF GUATEMALA, by Margot Blum Schevill, has recently been published by the University of Washington Press. In this volume, Ms. Schevill traces the change in materials, techniques and images found in 17 Chichicastenango tzutes (headresses) from the collections of the Lowie Museum of Anthropology at the University of California, Berkeley. 84pp. ISBN 0-963127-01-5. LC 86-2858, paper only. \$12.95.

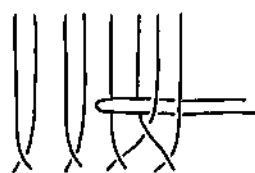
Also available from University of Washington Press is **THE TECHNIQUES OF BASKETRY** by Virginia I. Harvey. This is a new paperback edition available in large format. 132pp. ISBN 0-295-96415-4, LC 86-19057. \$12.95. For information on either of these publications contact the University of Washington Press, P.O. Box 50096, Seattle, WA 98145-5096.

Two books by Paula Simmons are now available from Graphicom Inc. P.O. Box 404, Berea, Kentucky 40403: **SPINNING FOR SOFTNESS & SPEED** and **HANDSPINNERS GUIDE TO SELLING**. Also available from Graphicom is **MOHAIR PRODUCTION SCIENCE**, 2nd edition, by D. L. Stapleton. This book is directed to those who wish to learn about the angora goat and the production of mohair. 243 pp. paper only. \$24.95.

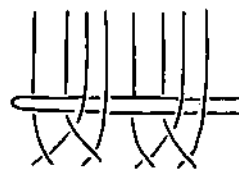
VIDEO

WILD WILLOW: A Basketmakers Guide to Willow with Char TerBeest is now available in video format. She shows how to harvest willow and select other midwestern botanicals for the construction of baskets from nature. 28 minutes. Available in VHS only. \$29.95 plus \$2.50 shipping and handling. Wisconsin residents add 5% tax. Available from Wild Willow Press, P.O. Box 438, Baraboo, Wisconsin 53913.

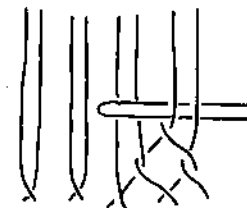
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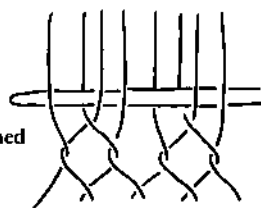
Double twist, row 1: 2 lower threads up, 2 upper threads down.



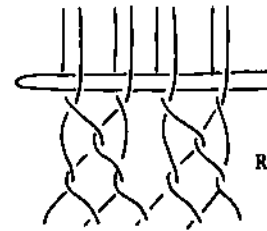
Row 1 completed.



Slit: Single-twist row begun and stopped.



Single-twist row 1 resumed after slit.



Row 2 of slit.

the first lower right thread and bring it up to the right of the first upper thread. Push down the upper thread. Insert the stick in this crossing. Repeat across. When crossings are completed, insert two small rods to hold them, as before.

Repeat rows 1 and 2 as long as there is space available to manipulate further twists. When this becomes impossible, it is time to insert a binding weft. This will need to be woven in with a needle. In the scarf shown, three rows of binding weft were woven into the center of each motif. Remove the rods that were used to temporarily hold the twists.

Advance the warp, weave the desired amount of plain weave to separate pattern bands and try the double-twist variation.

Double Twist

Open the twisting shed. Bring the first two lower threads up and to the right of the first two upper threads. Push the first two lower threads down. Insert

stick in the crossing. Continue across. Use rods to hold twists temporarily as before.

If the same threads are twisted again in the next row, a rope-like pattern will occur. Single twists can be alternated with doubles to form a variety of openwork effects.

Slits

Another interesting possibility in sprang is leaving "holes" or slits in the work. To do this in a singles mesh, end the twisting before the slit by pushing down two upper threads. Begin the twisting again as though starting a new first row. Twist the second row as usual. The slit can be closed on the next odd-numbered row, or continued for the desired length. Experiment with some of the possibilities on this sampler-scarf project.

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means, the mystique that has settled into too many handloom weavers' minds about structures of more than four shafts will dissipate and one can confidently expect that the logic of seeing structure as structure will take its place. It is likewise our expectation that the fear of more than four shafts will evaporate as weavers need not be constrained by studying only those structures which they themselves are equipped to do.

It has been this writer's experience on every single occasion where persons with no prior textile experience are trained for weaving, the four vs. "multi" question is never spontaneously raised. An almost complete understanding of the fundamentals of warp/filling interlacement is achieved with what to some is amazing quickness. This experience has led us to further conclude that the division into four and "multi" shaft weaves and equipment is less inherent to weaving than to weavers' thinking. One weaver's son began his textile life at the age of four as the commandant of a thirty-shaft, dobbie-equipped sample loom. Much food for thought.

The effect of this four vs. "multi" conflict on the equipment choices open to handloom weavers must not be overlooked, for we believe a great part of the limitations on equipment choices are due to weavers' own fear at approaching anything more than four shafts. When we compare this situation to the equipment menu offered to the hand-machine knitter, their range of equipment choices far exceeds that available to handloom weavers in part because knitting as a technology has never been broken along lines that act more as barriers than as naturally occurring divisions. The situation for weavers will change only as weavers themselves see their equipment more in terms of the potential it offers and less as a mechanism beyond their comprehension. Perhaps at that point, those whose present equipment has thus far been limited only to four shafts will see how really limited that is and, not fearing anything more than four, will venture out with confidence.

Handloom weavers seem also to have allowed the four vs. "multi" shaft division of looms to dictate in part the scope of their growth as designers. Were the situation more similar to that of hand-machine knitters, with weavers experiencing far fewer limitations to their designing, their sense of weave structure would follow only the bounds of creativity and that alone would dictate the equipment requirements, not the other way around. Such texts as Oelsner, Watson and others are virtual weave structure warehouses, yet the majority of handloom weavers see them as being written in Serbo-Croatian, principally "because most of those weaves take too many harnesses [sic] and all I have is four."

The recent development of and interest in dobbie-equipped handlooms, their shortcomings notwithstanding, does provide the kind of impe-

tus the field has long needed in order to recognize the breadth of what was historically accepted as weave structure. Even among textile designers working in industry, an extensive knowledge of weaves is no longer as common as it was as recently as twenty years ago. Therefore, the impetus furnished by these developments, if properly applied, can have a very long-awaited and positive effect beyond the narrow realm of the handloom. The return to a universal knowledge of weave structure, regardless of its complexity, will be truly complete when we see the same development and interest in handlooms equipped with jacquard machines.

It is to our advantage that the categorizing of handloom weaving into four and "multi" shaft compartments is a relatively recent phenomenon. We are most fortunate in that we have had many centuries of textile design, still preserved and accessible, long before this phenomenon had its effect. Prior to the vast southward migration of the textile industry out of New England, many mills were regularly producing what in the trade are termed "fancy goods" of quite intricate and highly developed weave structure for both aesthetic and fabric construction reasons. These centuries of design offer to the handloom weaver a resource that can help in as yet unrealized ways to release the constraints of the four vs. "multi" weaving mold. It is entirely within the definition of human behavior that seeing possibilities creates a desire for the actualization of those possibilities. Even a cursory perusal of past weave structures would fail to stimulate this desire only in the most unseeing of eyes.

Lastly, we need to look at the influence of those who have been given and/or taken upon themselves the role of a teacher of weavers in maintaining the four vs. "multi" status of things. It is the general approach of most instructors to teach application rather than principle. It follows from this approach that the instruction proceeds in an artificially linear fashion that may have no substantive connection with how learning takes place in the human mind. The adage usually espoused in defense and support for this approach has to do with walking and crawling, not necessarily in that order, but reflecting even less understanding about learning than about human ambulation. Babies crawl because they have a distant goal and because they fail in their attempt to walk. They do not crawl because they want to crawl. On the other hand, in teaching weaving, one is dealing neither with crawling nor walking and certainly not with babies.

Unlike babies, normal human adults, even those without any textile experience, bring to the learning process a background of perhaps isolated but certainly connectable experiences that can contribute significantly to understanding the principles and later making the applications. Therefore, from what a student already knows, however unrelated to weaving, it is entirely possi-

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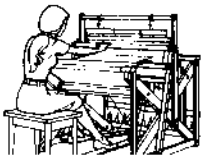
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Arrowmont 23
Ayottes' Designery 54
Bare Hill Studios 11
Color Trends 58
Crystal Palace Yarns 6
Flagstaff Travel 19
Frederick Fawcett 20, 35
Golden Heddle 54
Gorrie Downs 78
Hand Papermaking 58
Handweavers Guild of America 54
Harrisville Designs 35
Henry's Attic 6
Ruth N. Holtroyd 6
Audrey Homme 19
Interweave Press 58
J-Made Looms 19
Journal for Weavers, Spinners and Dyers 11
Loom Tools 67
OR Rug Co. 78
Pendleton Shop 77
Plymouth Yarn Co. Inc. 35
PRO Chemical & Dye Co. 54
Katherine Ramus 12
Rio Grande Weaver's Supply 11
Schoolhouse Yarns 5
Schacht Spindle Co. 56, 57
Sievers 5
Linda Snow 78
Stuff 77
Treenway Crafts 23
Väv 39
Weavers Way 20
Wilde Yarns 58
Weaver's Journal Publications 2, 79
Wondercraft 20
YLI Corp. 54

FANNIN from page 76.

ble to being a study of weave structure at the basic principles of warp and filling intersection and continue on to any degree of weave complexity. Contrary to popular approach, four shafts do not represent the most fundamental and basic principles of weave structure. They are only one, albeit simple, application of those principles. To mire a weaving student in an endless routine of four-shaft variations not only does him/her a great disservice individually,

but makes a needless contribution to the perpetuation of a system that should never have begun in the first place.

As active participants in a field whose real evolution is just beginning, it behooves us all to examine as thoughtfully as we can each small episode in that evolution, no matter how seemingly insignificant, and make our own contribution to it. Because the clearly wrong division of handloom weaving into four and "multi" shaft

poses such a formidable obstacle to much of which the field is capable, only an equally formidable intellectual effort will remove this obstacle and allow progress to the next.

Kind regards and thanks.

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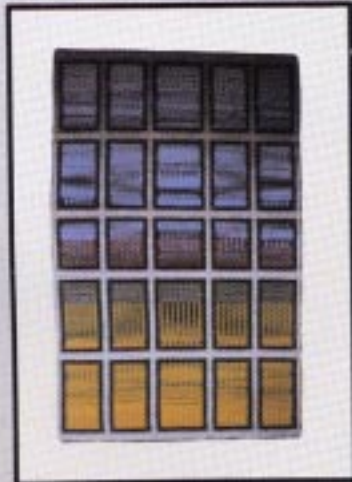
Errata

Vol. XI, No. 3, Issue 43 (Winter 1987): In "Chinese Brocades" on p. 53, photos 12a and 12c go with captions 12b and 12c. Caption 12a belongs to photo 12b. Figure 11 is a detail of a scroll. The picture was printed upside down.

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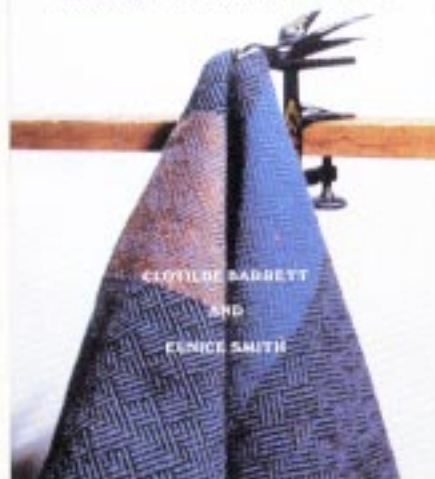
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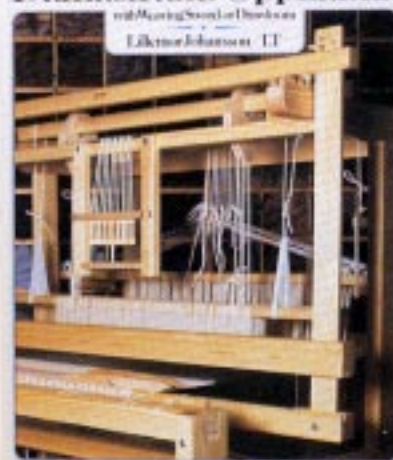
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