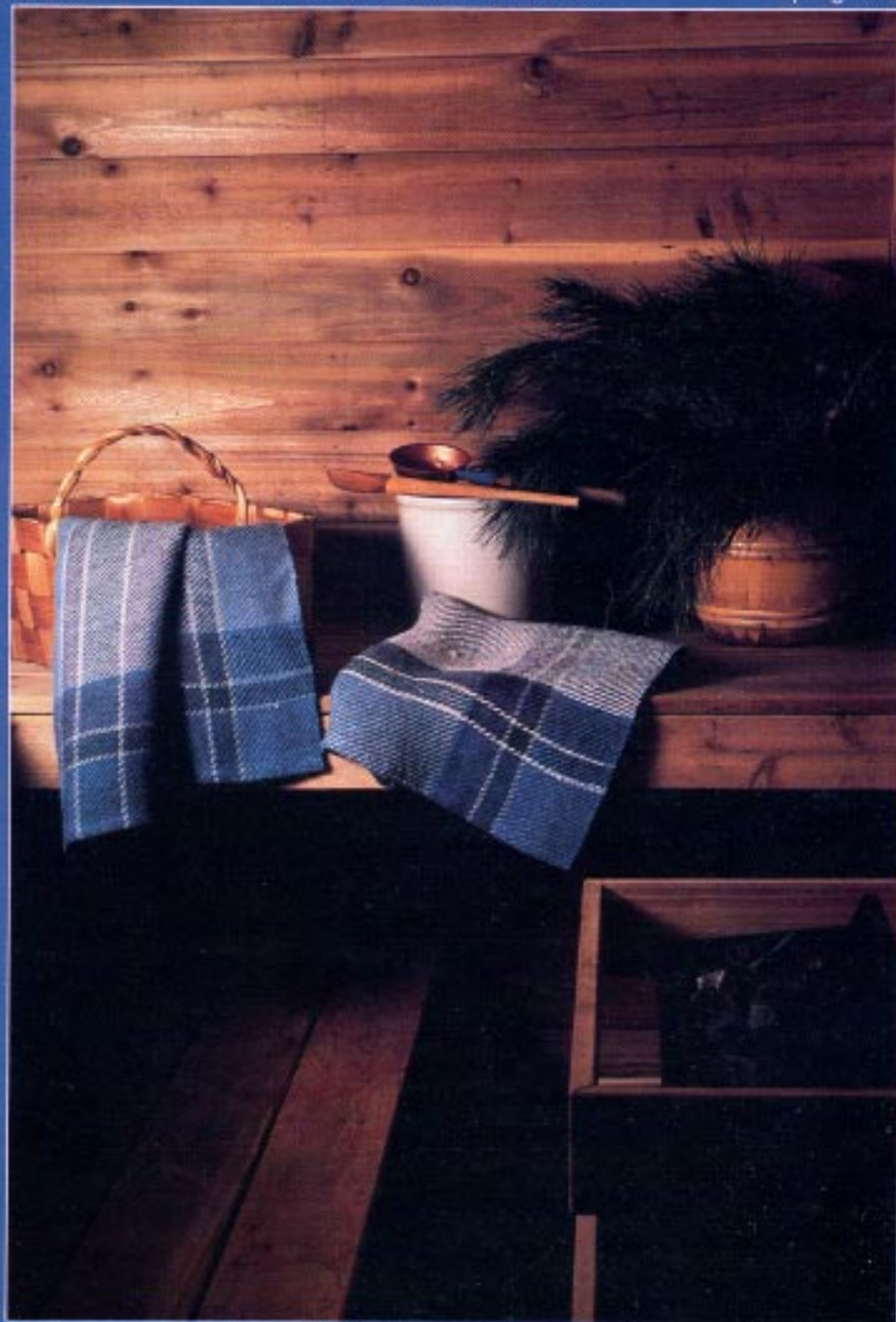


The Weaver's Journal

\$4.00

Volume X, Number 4, Issue 40

Spring 1986



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Something for you...

If you are a weaver, spinner, dyer, armchair enthusiast or collector, there's something for you in every issue of *The Weaver's Journal*.

Summer 78 \$2.50

Fabrics for interiors, summer & winter rugs, corded weaves, wool finishing, bog shirt, double weave jacket, Andean crossed warp technique, part 2.

Spring 79 \$2.50

Swed weave, miniatures, coverlets in 2-rie weaves, spot-weave rugs, woven garments, baskets.

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Rug issue. Shaped, sculptured rugs, rug rugs, corded weaves, backed cloth weaves, multi-harness crackle weave, spinning dog hair, business of weaving.

Spring 80 \$3.00

Rug issue. Rug design, shadow weave rug, shaft switching, inkle bands, summer & winter pile afghan. *Series:* Multi-harness weaving course, part 2. Twills and satins. Tapestry course, part 2.

Summer 80 \$3.00

Shaft switching, corkcrew weave, 4-harness damask, transparencies, bopi embroidery, pine needle baskets, balinese ikat, silk dyeing and starching. *Series:* Multi-harness weaving course, part 3, twill derivatives. Tapestry course, part 3.

Summer 81 \$3.00

Tablecloth, runner, window coverings, liturgical weaving, multi-harness M's and O's, satin with long-eyed heddles, shaft-switching for 3-end drafts, felt.

Summer 82 \$4.00

Fabrics for interiors, interview with Jack Lenor Larsen, matched double cloth, mantle, weave analysis, card-woven rug selvages, linen shirt, colorbar band, backstrap weaving.

Fall 82 \$4.00

Special Fall issue. Flax processing and spinning, linen weaving and dyeing, linen apron, shirts, towels, runners, rug design, blocks and profiles, bouillonné. *Wearcat I. Series:* Whig Rose study, part 1.

Winter 83 \$4.00

Clothing issue. Coats, capes, triangular shawl, plaid shawl, vest & skirt, jackets, crocheted finishes, hand finishes, tapestry bag, double two-rie twills, 3-block weave with long-eyed heddles. *Series:* Whig Rose study, part 2.

Spring 83 \$4.00

Rug issue. Rep weaves, rug weaving, rug projects, double-weave pick-up, designing 4-harness double weave, color in summer & winter, enlarged patterns, plaided twills. *Series:* Intro. to computers for weaving, part 1.

Summer 83 \$4.00

Ethnic Textiles issue. Mexican textiles, Shaker textiles, Norwegian Tapestry, Persianian loom, Navajo weaving, Southwest Indian wall tapestry, Sumatran ikat, Guatemalan weaving, Japanese weaving, traditional damask, 4-block double weave for 4-harness, space dyeing. *Series:* Intro. to computers for weaving, part 2.

Fall 83 \$4.00

Handspun yarns for weavers, hand-spun & handwoven saddle blanket, rainbow dyeing, flame retardants, mothproofing, yarn counts, name draft program, transparencies, onion basket. *Series:* Intro. to computers for weaving, part 3.

Winter 84 \$4.00

Clothing issue. Jacket, shirt and skirt projects, woven sweaters, beginner tops, weave & knit garments, 100% wooler blazer, Kamie cloak, computer weaving, cotton spinning, 5. LaPlante baskets, rosemorn, multi-shaft overton on opposites.

Spring 84 \$4.00

Rug issue. Flamepoint rugs, men & separate rugs, block drafts for rugs, shaft-switching devices and techniques, multi-colored dyeing, Koel-Aid dyeing, quilted coverlet, blanket weave, Tansan lace, block weaves with long-eyed heddles. *Masterweaver loom.*

Summer 84 \$4.00

Jacquard loom, Girdle of Barmecide, Norwegian card-woven belt, place mats, ornamental hanging, fished jacket, Bedouin dress, shaft-switch rug, Greek split-ply twining, knotted Chinese button.

Fall 84 \$4.00

Antique spinning and weaving tools, turned drafts in double 2-rie weaves, Chinese drawloom, natural dyeing, ramie blouse, heathered yarns, Sahih spinning & weaving. *Series:* Textile conservation, part 1.

Winter 85 \$4.00

Clothing issue. Wrist-to-wrist garments, table-woven garments, pulled-warp technique for shirting, cotton vest, wool vest & skirt, liturgical weaving, Ted Lithuanian, man-made fibers, doublejack. *Series:* Textile conservation, part 2.



Spring 85 \$4.00

Scandinavian Traditions. Rugs & tapestries of Maria Mikko Ekenstrom, Finnish eye apron, Norwegian braided fringe, log-cabin rug rugs, double-faced krossbald, shaft-switching device, designing for an interior, block weaves with long-eyed heddles. *Series:* Textile conservation, part 3.

Summer 85 \$4.00

Rahati shawl, (India) 5- and 7-loop hoids, Middle Eastern Kaftan fabrics, satin weave bag, Greek Chemises, Macedonian shirt, weft ikat, Japanese ikat, Bar blankets of Bolivia. *Series:* Textile Conservation, part 4.

Fall 85 \$4.00

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

Winter 86 \$4.00

Annual Garment Issue. Anita Mayer on wearing handweaves; Vadmal, projects and finishes; wearable fine thread tapestries; Carrel weave; ribbon wefts' historical changes affecting Guatemalan clothing; ecclesiastical vestments; instructions and suggested projects for 4-16 harnesses; the shed regulator; multi-color random warp dyeing. *Series:* Color Theory, part 2.



THE WEAVER'S JOURNAL

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THE WEAVER'S JOURNAL

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Sauna towels designed and woven by Judy Freeberg, using Finnish tow linen and woven in 2/2 twill. The article, including instructions, begins on page 50. *Photo by Jila Nikpay.*

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FROM THE EDITORS

Our First Decade . . .

This is an issue of celebration! *The Weavers Journal* is ten years old and we couldn't resist the opportunity to dedicate this issue to our anniversary. Much to our delight, the *Journal's* founder and first editor, Clotilde Barrett, agreed to write one of her outstanding technical articles for the occasion. Many of our readers have mentioned to us that they have missed Clotilde's special touch in recent issues, so we are doubly pleased to feature her article.

In honor of the ten-year milestone, we have put together a special tribute to Clotilde which includes a biographical sketch and bibliography of her *Weaver's Journal* articles and her books. Some members of Clotilde's original staff were eager to share with us their memories of those first years when

their enthusiasm for weaving and their sheer determination launched a successful magazine.

The magazine as produced by the original staff sought to fill a gap in available technical information for weavers. From its humble beginnings, *The Weaver's Journal* has evolved and expanded. As recent owners, we have tried to keep alive the tradition of in-depth and high-quality articles established by our predecessors.

Judging from the responses of our readers, the *Journal* continues to thrive and we look forward to the anniversary of our second decade!

Karen and Sue

Karen Searle & Suzanne Baizerman

The Readers Survey

We thought that you, our readers, might like to know what we learned when we polled you last summer. Based on the returns and limited by the fact that this was a sample of the overall readership, we have learned some interesting things.

It was no surprise to us that our readers tend to be experienced weavers, the majority having woven for more than three years and consider themselves to be intermediate level weavers. You may also have guessed that most of our readers are women. We were surprised to see the very wide range of ages in our readership, with no one age group dominating the picture. In terms of geographic distribution we found that subscribers are evenly distributed among urban, suburban and rural areas, with heaviest concentration of readers on the West Coast—about 25% of our sample.

More than half of you are self-taught and one third of you have been teachers of our craft. In terms of marketing your work, about half of the readers responding market their weaving in some way. Most are not making a profit, but one fourth of the respondents make enough to buy their supplies.

In addition to weaving, more than half of our readers are also spinners! We were interested to learn that you also enjoy sewing and knitting, embroidery and needlepoint, basketry and dyeing.

In the equipment department, two-thirds of our respondents own jack looms. Half (and these include many of the same people as jack loom owners) own table looms; one third own rigid heddle looms, and one half, inkle looms. Two thirds of the respondents own four-harness looms and two thirds own eight-harness looms. Sound confusing? Well, to put it briefly, many people own many looms! One sixth of the respondents use a computer to aid their weaving.

Advertisers will be interested to know that two thirds of our readers read *The Weaver's Journal* the day it arrives and most readers read the entire issue including all of the ads! And most readers save entire issues and refer to them often.

While we thought we might receive a clear dictate from our readers about their most and least favored parts of *The Weavers Journal*, we found instead that our readers are indeed a very diverse lot in terms of preferences. But we like it that way!

THE WEAVER'S JOURNAL

SPRING 1986

VOL. X, NO. 4, ISSUE 40

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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: \$15.00 1 year (4 issues); \$29.00 2 years; \$42.00 3 years. Outside U.S.A.: \$18.00 1 year; \$34.00 2 years; \$50.00 3 years. U.S. currency only, please.

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

LETTERS

I AM SO IMPRESSED both with the way you presented my article and with the entire issue! Simply great! I want to sit down tonight and read it all—cover to cover—that is my indication that a magazine is tops. It is truly an honor to be included. My thanks for caring and supporting.

Anita Luvera Mayer
Anacortes, Washington

I HAVE A SMALL SPINNING, weaving and yarns shop, where I take and sell new and used looms. A customer brought me the "Masterweaver loom" which is advertised in the Fall 1984 issue of *The Weaver's Journal* on page 41. As he could not locate his instructions, he wrote to the now defunct company requesting another copy. They could not supply him with one. Is there any way that you could help me locate a copy? If anyone has one and would photocopy the pages we would be glad to reimburse you.

Sue Momberg
c/o Dabblers
Hood River, Oregon

I WANT YOU TO KNOW how very impressed I am with *The Weaver's Journal*. Each issue entices me to read more of it, sooner. You are captivating me with that magic blend of entertainment and information in very readable prose.

A couple years ago I overheard a remark that handweavers needed a real "journal." I took the remark to refer to the need for a bit more scholarship in the field. I believe you are doing the job with style and beauty. I sincerely hope you are also managing to be financially successful. I don't want to lose you!

Enclosed please find my 3 year renewal payment.

Katie Meek
Kalamazoo, Michigan

OVER THE YEARS your magazine has been a rich source of technical information and scholarly articles which have been of inestimable value in teaching.

Lately, the writings of Allen Fannin have been a joy! It is rare to encounter someone so clear-thinking and with such a lucid, sensible approach to the issues surrounding our craft. And what additional pleasure to find his thoughts expressed with such a command of language! Anyone able to present his thoughts in so scholarly a manner deserves great respect, even when one might disagree on the odd minor point.

Keep up the good work! As a weaver of many years (mostly doubleweave and damask) I enjoy your magazine's approach, and hope

you will continue the standard set by Clotilde Barrett.

Peter Townley
Neutral Bay, New South Wales
Australia

MR. FANNIN'S ARTICLES have produced a great deal of debate, much of which I believe misses the mark. The basic question of why anyone weaves or spins by hand has been overlooked.

The interest of handweaving has traditionally been to explore the methods and techniques of the past, and more recently a form of artistic expression. In some cases, the handweaver's commitment has been to maintain and/or revitalize an ancient tradition. There has also been a small number of production studios filling the voids left by the mills. Because, as Mr. Fannin points out, a loom is in fact a machine, any new innovation in loom technology has been greeted with skepticism by the handweaving community. When improvements relegate the handweaver to little more than a source of power, the obvious question becomes, "Why bother when better power sources exist?"

The industrial revolution began in the late 18th century and the handweaving industry was the first in the long line of hand industries to fall before the might of steam and later electricity. As a reaction to the dominance of machine-made goods, the arts and crafts movement was born, first in England with William Morris and eventually here in the United States at the turn of the century. Mary Atwater was instrumental in the movement and to the benefit of the American handweaver. To blame her for obscuring the definition of hand vs. machine-made cloth is naive at best. Her view of fly-shuttle cloth as not being handwoven is one that has been forwarded since the 18th century. Mr. Fannin seems to have overlooked the bloody riots in France and England in which weavers lost their lives (not to mention their looms) over the introduction of fly-shuttle movements.

To fault loom manufacturers for the paucity of weaving equipment is ill-founded. It seems far more accurate to look at the market place. Loom builders are not uneducated nor remiss. Most all are concerned with making a profit in a limited market place. In order to accomplish this, it is necessary to sell a loom that is as versatile as possible, and the simpler the loom, the more versatile it is.

Instead of blaming their tools, the American handweaver should look to improve the skill of their hands. After all, the greatest examples of handweaving have been produced

with the most primitive of tools and conditions. The greatest weavers have always relied on the most sophisticated tool of all—the human hand.

Vincent Carleton
Elk, California

THE ARTICLE ON VADMAL is great! Keep up the good work!

Margaret Creon
Hadlock, Washington

I AM ALWAYS PLEASED when you have articles on church weaving. The "Vestment Variations" by Nerty Jansen was excellent.

Olive White
Springfield, Missouri

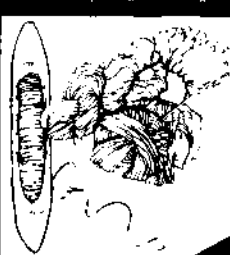
YOUR LATEST ISSUE is perhaps the most outstanding single issue of *The Weaver's Journal* that I have seen. The *Journal* took a slight dive after Clotilde left, but it's back on its feet—and flying!

Terese Ridgeway
Chaplin, Connecticut

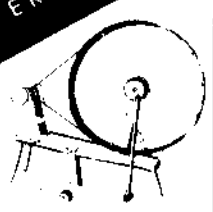
I WOULD LIKE TO SUBSCRIBE to *The Weaver's Journal* once again. I like the direction the magazine is taking. I especially like the Spring 1985 issue on "Scandinavian Traditions."

Charlotte Ziebarth
Boulder, Colorado

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Clotilde Barrett:

A Biographical Sketch

A sampling of *The Weaver's Journal* showing just a few of the many weaves and techniques covered in each issue.

CLOTILDE BARRETT was born in Belgium in 1932 and lived in Brussels until the age of 22. After graduating from the University of Brussels in 1954 as Licencié en Sciences Physiques, equivalent to a Master's degree in mathematical physics, Clotilde received a grant from the Swedish Government to study meteorology and computer science at the University of Stockholm from

October 1954 until June 1955. During this time she married American scientist Earl Barrett, immigrating to the United States in August 1955. Her short career as a research assistant in meteorology at the University of Chicago, was interrupted to raise two children.

In 1959 she started to explore crafts and its career potentials, studying clay sculpture and wheelwork in a shop/studio situation in Chicago. The academic year of 1960-61 was spent in Baltimore where Clotilde joined the Baltimore potters guild and studied art history at McCoy college. Returning to the Chicago area in 1961, she maintained a small pottery studio in Evanston until 1967 for teaching and for production. During those years she enriched her already formidable art background with ceramics classes at the Art Institute of Chicago and a three week study session at the Haystack Mountain School of Crafts with potter Karen Kearns and textile designer Jack Lenor Larsen. She also received a Master's degree in Art from Northwestern University in 1967.

"I was introduced to handweaving and became especially interested in textile history, in the mathematical and logical approach to weave structure, in the design and marketing aspect of this craft.

"In 1967, I moved to Boulder, Colorado, where I decided to pursue a career in textiles. In the late '60's and early '70's I explored weaving techniques, loom and non-loom constructions and explored the potentials of expressing creative ideas and concepts through the medium of fiber. I took a three credit course at the University of Colorado in Boulder, in order to learn metalsmithing so that I



Cover of Vol. VIII, No. 4, Issue 28, Spring 1983 showing a wall hanging by Ken Weaver; Mood lamp cover of Vol. III, No. 1, Issue 9, July 1978; Vol. VIII, No. 4, Issue 32, Spring 1984 open to article on "Tarascan Lace," by Micheline Thabet.



could freely combine fiber, ceramics and metals. During these years, I entered many shows, won many awards and started to lecture and give workshops in fibers.

"By 1976 I had accumulated large numbers of study files which resulted from my research in textiles. I decided to share my knowledge with other weavers by starting the publication of a quarterly magazine for handweavers. I named it The Weaver's Journal. During the eight years of editing and publishing The Weaver's Journal, I had to practice all the skills of management, from janitor to executive director. I applied for and received two grants from the National Endowment for the Arts and started writing and publishing a series of technical weaving books. With the help of friends and colleagues I built The Weaver's Journal from a 32-page typewritten issue to a thriving full color publication with a printer's run of 10,000 and a wide international circulation."

During these years and still today Clotilde Barrett has traveled throughout the United States and to many countries abroad to give workshops and lectures.

The death of her husband Earl in August, 1983 caused Clotilde to reevaluate the directions which her life had taken.

"I decided to sell The Weaver's Journal publication and thus acquire some free time for weaving, writing and teaching. I am interested in the future of handweaving and would like to make more contributions to the success of the development of this craft."

Many talented people have helped *The Weaver's Journal* reach this tenth anniversary. We contacted several members of the original staff for their reminiscences.

"The Weaver's Journal was an exciting magazine to help start and continue working on most of the time. It was a thrill to see it grow. Clotilde and all the other staff members were very lovely and enjoyable to work beside."

Iris Richards

Boulder, Colorado

Associate Editor, Circulation Manager

*"If the saying 'fools rush in where angels fear to tread' is true, I must have been just such a fool ten years ago, though I didn't exactly 'rush!' But when Clotilde said 'and you will do the advertising, bulk mailing to dealers, and will weave projects,' what could one do but acquiesce and then thoroughly enjoy the fellowship of the staff, which led to valued and long lasting friendships; weave articles one would otherwise never have dared to try; and reap the rewards/frustrations of being a part of the beginning of the success story which is *The Weaver's Journal*. I grew in the process—thank you Clotilde!"*

Jeanne Richards

Estes Park, Colorado

Publicity Manager

"Clotilde Barrett was the first person I took weaving classes from—Beginning Weaving—in 1970. After the class ended, some of the people in the class began meeting on a regular basis with Clotilde. One day she said: 'I always wanted to write a technical magazine for weavers. I want you all to help me.'"

Maxine Wendler

Boulder, Colorado

Associate Editor

"I was typing one day when Clotilde came into the room with a letter in her hand. 'Read this,' she said. The letter was from a *Weaver's Journal* subscriber who praised the content of the magazine but criticized its appearance harshly. 'The magazine is so ugly!' she wrote. 'When a new issue comes, it makes me sick to my stomach.'

"I remember feeling angry and defensive when I read that letter, so I was greatly surprised when Clotilde said calmly, 'She's right, you know. I'm going to phone her and ask her for advice.' That phone call must have been a great surprise to the subscriber. But she gave advice and also recommended a good book on typography. And she told Clotilde, 'I thought you would be very angry because of my letter.'

"From that day, Clotilde insisted that we all become more conscious of the appearance of the magazine. And she followed the advice the subscriber had given her. She sought advice from others too, and adopted the suggestions she thought were valid. And gradually, Clotilde made the magazine more attractive.

"Working with Clotilde on *The Weaver's Journal* was a great adventure for me and one that I treasure."

Mary L. Derr
Boulder, Colorado
Associate Editor

"I am fortunate to be in the same guild (Handweavers Guild of Boulder) as she is. Our guild association goes back nearly 12 years, since 1974 for me. In 1977, while taking a rug weaving course from Clotilde, an opening for first a weaving apprentice and then a *Weaver's Journal* staff layout artist occurred and my closer association with Clotilde began.

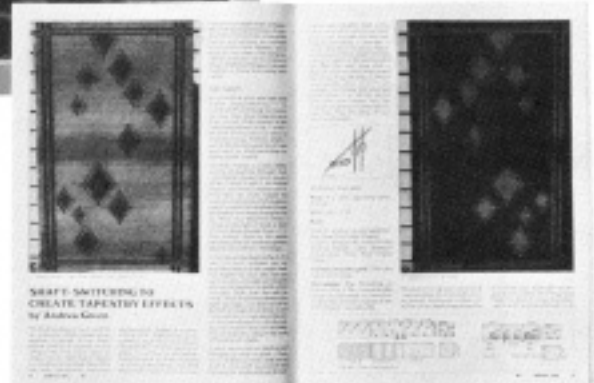
"As *The Weaver's Journal* was begun, Clotilde did each job in turn, in order to be able to assign it to another with understanding. The Boulder staff are all good friends, and still get together two or three times a year. We all miss Earl, who was a most important member of the staff.

"Clotilde has an insatiable curiosity and tremendous teaching ability. She wants to understand everything!"

Ellen Champion
Nederland, Colorado
Staff Artist.



Cover of Vol. VII, No. 1, Issue 25, Summer 1982 showing jacquard woven wool wilton carpet designed by Jack Lenor Larsen. Vol. VIII, No. 4, Issue 32, Spring 1984 open to article on shaft switching by Andrea Green.



Bibliography

The following bibliography is a compilation of articles and books by Clotilde Barrett, taken from *The Weaver's Journal*, Colorado Fiber Center publications and *Weaver's Journal* Publications. Articles which were translated by Clotilde Barrett or co-authored are also indicated. Article notations indicate Volume, Number, Issue number, season or month, year and page number. A listing of projects contributed to articles by Clotilde Barrett is also provided, with their location in *The Weaver's Journal*.

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- "Braid Your Own Chenille." I/1 1(July 76): 10.
- "Drafts." I/1 1(July 76): 12.
- "Shadowweave, Part I." I/1 1(July 76): 13.
- "Navajo Saddle Blanket Patterns." I/1 1(July 76): 22.
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- "A Double Woven Bag Inspired by a South American Bag." I/2 2(Oct 76): 29.
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- "Shadowweave, Part III. Marian Powell's Shadow Weave Conversion." I/3 3(Jan 77): 25.
- "Silk Box." III/2 10(Oct 78): 13.
- "Loom Controlled Designs." III/3 11(Jan 79): 18.
- "Coverlet Weaves using Two Ties." III/4 12(April 79): 26.
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 "Foot Cozy." V/2 18(F80): 12.
 "Woolen Throw." V/2 18(F80): 14.
 "Leno with Steel Doup Heddles." VI/3 23(W81-82): 48.
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 "Enjoy Threading Your Loom." VII/4 28 (S83): 66.
 "Table Tapestries." VII/4 28 (S83): 73.
 "Four-Block Double Weave on Four Shafts." VIII/1 29(Su83): 72.
 "How One Weave Leads to Another." VIII/1 29(Su83): 75.
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 "Weaving Towels as a Means of Learning the Basic Four-Shaft Weaves." VIII/2 30(F83): 11.
 "Merry Christmas!" VIII/2 30(F83): 36.
 "Weave and Knit Pullover." VIII/3 31(W83-84): 20.
 "Shaft-Switching." VIII/4 32(S84): 28.
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 "In My Country, It's Winter," by Agathe Gagne-Collard. VIII/3 31(W83-84): 85.
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 Room divider. I/1 1(July 76): 9.
 Saddle blanket. I/1 1(July 76): 24.
 Stuffed wall hanging with doghair weft. I/1 1(July 76): 28.
 Twill rug. II/1 5(July 77): 27.

Wall hanging based on Huguenot draft. I/2 2(Oct 76): 11.
 Placemat. I/3 3(Jan 77): 4.
 Coiled hassock. III/1 9(July 78): 22.
 Coiled seat. III/1 9(July 78): 23.
 Dress with pine tree design. II/3 7(Jan 78): 4.
 Dress, white alpaca huck lace. II/3 7(Jan 78): 5.
 Dress with Mexican embroidery. II/3 7(Jan 78): 17.
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 "Color Composition," wall hanging. IV/4 16(April 80): 7.
 Rug, three-color boundweave. IV/4 16(April 80): 29.
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The first issue of *The Weaver's Journal*, Vol. 1, No. 1, Issue 1, July 1976.



Vol. VIII, No. 1, Issue 29. Summer 1983 on the importance of historical and ethnic textiles.

Coverlet on cover of Vol. III, No. 4, Issue 12, April 1979; Pine needle basket by June Clark on cover of Vol. V, No. 1, Issue 17, Summer 1980. Vol. VII, No. 4, Issue 28, Spring 1983 is open to an article on "Rep Weaves" by Clotilde Barrett.





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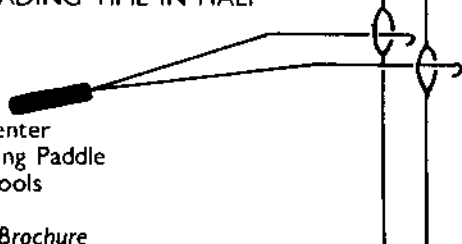
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Multi-Harness Huck

Learn about the structure of this family of weaves and design your own variations

by Clotilde Barrett

HUCK IS A WEAVE that can combine plain weave, warp floats and weft floats. It can be woven on four harnesses or more. A unit in huck weave has the same number of warp ends as weft picks, usually six or ten, but sometimes 14 or another even number (figure 1). Figure 1c shows an example in which the half-units are not equal in size.

Four-harness huck produces textures known as plain weave, weft spots, warp spots and huck lace, which are described in most weaving books. It is assumed that the weaver has some knowledge of these basic four-harness structures before beginning to design multi-harness huck.

This study will deal with huck woven on any number of harnesses over four and will assume that the huck unit has six warp ends and six weft picks. Units of other sizes will be discussed briefly in the last section.

Figure 2 shows a drafting system for four-harness, 6-end unit huck which is different from the system usually found in four harness huck studies. This system is chosen here because it can be logically extended to more than four harnesses.

Threading

Note that the warp ends which will always weave plain-weave fabric are threaded alternately on harnesses 1 and 2. Also note that the first half-unit combines base harness 2 with pattern harness 3 which is an odd numbered pattern harness; the second half-unit combines base harness 1 with pattern harness 4 which is an even-numbered pattern harness.

The following rules apply when a huck threading is extended to more than four harnesses (figure 3).

1. The warp ends that weave plain weave are threaded alternately on harnesses 1 and 2.
2. The base threading (harnesses 1 and 2) of the pattern area is always the same.
3. In the pattern area, base 2 combines with an

a b c d

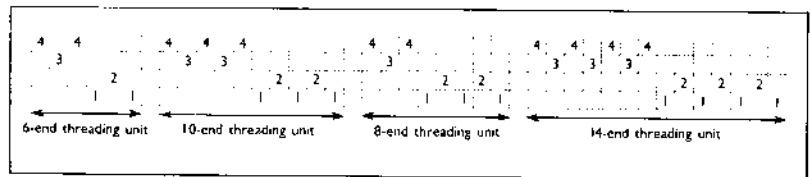


Figure 1.

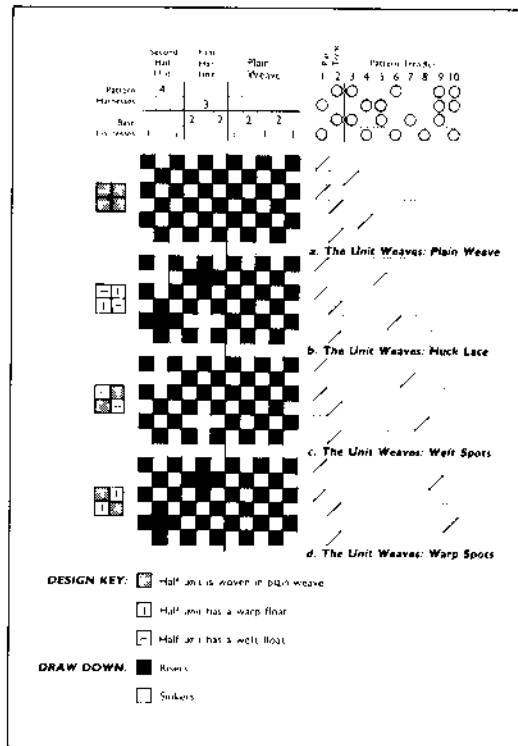


Figure 2.
Drafting system for four-harness, 6-end unit huck.

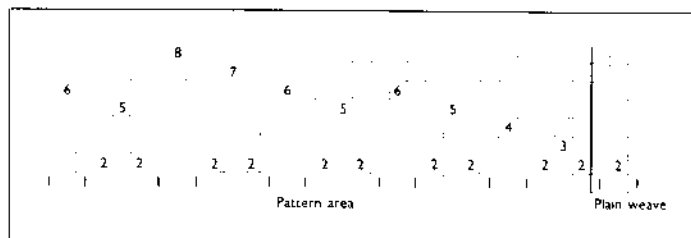


Figure 3.

odd numbered pattern harness; base 1 combines with an even numbered pattern harness.

4. The pattern harnesses always alternate odd, even.

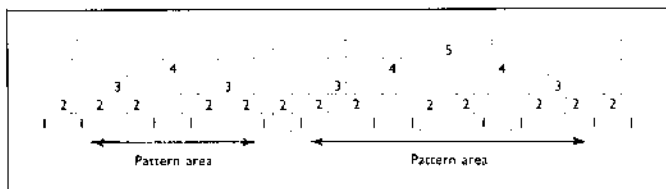


Figure 4.

Practice drafting huck threadings and make sure that all the above rules are observed. Figure 4 shows that huck can be threaded on an odd number of harnesses.

Treadling

Note that the treadling sequence is always as follows:

First half of treadling unit

1. tabby pick lifting base harness 1, plus all odd-numbered pattern harnesses.
2. pattern pick lifting base harness 2 and some pattern harnesses.
3. tabby pick, same as #1.

Second half of treadling unit

1. tabby pick lifting base harness 2, plus all the even-numbered pattern harnesses.
2. pattern pick lifting base 1 and same pattern harnesses.
3. tabby pick, same as #1.

Note that in figure 2a, where the unit weaves plain weave, picks #2 are not pattern picks but the alternate tabby pick.

The following rules apply when treadling multi-harness huck.

First treadling unit: Weave tabby base 1, pattern pick base 2, tabby base 1.

Second treadling unit: Weave tabby base 2, pattern pick base 1, tabby base 2.

Figure 5.

Design Key	Tie-up of Pattern Harness
■ ■	Plain weave Tie to base harness 2 and even pattern harness
■ ■	Plain weave Tie to base harness 1 and odd pattern harness
□ □	Huck lace Tie to base harness 2 and odd pattern harness
□ □	Huck lace Tie to base harness 1 and even pattern harness
■ □	Weft spot Tie to base harness 2 and no pattern harness
■ □	Weft spot Tie to base harness 1 and no pattern harness
■ □	Warp spot Tie to base harness 2 and both pattern harnesses
□ ■	Warp spot Tie to base harness 1 and both pattern harnesses

Drawdown and Design Key

The drawdowns of figure 2 are the interlacings of warp and weft. The crossing of both elements is shown as a black square where the warp rises on top of the weft.

In the design keys, each square represents one half of a huck unit—3 warp ends and 3 weft picks. The symbols in the squares show the fabric structure of the half-unit: shaded □ for plain weave, a vertical line □ if the pattern pick produces a warp float, a horizontal line □ if the pattern pick produces a weft float.

Tie-up

The way the pattern harnesses are tied to the pattern treadles will determine whether the unit (or half-unit) weaves plain weave, lace, warp spots or weft spots (figure 2).

a. Plain weave unit

The pattern treadle tied to base harness 2 is also tied to harness 4 (even pattern harness).

b. Lace unit

The pattern treadle tied to base harness 2 is also tied to harness 3 (odd pattern harness).

c. Weft spot unit

The pattern treadles are tied to their base harness only.

d. Warp spot unit

The pattern treadles are tied to their base harness and to harnesses 3 and 4 (both pattern harnesses).

Rules that apply when tying up the pattern treadles for multi-harness huck are shown in figure 5.

In figure 6 note that treadle 3 is tied to base harness 2. The design key below pattern harnesses 3 and 4 shows *buck lace*: this treadle 3 is tied to the odd pattern harness which is harness 3. The design key below pattern harnesses 5 and 6 shows *plain weave*: this treadle 3 is tied to the even pattern harness which is harness 6. The design key below pattern harnesses 7 and 8 shows *buck lace*: this treadle is tied to the odd pattern harness which is pattern harness 7.

Also note that treadle 4 is tied to base harness 1. The design key below pattern harnesses 5 and 4 shows *buck lace*. This treadle 4 is tied to the even pattern harness which is pattern harness 4. The design key below pattern harnesses 5 and 6 shows *weft spot*. This treadle 4 is tied to neither pattern harness 5 nor 6. The design key below pattern harnesses 7 and 8 shows *warp spot*. This treadle 4 is tied to both pattern harnesses 7 and 8.

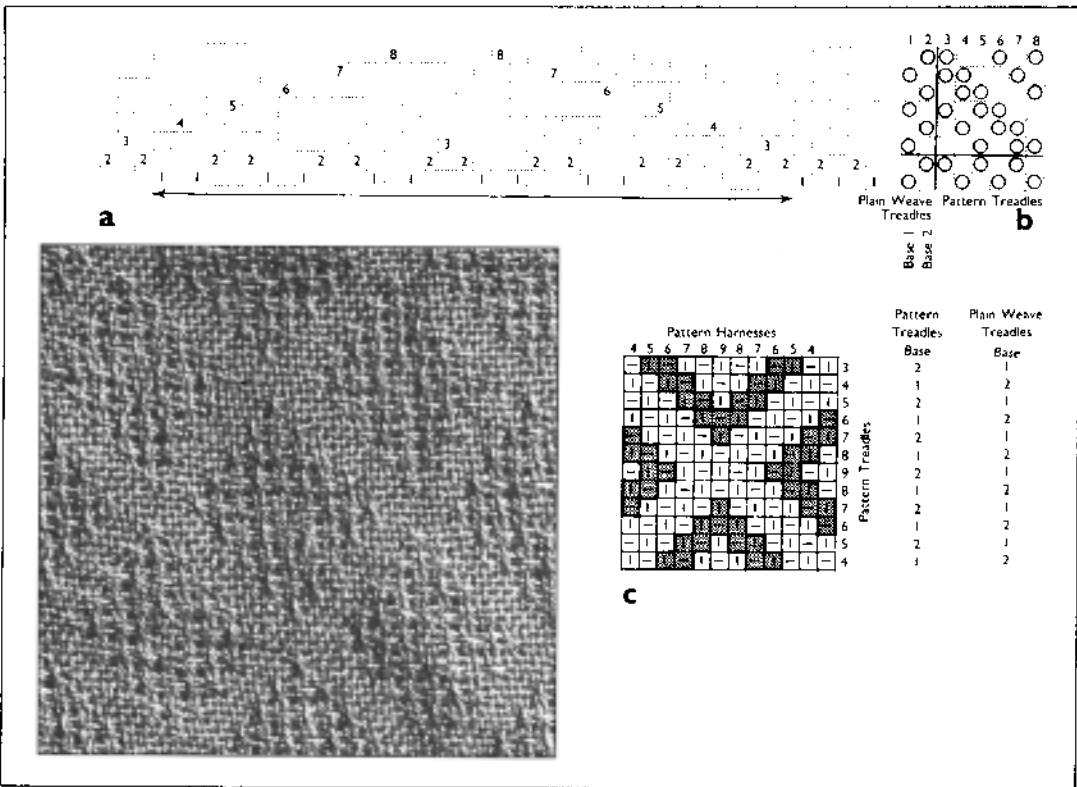
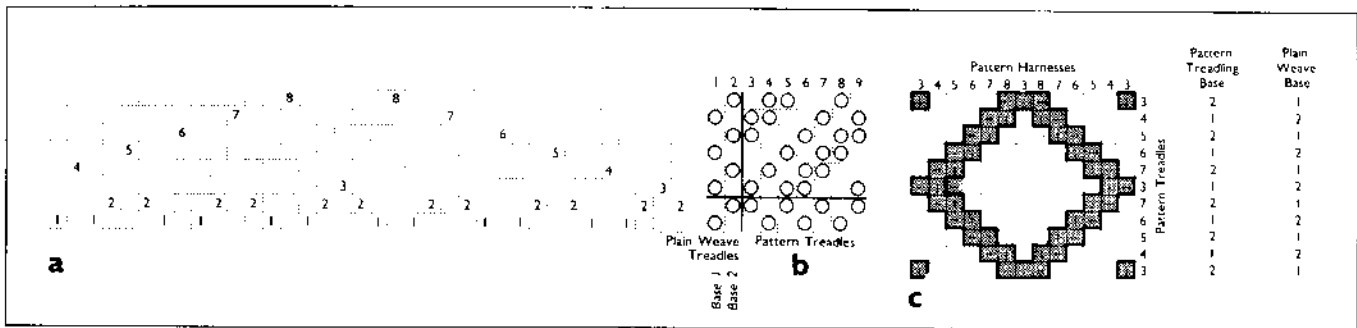


Figure 6.
 a. Eight-harness threading repeat using 16/2 ramie sett at 18 e.p.i.
 b. Tie-up.
 c. Design key of 1 pattern showing plain weave diamonds on a lace ground.

Figure 7.
 Another design on threading for figure 6.

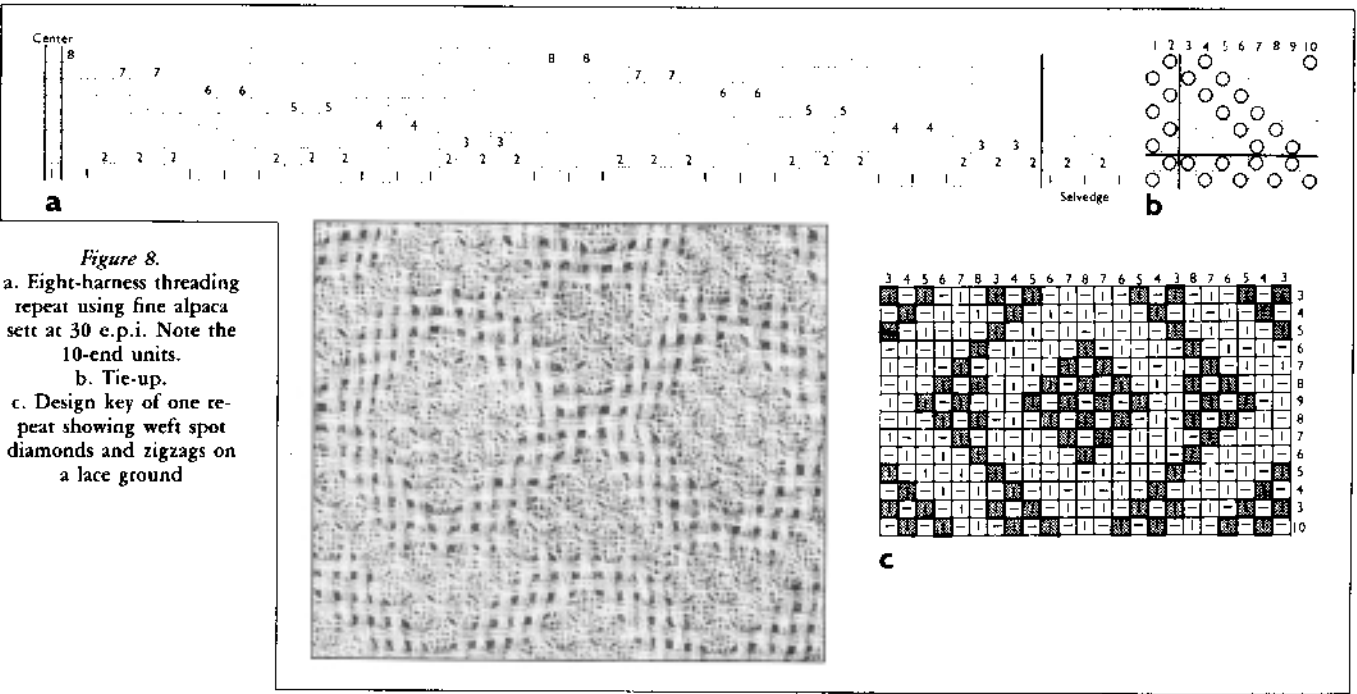


Figure 8.
 a. Eight-harness threading repeat using fine alpaca sett at 30 e.p.i. Note the 10-end units.
 b. Tie-up.
 c. Design key of one repeat showing weft spot diamonds and zigzags on a lace ground

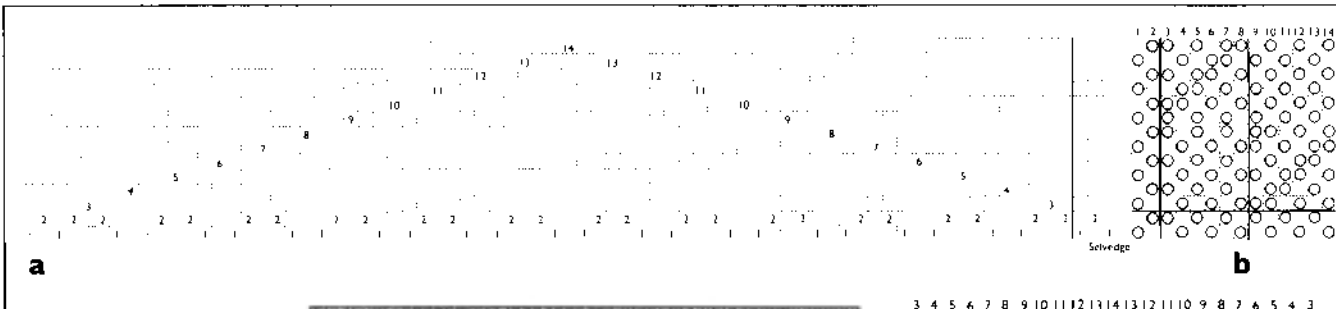
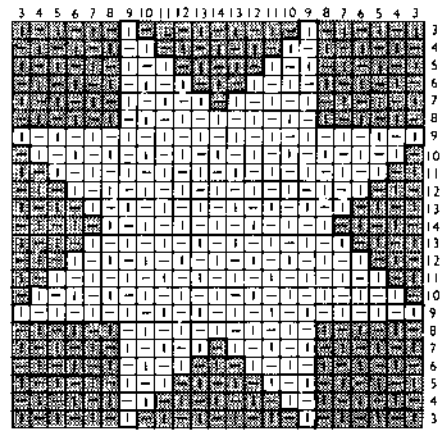
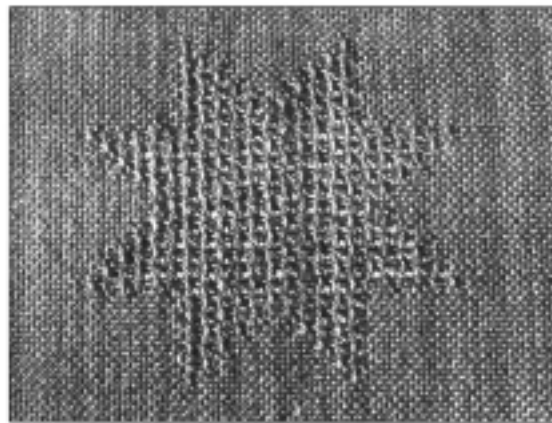


Figure 9.
 a. Fourteen-harness threading repeat using 20/2 perle cotton sett at 30 e.p.i.
 b. Tie-up.
 c. Design key of one pattern which is a lace star woven on a plain weave background.



Continue tying treadles 5, 6, 7, 8 and 9 to the pattern harnesses according to the design key and the rules of tie-up.

How to Design Multi-Harness Huck

Figure 10 shows graph paper that has been prepared for designing multi-harness huck with the aid of the design key. Each square represents the interlacement of 3 warp ends with 3 weft picks of the patterned area. Each square has one pattern harness and one pattern treadle. It is assumed that the top right square has an odd pattern harness and a pattern treadle which is tied to base harness 2.

Above the graph, write the pattern harness corresponding to the threading sequence. Write one pattern repeat or one complete pattern. Start at the right with an odd number and preserve the odd-even sequence throughout. Draw a vertical line after each odd-even pair.

To the right of the graph, write the treadle numbers. Start at the top with a treadle that is

tied to base harness 2. Alternate base harness 2 and base harness 1 (figure 11).

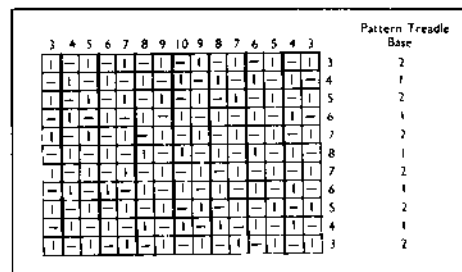


Figure 11.

Note that the graph is the design key for a fabric woven with allover huck lace patterning.

To design plain weave areas, use a pencil and shade any square where plain weave is desired (figure 12). Note that under the same pattern harness the same texture has to be drawn. Figure 12 shows a design key for a fabric combining plain weave and huck lace.

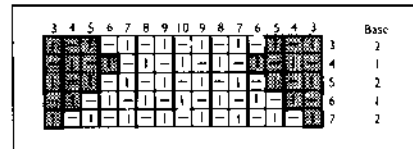
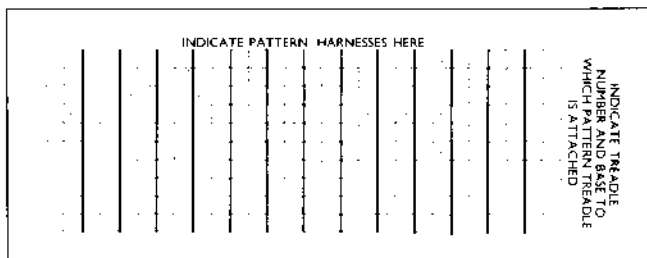


Figure 12.

To design weft spot areas, use a pencil and shade all the squares with vertical floats, thus replacing the vertical float texture with plain weave. Figure 13 shows a design key for a fabric combining weft spots and huck lace.

To design warp spot areas, use a pencil and shade all the squares with horizontal floats, thus replacing the horizontal float texture with plain

Figure 10.



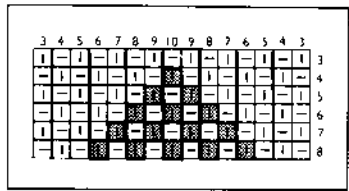


Figure 13.

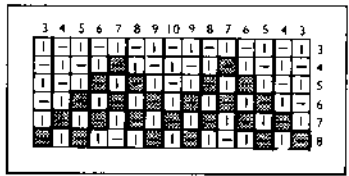


Figure 14.

weave. Figure 14 shows a design key for a fabric combining warp spots and huck lace.

Figure 15 shows a design key for a fabric combining the textures of plain weave, huck lace, warp spots and weft spots.

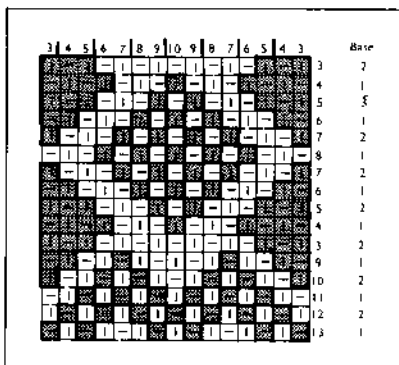


Figure 15.

How to Weave the Fabric of the Design Key

Remember, the treadling is as follows:

- Pick #1:** Tabby, lifting base harness 1 and all odd pattern harnesses (treadle 1).
- Pick #2:** Pattern pick, lifting base harness 2 and some pattern harnesses.
- Pick #3:** Tabby, same as #1 (treadle 1).
- Pick #4:** Tabby, lifting base harness 2 and all the even pattern harnesses (treadle 2).
- Pick #5:** Pattern pick, lifting base harness 1 and some pattern harnesses.
- Pick #6:** Tabby, same as #4 (treadle 2).

The tie-up base is shown in figure 16. The top right-hand section must show which pattern harnesses have to be lifted, and must be filled in by studying the design key.

For each pattern treadle, study the corresponding row of the design key and note the base harness. Look at each pair of squares of the row. The right-hand side square of the pair is under a odd numbered pattern harness, the left-hand side square is under an even numbered pattern harness.

Tie each pair of pattern harnesses according to the figure 17.

In figure 18, treadle 3, base 2 is tied to the even (4) pattern harness of the 3-4 pair, to no pattern harness of the 5-6 pair, to the odd (7) pattern harness of the 7-8 pair and to the odd (9) pattern harness of the 9-10 pair.

Treadle 4, base 1 is tied to the odd (3) pattern harness of the 3-4 pair, to the odd (5) pattern harness of the 5-6 pair, to the even (8) pattern harness of the 7-8 pair and to no pattern harness of the 9-10 pair.

Key	Base 2	Base 1
■ ■	tie even pattern harnesses	tie odd pattern harnesses
□ □	tie odd pattern harnesses	tie even pattern harnesses
□ □	tie no pattern harnesses	
■ □		tie both pattern harnesses

Figure 17.

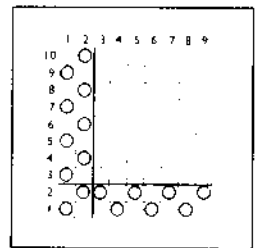


Figure 16.

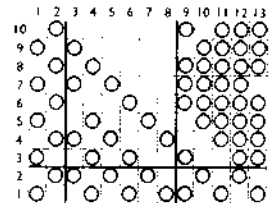


Figure 18.

Extending Units Into Blocks

Any half-unit of huck may be extended to form a block. To extend a half-unit, repeat it, but put a warp end threaded for plain weave (harnesses 1 or 2) between each repeat. Figure 19 shows the extension of the 2/3/2 half-unit and of the 1/4/1 half-unit. Lace blocks based on huck are sometimes called Swedish lace. The extended treadling works in a similar way. Any treadling half unit (3 picks) may be repeated but between each repeat one must throw the alternate tabby pick.



Figure 19.

Larger Units

The half-units may have more than 3 threads as shown in figure 20. The tie-up remains the same, the design key remains the same but □ stands for 2 vertical floats and □ stands for 2 horizontal floats for a 5-end half-unit and stands for 3 floats for a 7-end half-unit.

The treadling half-unit for a 5-end half-unit is as follows: a tabby pick, a pattern pick, a tabby pick, a pattern pick and a tabby pick. For an example, see figure 8.

Huck is often woven with untextured linen but can, however, be woven with any type of fiber. A textured yarn will, however, detract from the weave structure. The sett is the same as for a medium to loose plain weave, and there are as many picks per inch as ends per inch.



Figure 20.

MEET THE AUTHORS



ALVIC



BARRETT



BOUTIN WALD



BOWMAN



CAHLANDER



EASTLAKE



FANNIN



FREEBERG



GRAVES

Fiber artist, teacher and writer **Philis Alvic** graduated from the School of the Art Institute of Chicago in 1967. Since that time she has frequently exhibited her work. At her studio in her home in western Kentucky, Philis weaves loom-controlled wall hangings and investigates weave structures. She shares her experience and opinions about weaving through lectures, workshops and writing.

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

Pat Boutin Wald received her M.F.A. in textiles in 1976 with a thesis exploring color in hand-made felt. Her work has been exhibited with the American Craft

Council's "Young American Show," and in Manila, The Philippines in "Fiber as Art." She currently designs handmade papers and teaches color workshops for fiber artists.

Gloria Bowman was born in Misantla, Veracruz, Mexico and studied weaving at the School of Design and Crafts in Mexico City, The University of Los Andes in Colombia and at the Arts and Crafts Center of Pittsburgh. She is a tapestry weaver, working primarily with Mexican wools and using Mexican, Peruvian and French techniques. She is the owner of 12 Changes, a yarn shop/gallery in New Canaan, Connecticut.

Adele Cahlander has specialized in studying the techniques of Andean weaving and braiding. In addition to various articles, she

co-authored *The Art of Bolivian Highland Weaving* (1976), and is author of *Bolivian Tubular Edgings* and *Crossed-Warp Techniques* (1978), *Sling-Braiding of the Andes* (1980), and *Double-Woven Treasures from Old Peru* (1985).

Sandy Eastlake from Salem, Ohio has a degree in Education with a concentration in fiber arts. Her interests include spinning, natural dyeing, weaving and basketry. She is currently a docent at the Butler Institute of American Art in Youngstown, Ohio.

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).

Judy Freeberg has been weaving since 1972 when she took her first rigid heddle classes from Suzanne Gaston. Her special interests are garments with the application of various finishing techniques, and Scandinavian textiles. She currently teaches at the Weavers Guild of Minnesota and at Creative Fibers in Minneapolis.

John Graves is a pediatrician with a lifelong interest in wood-working. His wife **Susan Graves** introduced him to handweaving. Susan has been a professional weaver for ten years. She owns a weaving shop and has exhibited her work in Colorado and throughout the Midwest. She was

artist-in-residence at the University of Dubuque (Iowa) in 1983-84.

Susan Hick and the loom were first introduced in 1973, and they have been fast friends ever since. Researching "Fashion Trends" provides a bonus for Susan. Her special interest is in weaving yardage for clothing which she sells through Fiber Matrix, a cooperative endeavor in Denver, Colorado.

Bobbie Irwin is a professional weaver, spinner and needlepoint designer who has been weaving since 1973 and teaching fiber arts classes since 1976. She owns and operates a retail yarn shop/weaving studio and enjoys weaving a variety of projects ranging from transparencies to clothing and ac-

AUTHORS to page 90



IRWIN



KELLY



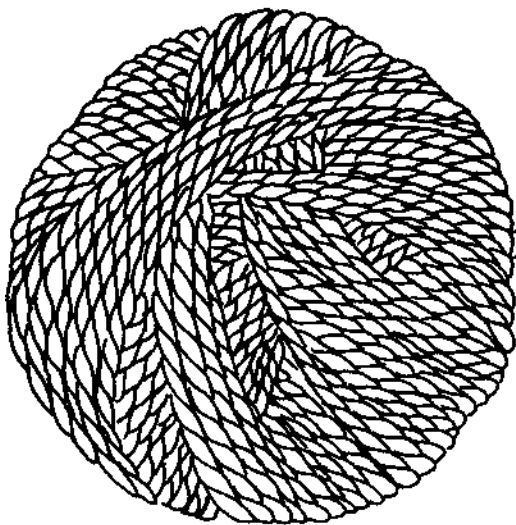
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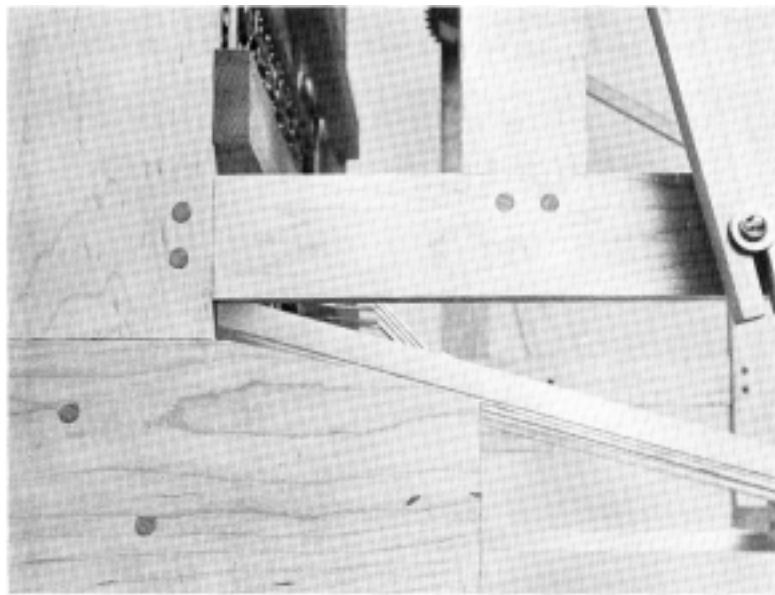
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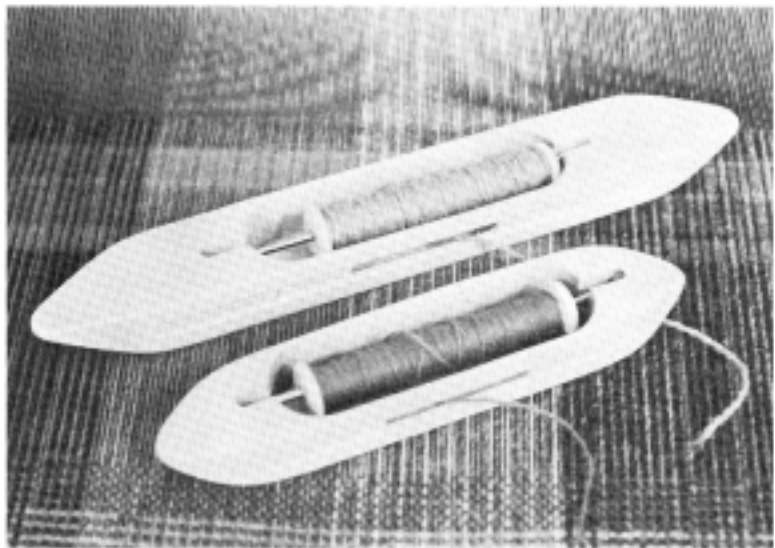
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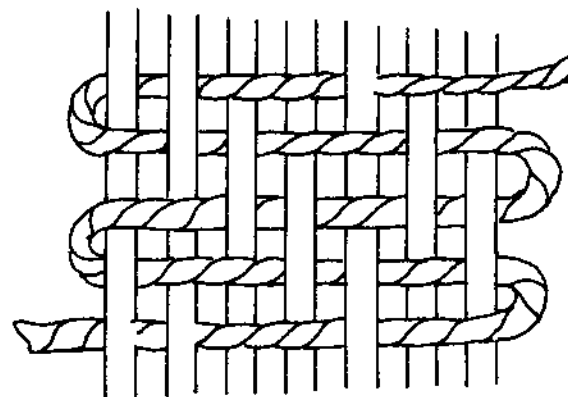
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Shaker Towels

*A guild devotes a year of study
to a nineteenth century textile*

by Sandy Eastlake

THE YOUNGSTOWN Area Weaver's Guild, a group of 45 fiber artists in Ohio, celebrated its 30th anniversary in 1984. As part of the celebration the members devoted a year of study to the Society of Shakers, beginning with their formation in England in 1747. The Guild focused specifically on Shaker textiles and weaves in a project which was made possible through the support of the Ohio Arts Council.

The Guild's monthly programs included a tour of the Shaker Historical Society in Shaker Heights, Ohio, a look at the history and use of raw fibers, a study of Shaker furniture, making a Shaker basket, Bronson lace Christmas angels, and dyeing yarn using recipes taken from *Early American Weavers and Dyers*. Guild members participated in a three-day workshop on Shaker linen textiles given by Mary Elva Erf. Ms. Erf's work has centered on the interpretation and documentation of heirloom Shaker linens.

Under Ms. Erf's guidance, guild members each wove differently patterned linen towels which were later displayed locally at the Warren and Youngstown public libraries. The exhibit then traveled to Connecticut where it was displayed for various guilds and at the Burr Homestead in Westport, Connecticut. The towels are now on permanent display at the Shakertown Museum in Pleasant Hill, Kentucky.

The Shakers were originally a small group of Quakers in Manchester, England who believed that the second coming of Christ was near at hand. A young woman named Ann Lee was their leader. She had been forced into a marriage which resulted in four children, all of whom died as infants. These tragedies in her life convinced her that a life of celibacy must be a foundation stone on which to develop her religion.

Practices such as silent meditation, trembling, and ultimately agitations of the entire body, lead to the label "Shaking Quakers" and eventually simply Shakers. The Shakers believed that the second coming of Christ had actually occurred in the body of Ann Lee, whom they referred to as "Mother Ann."

In 1774, Ann Lee and eight of her disciples set sail for America to escape the religious persecution. Two years after their arrival in New York, they had established a colony near Albany. In 1787 the first organized Shaker Community was established. American born followers took the leadership. Nine New England communities started during the next seven years, and by 1828 a total of eighteen settlements were founded from Maine to Ohio to Kentucky. The height of the Shaker movement came around 1850, with 6,000 faithful followers.

As the Shakers grew in number, their religious faith evolved into a life style that permeated their daily lives. Their rules were recorded and known as the "Millennial Laws." Not only the order of worship was detailed, but also duties of the members, use of property and quality of work. Four main principles were observed at all times: a life of celibacy, common ownership of property, confession of sins, and separation from the world.

Shaker Linens

"Labor to make the way of God your own, let it be your inheritance, your treasure, your occupation, your daily calling." (Mother Ann)

In order to isolate themselves from "the world" it was necessary for the Shakers to become a self-sufficient community. Nearly all the goods they consumed or used were produced in their own fields and shops. Since these tasks were per-



Members of the Youngstown Area Weavers Guild at work on Shaker baskets. Photo by M. Elizabeth Andrase.



formed in order to achieve a "perfect society filled with heavenly love," care was taken to produce items of exceptional quality.

Among other activities in the community, the women maintained spinning and weaving shops where most of the fabric used for clothing and household goods was produced. Shaker linens are noted for their exceptional structural qualities and simplicity of design.

In her book *Shaker Textile Arts*, Beverly Gordon explains the different weaves used, the distinctions between linens made for use in the outside world and those made for use by the Shakers themselves, and the significance of the embroidered markings:

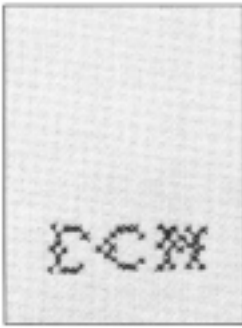
"Household towels, like blankets, were

both purchased and handwoven. Purchased towels were made of cotton, while handwoven towels were usually linen—sometimes natural unbleached linen, but most often bleached, white linen. Towels were usually done in the same plain weave and twills used for blankets, often in the same blue-on-white check, though sometimes more elaborate weaves, like variations of huckaback, M's and O's, or diaper, were used. None of these patterns was peculiar to the Shakers; fine pattern weaves were popular everywhere for towels because their textured surface increased absorbency.

"In the late nineteenth and early twentieth centuries, towels were important as sale products. Design on the sale towels, contrary to

Six Shaker towel replicas made by members of the Youngstown Area Weavers Guild. *Top row:* 6 Harness Dimity, 4 Harness Bronson, Plain Weave. *Bottom row:* 4 Harness Huck, M's & O's, 5 Harness Bronson.

blue and white plain weave
Weave structure: tabby
Warp: 40/2 blue and white linen.
Weft: 20/1 blue and white linen.
Sett: 42 e.p.i.
Comments: ¼" rolled hems. Original towel from Hancock Shaker Village.



the design on those the Shakers used themselves, was not solely structural; decoration was added freely. Ready-made towels were purchased in the world, and embroidery was added in corners, or crocheted edgings were attached on two sides.

"Shaker linens and textiles, like other textiles used in eighteenth- or nineteenth-century households, were almost always marked, usually with embroidered initials. In the outside world marking was important, because linens were used on a rotating basis so that they would wear evenly, and number markings were helpful in determining which pieces were used when. The owner's initials were also marked on the pieces, probably more for proprietary reasons than for avoiding confusion. In Shaker textiles, there were always initials, which stood either for an individual's name or for a particular family. Numbers on textiles usually referred to rooms in the dwelling houses—each room had a number above the door—and sometimes to the year in which the piece was made. Thus, a Shaker towel marked

CH
18
32

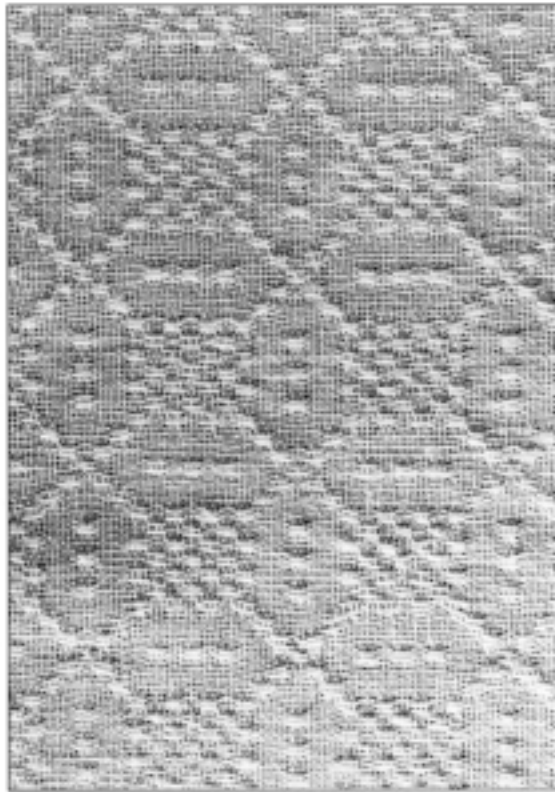
probably belonged in room 18 of the Church family, and was made in 1832. The placement of letters and numbers (numbers centered under letters) was conventional, adapted from mark-

ings of the outside world. Originally, markings were embroidered in fine linen, wool, or silk thread (usually blue) in tiny cross-stitches (embroidery of this type was specified in the Millennial Laws), but later markings were embroidered in other colors or, sometimes, written in ink."¹

Shakers and the World

Although the Shakers maintained communities separate from the rest of the society, they did have commercial contacts with the world. Many of the items they produced were available through Shaker stores or through the mail. For some time the Shakers experienced commercial prosperity: besides producing functional and attractive textiles, they excelled in agriculture and furniture making. Their inventions include the common clothes pin, washing machine, circular saw, and flat broom. It was the Shakers who originated the sale of seeds in packets rather than in bulk. Shaker furniture, distinctively sturdy, light and utilitarian, is admired today for its simple functional lines.

Today there are two small groups of Shaker Sisters in New Hampshire and Maine. The remainder of the communities exist as historical restorations, or are under private ownership. Most of the original communities have disappeared completely.



M's and O's

Reproduction of linen towel from an original draft by Elvira Curtis Hulett, in the collection of the Winterthur Museum.

Weave structure: M's and O's.

Warp: 28/1 natural linen.

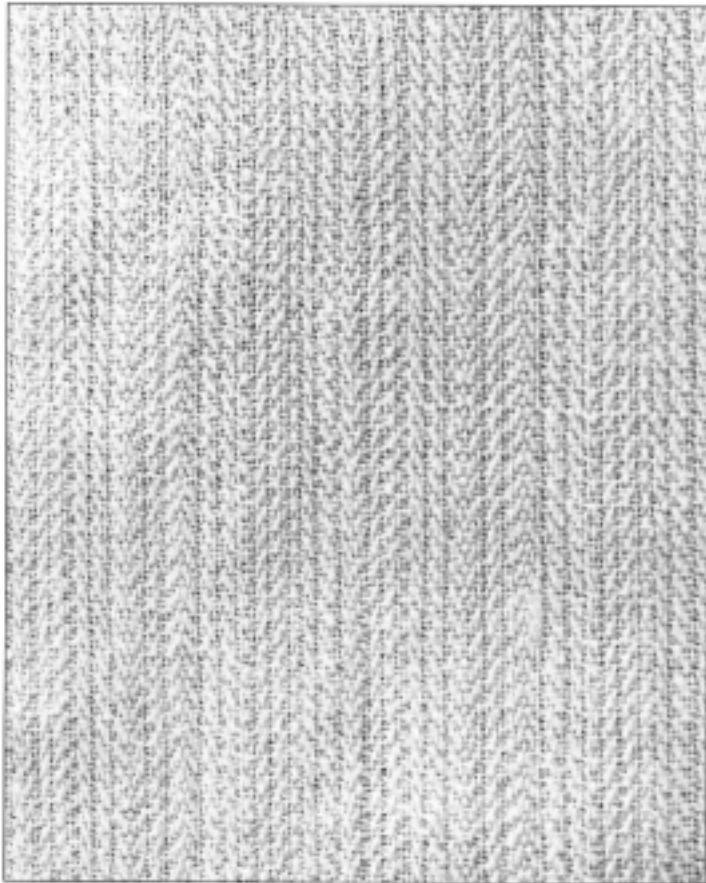
Weft: 28/1 natural linen.

Sett: 40 e.p.i.

Comments: Finished with ¼" hand-stitched hems.



1. Beverly Gordon, *Shaker Textile Arts*. Hanover, New Hampshire and London, England: University Press of New England with the Cooperation of the Merrimack Valley Textile Museum and Shaker Community, Inc., 1980. pp. 93 & 95.



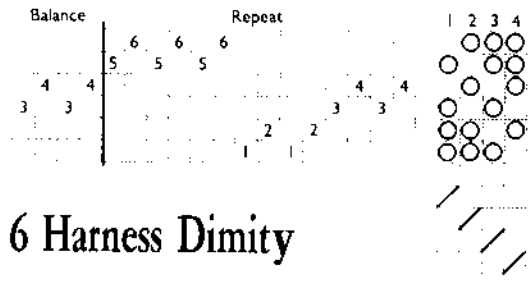
Reproduction of a towel from an original draft by Elvira Curtis Hulett, in the collection of the Winterthur Museum.

Weave structure: 6 harness dimity.
Warp: 20/2 unmercerized bleached cotton.

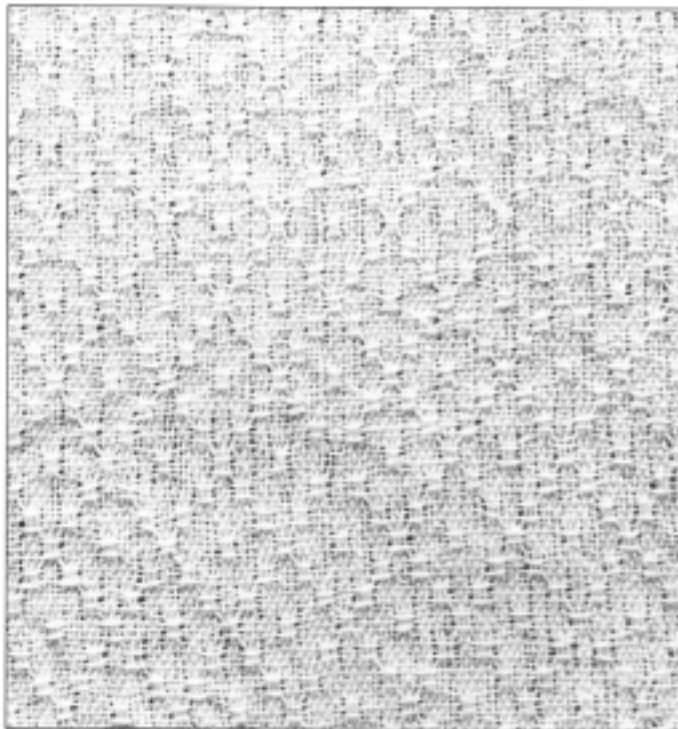
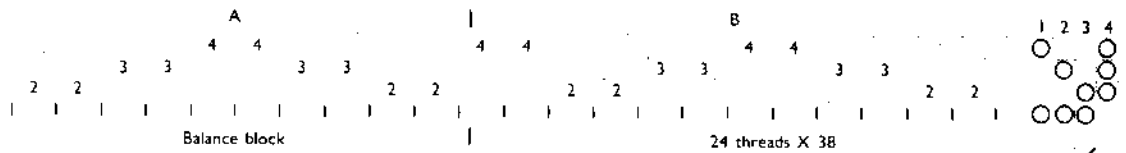
Weft: same.

Sett: 40 e.p.i.

Comments: This should be a firmly beaten fabric with "ribs" formed vertically. "E.C.H." cross stitched in indigo blue cotton.



6 Harness Dimity



Linen towel woven from an original draft by Elvira Curtis Hulett, in the collection of the Winterthur Museum.

Weave structure: York Diaper—4 harness Bronson.

Warp: 40/2 bleached linen.

Weft: 28/1 or 30/1 bleached linen.

Sett: 40 e.p.i.

Comments: The width on the loom was 23.3". Length of one towel was 40". Finished dimensions were 21" x 36". The towel was finished with 1/4" handstitched hems, done before washing. The initials "E.C.H." are cross-stitched in blue on the lower left corner.

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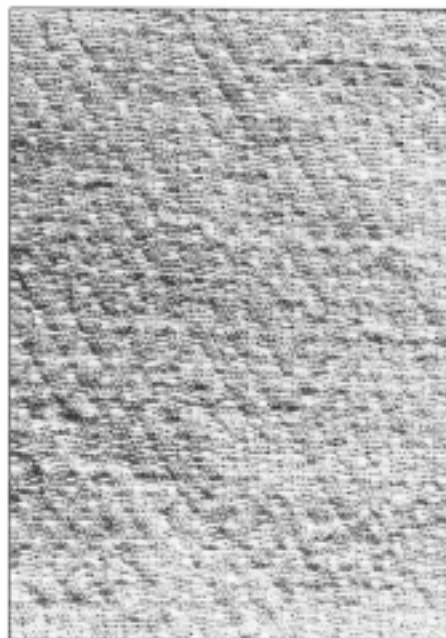
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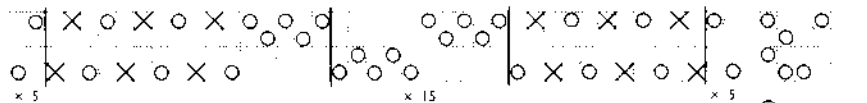
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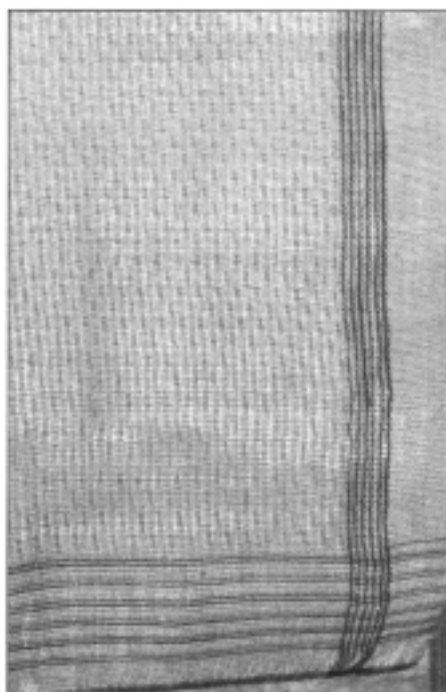


5 Harness Bronson

Reproduction of a cotton/linen towel from Hancock Shaker Village.
Weave structure: 5 harness Bronson.
Warp: 20/2 unmercerized bleached cotton.
Weft: 20/1 bleached linen.
Sett: 30 e.p.i.
Comments: 1/8" rolled hem sewn before washing.



X BLUE
 O WHITE



4 Harness Huck

Reproduction of bleached linen towel from Hancock Shaker Village.
Weave Structure: 4 harness huck.
Warp: 40/2 bleached and blue linen.
Weft: 30/1 bleached and blue linen.
Sett: 36 e.p.i.
comments: 1/8" rolled hem sewn before washing. Cross-stitched initials also sewn before washing.

Hemstitched Edgings for Linens

by Suzanne Baizerman

ONE OF MY VERY FAVORITE books on needlework techniques is an encyclopedic work by Thérèse de Dillmont aptly entitled the *Encyclopedia of Needlework*. It was originally published in France in 1880. The original volume is a small book that, like a small Bible or book of poems, fits comfortably in the hand. Inside is a wealth of information about sewing, mending (remember what that was?), various types of embroidery, knitting, crochet, macramé, tatting, a variety of lace techniques, *among other things!* Just the book to have along when you get stranded on that desert island! The profuse engraved illustrations add greatly to the charm of the book and reflect the period during which the work was produced. The book was reprinted in 1972 by The Running Press, Philadelphia, using enlargements of the original text that make it easier to read. The encyclopedia has enjoyed several reprintings since that date.

I was reminded of this little book when I thought of writing about finishes for table linens for this Spring "Interiors" issue of the *The Weaver's Journal*. Hemstitching was a technique that came to mind, a finishing method that can



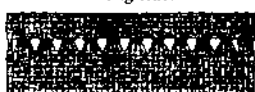
Simple hem-stitch.



Antique hem-stitch, wrong side.



Another hem-stitch.



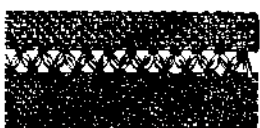
Antique hem-stitch, right side.



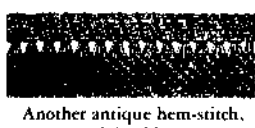
Ladder hem-stitch.



Another antique hem-stitch, wrong side.

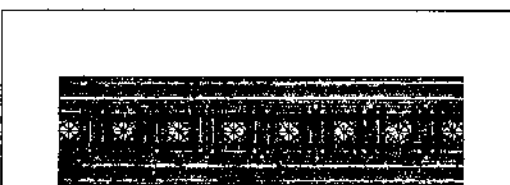


Serpentine or trellis hem-stitch.



Another antique hem-stitch, right side.

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Engraving with woven paper of an openwork edging.

Openwork on Linen

Openwork is the name given to those kinds of needlework in which some of the warp or weft threads, or both, are withdrawn from the material, and the isolated threads left by this process are drawn together in groups by means of various stitches, forming open patterns.

The different ways of grouping the threads and oversewing them with various stitches produce the most varied combinations and the richest designs, which can be used as the sole ornament of a piece of work, or combined with any other type of embroidery, such as cross stitch, for instance.

There are two kinds of openwork on linen: one is produced by removing either the warp or the weft threads, and is known as drawn-thread work or single openwork (the Italian "punto linto"). For the second, both warp and weft threads are removed; this type is called cut-and-drawn work or cut openwork (the Italian "punto tagliato").

Openwork with drawn threads, as well as cut-and-drawn work, can be worked with the sewing machine. The machine, being quicker than the hand, is often preferred for large articles of household linen. Narrow, simple openwork strips can be worked without being mounted in a frame, but the frame is indispensable for rich designs with varied motifs and for cut-and-drawn work.

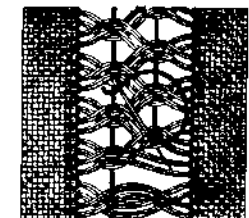
Materials.—Fabrics woven with coarse threads, for the purpose of imitating medieval embroideries, require, for openwork stitches, a thread of similar thickness to those of the fabric.



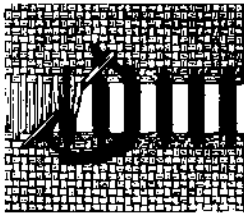
Whole groups crossed once.



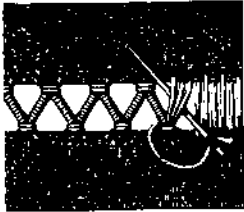
Groups divided and crossed once.



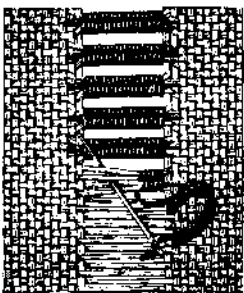
Four groups crossed twice, in two rows.



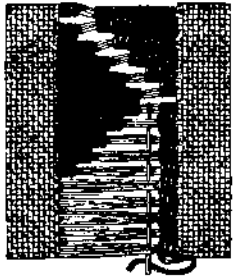
Isolated overcast bars.



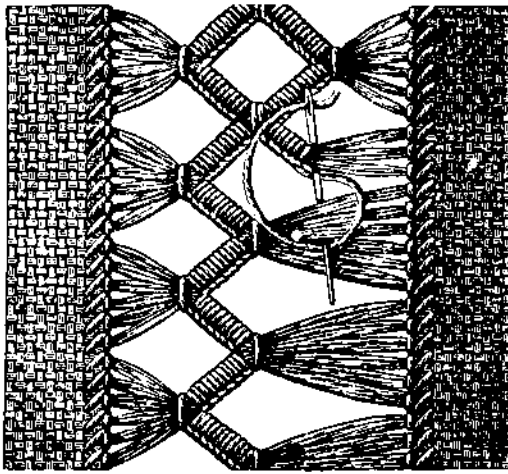
Zig-zag overcast bars.



Darned bars.



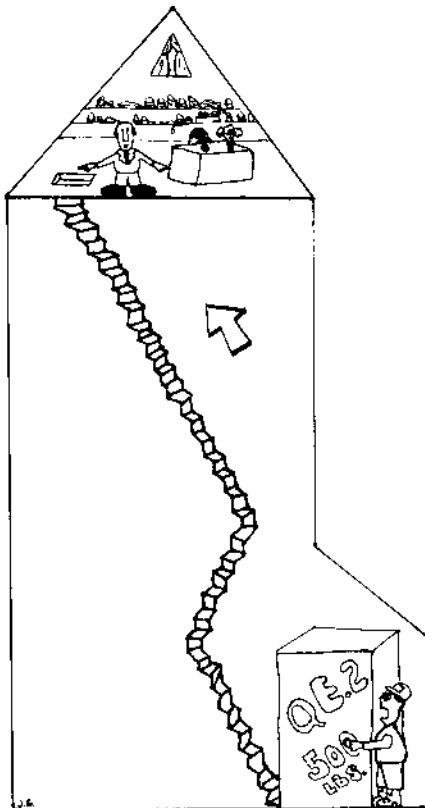
Darned pyramids.



Groups knotted together twice in sixes, with a diamond design in burtonhole stitch.

be as elaborate or simple as the overall design of a work dictates: bold, in heavy yarn and in color contrast to the fabric or more traditionally fine, delicate and barely apparent. Some of you may well have hand-stitched hems gracing heirloom or antique textiles in your collections.

In the *Encyclopedia* a variety of hemstitching and other openwork techniques are included in a chapter on "Openwork on Linen." Openwork is defined on the opening page of the chapter as applying to needlework where certain warp and/or weft threads are pulled from the material. Isolated threads which remain are then drawn together in groups using various stitches and forming open patterns. Further explanatory notes and other illustrations have been reproduced here. De Dillmont offers instructions for working these techniques on finished linen cloth, directly applicable to the finishing of handwoven table linens. In addition, the handweaver with a little imagination will be able to translate these techniques into ones that can be used while loom work is still in progress. Indeed, the tension on the warp thread and on the cloth provides an ideal set-up for the would-be loom embroiderer. You will notice that techniques for crossing groups of threads are alternative ways of producing a leno-gauze-like structure.



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Looming Thoughts

by Allen A. Fannin

BE ONE WEAVER OR NOT, nearly everyone has at one time or another been made at least tangentially aware of the dire condition in which the American textile/apparel industry is presently found. Should the reader think that this crisis is of no more than general interest to the specialized handcraft textile practitioner, perhaps we may be able to offer sufficient provocation, if not to alter that frame of mind, then to balance such thinking with another side.

During the earlier days of our particular field, Mary Alice Smith, in *Handweaver & Craftsman*, the principal handweaving journal of its time, maintained a unique, almost symbiotic relationship between the mill and hand textile trades from the premier issue until her death in 1970. Both in her own posture—editorial as well as personal—and in her choice of writers, handloom weavers were made aware of issues and developments in the larger textile world. Such opportunity for dialogue and the important fruits thereof is clearly, but not necessarily irretrievably, missing today.

Unfortunately, the entire picture of the American textile/apparel trade is badly clouded by the media and industry emphasis on imports. The situation is, to this and some other observers, far more complex than is realized. Its comprehension is further muddled by cross-currents of ill-founded opinion, conflicting theories and competing interests from all sides. It would therefore be foolhardy to presume that this writer's lone insight can and will resolve what may in time prove to be unresolvable. We raise more questions than we answer but in the process we might sort out and explore the elements that compose this out-of-focus picture. Handloom weavers of whatever persuasion are, for good or bad, a part of the total, larger textile world and should be more than passingly and passively aware of this serious issue.

The commercial textile/apparel trade in the United States has always had to deal with the burden of lower cost imported goods. The histories of some of America's early textile entrepreneurs (Slater, Almy & Brown for example, of whom Samuel Slater is the most well known¹) contain many references to the problems of cheaper yarns and fabrics from England and the continent. In fact, many of the complaints heard from modern textile executives mirror these historical texts: The picture is not new. It is not en-

tirely accurate to assume, as many do incorrectly, that the total textile needs of a growing nation like the U.S. in Slater's day were, or even could be, satisfied solely by domestic production. Textile products from more inexpensive sources were as necessary then as now.

So if the picture is not new, are the complaints we are hearing (if no more or less strident than in Salter's day) any more or less justified? The fundamental changes that took place in the American system of textile production as the factory system evolved from that of family workers (in which the traditional hierarchy of father-mother-children was fairly well maintained) to a system of essentially independent individuals cannot be ignored. This may in part explain the seemingly more vigorous tone of contemporary protectionists. Just as agricultural technology has reduced the labor intensity of farming to the extent of enabling fewer to feed more, machinery development has evolved to much the same state in almost all manufacturing industries. Quite simply, we have reached the point where we do not need so many people involved in production. Yet we have many people who, when agricultural technology evolution made them redundant, were able to leave the farms and enter the factories. Now, as more factories need fewer hands, these idle hands cannot return to the farms, for now many of the farms are gone. We can rightly conclude, therefore, that the textile complaints of today are more justified than they were in Slater's time, because the alarm caused by contemporary textile imports is now a result of far more dire conditions.

On the other hand, the American textile/apparel industry is not in trouble only because of foreign competition. The ultimate consumer who must exchange money for goods obeys one of the older and more stable laws of economics—to wit, obtaining the most for the least. Thus, one cannot and should not fault Mr. and Ms. Shopper for acting in what they perceive to be their own best interest, short-term and narrow though that action may be. So that otherwise idle hands can be employed, however marginally, we have created a plethora of goods for which Mr. and Ms. Shopper can exchange their dollars that boggles any but the most callous of minds. Since the volume of those dollars has not increased in exact proportion to the range of goods, it is obvious that fewer dollars are available per unit of goods. Thus, the growing consumer pressure for lower prices in all market areas is perfectly logical given that restraint in buying is always the last alternative.

At one time, within the living memory of our most respected colleagues, the textile industry in the U.S. was compared most favorably with that of any of the "Old World" nations. The quality of goods produced by many long-gone New England woolen and worsted mills was second to none. This fact is all the more significant

1. Tucker, Barbara M. *Samuel Slater and the Origins of the American Textile Industry 1790-1860*. Ithaca, New York: Cornell University Press, 1984.

given that the very early growth of textiles in this country was hampered by a great many *foreign* obstacles. In the beginning, the very mill technology at which the U.S. was to eventually excel, if only briefly, was jealously guarded by those European nations that first developed much of it. England, for example, was far more anxious to export finished goods to "the colonies" than to allow raw materials, technology and talent to enter into what was seen as a vast market for United Kingdom overproduction. Then, as now, U.S. mill owners ranted against foreign competition that was impeding the birth and growth of an independent U.S. fabrics industry, if not the very growth of an independent U.S. itself. Such definitive historical resources as Winsor,² Hakluyt,³ The King's Customs⁴ and others clearly illustrate the self-protection principle that leads nations to gather unto themselves, often by any means necessary, all that which will allow them to exist in the least dependent way. Therefore, negative sentiment and political clamor against the competition of foreign goods can safely be taken as quite normal and sane.

Yet U.S. textiles did overcome this early hindrance and become second to none, except in the most elitist of minds. While certain conditions are nearly identical now to conditions then, others are very dissimilar and many new circumstances prevail. First, all technologies can theoretically reach an evolved stage of diminishing returns when no significant further overall benefit can be derived from further advances in technological efficiency. Mark Kramer, a most astute literary journalist, presents this point most effectively in his book on making milk, meat and money from the American soil, *Three Farms*.⁵ He shows that the largest of corporate California tomato farms is not able to bring its product to market any more efficiently or at a lower price than a far less mechanically sophisticated Midwest hog farm or New England dairy operation. Unless a balance can be found between a mill's capacity to produce and a market's willingness to absorb, a system cannot survive for long. Achieving this balance by reducing the number of mills producing with a constant market is of course contrary to the free-market system. The U. S. textile industry grew into its full production capacity during and following World War II at an unprecedented rate, and while the market seemed to follow suit, there may have been a not-so-subtle condition operating that amazingly escaped notice until it was too late: *Fashion*. As textile mill machinery became increasingly more efficient that efficiency was offset by the cost of requiring longer and longer runs of the same goods. The output of even the least sophisticated woolen systems is staggering to one who is accustomed to gauging output in terms of yards per week rather than yards per hour. In the case of what the trade calls "staple goods," (common sheeting, print cloth, woven and non-woven

felts, certain industrial fabrics such as fiber glass cloth, etc.) where changes in design and color are rare, the present U.S. textile industry can do this job with enviable efficiency. But when individual consumers, having increasing difficulty remaining true individuals in anything, turn to and demand increasing variety in their fashion statements, this kind of staple efficiency breaks down rather quickly. Frequent design changes in relatively short warps are the stuff from which modern mill management nightmares are created.

In a recent issue of *Knitting Times*⁶ an editorial by Charles Reichman, editor of that publication between 1946 and 1978, pointed out an often repeated but yet not fully accepted fact of contemporary business: Firms are now seldom under the managerial control of those who are the technicians. There was a period in the very near past when mill owner/manager/producer roles were vested in a single individual. When enterprises were of a smaller, more humane scale, the CEO quite commonly worked up from floor-boy through every rank available, even in cases where familial connections could have provided an easier path. As one venerable, long-retired woolen mill descendant put it, "the sound of a weaveroom full of looms gets in one's blood and stays there for life." To anyone devoid of that feeling, whether in weaving or another trade, it is impossible to experience it by mere description. As the current MBA/accountant/lawyer combination, divorced as it is from the tangible nuts, bolts and grease of the mill floor, began to take hold in management, the relationship between maker and what is made died all but completely although not necessarily permanently. While it has taken this writer many years to reach it, the conclusion is inescapable that having one's trade in one's blood cannot be separated from the highest level practice of that trade.

Meanwhile, in far too many places, business is no longer as usual because business is no longer. Major textile producers are simply closing down mills that began operation near the turn of the century. The damage this does to a small community that is dependent upon one industry and, in the worst of cases, on a single large mill, cannot be described. We cannot even begin to turn this crisis around until certain not-so-self-evident truths are admitted.

First, the U.S. business system took a turn at the labor/materials crossroad a long time ago, the result of which we are seeing in earnest in the import problem. While other producing nations placed a higher value on raw materials than on labor, the U.S. system did just the opposite. The question of the absolute value of labor is one that has no place in this discussion, only its relative value in the labor/material ratio. Meanwhile, we have a large, underemployed labor pool that has, for better or worse, grown solidly comfortable with a level of income/lifestyle which we try to maintain more and more through the produc-

"The entire picture of the American textile/apparel trade is badly clouded by the media and industry emphasis on imports."

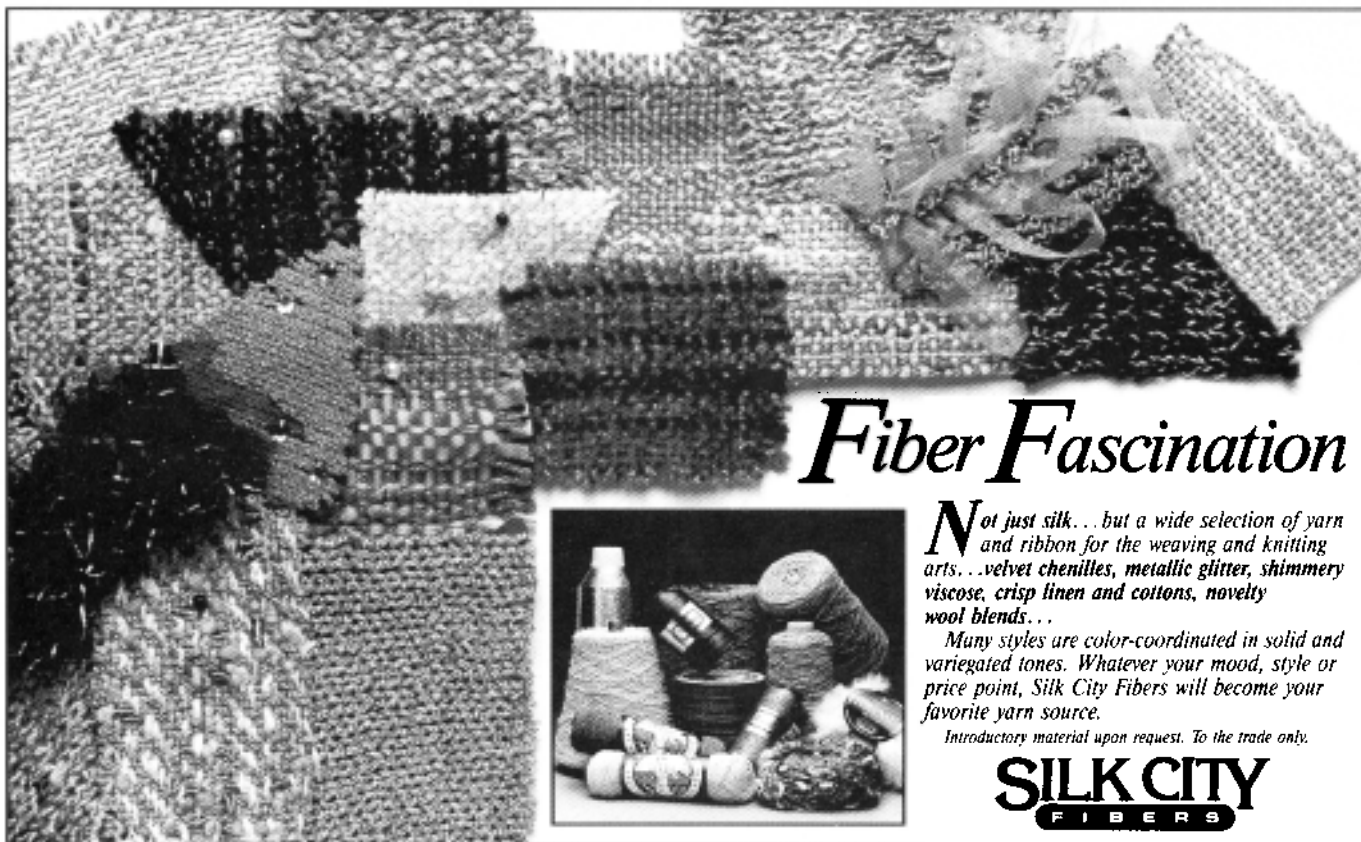
2. *Narrative and Critical History of America*. Edited by Justin Winsor. 8 vols. Boston: Houghton, Mifflin, The Riverside Press. 1888.

3. Hakluyt, Richard. *The Principal Navigations, Voyages, Traffiques & Discoveries of the English Nation*. 12 vols. First Edition, 1589; Third Edition, Glasgow: James MacLehose & Sons, 1903. Reprinted, New York: Augustus M. Kelley, 1969.

4. Atton, Henry and Holland, Henry Hurst. *The King's Customs*. 2 vols. First Edition. London: John Murray, 1908. Reprinted Augustus M. Kelley, 1967.

5. Kramer, Mark. *Three Farms*. Boston: Little, Brown, 1977.

6. Reichman, Charles. "Reevaluating the Technologist," in *Knitting Times*, December 1985, 11.



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"Frequent design changes in relatively short warps are the stuff from which modern mill management nightmares are created."

tion and consumption of goods and services of which the necessity and utility can increasingly be questioned. While a chicken in every pot is as basic a requirement for living now as when the statement was first uttered, one can rightly ask if the newness of the pot is as much a necessity as the pot maker would have us believe. In this sense, we may have come to the place in our social growth where we can no longer afford our own standard of living. The textile import problem may be only the tip of that iceberg.

Second, the basic tenet of unlimited business growth may have finally reached its stopping point. Not only will there be a limit to the price at which the consumer is willing to buy, but a more severe limit on the profit to be gained from the economy of scale. While the technologies of production and of business enterprise were developing during a period when certain market limits had not been reached, it was quite easy for management not to have foresight or to realize when the end would come. Human runners commonly beat the record that for Roger Bannister was a major victory, but if a mile is to be run in less than three minutes, something other than a human must do the running. There are limits—call them physical, natural or whatever—that define unequivocally where we humans can go and what we can do.

Third and probably most difficult to accept, is the fact that every technological advance in the entire history of human endeavor from the invention of the wheel to the modern computer has

had one unavoidable self-defeating aspect. Every time humans develop any means of achieving a net gain in effect, the human effort required is thereby reduced. This has the result of reducing the number of humans needed to perform a given amount of work. The ultimate and logical conclusion to this is that as we "progress" and, if we continue to "progress" in the way we have been, we may quite possibly "progress" ourselves out of needing people at all for much of anything, leaving us with lots of people with little or nothing to do. How often do we hear the modern entrepreneurial boast that this or that new plant installation will do the same work with 38 hands that formerly required 150. Such a new plant actually exists as of December 1985, geared to ship nearly 15 tons of yarn per week with a workforce of 38!

No matter what our approach to weaving—be it for a living or not, be it by hand or not—we are involved in a most basic productive activity, second in importance to food and ahead of shelter. Therefore we cannot pretend we are in any way unaffected by the global ramifications of what so many see so narrowly as simply an import problem to be solved by tariff and other protections of purely political nature. The essential foundation of how we live and work and why we live and work as we do is seriously in question, the positive outcome of which requires our collective energies.

Kind regards and thanks.

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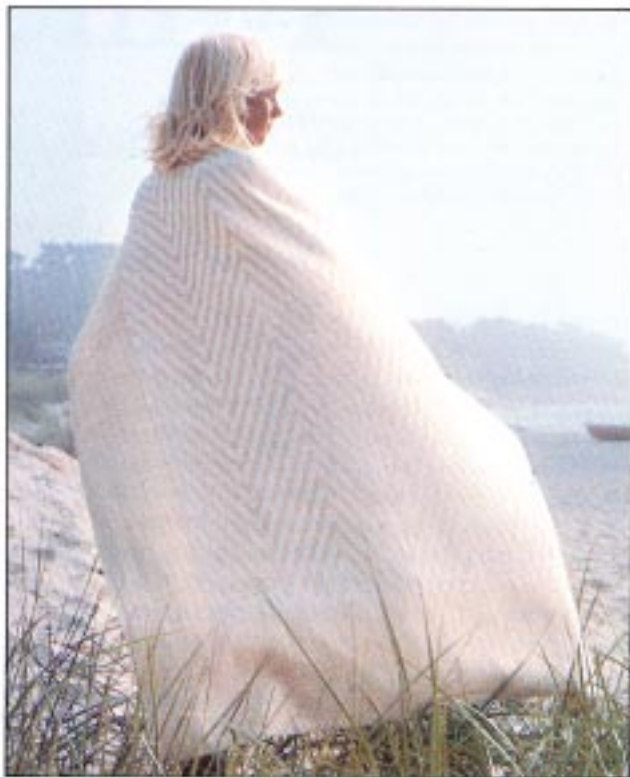
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Danish Twined Rag Rugs

Lillie Sherwood's Legacy

by Bobbie Irwin

AS A NOVICE WEAVER studying some of the traditional weaves for the first time, I dreamed of discovering, somewhere in backwoods America, an elderly weaver creating coverlets from an old, unpublished family draft, weaving on an ancient loom. I fantasized that someday I might be able to introduce a long-forgotten weave or pattern to a new generation of weavers. Although the circumstances and details were a bit different, something like that actually did happen to me.

In 1980, while working as a census enumerator in central Idaho, I met Lillie Sherwood, an elderly widow who lived in an old log cabin a few miles from my own home. When I entered her home, I discovered the most beautiful rag rugs I had ever seen.

At first glance I thought they were braided, but they were rectangular like typical loomed rugs. Several had interesting checkerboard patterns, and all were made from a cheery variety of colored fabric.

After Mrs. Sherwood had politely answered my official questions and we had chatted a bit, I couldn't help commenting on her rugs. I explained that I was a weaver and would love to know how she created the fascinating patterns, whereupon she invited me into the next room to see her loom.

It was a simple frame loom, warped with strips of cloth. She had just begun a new rug using brightly colored fabric scraps, which she expertly *twined* around the warp as I watched. I wished I could have stayed longer, but I did have a job to do and more people to interview, so I asked if I could come to visit her again and learn the intricacies of her patterns.

For one reason or another, I didn't make it back to Mrs. Sherwood's cabin. A year later we moved to another state. As I learned more about weaving and searched the literature, I failed to



Mrs. Lillie Sherwood, age 85, with one of her twined rag rugs.

find any reference to twined rag rugs. I was now convinced that I had stumbled upon a lost art, and regretted having forfeited what might have been a once-in-a-lifetime opportunity to study a dying tradition.

The twining technique itself is common to many cultures, and one with which I was already somewhat familiar. But the use of rags for both warp and weft and the combination of a multitude of colors in block patterns made Mrs. Sherwood's rugs unusual and especially interesting.

We moved back to central Idaho in 1984 and I called Mrs. Sherwood right away. To my surprise, she remembered me. I asked if she would still be willing to give me some lessons, to



which she answered, "Why honey, I'd be delighted . . . but you'd better not wait too long this time; I'm 84 now!" I went out to her place that same afternoon.

Born at the turn of the century in Cherokee County, Kansas, Lillie Sherwood moved to Idaho as a young girl. Her stepfather, who was Danish, taught her how to weave shawls and twined rugs on the big frame loom which hung near the roof of their tent when it was not in use (the family lived in a tent for years until they moved into more permanent housing). When Lillie was 14, she bought a homestead near Idaho Falls and attended Gem State Business College. At 16 she eloped and traveled by covered wagon to Ogden, Utah where she later ran a dairy. After her husband's death, she continued her dairy operation

Mrs. Sherwood's loom, warped with denim. Note that the twining started from both ends. The outside dimensions of the frame are approximately 29" x 52"; Mrs. Sherwood nailed this frame together herself many years ago from scrap lumber. She says she wore out several frames in her lifetime; this one is at least 20 years old and may be older.

In August, 1985, Mrs. Sherwood hosted our local weavers' guild meeting at her house. Although she had not woven a rug for about two years, she put this last warp on and twined a few rows for the benefit of our group. After the meeting, she gave the frame to me, and I completed the rug.

until the encroachment of highways and housing developments forced her to sell her cows. Eventually, she moved to her son's ranch in Idaho, on the East Fork of the Salmon River.

Slowed by arthritis and deteriorating vision, Mrs. Sherwood no longer weaves rugs. Her last rug, completed a couple of years ago with the help of a granddaughter, was donated to the local high school for a fund-raising effort. Over the years, she has demonstrated the technique to hundreds of people (most of whom were probably not weavers), yet it is doubtful that many actually used the method to make rugs, probably because of the discouraging amount of time involved. Depending on the materials used, the weaver's skill and the complexity of the pattern, a rug can easily require three or four hours per square foot, not counting the time it takes to prepare the rags. I was probably the last of her students, but I have promised her I would carry on this tradition.

Twined rag rugs do not adapt well to production weaving, but the results are well worth the time involved. Because the heavy warp is completely covered, the rug is virtually indestructible. The rugs are twice as thick and heavy as standard loomed rag rugs and they lie flat on the floor without curling at the edges. Some of Mrs. Sherwood's rugs have been in use — and not pampered — for decades, yet show almost no sign of wear. A durable twined rug can easily last for generations.

The bright colors in Mrs. Sherwood's rugs make them particularly attractive. She was delighted to use the colorful cloth scraps from her daughter's sewing and fabric business, especially the newer knit fabrics, to replace the drabber colors evident in her older rugs.

Mrs. Sherwood does not recommend machine-washing these rugs, because it soaks the warp (which does not need cleaning) and makes it difficult to dry them thoroughly. Regular

Detail of "Hit-and-miss" rug which Mrs. Sherwood started and which I completed. Approximately 24" x 34", denim warp, assorted weft (mostly knits). By working long hours, I was able to complete this rug in four days. I call this "hit-and-miss with a difference" because two colors are in use at all times.



vacuuming and an occasional hand-scrubbing with detergent are all the care required.

Basic Preparation

Lillie Sherwood showed me two similar warping methods. Although many materials (including heavy twine) are suitable for warp, most of her rugs were made with rags for warp as well as weft, which makes them especially unique. In both methods, a continuous, circular warp is used. If the warp is wrapped around the frame itself, the ends of the warp can be cut after twining is completed, to function as fringe. If fringe is not desired, or the weaver wants to tie on a different fringe, the warp can be wrapped around rods sus-

One of Mrs. Sherwood's rugs combined "hit-and-miss" with color blocks. This rug is probably 15 to 20 years old. In this detail, note the joins between blocks. There is an exaggerated slant of weft where blocks come together.



pending from the frame (similar to a Navajo loom).

As with all rag weaving, preparing the cloth strips is time-consuming, but commercially prepared "rags" can make the job easier. Different weights and types of fabric can be combined in the same weft, but heavier cloth should be cut narrower. For heavy-weight fabrics, one-inch-wide strips are adequate; lighter weight materials should be at least two inches wide. Mrs. Sherwood has even used sheer curtain fabric by cutting very wide strips.

As for standard loomed rugs, rag strips may be sewn together by machine before weaving, but it is recommended that working weft strips be no longer than one or two yards. It is difficult to twine with longer pieces, and new sections can be quickly sewn on by hand as you weave. Simply overlap ends, turn edges in twice, and overcast securely with a few quick stitches.

Equipment and Materials

Making a chair cushion on a small frame is an excellent introduction to this technique. An 18" x 16" canvas stretcher (available from art supply stores) makes an ideal frame, or you can substitute a picture frame (any size, but choose one which is not too deep).

For warp, use one-inch-wide strips of denim or similar heavy fabric, sewn securely together by machine. Unlike the weft, the warp should be sewn in a continuous piece, the length of which

depends on the size frame being used. The 18" x 16" frame mentioned requires 14 to 16 yards of warp (one pair of men's jeans will yield about 25 to 30 yards of denim). It is best to use the same weight and width of warp throughout.

For weft, choose lighter weight material, such as double knits, cotton, wool, or any combination. Although twining may be done with a solid color, it is recommended you select at least two colors for your sampler, preferably four or more. Solids, prints and plaids all work well. At three to four picks per inch, two yards of weft (doubled to make two strands) will weave approximately 24 to 30 inches. You may need to allow as much as seven or eight yards of weft per vertical inch.

Warping

Starting at the upper left corner of the frame, loop one end of the denim over the top of the frame, allowing several inches overlap, and secure with a pin or sew by hand (*figure 1*). Wrap the cloth around both ends of the frame in a circular motion. Avoid twisting or crossing the warp. The strips should lie flat and side by side along the ends of the frame, perhaps overlapping slightly. Finish wrapping at the lower right corner, make a final loop around the lower edge of the frame, overlap the warp several inches and secure the end with a pin or a few stitches, as you did at the start. This will give you an *odd* number of warps, which is especially important if you plan to work patterns. The warp should not be pulled extremely tight, because its tension will increase as weaving progresses.

Weaving the Sampler

Sew together two weft strips of different colors, each approximately a yard long but not exactly the same length. (Thus, when it is necessary to sew on new sections as weaving progresses, the joins in the two strips should come at different places in the sampler.) Where the two colors meet, loop the weft around the first warp (upper left corner). The join will be at the outside edge of the warp, so one color (*A*) will be over the warp on the "top" side and the other color (*B*) will show on the reverse side. At this point, and for several more rows, the first warp will be a double thickness because of the overlap made when warping the frame.

Now, start twining. The strip (*B*) which was *under* the first warp will come up and over the other strip (*A*) between the first two warps, forming the twist (it is not necessary to *consciously* twist the two strands—this will happen automatically). Weft *A*, which was on top of the first warp, will go *under* the second warp as weft *B* goes *over* the second warp (*figure 2*).

Continue this same procedure all the way

across to form the first row. Weft colors will alternate coming to the surface. While twining the first row, it is very important to pick up the warps in the same order they were wound on the frame, and to prevent crossing warps. If the first warp is on the back side of the frame, the second will be on the front side, the third on the reverse, etc. Be careful not to skip a warp or to twine around two warps at once. The weft should be packed as close as possible to the top of the frame and should be

"Hit-and-miss" blocks are assorted fabric, mostly knits, and solid blocks are nylon weft. Nylon warp exposed as fringe.
Designed and woven by
Bobbie Irwin.



pulled tightly at each twist. Each "stitch" should slant to the left. The weight and width of the warp will, in part, determine the sett, but the weight of the weft also influences the results. Typically, the warp will be two to three ends per inch.

The first row is woven from left to right and the second (and all other "even" rows) will proceed from right to left. Both strands of weft must wrap around the edge warps. To make the turn to start the second row, the strand which was *over* the previous warp (*B*) will go *under* the end warp while the other strand (*A*) goes *over* the edge warp. Bring weft *A* up between the two warps and then bring strand *B* around the edge warp (*figure 3*). Twine across the row, using the same motion as before (*figure 4*). The "stitches" in the second row should slant to the right.

After two rows are completed, turn the frame upside down and twine one or two rows on the other end to make sure the warps are properly aligned. As before, start the first row at the left (formerly the lower right corner). Be very careful to keep the warps in the same order as on the other end; if they cross, double check the first rows on the other end to make sure each warp was taken in order. Make corrections, if necessary, and do not proceed with the sampler until all warps are in proper sequence.

Weave several more rows on either end, pushing each row up tight against the previous row so as to completely cover the warp. Turns at the left side will be similar to those on the right (*figure 5*). Mrs. Sherwood recommends working from both ends toward the center, especially if

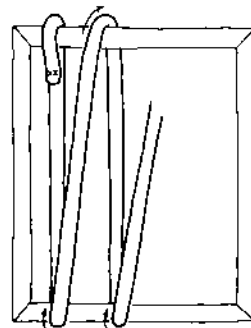


Figure 1.
Putting the warp on the frame.

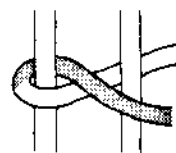


Figure 2.
Starting the first row.

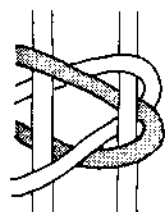


Figure 3.
Turning the weft at the right side.

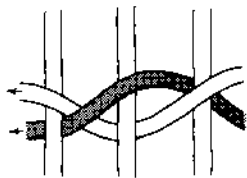


Figure 4.
Twining toward the left.

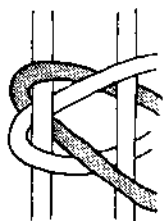


Figure 5.
Turning at the left side.

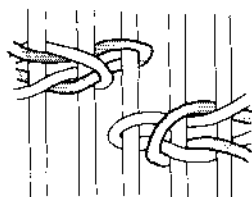


Figure 6.
A dovetail join for adjacent blocks.

you wish to balance colors or make symmetrical patterns. If you have pinned the warp ends, remove the pins as you cover the overlap with weft rows. The number of picks per inch will depend on the weight and width of the sett and how tightly it is packed, but three to four p.p.i. is typical.

As you near the end of a strand, sew on another by hand. Try to position the joins in the twist between warp strands.

If you wish to try block patterns, use a different combination of colors for each adjoining pair of blocks. Patterns with vertical and horizontal borders are easiest; angles are harder to execute. However, virtually any pattern which can be graphed can be attempted. Mrs. Sherwood used chalk on her warp to mark pattern areas; waterproof marker could be used instead. Blocks are worked tapestry fashion: when weaving a row from left to right, start with the *right-hand* block and end with the block on the left. For rows which weave toward the left, start with the left block. Weave one row at a time, all the way across the sampler.

A dovetailed join is used to connect pattern blocks (figure 6). Only one weft strand from each block will wrap around the shared warp, and on a vertical line, the same two strands (colors) will always be used.

If a pattern block ends at a point where it is not practical to sew on additional weft strips (for example, if a block ends in the middle of a row), sew the ends of the strands together securely. Loose ends of fabric strips can be tucked into previous rows or covered by subsequent rows. Do

not sew weft to the warp, because you may have to move the rows up tighter as you weave.

If you have woven from both ends, the last few rows will be near the center of the sampler. Pack them in as tightly as possible, using a blunt instrument if necessary to manipulate the weft around the warp. Sew weft ends together. Take the sampler off by cutting through the warp loops at the top and bottom edges of the frame. The warp ends will form a durable fringe. With a few stitches, secure the top and bottom rows of weft to the warp to prevent slippage.

Rug Weaving

Completing a small sampler will give you the expertise to weave a rug. A large frame can be made inexpensively to fit the width rug you desire, and by using suspended metal rods, you can vary the length of the piece. If you prefer, sections may be woven on a small frame and sewn together to make larger rugs.

Twining is traditionally worked from the top of a frame downward, but the direction could be reversed. Thus, rag twining could be adapted for use on a harness loom, using a standard warping method and substituting heavy cord for the rag warp. However, because this is a finger-manipulated weave, the use of a conventional loom offers no advantage in terms of speed.

Other twining variations can be tried, but the instructions here are adapted from the authentic Danish method used by Lillie Sherwood for over 70 years.

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Loom Woven Baskets

by Gloria O. Bowman

BASKETRY has fascinated me ever since I was a child in Mexico. I can remember the people in the marketplaces with their baskets filled with fruits and vegetables. Loomshaping has also fascinated me for a long time. We use looms to shape clothing, rugs, furniture and tapestries, so why not shape baskets on the loom?

I have seen examples in museums of the pulled warp technique used by the Incas in Peru and also by the Mexicans to shape textiles and baskets. I seldom have the time to make a coiled

or knotted basket, but with the pulled warp technique, I can thread my loom and weave a basket quite quickly.

The technique is very simple. It is a tapestry weaving technique (weft-faced weave) in which some warp elements will remain unwoven. These open areas will be closed after the piece is off the loom by carefully pulling the warp threads.

Weaving the Basket

A variety of materials is suitable for this type of basket weaving. The warp yarns

must be strong for pulling, so I like to use a cotton or linen warp, and weft materials such as linen, jute, sisal, raffia and rug wool. For the fruit basket, you will need one pound of 4-ply linen, and one pound of 4-ply rug wool.

Warp: 4-ply linen (a strong cotton may be substituted).

Weft: Linen or linen and wool.

Sett: 5 epi.

Width in reed: 19 inches.

Warp length: 2 yards.

Weave: Weft-faced plain-weave, beaten firmly with fork or tapestry beater.

Finished fabric size: 22 × 18½".

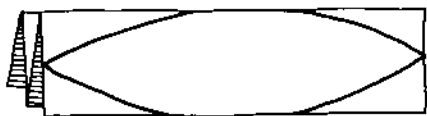


Figure 1. Cut corners off folded paper.

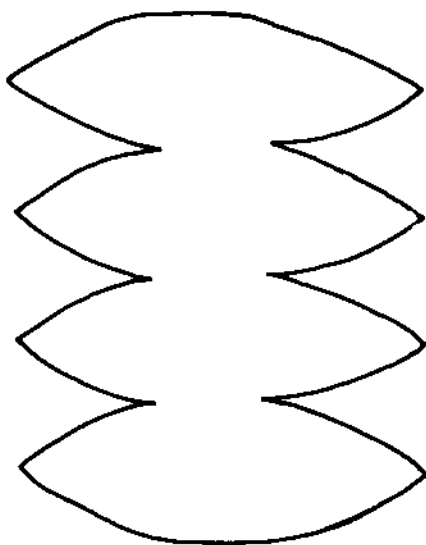


Figure 2. Paper patterns opened up.

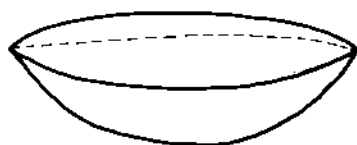


Figure 3. Paper model taped into shape

Almost any loom is suitable for this technique since the pulling of the warp threads takes place after the work is cut from the loom.

To determine the shape you will weave, fold a piece of paper into four equal sections. Cut off the corners and open the paper up (figures 1-3). Tape the cut sections together at the points to produce a rough model for your three-dimensional shape. Play with the paper models until you come up with the desired curvature.

Once you have the model, make an actual-size drawing on a 19 × 22 inch piece of felt (figure 4a). Mark off four 5 1/2" inch sections and draw the shape of the model in each section. This will serve as the cartoon for weaving.

Make a warp 19" wide and 2 yards long. This length will allow you enough material to weave the basket and the fruit. Thread the loom and sley the reed at 5 epi. Weave a one-inch heading, then start weaving the basket with the cartoon in place below the warps. Start with a 4" wide weft pick in the center of the row, and increase it by two warps on each side each row, until all of the warps are being woven. Then decrease each pick by two warps on each side until you are back to a 4" wide final row (figure 5).

Sometimes the unwoven warp can become loose. This problem can be corrected by weaving rags in as filler in the unwoven warps to take up the slack.



Proceed in the same manner to weave the three remaining segments of the basket. At the end of the last segment, I make a single row of twining with the same weft to keep it from unravelling.

Surface texture techniques such as soumak or loops can be added during the weaving, or use any combination of flat and texture weaves for added interest. Beads, feathers or shells may be woven in or applied later.

Cut the woven piece from the loom, including about 11 inches of additional warp for a handle. Knot the warps in pairs at the top edge and remove the bottom header. Now you are ready to pull the warp threads to make the final shape. If you have filled in the unwoven warp with rags, carefully take them out. Starting on one side, pull the warp threads one by one from the center to the outside of the piece by holding the weft and pulling each warp until the open areas are closed up. Repeat the process for the other side.

Knot the warps in pairs at the bottom of the weaving. Hold aside four knots from the top and four from the bottom of the warp at each corner. These threads will form the handle of the basket (figure 6). Take the ends of these groups of warps, curve them over the basket to form the desired handle shape. Use a two-yard piece of linen to wrap tightly over these threads. The

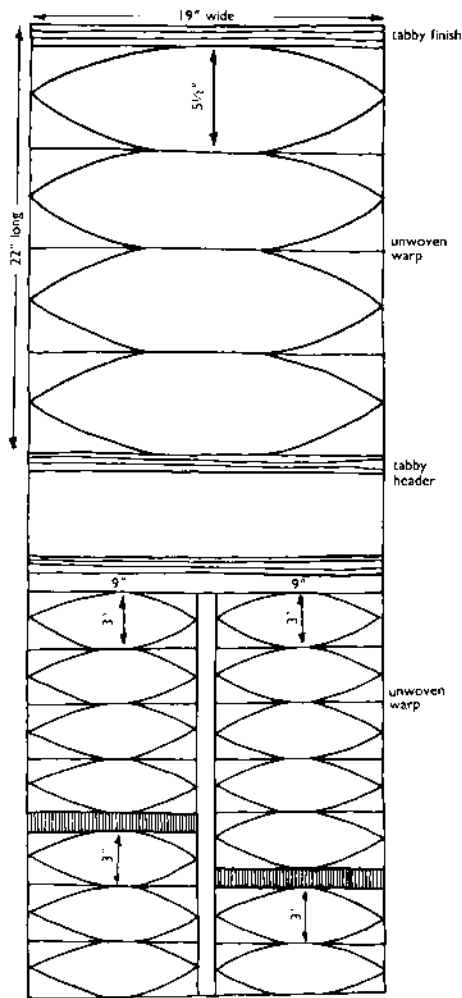


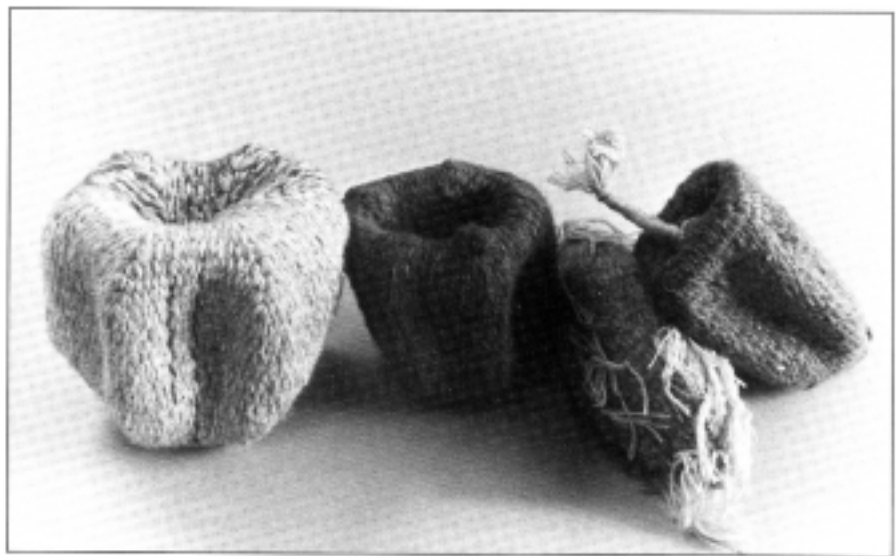
Figure 4. Loom shaped basket designs.

wrapping will secure the two sides of the handle and should be done carefully to achieve a finished look (figure 7).

With a canvas needle reweave each remaining warp end back into the basket body for a perfect finish.

Weaving the Fruit

Retie the loom and mark the center of the warp. Each half will be woven into two separate pieces of fruit. The shape of the basic segment for each fruit is the same as the shape of each segment of the basket. Proceed to weave each 9" wide fruit in the same increasing and decreasing technique as the basket.



You will need to use two shuttles and any bright colors you wish, and will weave two fruits at once.

Note that the number of segments can be different for each fruit (figure 4b). An ear of corn can be woven in three sections, a pepper in four, an apple or avocado in five, a grapefruit in six, and a stringbean can be woven in two.

After weaving the fruit, cut the woven pieces from the loom, cut each individual fruit apart, pull out any filling of unwoven warps, and proceed to pull the warp threads one by one as with the basket. The difference between the finishing of the basket and the finishing of the fruit is that the basket is left open and the warp ends are woven back into

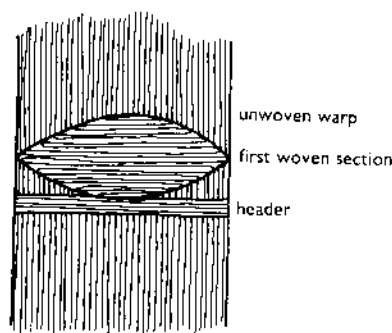


Figure 5.

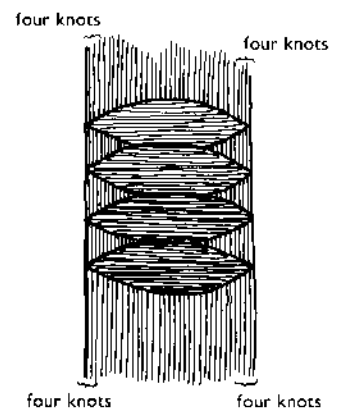


Figure 6.



Figure 7. Wrapping the handle.

each selvedge. The fruits are finished by darning the sides of each fruit together. Fruit shapes can be varied by poking in the ends or leaving them pointed.

Experiment with as many segments and colors in the fruits as you wish. Add final touches to the fruits such as stems, corn silk or other details.

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Color Theory for Handweavers

Part III: Visual Illusions with Color

by Pat Boutin Wald

COLORS THAT DISAPPEAR then reappear, vibrate, take on three dimensional form, emit light, or move in space are manifestations of visual illusion. These effects seem impossible if we think of color as an inanimate object. Color begins as a dye or pigment on a fiber, but from there, it becomes reflected light that enters a living eye and is interpreted by a human brain. Color is the dynamic process of seeing. As Buckminster Fuller might have said, *color is a verb!*

Color illusions materialize in the eye and mind of the viewer, not on the colored object itself. How color reveals itself is a result of the individual brain's interpretation of color information supplied by the eye. This personal and illusive aspect of color hold great fascination for artists.

and a cool half—red violet, violets, blues and greens to yellow green (*figure 1*). This division is not absolute. Perception of a color's temperature can change when the surrounding colors change. A red violet on an intense orange background will, in comparison, appear cool. The same red violet when surrounded by a drab olive green will appear warm.

There seems to be universal agreement on color temperature and its effect. Ancient color healers used warm hues to stimulate and cool hues to calm their patients. Today interior decorators use them in much the same manner. One of many stories that show the effect of warm and cool colors involves a group of employees in a factory. They complained that their air-conditioned rest room was very cold. The manager found that the temperature was high enough to be comfortable. Noticing the walls were painted a cool blue, he had them repainted warm brown and orange. After that, the employees said that the room was warmer, although there was no change in temperature at all.

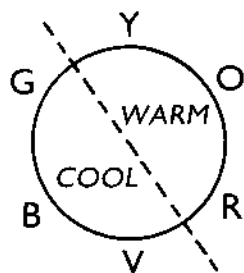


Figure 1. Color wheel divided into warm and cool colors.

Color Temperature

A very familiar form of color illusion is color temperature—a bright orange is described as *warm*, a greyed blue as *cool*. This reference to color temperature occurs so frequently that some writers include it as a fourth quality of color (along with hue, value and intensity).

To define color temperature, the color wheel is divided into a warm half—the yellow greens, yellows, oranges and reds to red violet

Size and Spatial Illusions

Color influences the eye in its determination of the size and location of objects. The size and distance of a color can appear to change when surrounding colors change. In general, a color advances and appears larger if, in comparison to surrounding colors, it is:

1. lighter in value,
2. warmer in hue, and/or
3. more intense.

A color recedes and appears smaller if in comparison to surrounding colors it is:

1. darker in value,
2. cooler in hue, and/or
3. less intense.

In textiles, the texture of a colored material can also affect these illusions. Smooth and shiny materials help a color to advance and appear

Color and the Five Senses

Different senses are often merged in what is called "cross-modal" associations. We refer to a sound as being "sweet," a sad person as "blue." There are people who possess a rare condition known as synesthesia, where perceptions commonly confined to one sense overlap two or more senses. For example, a synesthete eating spearmint might also feel cool glass columns pressing against his or her face. These sensations will repeat themselves. To true synesthetes, B-flat is always green and roast beef is an archway. Richard Cytowic, a neurologist studying synesthesia, believes it is a vestige of the way early man viewed the world before evolution of our brain structure separated the senses from each other. For most of us, however, fleeting connections between the senses will have to suffice.

larger white rough and dull materials contribute to it receding and appearing smaller.

The qualities of temperature, value and intensity *in comparison to surrounding colors* determine a color's behavior. Joseph Albers once said "color behaves in two distinct ways, first in self-realization and then in the realization of relationships with others." (Mostly it behaves according to the latter.) A color can be warm, light and intense, but it will not advance or appear larger if the colors surrounding it are equal or greater in warmth, lightness and intensity.

These general rules of spatial behavior describe how colors behave most of the time. One factor will override these general rules. That factor is *contrast*. Any color will stand out if it is in contrast to a predominant background. In figure 2, the white portions of the center bands (on the left) advance as expected. The black bands (on the right) also advance. We know that in a random mixture of color, they would recede. Here they advance because they are in strong contrast to the white background.

Overlapping and Translucency

Another form of spatial illusion creates the appearance of two colors *overlapping*. You can cre-

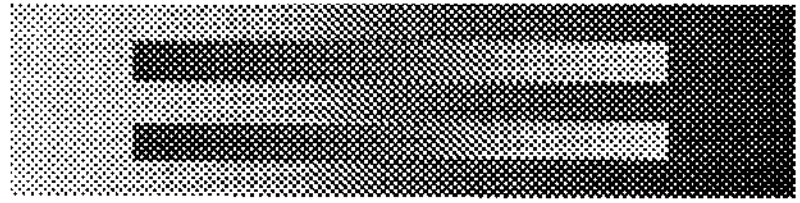


Figure 2. On a black background, white stripes advance. On a white background, black stripes advance.

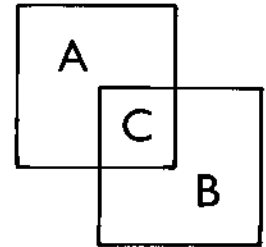


Figure 3. Pattern design where color areas appear to overlap.

ate this effect with any pair of colors. Select a pattern in which color areas appear to intersect (figure 3). In the area where they intersect, area C, place a color that would result from mixing colors A and B. Note figure 4 where A is yellow, B is blue, and C is a mixture of these two colors. If color area C appears to contain a greater proportion of yellow in its mixture then the yellow square will appear to float above the blue square (figure 4a). The greater the proportion of yellow in the mixture, the higher the yellow square will appear to float. If the mixture in area C appears to contain a proportionately greater amount of blue then the blue square will appear to float over the yellow (figure 4b). If the mixture appears to be a 50/50 blend of both colors, the yellow and blue squares will appear to intersect in the same dimensional plane (figure 4c). There is a second illusion created in this overlap. The color on top also appears to be translucent allowing the color below to show through.



Figure 4. A. shows yellow overlapping blue. B. yellow and blue intersect. C. blue overlaps yellow.

Why Hues Create Spatial Illusions

When you look at an object, the light from that object enters your eye by passing through the eye lens. The lens bends the light to form an image of the object on the retina. The nearer an object is, the more the light has to be bent to put the image on the retina. To further bend the light, eye muscles push the edges of the lens to make it thicker. You can tell that an object is near because you feel your eye muscles working hard when you look at it. Because of the different wave lengths, the lens of the eye bends blue light more easily than red. To put the image of a red object onto the retina, the eye muscles have to work extra hard, as they would if the object were near the eye. That is why red and analogous hues seem to be closer than they really are.

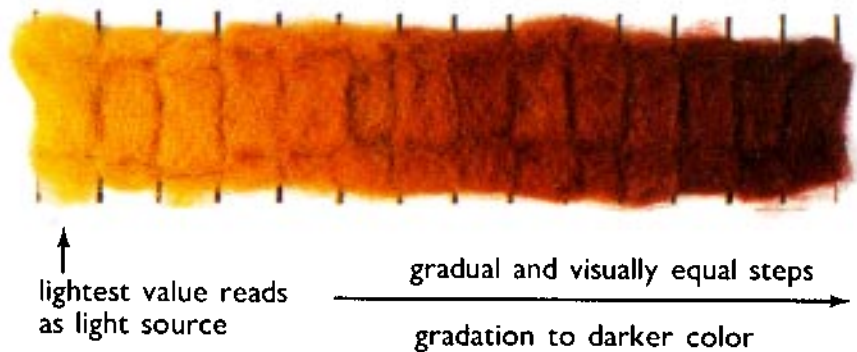
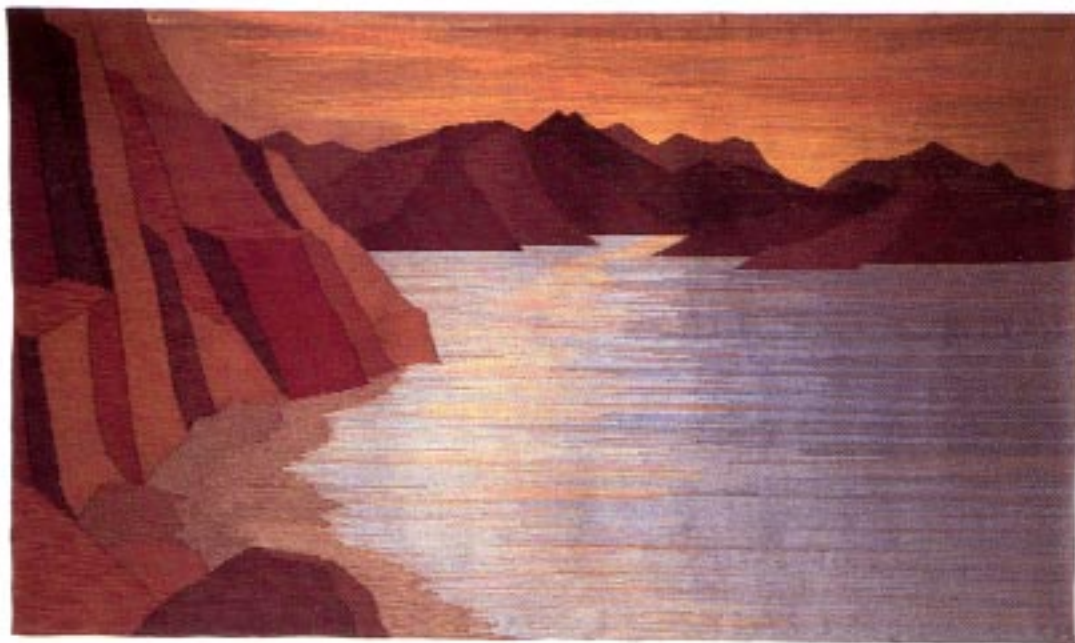


Figure 5.

"Golden Sunset," by Peg McNair. 5' x 3'. 1980.



Detail of "Golden Sunset" showing Theo Moorman technique. The inlays are each composed of a number of colored sewing threads.



Peg McNair

Golden Sunset is a tapestry in Theo Moorman inlay technique by Peg McNair. In this impressionistic landscape, the light source appears to be just behind the cleft in the distant mountains. It is a small area of intense yellow which blends into the golden yellows, oranges and magentas in the sky.

Many different colored strands of sewing thread are used together to form each weft inlay. To create the subtle color changes, Peg may change the color of just a single thread in a group of five. "It's amazing the effect one small change can have on a color." For the effect of light on the water, Peg chose less saturated tones of these sunset hues, used fewer strands of them, and mixed them with the various blues of the water. The lightest value of blue recurs most frequently where the illusory light hits the water, allowing it to blend with the light yellows and oranges. The golden aura of the ground cloth was also al-

"Sun Poem," by Peg McNair. 4'6" x 3'. 1984.



Luminosity

One of the most dramatic illusions created by color is that of luminosity. Luminosity refers to the appearance of colored light emitting from a composition. Often, other colors in the composition appear to be bathed in this light. To create this illusion, begin by selecting an area in a design to be the source of light. This area should be small in proportion to the whole piece. It should be a color that is lighter in value than surrounding colors. It also helps if it is purer in intensity.

For this illusion to be successful, the appearance that the light's hue, value and intensity pervade the surrounding colors must be created. This is achieved by combining the color of the light source with the other colors in gradual and visually equal steps. This type of gradation is illustrated in figure 5. Note that the colors near the light source will have a greater proportion of the light's color in their composition. Let's look at how these general rules were applied by two artists working with different styles and in different media.

lowed to shine through, uncovered, to add to the illusion of reflected light.

Golden Sunset and *Sun Poem* are just two of the eighty-two tapestries Peg McNair has woven. She has a very subtle painterly color sense, using fine colored threads to mix her palette of colors. Peg says she works intuitively, improvising with color as her designs evolve. However, Peg says that color theory has a firm grip on her subconscious! She uses formal color theory to help solve problems or track down the elusive "something isn't quite working" stage of some design ideas.

Stage two of color use in her tapestries involves translating the pastel or watercolor "design colors" into yarn color blends that will have the same color essence when the weaving is done. This process has evolved over 12 years. Peg comments, "The art of visualizing cannot be taught. There is no substitute for direct experience. You have to choose your colors and then weave them to see what they do to each other."

Like all her work since 1981, *Sun Poem* is woven using traditional tapestry techniques, but with weft color subtleties carried over from earlier Theo Mooman pieces. Each weft is composed of fine wool, mohair and lightly textured yarns of different colors that Peg plies together on her spinning wheel, adding the luster of surface texture to her color palette.

Suzanne Kjelland

Suzanne Kjelland's piece, *Sunscape* reflects here love of color. "Color theory is the basis of my work. The whole process is very analytical. It tells me what to do in the design process and later it

tells me why something has gone wrong." Suzanne feels this structure gives her freedom. "I tell my students that without banks there is no river and that without limitations there is no design process."

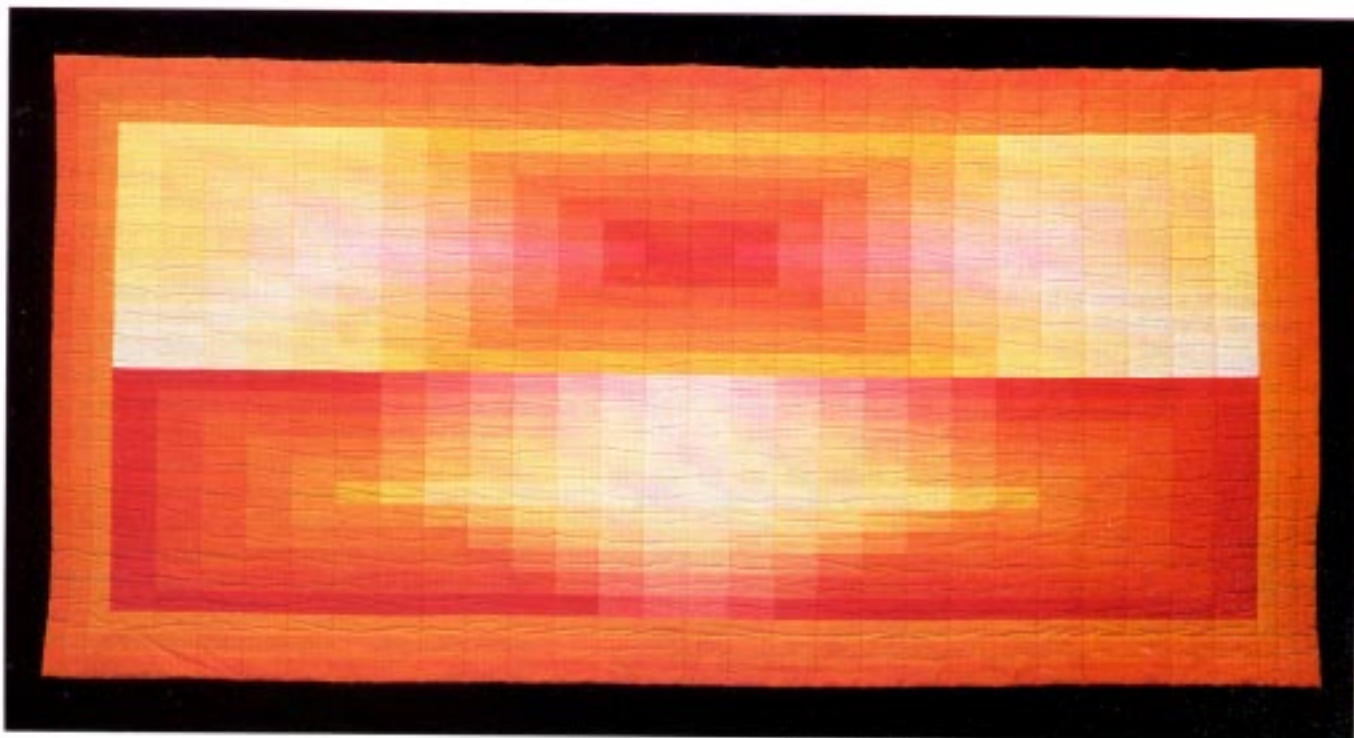
Suzanne likes to use colors few people work with including colors which she herself may have a strong prejudice against. "When success comes with these colors, it is especially satisfying." She begins by dyeing a series of gradations. "I like to start with order and then introduce contrast. If I start with contrast first, I'm lost." Suzanne has dyed as many as nine hundred colors for a single quilt design to achieve her desired effect. The value gradations she used create a sense of light in her work. She finds this a powerful and positive effect, both as an expression of herself and as an experience for the viewer.

In the quilt, *Sunscape*, illumination is created in an abstract geometric pattern. The many color gradations (yellow to orange to red to magenta) were created in the dyepot. Suzanne combined two hues, yellow and magenta, according to the Weber Fechner Law. This law creates visually equal steps by combining colors in proportions based on a geometric progression.¹ In these gradations the light appears to flow from the lightest value to the darker colors. The contrast between the upper and lower halves of the quilt shows how much more dramatic the effect is when the gradations radiate from a single point of light, as they do at the bottom.

As to the effect of color temperature, Suzanne commented that just looking at the reds and oranges in this quilt make you feel 10° warmer!

1. You can read more about the Weber Fechner Law in Albers, Josef. *Interaction of Colors*. New Haven: Yale University Press, 1963. pp. 54-58.

"Sunscape," by Suzanne Kjelland. 8' x 4'. 1982. Collection of Mary and Hal King. Photo by Ken Wagner.



Boundweave

Learning from the Past



by Phyllis Waggoner

LAST FALL, I attended a chamber music concert where a Mozart string quartet was performed. The program notes told how Mozart, in his early work, followed the musical forms set by his famed teacher Haydn and that Haydn in turn, referred to the work of his contemporaries and predecessors as he developed the classic string quartet. I thought about how the process of studying the past and recycling it into one's own work is common to all creative disciplines.

Boundweave has taken me on such an adventure. It began with my search for a loom-controlled threading that would produce flame stitch-like color effects. I preferred a weft-faced weave because it gave me more control over the manipulation of color relationships. After much experimentation, reading and discussions with other weavers, I found that by repeating a treadling sequence over and over, a boundwoven textile could be woven on many different threading systems. I also learned that the point twill and overshot drafts provided as many design blocks as there were shafts in their threadings, thus providing the weaver with an optimum number of possible color combinations. Eventually I encountered bound rosepath and have found in it a limitless opportunity for variety in design and artistic expression.

Rosepath is one of the Swedish "art weaves," with a history that dates back over four hundred years. Its popularity stems largely from its potential for creating colorful patterns, including the rows of stylized flowers for which it is named. The rosepath threading draft is a point twill followed by an end on the first or last shaft, depending on where the threading begins. The number of



Bound rosepath coverlet woven on a 3 shaft rosepath threading, from Skåne, Sweden, in the collection of The American Swedish Institute, Minneapolis. Note back view showing long weft floats.

shafts that can be used for the threading ranges from three to eight, with the eight end repeat on four shafts being the most common. It has been interesting to learn that in Sweden this popular threading has many distinct treadlings and names. With a balanced tie-up, it is woven with one weft as a twill and known as *Korndräll*. Rosepath woven overshot-fashion with a pattern weft and tabby binder is known as *vanlig rosengång*. Rosepath treadled on opposites and woven with two different colored wefts is called *moisatsrosengång*. When the shafts are treadled so that the weft goes over only one warp at a time, the weave is called *bunden rosengång*.

A close relative to bound rosepath is *krokbragd*, a Norwegian boundweave. The most common threading on which it is woven is a three shaft point twill with one shaft treadled at a time. Double *krokbragd* is woven on three- or four-shaft double-point twill drafts, also with an unbalanced tie-up. In all probability the "purists" would say that *bunden rosengång* and *krokbragd* are the only true forms of boundweave.

As part of my research on boundweave I had the privilege of studying the bound rosepath textiles in the collection of The American Swedish Institute in Minneapolis, Minnesota. It is difficult to describe my emotions as I examined these old treasures which are so finely woven and well worn. Their makers were skilled in spinning, dyeing and weaving and their work continues to instruct those of us who see it today.

Many of the pieces in the Institute's collection appear to have been used as wall hangings or coverlets. Some were woven in two sections, each about 22" wide, and then seamed together. The "hand" of the coverlets is supple, almost



Bound rosepath coverlet woven on a 4-shaft rosepath threading, from the collection of The American Swedish Institute, Minneapolis. Each pattern is created using only two colors. Note back side of weaving on left, showing long weft floats.

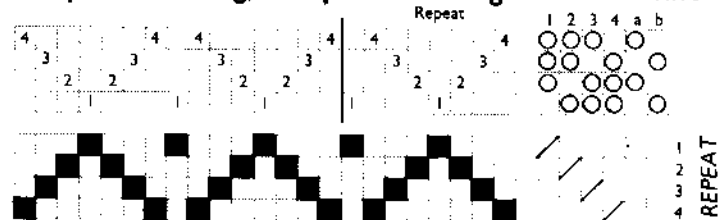
spongy, while the wall hangings are more firm. The wefts for all of these pieces is single spun, usually wool. Occasionally a natural colored linen is also used. The warp is either plied linen or cotton about the grist of a 10/2 linen, with setts ranging from 10 to 12 ends per inch. There appear to be several distinctive pattern systems at work, such as the use of simple 2-color patterns separated by areas of a single color, more elaborate bargello-like color sequences, and extensive use of sampler-like compositions showing a variety of patterns.

In my library I have gathered together a number of books with sections on bound rosepath, many of them published in Sweden. Although I am not fluent in Swedish, I could easily understand the pictures and diagrams. A 1983 Swedish publication, *Bunden Rosengång*, by Inga Lisa Petersson and Birgit Jansson has been an especially valuable resource. It contains many beautiful photos of antique bound rosepath coverlets as well as contemporary reproductions. At first I was puzzled by some of the old treadling notes included in the "Gamla Mönster" ("old patterns") chapter. They showed the regular boundweave treadling sequence of lowering one shaft at a time, using counterbalanced looms with a sinking shed. Occasionally, however, two treadles were tromped simultaneously to make a tabby shed. I finally realized that this was a shortcut for weaving two sheds of the same color with one shot. Whenever the pattern called for a color to fall in both sheds 1 and 3, tabby *a* was treadled. Tabby *b* was treadled if the same color was to be woven in both sheds 2 and 4. This condensed treadling sequence saves yarn and weaving time and equalizes the tension difference

that exists between the front and back. After experimenting with this "tabby substitute" I learned that boundweave need not be treadled faithfully in the same sequence. As long as all the shafts for one row are eventually covered, the treadles can be tromped in any order, and when possible, a tabby treadle inserted. This procedure is useful when weaving areas of a single color, because weaving them in plain weave changes the texture too drastically. With a four shaft threading, treadle 1, *b* (2,4), 3 or 2, *a* (1,3), 4 with one weft.

This treadling short cut reminded me of something Peter Collingwood wrote in *The Techniques of Rug Weaving*. He points out that a straight twill threading on four shafts can be woven as a three-shaft point twill krokbragd by lifting shafts 2,3,4/1,2,4/1,3 or 1,3,4/1,2,3/2,4 (jack loom, rising shed). In essence the tabby treadle connects shafts 1 and 3 or 2 and 4, causing them to operate as if all of their warps were threaded on one shaft, perhaps an early form of shaft-switching. When applied to the four-shaft rosepath threading, reducing it to a three treadle

Rosepath Threading, Tie-up and Treadling for Boundweave



These four weft shots pack together to form one row of weaving. Therefore to actually weave a pattern like the diagram, the color/treadle sequence would be:

- 1D 2L 3L 4L
- 1L 2D 3L 4L
- 1L 2L 3D 4L
- 1L 2L 3L 4d

When the same color is to be woven on both shafts 1 & 3 or 2 & 4, substitute a tabby treadle.

Tabby *a* replaces treadles 1 & 3 and tabby *b* replaces 2 & 4.

- 1D bL 3L repeat
- 2D aL 4L repeat
- 1L bL 3D repeat
- 2L aL 4D repeat

This shortcut saves time and yarn.



If treadle 1, b, 3, sequence is repeated, one can weave the same patterns that are possible with a 3-shaft krokbragd threading.



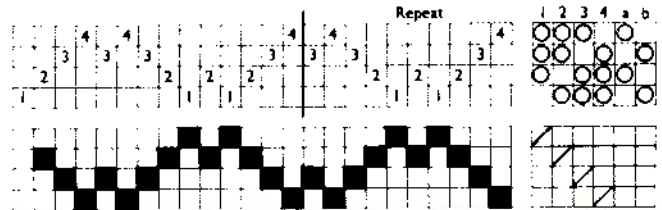
A treadling sequence of 2, a, 4 produces 3-shaft double krokbragd patterns.



Contemporary 4-shaft double krokbragd wall hanging, woven in Norway, from The International Design Center, Minneapolis. Linen warp, wool and linen singles in the weft.

for the absent wefts. Watch the back of the weaving when shuttling the wefts in this manner because occasionally the repeated "dropping" of a weft will cause a warp end near the selvedge to be missed entirely. However the selvedges are woven, care must be taken that consistent actions are practiced so that the finished piece is woven the same way throughout.

I was not able to satisfactorily determine the selvedge shuttle sequence on the old bound rosepath coverlets. Undoubtedly they were not woven with a floating selvedge because the patterns extend over the edge, and with a floating selvedge an extra block is created that is not always incorporated into the selvedge block. The



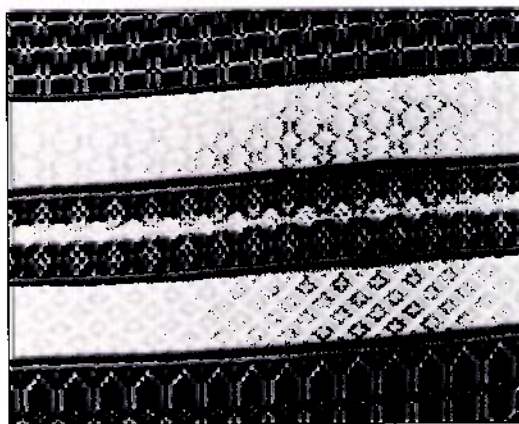
sequence, the draft becomes a three-shaft double krokbragd.¹

My early bound rosepath rugs were woven before I had learned about the option of substituting a tabby shot within the treadling sequence. Designing the patterns was great fun, but after the rugs were removed from the loom I discovered a tension problem which caused them to curl at the ends. The culprit is the nature of the weave structure, with the weft passing over each warp individually on the front and floating over many warps on the back. My efforts to control this problem included fine-tuning the beat, adjusting warp tension, modifying the warp/weft ratio, bubbling the weft differently and blocking the finished rug. All of these things were helpful but the real secret was to use a tabby shot whenever possible during weaving. This equalizes the tension between the front and back and reduces the number of weft floats. The three shaft krokbragd three-treadle sequence contains a tabby shed; hence, pieces woven on this threading do not curl.

Over the past two years I have woven a series of rugs on a 12/6 seine twine warp set at 8 e.p.i. and threaded in a 4 shaft rosepath draft. A floating selvedge is added to keep order among the wefts as they appear in the various sheds at the selvedge. When weaving with a floating selvedge, the shuttle enters the shed over the floating selvedge and exits under it. There are numerous ways to deal with the wefts at the selvedge which must be worked out during the weaving. One solution is to carry only the color that appears in the block at the selvedge over the floating selvedge and exit under it while bringing the remaining wefts under the floating selvedge, both as they enter and exit. This procedure requires the floating selvedge to be wrapped periodically with the "selvedge" color to compensate



Fragment of a 4-shaft bound rosepath coverlet, from the collection of The American Swedish Institute, Minneapolis. Some patterns were woven using three colors, others with only two.



Four-shaft bound rosepath coverlet, woven in two sections and sewn together, from the collection of The American Swedish Institute, Minneapolis.

1. Elmer Hickman, in his 1948 monograph on *Krokbragd*, comments about the lack of written information about this weave. He says, "... it is missing from practically all the Swedish weaving books, even though the back cover of the Swedish publication *Palmgren's Värbok* shows an excellent color reproduction of Krokbragd in 3 harness weave." The front cover of this book shows a 4 shaft bound rosepath weaving. It appears that the front and back covers were woven on the same warp. The back cover was probably treadled with the 3 treadle sequence that uses a tabby shot.



antique pieces were usually woven with only two colors at a time and so the weft arrangement at the selvedge was woven in their natural sequences. Because the wefts are so fine the different color combinations and floats at the selvedge are not visually bothersome.

The weft I used in the rugs illustrated in this article was a two ply mill end, 900 yards/lb, which was hand dyed either with synthetic or natural dyes. In her workshop on loom-controlled designs for rugs, Clotilde Barrett suggested pre-washing rug wool wefts. This is especially useful for mill ends and coned yarns that have been compacted. The yarns bloom, making the surface of the textile very pleasing in appearance and texture. The use of one type of weft for the entire weaving contributes a unifying element to the piece.

Folk art of all media and genre provides me with inspiration for pattern and color combinations. I have found the borders of oriental rugs to be helpful in visualizing ways to combine patterns of different scale and complexity. One of my favorite books for ideas is *Spanish Textile Tradition of New Mexico and Colorado*, published by The Museum of International Folk Art in Santa Fe, New Mexico. Since my tendency is to use every possible pattern and color combination in one piece, this book helps me exercise restraint while visualizing different pleasing compositions by illustrating so many patterned rugs within its pages.

Most of my designing is done at the loom. This is risky business because one must remember that usually the finished piece will be viewed from a greater distance than that from which it is seen by the weaver. Color and pattern combinations that look interesting up close will often blend together as the viewer moves farther away. I have found value contrast to be the most impor-



Far left: Detail of boundweave wall hanging woven by the author on the same warp as piece at right. Some of the patterns were woven using the tabby shortcut.

Boundweave wall hanging woven by the author on 4-shaft rosepath. Warp is 12/6 seince twine, sett at 8 e.p.i. Weft is 2 ply wool. The irregularly dyed weft is reminiscent of color variations found in oriental rugs. Hearts are traditional Scandinavian motifs. Finishing technique is the woven edge from Baizerman and Searle's *Finishes in the Ethnic Tradition*, p. 10.



Boundweave 4-shaft rosepath wall hanging woven by the author. Weft yarns are colored by natural dyes. Note how value contrast in the weft produces eye-catching patterns.

tant color dimension to consider when choosing colors for this weave. For those who have read *Drawing from the Right Side of the Brain*, let me suggest that designing at the loom is a good right-brain exercise. The weaver must visualize which sheds the colors must appear in to form a pattern and make spatial judgements about extending the designs relative to the whole composition.

Finally, I encourage the weaver to consider the warp color and finish as important visual elements within the total appearance of the finished piece. The warp color should be integrated within the color palette of the weaving and the warp finish should reflect the character of the weaving. If, for example, fringes appear to be too ponderous or fussy, then perhaps a Philippine or woven edge would be more suitable. When finishing edges, work on the *wrong* side of the rug because it is easier to draw the warps back into the piece from this side.

One of my favorite college courses was History of Furniture Design. In our study of 18th century furniture, we learned how the refined designs created in Paris were interpreted in the provinces far from the "style center." The provin-

cial craftsmen used local materials and adapted the Louis XV style to suit the needs and tastes of their customers. Often I am reminded of this phenomenon when I see influences from distant style centers evident in creative work. It is intriguing to study the evolution of boundweave from its past to the present, both in Scandinavia and on this continent.

Last summer I entered two bound rosepath rugs in the 4th Annual Weaving in the Nordic Tradition contest held at Vesterheim—The Norwegian American Museum in Decorah, Iowa. I was honored to learn that I had been awarded the first prize. It was interesting to note that there were many bound rosepath and krokbragd entries, indicating that many weavers are interested in boundweave. Here is one more instance of a venerable old art form that is interpreted by contemporary artists and incorporated into their work. This summer Vesterheim is offering a class in Krokbragd, July 18 through July 23, taught by Norwegian weaver Astrid Lirhus.

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Sock Top Bathmat

woven by Paula Pfaff

Cotton sock tops are a novel rug weft material, and produce a thick, fluffy rug or bath mat.

The sock top loops are chained together (*figure 1*). Pull on the loops when chaining them so the knots will flatten out as much as possible. The loops add texture to the weaving, becoming a prominent part of the rug's design. A chain of 20–25 loops is an easy-to-handle weft long enough to fill up a rag shuttle. The weft chains can be joined to form stripes or a random color pattern. The rug pictured here used two shades of blue, two shades of gray, white and off-white in both random and solid-color striping.

A small heading in carpet warp was woven at each end of the rug, and the cotton warp fringe was finished in overhand knots.

A 10 e.p.i sett made a fairly thick rug. Any sett from 6 to 10 e.p.i can be used. The thickness of the rug and the amount of weft material needed increase with the lower setts.

Sock top rugs are very durable. They can be

washed in the washer with warm water and a mild detergent, and hung to dry.

Size: 30" x 48"

Warp: cotton carpet warp (1 tube).

Weft: 4 pounds cotton crew-sock tops from Cotton Clouds.

Sett: 10 e.p.i., 30" wide.

Weaving: Use a plain-weave or twill threading and a plain-weave treadling. Weave a one-inch heading in carpet warp before starting with sock-top weft. End with a carpet warp heading. For best results, keep the loom tension very tight and beat before and after each shot. Measure weaving with tension released. Allow for 10% shrinkage.

Sock top samples in 40 colors are available for \$2.00 from Cotton Clouds, Rt. 2, Desert Hills, Safford, AZ 85546.

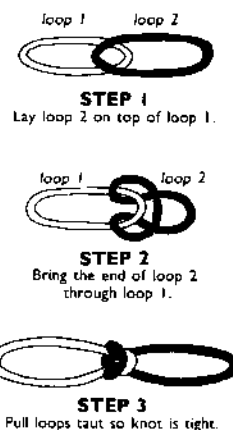


Figure 1. Chaining the sock top loops



Sauna Towels

woven in soft, absorbent tow linen

by Judy Freeberg

FROM THE TIME I started weaving, my husband has stood patiently by while I accumulated assorted looms, weaving equipment and stockpiles of yarn. He has been my critic, consultant and source of encouragement for both the experimental projects that I keep in the closet and for those that can be proudly displayed or worn.

I decided it was time to weave something for him. A garment or a table runner did not seem appropriate. He had built a sauna in our basement, so it was logical for me to weave towels with Finnish linen. Tow linen is very soft and absorbent and would add color to the sauna room. Because a sauna is hot I chose to use cool colors of blue, green and purple.

The natural unwashed tow linen yarn is usually recommended as a weft yarn only. With some patience and special handling, it can be used as a warp. On some looms it works out best to beat with an open shed when using the #4 tow linen as warp. A lot of lint from heddle and reed abrasion appears during the weaving, and to keep this at a minimum, it sometimes helps to spray the warp with water or spray starch during the weaving. The lint collects where there are thick parts on the thread, so those areas have to be watched for breakage. Little knobs can be gently removed with your fingers.

These thirsty linen towels become softer, more absorbent and more beautiful with use. Although tow linen textiles are washable, a great deal of lint comes off during the first few cycles. They should be washed separately from other clothing for several times, and never with synthetics. Hang-dry linens and press with a hot iron while still slightly damp.

For three towels in a 2/2 twill weave, I used five 8 oz. skeins (3170 yards) of tow linen from Finland (available from Schoolhouse Yarns and Miranda Imports). Finished size of each towel is 25" wide and 45" long.

Warp: 180" long (includes 36" loom allowance)

Color order in Warp:

blue-50	purple-30
grey-3	grey-3
green-12	green-24
grey-3	grey-3
purple-24	purple-12
blue-3	grey-3
grey-80	blue-64
blue-3	

Reed: 12 dent reed

Sett: 12 e.p.i.

Width in reed: 26 1/2 inches—317 warp threads

Color order in weaving:

4" blue	1/4" blue
1/4" grey	2 1/2" purple
1" green	2" green
2" purple	1/4" grey
1/4" blue	1" purple
28" grey	6" blue

In addition to the three towels, weave an additional 3" for hanger loops.

Weaving: A lot of lint tends to collect at the thick parts of the warp threads, but it can carefully be picked off while weaving. Broken warp threads can be a problem, but if the fell line is kept close to the beater (warp will be advanced often as a result) there will be less friction placed on the warp threads when beating.

Finishing: From the 3" strip, fold each cut warp edge to the center, then fold in half, stitch open edge by hand or machine. Cut three 8" lengths to form a hanging loop. Make a 1/2" hem at the end of each towel, stitch by hand or machine. Insert the cut ends of the loop into the top hem before stitching. Machine wash separately (more lint) in warm water. Dry in dryer, cool setting, until damp. Press with a hot iron.

FASHION TRENDS

by Susan Hick

SUMMER

SPRING AND SUMMER evoke thoughts of freshness and renewal, nowhere more evident than in the world of fashion. Renewed are the holdovers from last season. The turtleneck has cutaway shoulders. Leggings and stirrup pants are not completely out, despite what the fashion gurus may say. Neither are ample big shirts and roomy knit tops, although now these might be belted or have the front shirttails tied above the waist. Returning, too, are sarong skirts, halters, and dusters.

Fresh are body-conscious clothes, accomplished with bared shoulders, emphasis on the waist or an elongated torso, fit through the hips, or merely aiming toward slimness in general. Any one or all of these qualities may be incorporated into a single outfit, so at least one part of the body looks slim and sleek. None of this means, however, that comfort and ease are sacrificed.

An obvious way to show off the waist is to belt it, and it seems that every piece of clothing can have one. Some belts are wide, even wrapped such as the modified obi sash; others are narrow. One could choose a shorter sweater or a cropped top that accents the midriff. Try hip ribbing on skirts or pants. A wrapped sarong-style skirt with its draping is a natural, or simply tie a triangular



scarf at one side and let the third point hang down at the other.

Those of us without great waists can accent the area without distress by utilizing such illusory techniques as artfully placed tucks and pleats, gentle shirring, or just plain clever seaming details.

Uncovered shoulders come courtesy of bandeaux, bra tops and straplessness, and the previously mentioned T-necks and halters. Conversely, shoulders on dresses, sweaters, and jackets are slightly extended and rounded, with the gentlest of padding.

Jackets are meant to be worn not only with skirts and pants but also over dresses and jumpsuits. They can be short. They can be long and fitted over the hips. They can be cut with the ease of a shirt and perhaps have an encased drawstring. Then again, they might be fitted through the bodice and end in a saucy little peplum. Sleeves range from fitted to just wide enough to roll up a bit, to those influenced by kimonos. The newest jackets are collarless with round necklines and button fronts, or are cardigan-style. Once again the long ones go with knee-high skirts or shorts.

Avant pants are wider, sometimes with a hint of tapering and other times flared as for sailors. Even dhoti pants are shown. The pants usually stop just short of the ankle. Shorts are for all facets of life, sports and city wear and evenings. Choose from all variations, including tight bicycle shorts, bermudas, and culottes. The most recent of the latter are wide-legged, cut on the bias, and worn with short jackets.

These days sweaters and sweater sets are intended for wearing the year around. Thin ones are tucked into waistbands; bulkier sweaters, of course, stay out. The matching duos may both be cardigans, the one worn closer to the body remaining buttoned. No matter what the style, the inner sweater is either belted or tucked in.

For several seasons printed textiles have been urged upon us. To take advantage of them

we can borrow their colorations. Notice that a lot of the backgrounds are strong, bright candy colors—lilac, pink, red, orange, yellow, green, teal—plus white. Pick one and add splashes of some of the others or add lime green, fuchsia, rich blue, antique gold, jade, or turquoise. Then use the print to line a garment.

If these mixtures are too outrageously jarring to suit your eye, employ the same method to put together clear pastels and thus achieve subtler effects. Still color-shy? Use the neutrals to tone down the others or use them alone: ivory, sand, taupe, silver, stone, charcoal, navy. For the ultimate de-coloration combine black and white, crisp and spare and classic.

Most of the excitement in fabrics for Spring and Summer comes from color, which goes into coordinating stripes and plaids, small checks and large checks, and positive/negative effects. Shininess continues to come up a winner. Jersey is favored because it lends itself so well to the suppleness of the clothes. Denim makes a comeback.

Textures are hard to find. There are crinkly, deliberately wrinkled linens and silks, and there is a pebble-surfaced fabric which is the result of a closely sett broken twill rib weave. Add a few Bedford cords, piques, and laces, and that's about it.

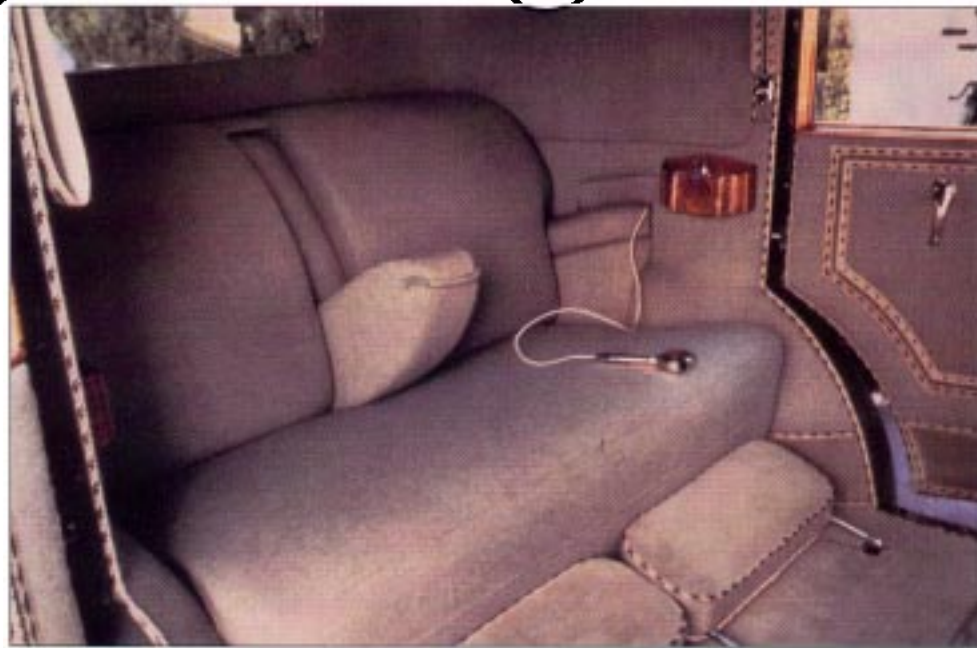
So experiment with pattern mixes, use jersey as trim, pair a handwoven with denim, or try for a denimlike look in something other than cotton.

Many of the fibers used now create things to wear nine months of the year, making fabrics quite transitional in nature. One thinks here of the very lightweight "tropical" wools, gauzes and crepes. Even cashmere's season is extended. This is good news for those who have to live with short Summers. Less linen is shown this time around.

Over all, the fashion gimmicks are few. Clothes today are meant to show off the body more than in the recent past. In spite of that observation, from lean to voluptuous there is a fit for every figure.



Custom Fabric for a Classic Cadillac



by Jacquie Kelly

WHEN THE OWNER OF a classic automobile decides to restore it, he is faced with many problems, not the least of which is where to find fabric to match the original upholstery and trim. The possibility of getting just the right material from a decorator is pretty slim, and the amount needed is too small for a mill to set up a run. Steven Nanini found all this out when he set out to restore his 1930 V-16 Cadillac Landaulette. After contacting several fabric suppliers, including textile mills, without success, someone suggested he talk to a handweaver. This

led to the most interesting year of weaving I've ever had, and the most challenging.

A Landaulette is a limousine with a fold-down top over the passenger seat only. This particular car uses the same fabric for all the upholstery (except the chauffeur's seat), as well as the headliner and rear door panels. In addition, there are several related styles of decorative bands, called "windlace." These bands form the door and window seals, carpet and upholstery edgings, and trim the doors and the back of the chauffeur's seat. Steve brought me a footrest, which had carpet (fortunately still available com-

1930 Cadillac Landaulette.

mercially), upholstery and cording, that provided a fair sample of what needed to be replaced. He asked, "Can you duplicate this?" At this point all I could do was say, "I think it's possible" and arrange to obtain samples for analysis.

Analyzing a well-worn piece of upholstery is very different from the *pickout*¹ examples shown in books, and from most handwoven fabrics. This upholstery was a very tightly woven fine check of two shades of gray wool, producing a fairly simple color effect. The first obstacle was the extreme density of the fabric. Not only was it very closely sett, but over the years the wool yarns had compacted until they were almost felted, especially on the back side which was mounted directly over a horsehair pad. To more clearly see the structure, I shaved both front and back of a 2" square piece, using an old electric razor to remove the fuzzy surface.

I examined the cloth with a magnifying glass, locating the repeats and marking a section of about two repeats for pickout. Using a 10 power linen tester, I selected several samples. Each weft intersection (or was it a warp?—there was no way to tell) was recorded as over or under the warp, noting the color of each end and pick, as well as the structure. After a couple of pickouts produced the same results, indicating a 12 end, 12 pick repeat threaded and woven alternately dark-light, I fed the results into my computer's analyzer program. To my great surprise, it said I needed 9 shafts and 8 treadles. This seemed most unreasonable, so I went back to the samples for yet another pickout. Sure enough, one pick was wrongly recorded. I went back to the computer again, and this time it showed 8 shafts and 8 treadles. I confirmed this result by double checking the pickout chart, and then by doing a manual analysis. Only 8 shafts and 8 treadles were required for this weave, but it certainly was a strange looking draft!

When you stop to realize that this first draft is from start to finish of the pickout, which may have been begun anywhere within the repeat, both warp- and weft-wise, it is not surprising that some rearranging is needed before it is ready to use. Computer analysis is great for showing how many shafts and treadles are needed for a structure, but the threading may very well not be the one you want to use. In this case, rotation of warp and weft to a new starting point produced a threading and treadling draft of a manifold twill. The tie-up is rather unusual. It is related to double weave, and causes only 8 of the 12 ends in the repeat to appear on either side, with more light ends on the face and more dark ends on the back of the fabric. Therefore a drawdown, whether of structure or color effect, does not give a good visual representation of the fabric.

Analysis of the windlace posed some different problems. The pattern is of very short pile loops in black and gray, about 30 per inch, and was readily charted on graph paper. Relating the

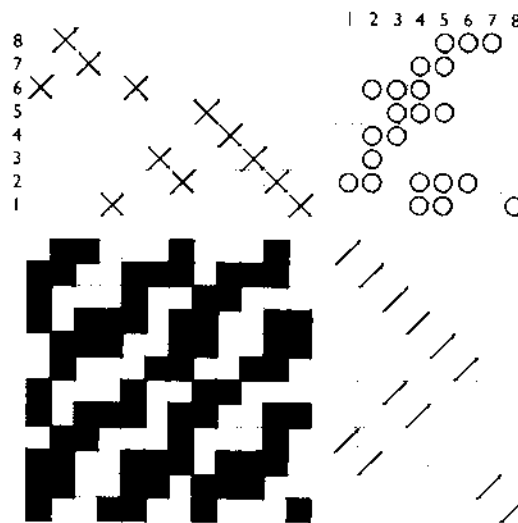


Figure 1. Draft as derived from the pick-out. The structure is correct and identical with that of figure 2, but entering and treadling orders are not the same.

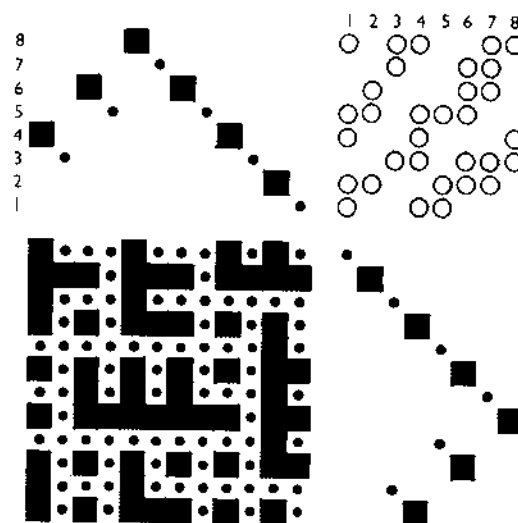


Figure 2. Revised draft with light and dark warps and wefts indicated. Drawdown shows color effect, not structure.

pile warp to a ground warp of cotton, an overlay warp of shiny rayon and weft-faced cord between sections on the wider bands was more difficult, especially at the beginning when I had only the very worn cording from the footrest to work with. Later I obtained samples of the other types of windlace, most of which were in pretty good condition.

The main pattern element, used in all of the windlace, was 7 units wide and 18 rows in length, combined with various bands of plain pile and "satin" cords. The structure of the windlace required three separate warps, and each end of the pile warp would need to be tensioned individually. Tracing the interlacement of these



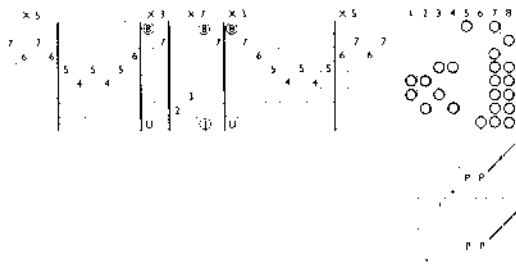
Figure 3. Basic pattern chart for the windlace. Used in various combinations for all six types of trim.

1. "At times, one is faced with a swatch or small sample of already woven goods from which a draft must be reconstructed so that the weave may be reproduced as is or adapted in some way. The analysis of the sample is called *picking out*, and it involves literally picking out the yarns from the swatch in the exact order in which they were woven and writing the weave draft from this by indicating warp risers and sinkers on paper exactly as they appear in the sample." (Emphasis added.) Allen Fannin, *Handloom Weaving Technology*, 1979.

Clockwise: Upholstery fabric; small round cording (carpet binding is the same but has only one tape edge); lap robe trim; door trim; rear window seal; flat trim for door panels and back of chauffeur's seat; trim for hand grips.



Figure 4. Draft for small round windlace. Pile warp is threaded on shafts 1 and 8 in separate heddles; "U" indicates open-top heddles for solid gray stripes. The overlay warp is on 2 and 3, with borders for the pile section on 4 and 5, both of sewing thread. The 10/2 ground warp is threaded on shafts 6 and 7. Picks 1, 2, 6 and 7 are ground weft of 10/2; 3 and 8 are pick-up only; 4, 5, 9 and 10 are sewing thread.



three warps was very difficult, and since it appeared that I would not be able to exactly duplicate the original structure with available equipment, I concentrated on copying the appearance of the original in a structure that could be woven on one of my looms.

Working with the narrow cording, I eventu-

ally devised a draft on 8 shafts which controlled everything except the pile pattern itself, which would have to be woven as hand pick-up. Since forming the pile requires inserting a series of fine rods in several successive sheds anyway, this only meant that those rods would be used to pick up the pattern as they were put in place.

The next step was to make samples of both the upholstery and the windlace to confirm the accuracy of the analysis and drafts. I began with the upholstery, using some 2/18s and 2/20s worsteds which were on hand. These were near enough in size to approximate the original yarns, and could be finished to check shrinkage and fulling.

First, samples of the windlace were done on a table loom, with both the ground and overlay

warps wound together. The pile warps were suspended over a makeshift second back beam, each end on a weighted bobbin. Even the narrowest windlace, only $\frac{1}{2}$ " in the pattern part, required 22 bobbins, and there was a lot of snarling as the work progressed. A better solution would have to be found, especially since the widest pieces would require 60 bobbins. But the drafts worked, and I knew that I could weave both upholstery and the windlace.

Now my task was to find yarns as close as possible to these original ones. The search took several weeks, and required contacting some 40 suppliers. There is not a great variety of really fine wools available to the handweaver in this country, and at the same time, the number of shades of gray is far greater than I would have believed. The color of the upholstery yarns had to go with the carpet which was purchased from the same company which had made the original, and was the best match available today.

Two yarns were used in the original upholstery fabric: a 2-ply marl of natural and light gray worsted, and a darker woolen singles, slightly heavier. Both were very fine: the 2-ply about 2/28s to 2/32s, the singles about 1/16s. The pile warp for the windlace was 2 ends of extremely fine 2-ply wools, but sampling showed that yarns suitable for the upholstery would also work. The ground warp was 10/2 cotton, readily available, but the fine rayon overlay warp was impossible to locate, so a highly mercerized cotton sewing thread was substituted, with good results.

To try as many combinations as possible, I ordered one each of the smallest put-up of yarns I thought might work, including sizes from 2/15s to 2/28s and the few fine singles available, and wove samples. The yarns chosen to weave the reproduction fabric were a 2/18s light gray and a 2/20s dark gray, not quite the same size as the original, but a very good color match for the new carpet.

The yarns selected for the upholstery were worsted, and could not be made to full so closely as the original. Therefore they were sett at 56 e.p.i., (alternately 3 and 4 in a 16 dent reed), which yielded very close to the 60 e.p.i. of the original after finishing, although the cloth was not as thick.

The very dense sett and the 25 yard length of warp needed raised another round of problems to solve. There were nearly 2,600 ends in the warp, and the close sett meant a lot of friction and wear on the shafts. To spread the warp ends evenly on the shafts, I rewrote the draft for a straight draw on 12 shafts. This also simplified threading and treadling. A production sample, 18" wide and 2 yards long, had frequent breakage on the selvages and quite a few ends in the center of the warp just came apart, apparently from abrasion. Unless the warp was very tight, many sheds were not clear, leading to breakage when a shuttle hit an end left in the middle of

the shed. The selvedge problem was cured by adding 4 ends of 10/2 cotton on each edge. These were wound on a bobbin weighted to the same tension as the rest of the warp, threaded on shafts 2 and 8. The problem of abrasion within the warp was solved when Texsol[™] polyester heddles were substituted for the cotton string heddles which I had been used for the sample yardage.

Anyone who has put on a long, wide warp will know the problems in actually winding on this warp. There was no question that the warp had to be beamed before threading: one pass through the heddles was enough to demand of the fine, soft warp ends. Using a large vertical warping mill, the warp was made in six chains of 432 ends, each weighing just over two pounds, using eight cones of yarn (four each of light and dark gray) at once. In preparation for beaming, the warp was spread in a raddle, and a stout rod slid through the end loops and snitched to the warp beam apron.

I recruited my husband and daughter, both experienced in beaming, to hold the warp, and started winding on. In just a few minutes we all knew this was not going to work: There was simply too much yarn placed too closely together to maintain an even and adequate pull on the warp. To provide this pull, constant tension on all chains was needed. An article in the Scandinavian weaving magazine *VÄV* (No. 2, 1984) provided the idea for a way to do this.

Each chain was led from the raddle across the room and over the castle of another loom, where it was hitched to one side of a horseshoe. The other side of the horseshoe held a stout bag containing weights. After experimenting, we ended up with five pounds of weights in each bag. There was room to wind on about a yard of warp before the horseshoes got near the top of the castle. The hitches were undone, warp unchained and rehitched, and the lease sticks were moved back, ready to wind on another yard. This was still a slow process, but it was steady and consistent. Since the warp was under constant tension except for the time the chains were being let down (only one at a time— $\frac{1}{6}$ th of the warp), the finished warp was very even and wove off smoothly. The use of a temple while weaving kept draw-in to a minimum.

Usually I finish handwoven fabrics at home, but it was not possible with this yardage. There were twenty-four yards of raw fabric, 45" wide, which had to be finished in one piece, since there was no way for me to tell where it would be cut by the upholsterer. A commercial laundry could handle the quantity of material, but I worried about how it would come out. Talking with the manager of a local dry cleaners encouraged me. He was intrigued by the project itself and queried me at length on just how I normally finished similar cloth. He said he thought he could duplicate the results, even to air-drying before pressing. I delivered the fabric to him on a Saturday,

feeling as if I were sending a child alone into the wilderness. I was to return Monday afternoon for the finished yardage. But Sunday afternoon I couldn't resist a look through the window to see the "air-drying." There was all my cloth, draped in great swags over the pipes which crossed the ceiling, with each pipe covered with paper to protect the cloth! On Monday I collected the finished fabric—beautifully pressed, rolled on a tube and swathed in protective plastic—ready for the upholsterer.

The various lengths of windlace were woven in the order needed for use, and delivered as they were finished. There were six different types of windlace, each varying in width and design, according to their use. The trim for the door panels and the back of the chauffeur's seat was the widest and most elaborate, with three pattern motifs. The other types of windlace are functional as well as decorative, with tabby edges of cotton, varying according to use and attachment. The shortest piece was only six feet long, used to frame the back window, but carpet binding and cording for the door seals required more than 70 feet each.

The windlace was woven on a 24" floor loom, with 8 shafts and a double back beam. This double beam was necessary to separate the ground and overlay warps, which had very different take-up rates. A floating selvedge of black sewing thread was used at the edge of the pile portion of each band, and the heavy warps which padded the "cords" in the wider windlace were also floating. All of these warps were on spools, weighted by a heavy nail through the center, and secured by a rubber band. Nails and rubber bands also weighted the pile bobbins, which were cut from the cardboard tubes used in dry cleaners hangers. To solve the problem of distributing the pile bobbins so they would feed smoothly and not tangle, my husband designed and built a detachable rack which spread the bobbins, provided guides to lead the ends to the loom, and gathered them into a comb at the back of the loom to let them enter the heddles at a reasonable angle. This was built to fit my particular loom, but it could easily be modified for almost any loom and used for a variety of weaves requiring independent control of warps, singly or in small groups.

Warp pile fabric needs rods of some kind to keep the loops raised until a least three or four shots have been woven to hold them in place. The size of the rods or wires used for this will determine the height of the pile. The windlace has very short pile, with uncut loops, so a fine spring steel was used for the rods. I used a set of six, each about 5" long; one of these rods was burnished so it could be identified as "number one." Six, rather than some other number, was chosen because the pattern had 18 shots, and the marked rod provided a cross-check on my location in the pattern. The wide windlace used two basic mo-

tifs, with their starting points offset 6 rows. The diamond pattern in the center of this piece, however, had a 9 row repeat so the cross-check prevented many errors. Although the basic pattern was rather quickly memorized, after several hours of weaving I would sometimes look blankly at the work in front of me, totally unable to recognize where I was. I knew then that it was time for a break.

Weaving the windlace went very slowly, from four to eight inches an hour, depending on the width. Bobbins had to be unwound and let down after about eight inches of weaving, giving me time to get up and stretch.

For each pattern row there are 4 shots of weft and a pick-up. The pick up was simplified by threading all the gray ends for the plain bands through 2 heddles: regular heddles on shaft 8, with all the rest of the gray ends, and open top heddles on shaft 1, which carried the black ends for the pattern. Thus, the plain gray came up whenever the black was raised. Of the 18 pattern rows, only three had both black and gray in the same row. The other 15 rows use one or the other, so only one treadle lift was needed to make the pick up, which made quite a saving in time.

For most of the bands there was not room to wind all the finished windlace on the cloth beam. After a length of several feet was woven, it was unwound into a box on the floor beside the loom, and the band spiraled around the beam to start again. To hold this restart in place and to cushion the pile, a narrow strip of velveteen about 8' long was wound in with the windlace, pile sides together. Of course, as the new weaving built up on the beam, the length in the box spiraled back up, but loosely and nothing seemed the worse for it. The windlace was finished by a heavy pressing, with lots of steam and lengthwise stretching. Two yardsticks on the ironing board, spaced as wide apart as the pile portion, and covered with a heavy terry towel prevented crushing the pile.

After all the fabric and windlace were sent to the upholsterer, I made a lap robe, a final touch of elegance for this special car. In 1929, when this Landalette was made, the original owner had ordered a lap robe of matching fabric with a custom monogram. The present owner, Steve Nanini, wanted these initials rather than his own on the new robe. The monogram was separately woven in doubleweave pick up and applied to the robe which was also trimmed with a border of windlace and lined with a commercial pile fabric.

A beautiful old car has been restored for a new life. I have had a year of challenges, trying to understand and duplicate unknown weave structures, solving a host of technical problems, and watching patterns of half century ago come alive on my loom.

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Review

Miranda Imports

Artissa and **Pörri** are two lovely yarns from Miranda Imports. The Artissa is their own 2-ply wool that they hand dye with a color gradation effect. Pörri, also a 2-ply wool, is a Finnish product whose colors coordinate well with the Artissa.

Elaine Geisterfer has used both (along with a third yarn for some contrast) in her sampler and pronounced them good for tapestry because they pack very well. She noted that the Pörri, because it is the smoother yarn of the two, showed off different techniques much better. She found that when she wove with Artissa straight and as is from the skein, the colors came out in stripes too even for her taste. So she decided to have some fun by cutting the yarn up in order to place the colors where she wanted them. That may seem wasteful, but most of the bits and pieces were eventually incorporated into the piece.

My turn. I first wanted to test the distribution of color in the Artissa, its "stripiness." The 10" wide warp was sett at 8 e.p.i. for plain weave and woven carefully to square. Samples one, two, and three were woven with Artissa weft and number four with Pörri. After cutting them off the loom, I allowed them to relax for a few days before starting the finishing processes. Examination showed that Artissa in the warp and weft produced a nice suggestion of a plaid, as such yarns can do. Single colors did not tend to pile up on one another, nor did one side of the cloth accumulate more light or dark tones than the other. The sample with the Pörri as weft was equally pleasing.

Finishing experiments. The tag said the dyes might bleed, although I didn't really think I'd mind if that happened. All samples were washed with liquid dish soap. Fabric softener was added to the final rinse. They were laid flat to air dry and steam pressed while still damp. Samples one and four were processed in cool water, using very little agitation. They gave up some color, but no real bleeding occurred. Total take-up and shrinkage was 10% in warp and weft. Samples two and three were placed in very hot soapy water and worked quite vigorously. A little more color was present in this bath. Then I decided to shock them by plunging them into cold water. In spite of this treatment the fabrics didn't felt, probably because of the yarn's previous dye experience. Additional shrinkage was only about 2% in each direction. A light brushing of sample three before it dried completely further blurred the color distinctions.



Miranda introduces "Artissa" and "Pörri," used in the samples illustrated. Nos. 1-5 are mentioned in the text. Note that no. 6 incorporates both yarns in a variety of weaves: a. "Artissa" 1 row, "Pörri" 1 row; b. "Pörri" in soumak; c. "Artissa" as is; d. "Artissa" plain weave, cut to color; e. "Pörri" plain weave; f. "Artissa" cut to color.

All of the samples proved to be satisfying fabrics. Numbers one and four would probably be best used for throws or scarves, while two and three, with the extra fulling, would make great outerwear or sweater-like garments. Because of the penchant for using slightly different colors in warp and weft, my personal choice would be woven as sample four and finished as number three.

Finally, some knitting with the Artissa cried out to be done. I used the suggested size 6 needles. The yield was an agreeable wash of color across the sample.

Both Elaine and I enjoyed working with these yarns. Now and then it's relaxing to sit back and let the yarn do the designing, to just watch the colors come up and see how they interact.

Artissa comes in 8-ounce skeins of approximately 520 yards and in 12 color families that range from subtle to vivid. The Pörri line has 37 colors and is put up in 100-gram skeins. A complete sample card set is available for \$5.00 from Miranda Imports, Inc., 2 S 977 Shagbark Dr., Batavia, Illinois 60510. The company offers a wholesale discount to individual weavers with a minimum order of \$50.00.

Susan Hick

Elaine Geisterfer specializes in woven tapestries and wall hangings and teaches her techniques at Arapa-

hoe Community College in Littleton, Colorado. Susan Hick weaves samples and occasionally manages to do yardage for clothing and placemats for family and friends. Both are members of Fiber Matrix, formerly a cooperative selling endeavor and now a support group.

News

New Yarns

Silk City announces "Montreaux," a wool and acrylic yarn, spun in Switzerland and "Rio," spun in France and made of viscose, wool, metallic and nylon. For information: Silk City Fibers, 155 Oxford St., Paterson, New Jersey 07522 (201) 942-1100.

Elite introduces "La Swa," a silk/wool blend available in both 3-ply straight yarn and a boucle, in eight jewel tone colors. Also available is "Fanfare," a 100% American wool yarn, spun and colored by New England factories, spun on the worsted system and dyed in 15 colors as well as seven coordinating stencilled colorways. The following yarns are being phased out: Cashmere #1, Heather #1, Tamara, Soie, Elegant, Reflectus and Manhattan (natural 1216 and black 1213 will still be stocked). For information: Elite Specialty Inc., 750 Suffolk St., Lowell, MA 01854.

North Central Wool Marketing Corp.
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Inspiration from West African Textiles

by Elisha Renne

THREE YEARS AGO I traveled to West Africa. When I reviewed the work I had completed since this trip, I recognized the strong influence that West African textiles—in particular narrow strip cloths—have had on my design sensibilities. Such narrow-strip textiles may be familiar to handweavers from an exhibition of the Lamb Collection of West African textiles held at the Textile Museum in 1975 and through the Lambs' many publications.

These narrow-strip cloths have come to represent West African weaving perhaps more than any of the myriad types of textiles produced in West Africa. Strips are woven on narrow horizontal looms. The strip size ranges from a narrow one-inch width to as wide as twenty-six inches, with the most common width being about four inches. The strips are sewn together by hand or machine to produce the desired cloth width. The result is often a wrapper cloth, which may require twelve to fourteen strips, and is two yards in length.

The continued use of narrow-strip looms, particularly after European wide-width handlooms were made available to West African weavers, has been misinterpreted by many observers. In her essay on Daboya (northern Ghana)

weavers, Esther Goody describes the reaction to a European handloom. The weaver interviewed indicated that the loom was too wide for weaving cloth strips. Goody writes, "A shift from narrow to broad cloth seems no more radical than a shift from dyeing thread to tie-dyeing cloth." Goody concludes that the decision to maintain the narrow strip loom was based on "relations of production," rather than cultural or aesthetic considerations.¹

To the contrary, there are very definite cultural and aesthetic reasons for the continued use of the narrow strip loom. First, small narrow-strip looms are easily transported and set up and can be stored during the rainy season when many weavers are busy farming the land. Therefore they are "technologically appropriate" for the West African culture. The second reason is traditional and to some extent economic. Until the nineteenth century, narrow cloth strips were used as a form of currency in some parts of West Africa.² Thus, wearing cloth-strip cloths was akin to wearing money. Even today cloths of equal size but made of wide-width commercial fabric generally do not enhance one's status as do the more expensive narrow-strip cloths. Furthermore, many traditional events—funerals and other festivals—require the wearing of strip-

1. Esther Goody. "Daboya Weavers," in *From Craft to Industry*. Cambridge University Press, 1982: 82.

2. Venice and Alastair Lamb. *The Lamb Collection of West African Textiles*. The Textile Museum, 1975: 81.



Figure 1. Cotton blanket from Niger (Fulani?). 54" x 104". Collection of the National Museum of African Art.

woven cloths for ceremonial reasons.

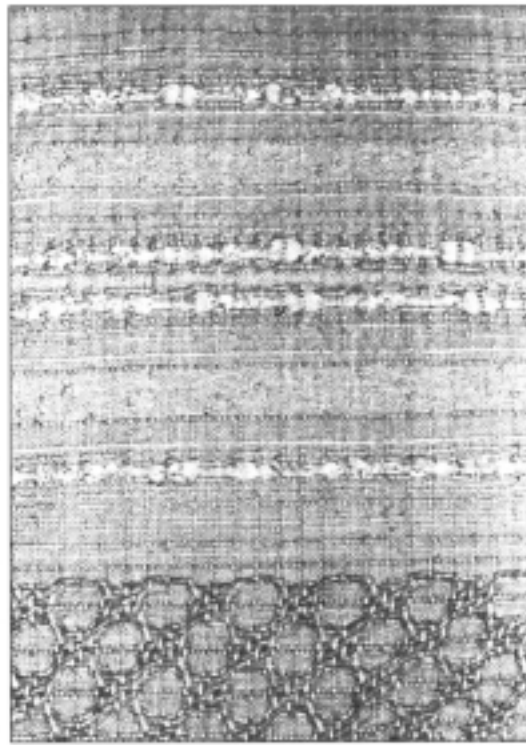
Perhaps the least recognized reason for using narrow strips, though probably the most interesting for the handweaver, is the increase in design capacity and flexibility. Sometimes all strips in a cloth would match across the width, as is the case with the blanket woven by the Fulani of Niger (figure 1). Often, however, strips would be woven together with offset pattern blocks (figure 2). By using differently striped and colored strips in a single cloth, design possibilities are greatly increased. For example, asymmetrically striped strips could be pieced together, alternating left and right selvages, to produce different striping effects. Rather than having a single wide warp with one combination of warp stripes, the use of narrow strips offered an almost endless source of warp striping combinations, without having to rethread a whole loom width for every change.

The design possibilities suggested by the use of cloth strips are what intrigued me. The offset block placement using strips alleviated the often static appearance of weft banding on wide-woven textiles. Furthermore, the relatively narrow strips also allowed for considerable freedom in use of materials, such as heavy cotton yarns and rag strips. The bedspread, produced by



Figure 2. Cotton blanket from Niger (Djerma). 62" x 96". Collection of the National Museum of African Art.

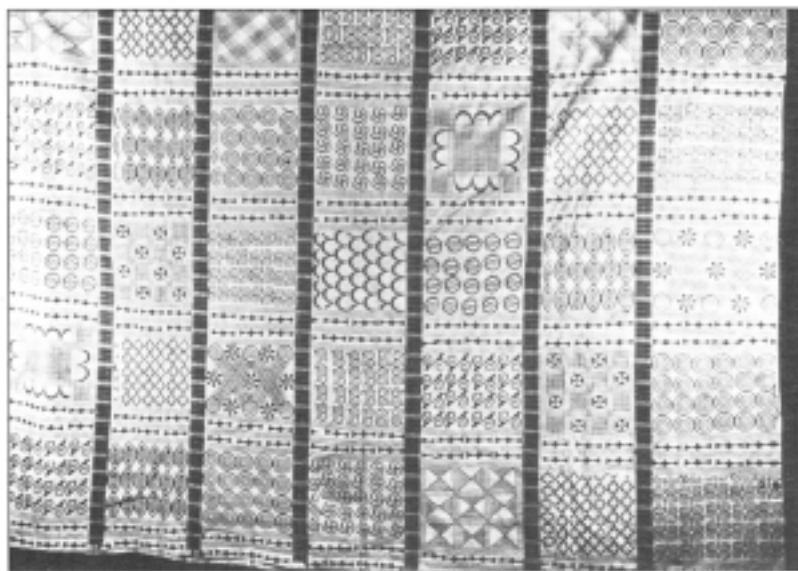
Figure 3. Cotton bedspread, woven by Elisha Renne. 117" x 126". Collection of Marilyn Blumberg, Miami.



rather wide cloth strips of 27 inches each, incorporated ribbed plain weave, a waffle weave variation, and plain weave with supplementary weft floats of casement cloth strips (figure 3). Careful measurement of design blocks while weaving insured proper matching of strips when they were sewn together.

A smaller version of offset block use on cloth strips utilized another example of West African textile design, namely the stamping by hand of *adinkra* cloths of the Asante people of Ghana (figure 4). These cloths were originally made of handwoven cotton cloth strips sewn together and then stamped by hand with a black vegetable

Figure 4. *Adinkra* cloth from Ghana (Asante). 88" x 132". Collection of the National Museum of African Art.

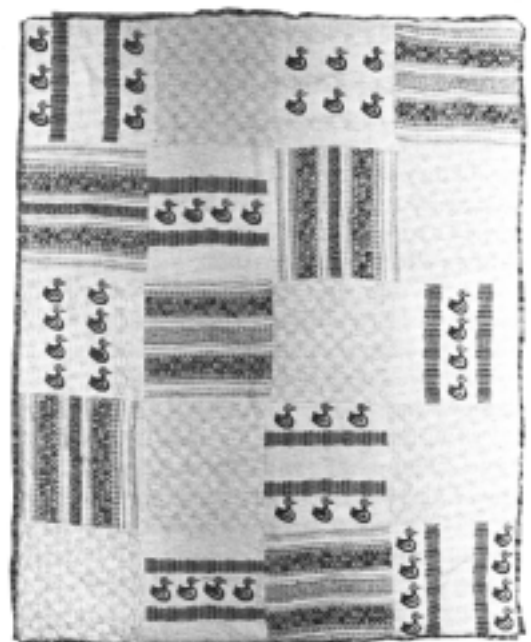


dye, using stamps cut out of calabashes. The baby quilt (figure 5) was made from wide cloth strips, similar to those used in the bedspread mentioned earlier. In this piece, however, the strips were cut into squares after weaving and portions of these squares were stamped with linoleum-block stamps, using reactive dyes. All of the squares were positioned as desired and pieced together. The cloth was backed with batting and a plain cotton cloth and the three layers were tied together. Casement cloth strips were sewn along the outer edge.

The use of cloth strips physically increased design flexibility as well. Strips could be manipulated both vertically and horizontally. The wall hanging of linen and wool utilized wide cloth strips that were literally woven together (figure 6).

While plain weave strips of natural hand-spun cotton were the most frequent product of West African narrow strip looms, such strips were sometimes used to make large rectangular cloths that were subsequently dyed in indigo dye vats. Several ethnic groups in Nigeria, for example, make resist designs on natural cotton cloths, dye the cloth indigo blue, and remove the resist, which leaves a white design on a dark blue ground. The most well known of these resist indigo-dyed cloths is the *adire* cloth of the Yoruba, in which the resist is effected by wax, starch, tying, or stitching. Less well known are the raffia-stitched, indigo-dyed cloths of the Jukun, the Igbo, and the Bamum peoples (the two former groups from Nigeria, the latter from neighboring Cameroon.) Designs are first drawn on the cloth with guinea corn (sorghum) stalks; the vertical strip seam acts as a guide for the pattern layout. The design is then sewn with a "wrapping" stitch using raffia yarn, which completely covers the drawn lines. The cloth is then

Figure 5. Blue duck baby quilt, woven by Elisha Renne. 48" x 60".



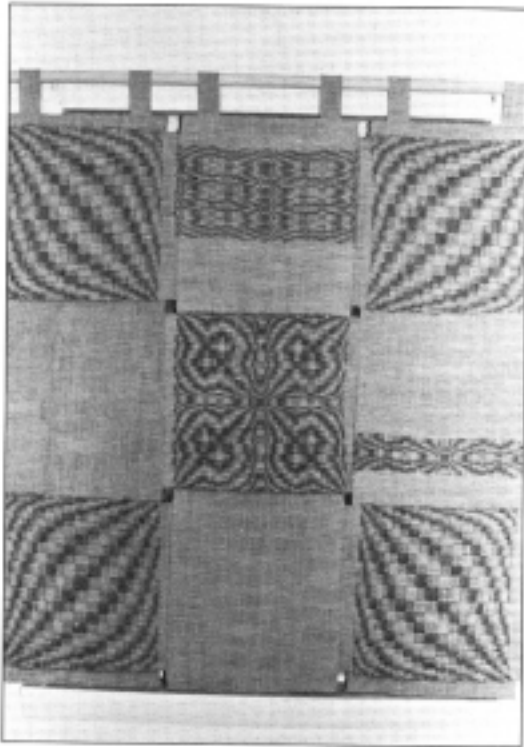


Figure 6. Linen and wool overshoot weave hanging, woven by Elisha Renne. 48" x 58". Collection of Elizabeth McGrath, Atlanta.

died in an indigo vat. The resulting white design motifs on a dark blue indigo ground are precise and striking. Cloths produced by this technique include the *akya* cloth of the Jukun/Abakwariga, the *ukara* cloth of the Igbo (figure 7), and the *ndop* cloth of the Bamum.

An application of the resist-stitched and resist-dyed cloth technique to natural nubby cotton/rayon stoles, folded and stitched in strips along the length and in bands at either end, resulted in an interesting effect. While the single machine straight stitch did not produce the clearly defined patterning of the West African cloths, the striping effect was quite distinct (figure 8). The use of machine zigzag stitching would perhaps result in a clearer design, but it would be more time-consuming to remove. The use of a cotton-rayon yarn added interest to the color effect as these two fibers accept the dye differently, the rayon taking on more color than the unmercerized cotton with the reactive dyes used.

Cloths collected in West Africa by Venice and Alastair Lamb and illustrated in their many

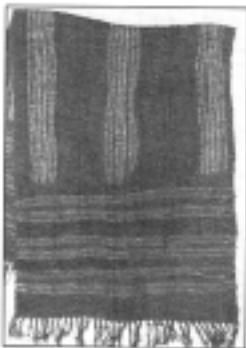


Figure 8. Boucle cotton stole, machine-stitched, dyed, woven by Elisha Renne. 27" x 80".

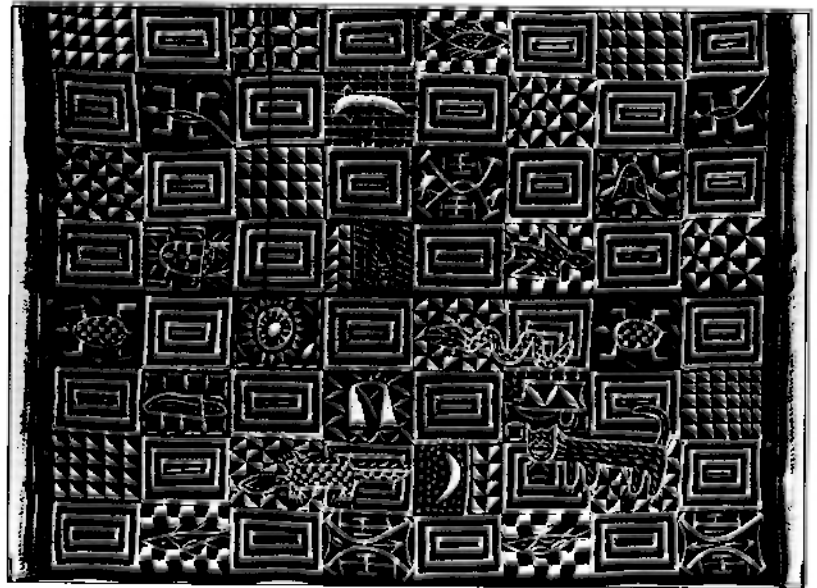
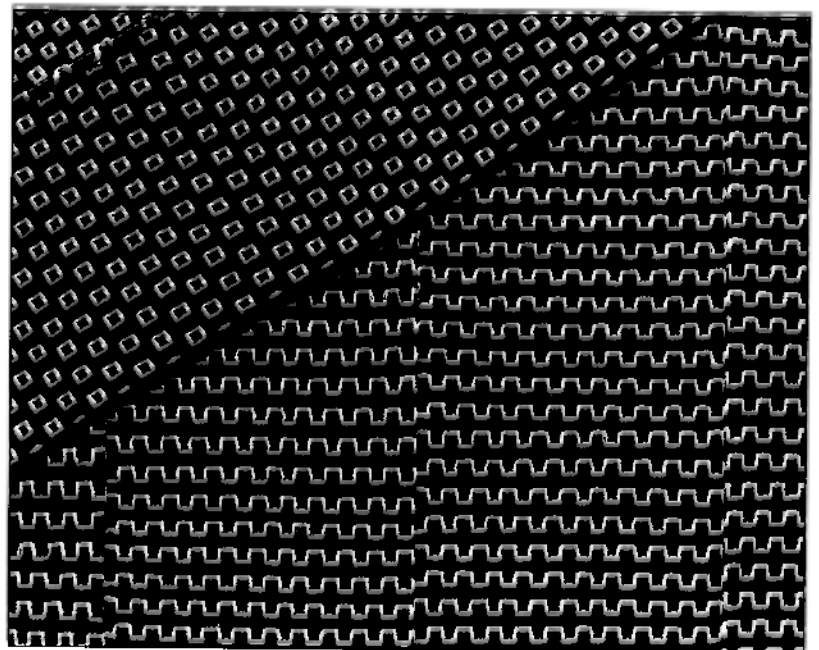


Figure 7. *Ukara* cloth, raffia-stitched, indigo-dyed, from Nigeria (Igbo). Collection of Elisha Renne, New York.

publications also provide inspiration for fresh design treatment. Their collection of West African textiles has recently been jointly acquired by the Smithsonian Institution National Museum of African Art and the National Museum of Natural History, both in Washington, D.C. In the course of studying these cloths, I observed several unusual textile structures that may be of interest to handweavers.

One cloth, produced by the Ewe people of southeastern Ghana, uses a combination of supplementary warp and weft yarns to produce a zigzag pattern (figure 9). While this zigzag line appears to be continuous, careful intermittent

Figure 9. Cloth wrapper from Agbosume, Ghana (Ewe). Pattern called *Kotokotoe* ("a circling motion"). 53 3/4" x 77 3/4". The Lamb Collection, Smithsonian Institution.



manipulation of supplementary warp yarn and weft yarn floats produces the effect. Five harnesses are needed to produce this type of weave structure, but a shed stick could be used to raise and lower the supplementary warp yarns. Also, supplementary warp yarns could be hung on spools at the back of the loom, if a double back beam is not available (figure 10).

A second use of supplementary yarns involves an openwork technique, often referred to as "Spanish lace," which results in woven "holes" in the cloth (figure 11). The supplementary yarn is simply laid in the shed at intervals. These yarns are woven back and forth three times, and then

carried on the face of the cloth until the next set of holes is to be woven. Thus, the structure of this openwork weave differs from actual Spanish lace openwork, as the yarns used for the openwork designs are supplementary and not part of the plain weave ground.

The use of yarns as both warp and weft has other applications in West African weaving as well. The "Liar's Cloth" of the Asante of Ghana is a remarkable feat of design ingenuity (figure 12). It is produced by warping two groups of three narrow warp stripes at each selvedge of a plain white warp. The warp is threaded through the heddles as usual, including both groups of colored warp stripe yarns. However, only one group of colored warp yarns is actually woven at one time. One group is knotted in front of the heddles and kept in place by a hooked weight (figure 13). After weaving a section with colored yarns on one side, these yarns are cut, the unwoven yarns are looped and hung in front of the heddles. The colored warp yarns from the other side are brought forward and woven. The colored warp yarns from both sides are overlapped when they act briefly as weft yarns. This zigzag design continues for the length of the cloth. Needless to say, an explanation of weaving "Liar's Cloth" is certainly one that is benefitted by illustration. Care should be taken when clipping the woven colored warps to leave enough unwoven yarn so that they can be turned 90° and woven as weft. Also, a balanced weave structure with a fairly close sett is necessary both to show the colored warp/weft yarns to advantage and to spread sufficiently when these yarns are not part of the woven cloth. This technique could be applied equally well to both rugs and stoles.

A final example of unusual woven techniques displayed by cloths in the Lamb Collection involves the use of resist-dyed yarns and rib and plain weave patterning. Warp yarn chains are dyed in specified places, in this case at either end, with light indigo blue dye. The warp is then prepared for weaving. Areas where the warp yarn has been dyed blue are woven with thick white weft yarn, resulting in narrow blue warp-wise plain weave stripes (figure 14). This technique of using weft yarn to block out space dyeing could be an extremely useful technique for ikat weavers, who would like to vary a warp resist effect. A four-harness loom, threaded in a twill variation could reproduce this technique (figure 15).

While much of the cloth produced on West African narrow strip looms is plain weave or variations thereof, several unusual techniques—both woven and dyed—lead one to realize that these West African textiles are more complicated than they initially appear. Many weavers are familiar with the *kente* cloths made by the Asante of Ghana that are woven with supplementary warp heddles that allow for the weaving of plain weave, weft-faced ribbed plain weave, and extensive supplementary weft patterning in the

Figure 10. Threading, tie-up, and treadling draft for cloth illustrated in figure 9.

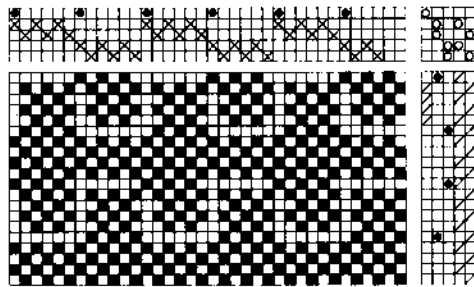
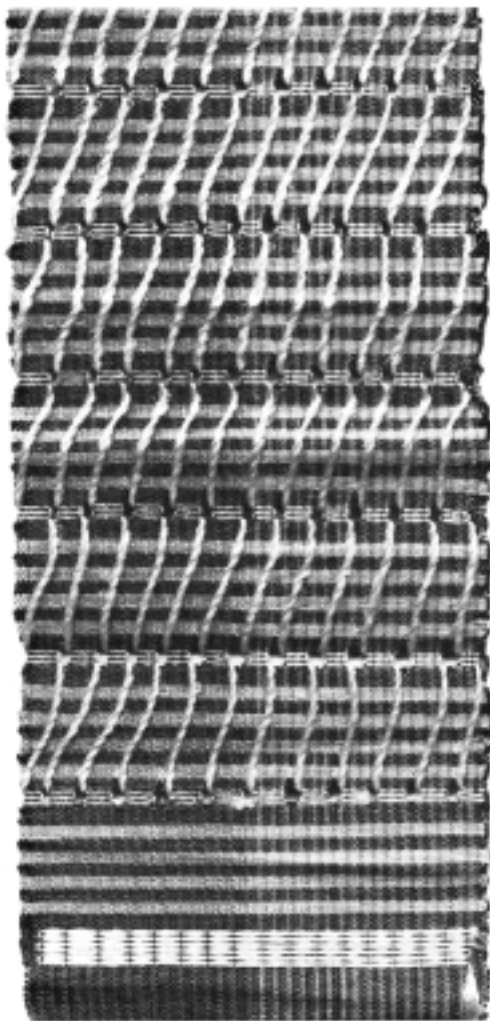


Figure 11. Aso-oke cloth strip from Iseyin, Nigeria (yoruba). Pattern called *Jemibewon*, in honor of the Nigerian president who first wore this cloth. 4¾" x 41¾". The Lamb Collection, Smithsonian Institution.



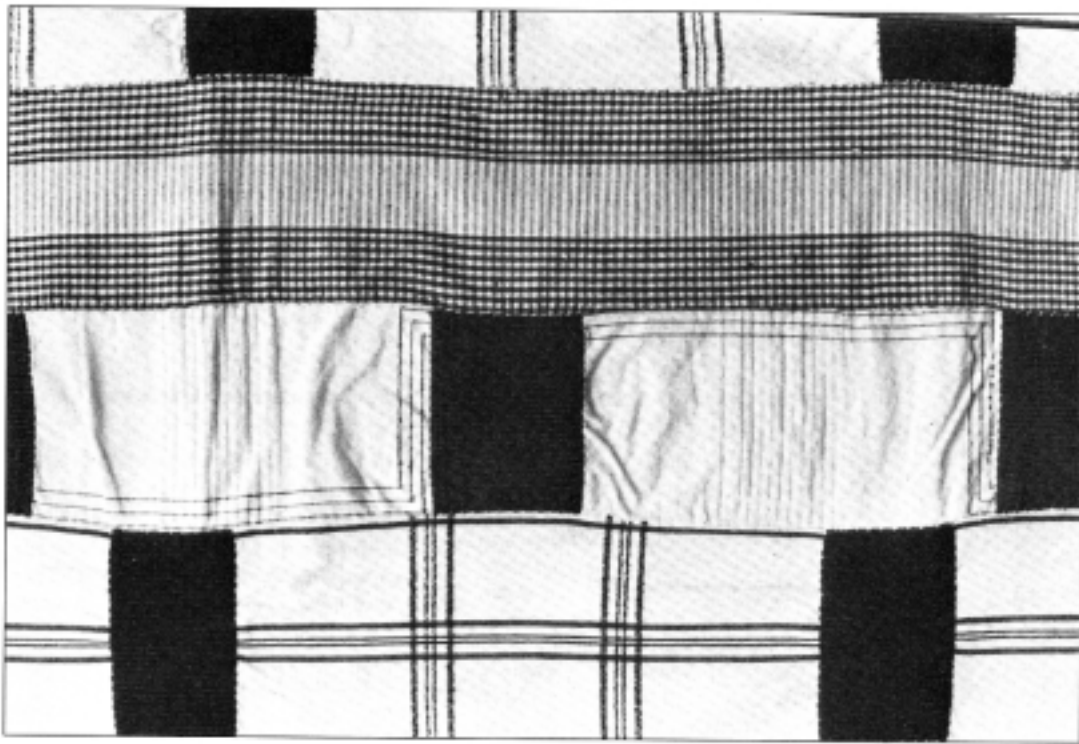


Figure 12. "Liar's Cloth" wrapper from Bonwire, Ghana (Asante). Cloth pattern name, *Kye Kye Mmaben*, refers to northern origin of cloth design and number of different strips. $30\frac{3}{4}'' \times 46\frac{3}{4}''$. The Lamb Collection, Smithsonian Institution.

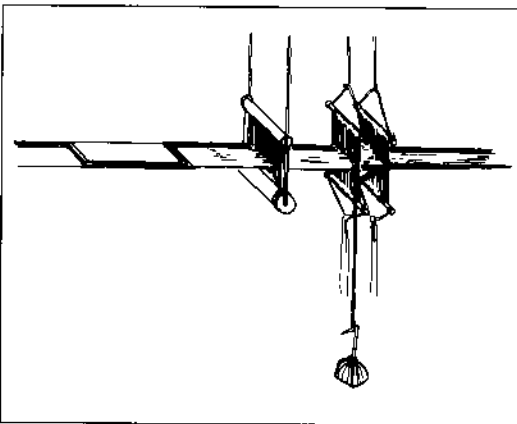


Figure 13. Illustration of loom arrangement and special weight used by Asante weavers to produce "Liar's Cloth." From Menzel, B., *Textilien Aus Westafrika*, 1972: 711, 712.

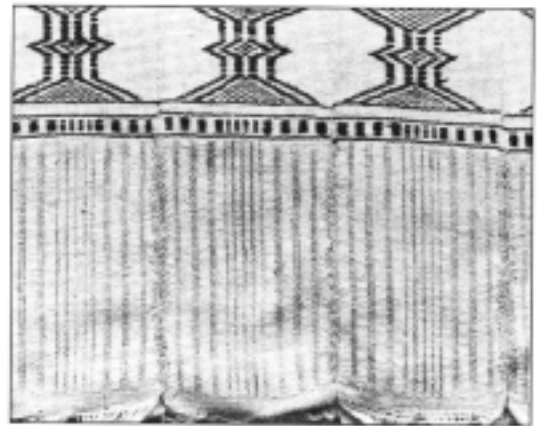


Figure 14. Blanket from Sokoto, Nigeria (Hausa). $57\frac{3}{4}'' \times 240''$. The Lamb Collection, Smithsonian Institution.

same cloth strip. The Ewe people of southeastern Ghana and the Djerma people of Niger also use a similar technique. Ikat-warp-striped designs are woven by the Baule of Ivory Coast and the Yoruba of Nigeria. The well-known indigo dycpits of the Hausa of Kano, Nigeria speak to the virtuosity of these dyers. Like the pre-Columbian textiles of Peru, West African narrow-strip handwoven textiles remind us that complexity and beauty may come from very, very simple looms. I hope that more exposure to West African textiles, some woven more than a century ago, will inspire weavers working on looms today.

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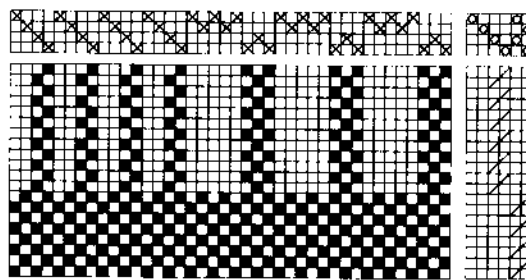


Figure 15. Threading, tie-up and treadling for cloth illustrated in figure 14.

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PRODUCTS from page 59

announces the introduction of its newest subsidiary, **Nature Spun Yarns**. Nature Spun Yarns are 100% hand-selected all-American wool and come in 28 colors, 24 dyed yarns and four natural shades, available in pull-skeins at 3.5 ounces as well as cones for machine knitters and weavers. *For information:* Nature Spun Yarns, 101 27th Ave. SE, Minneapolis, MN 55414.

School Products Co., Inc. announces Lesotho Handspun Mohair, produced by self-employed villagers primarily in the mountain regions of Lesotho, Africa. Most of the spinners are women and organized into production cooperatives. One kilo of handspun yarn reflects almost two days of intense work for one spinner. The Lesotho yarns are available in fashion colors or left in their natural hue and can be used for hand knitting, hand weaving and crocheting. Sample cards are available at \$1.00 each, redeemable with order for Lesotho yarns. *For information:* School Products Co., 1201 Broadway, New York, NY 10001.

Stanley Berroco announces "Poppy," a soft linen blend, created in Italy and available in eight fashion shades and featuring multicolor nubs appearing randomly in each shade. Look for "Pixie," a cotton blend in a range of solid and variegated colorations. Two popular spring yarns are "Glacé" and "Dante," now in five new variegated and coordinated solid shades. *For information:* Stanley Berroco, Dept. MC86, P.O. Box 367, Uxbridge, MA 01569.

Scott's Woolen Mill, Inc. has five new yarns for spring and summer 1986: "Bamboo Quartz," 100% cotton in five spaced-dyed colors; "Sateen," 70% cotton, 30% nylon in eight colors; "Silkan," 40% silk, 30% linen, 30% viscose in six colors. Two new coned yarns are "Shimmer," 100% rayon chenille in 14 colors and "Flutter," 64% cotton, 26% rayon, 6% linen, 4% nylon blend in eight colors. *For information:* Scott's Woolen Mill, Inc., P.O. Box 306, Uxbridge, MA 01569.

Green Mountain Spinnery's spring collection includes sport and worsted 100% wool yarns. Four new colors are Winter Twilight, Autumn Oak, Aquamarine and Champlain Blue. Green Mountain produces 28 yarn colors, "Vermont Designer Patterns," and

"Vermont Designer Knit-Kits." *For information:* Green Mountain Spinnery, Box 54, Putney VT 05346.

Halcyon Yarn introduces two new rug yarns, available this spring. "Deco" is a 3-ply blend of New Zealand and domestic wools designed to be springy and give good coverage in welt-faced weaves as well as hold its twist in pile and fringe. 470 yds/lb in 4 oz. skeins. "Deco" is dyed on a white base yarn for bright clear color. "Geo" is a single ply with good loft for coverage yet with enough twist to use as warp for upholstery and outerwear fabrics. "Geo" is dyed on a pale grey heather base. 4 oz. skeins. Both yarns are available in 32 coordinating colors. Samples are available in the "Yarn Store in a Box" sample set or as individual sample cards for \$1.50 each. *For information:* Halcyon Yarn, 12 School St., Bath, Maine 04530 (800) 341-0282.

Henry's Attic announces four new yarns: "Crown Berber-Charcoal" made from 100% imported virgin wools, natural unscoured and dyed; "Perle" from France, 100% French perle cotton, carded, washed and mercerized, in natural and black; "Monty 3/9's" made of 100% worsted wool, natural, unscoured; "Normandy Linen" from France, available in bleached and ivory. Three new colors have been added to the "Majestic Mohair" color card—Canary, Garnet and Tourmaline. Color 649 has been discontinued. *For information:* Henry's Attic, Mercury Avenue, Monroe, NY 10950 (914) 783-3930.

Stuff

Stuff is a small home-based mail order business dedicated to bringing yarns and accessories to weavers and knitters that may be unavailable on a local level. Ranging from traditional to contemporary, offerings include the hand-dyed yarns of **The Drop Spindle** as well as coverlet weight wools from **Kathleen B. Smith** that use the vegetable dyes and mordants commonly available before the discovery of synthetic dyes in 1856. *For information:* send a SASE for information sheets describing the various yarns available to Susan Beffa, Stuff etc., RR 3, 260 Hoffman Drive, Califon, NJ 07830. Samples are \$5.00.

Notes of a Pattern Weaver

Point Block Progression

by Philis Alvic

I FIRST BECAME FASCINATED with the idea of infinite variations within a rigid format during my art school days. My growth as an artist has proceeded by carefully defining one small segment and then systematically finding out as much as I can about that designated area. Ideas seem to grow one out of the other, so the more variations on a particular case that I can document, the more reveal themselves as possibilities. My first step in this process is to come up with examples which fit within my defined format. Once identified, the examples tend to group themselves into categories with like characteristics. When I began working in this way, I discovered that many others before me had used this working style. By using categories previously defined by others, I could advance my own studies at a far greater pace.

In the category of symmetrical figures, there is a group that can be constructed with block weaves using a single block progression arranged in a point. Symmetrical figures are those in which one side is a mirror image of the other. Symmetry is a comfortable concept for humans, perhaps because we ourselves are basically aligned symmetrically. I have limited myself to block weaves, because I already know a lot about them and the ease of working with them. For this article, my samples are in Tied Lithuanian using 16 harnesses. Any of several other block weaves could be generated using these drafts, however Summer & Winter would use 9 harnesses. Designs in block weaves can be represented very clearly in profile drafts and profile drawdowns. In a profile, one darkened square on the graph paper in either the warp, tie up, or treadling stands for a group of things. This group is always comprised of the same elements and they always function in the same way together (*figure 1*).

In the Tied Lithuanian weave structure, a darkened square in the threading stands for

threads inserted through heddles on harnesses one and two, then alternating between consecutive odd and even harnesses for the next eight threads. A square in the tie-up represents harness 2, as well as the odd and even harnesses for that block. A square in the treadling represents the sequence of the block raised for the pattern shot, followed by the odd tabby, then the block again, followed by the even tabby and continued for a total of 6 pattern shots (*figure 2*). In a single block progression, each block in the threading represents only one threading unit, and that these units are placed so they follow one after another and then return, i.e. A,B,C,D,E,F,G,F,E,D,C,B,A.



Figure 1.

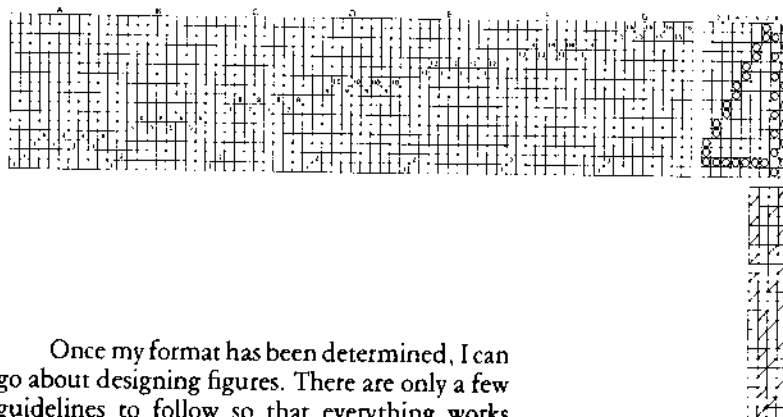


Figure 2.

Once my format has been determined, I can go about designing figures. There are only a few guidelines to follow so that everything works properly and to best advantage. A darkened square in my figure drawdown represents an activated warp block. When the warp block is raised the weft fills in the background.

- Blocks on the same harnesses always function together.
- Single blocks may be combined into larger blocks.
- Non-consecutive blocks may be activated at the same time.

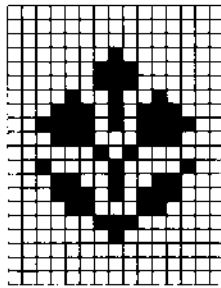
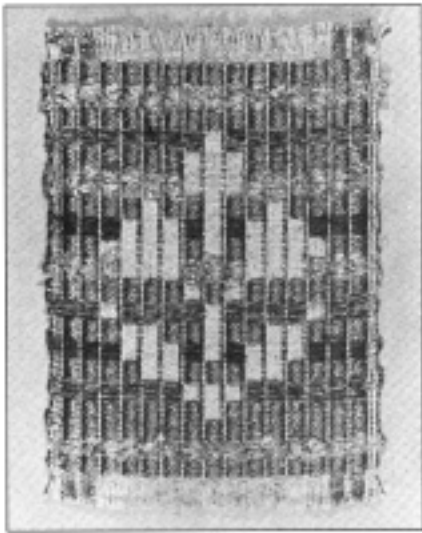


Figure 3.

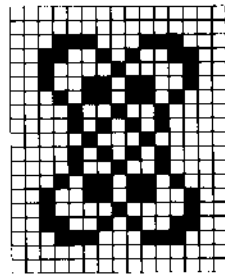


Figure 4.

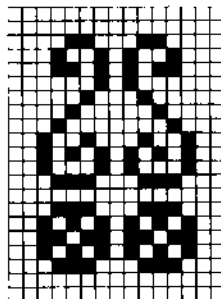
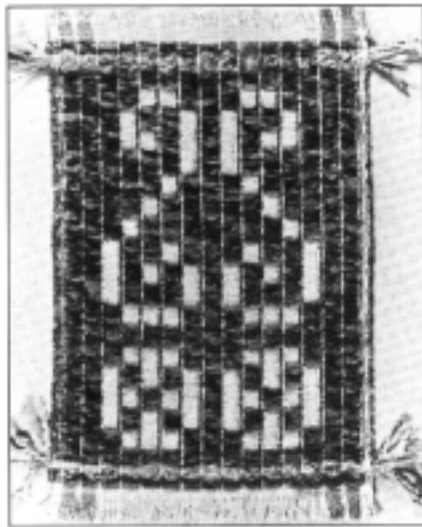
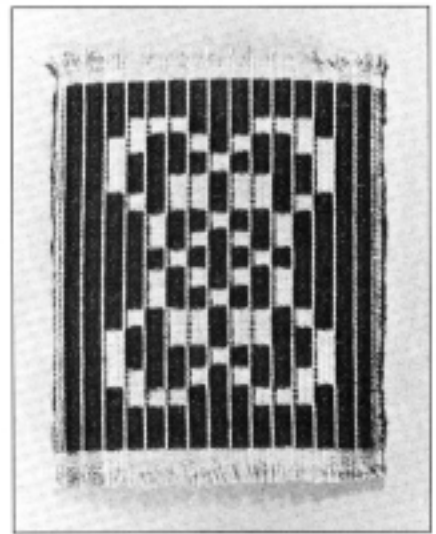


Figure 5.

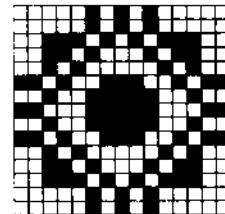
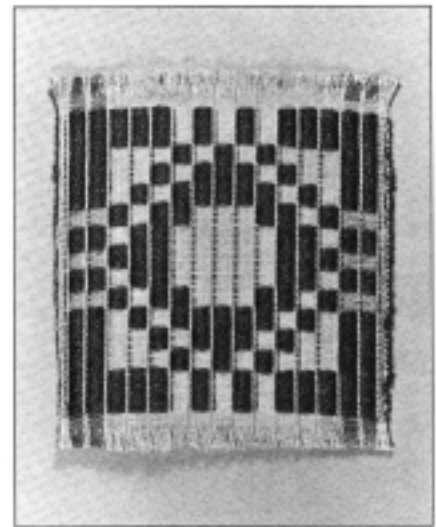


Figure 6.



- All blocks may be activated in a single row.
- No blocks need be activated in a single row.
- A block or blocks can remain inactive throughout the entire figure. This allows an isolated figure on a ground.
- The same block or combination of blocks can be repeated.

Keep these rules in mind. You will find, however, that actually designing with blocks is very easy. I fill in squares on graph paper, remembering only to repeat in mirror image any square darkened on one side of the designated center point on the other side too. It is a good idea to mark the width, so that the figure does not grow beyond the number of harnesses required by the weave structure to be used. Usually I have to fill several sheets of graph paper before I come up with a figure I like. I then use this figure for the treadling pattern rather than writing a separate one. The treadling sequence for the weave structure is inserted where a square is darkened.

After years of producing these types of figures using many different weave structures, I have identified several categories into which

these designs fall:

- **The solid figure.** This is a completely darkened design which is silhouetted against a ground (*figure 3*).
- **The hollow figure.** This is an outline which often contains other shapes within it (*figure 4*).
- **Two identical figures.** This applies to two smaller shapes which do not meet in the middle. The individual shapes may or may not be symmetrical (*figure 5*).
- **Figure-Ground.** This identifies a design with approximately equal figure and ground where it is often difficult to tell which is which (*figure 6*).

Figures produced that fit into these categories have different visual characteristics. Remembering this, I have a clearer understanding of how I might go about achieving a certain effect.

I encourage you to evaluate my observations and use them in the development of your own work. Define them further by gathering more information to develop finer distinctions which are applicable for your purposes.

Simple Ways to hang a Weaving

by John & Susan Graves

Many of us create two-dimensional wall hangings of a modest size and weight. When we first received this article from the Graves, we saw in it a review of many basic methods and materials used for hangings such as these and some innovative ones as well. We asked the Graves if they would further expand their article to include information on the use of plastic material.

AN APPROPRIATE WAY of hanging a piece of weaving should be decided on before the weaving is ever started. The method of hanging is part of the design process: the overall unity or integration of the piece is of utmost importance.

A weaving's size, weight, color, style and intended use all have a bearing on how it can best be displayed: The size and nature of the support should be in proportion to the whole. Heavier or larger pieces obviously need stronger support. You may decide that you do not want the support to show, or that the whole piece can be made more interesting visually if some of the support is visible and a part of the design of the weaving (figure 1).

A simple way to attach the hanging to the wall is desirable. The method should be clearly understood and easy to implement since it might be used by someone other than the weaver.

Concealed Supports

Concealed supports are used for a more formal appearance. The classic concealed method utilizes a flat stick fitted into a sleeve of supporting fabric constructed so that the fabric extends beyond the long edges of the sleeve like fins above and below the stick. The weaving is carefully hand stitched to the fins with the lower fin carrying most of the weight of the weaving while the upper fin helps distribute some of the weight and stabilizes the free edge of the weaving. The details of this technique and a variation of it are given in an article by Butterfield and Stack in the Winter 1985 issue of *The Weaver's Journal*. This method is commonly used by museums and often must be used where the weaver has not provided a system for hanging. It is one of the few satisfactory ways of hanging a weaving if the

warp is to run horizontally. It is, however, not the only method available to weavers who have the freedom to design and fabricate a support system.

In a modification of the classic concealed method, a single or double facing is sewn onto the reverse side of the top edge of the weaving to form a sleeve. A stick or dowel, slightly shorter than the width of the weaving, is inserted into the sleeve. The ends of the sleeve may be stitched closed. It is simpler still to make a hem using the top edge of the weaving itself. The stick or dowel should first be sanded and sealed with several coats of urethane or lacquer to prevent interaction between textile and the acids in the wood resins. Although there is some question as to whether this mild acidity in wood has any effect on textiles, sealing wood improves its appearance, reduces fluctuations in moisture content and keeps the wood looking fresher and cleaner.

These shortcut methods should be called "semi-concealed," because the contour of the stick and usually the hem of the textile will be apparent. They are mentioned here primarily because they are in such common use.

Exposed Support

Most of the other methods fall into the "exposed support" category, so called because one sees what is holding up the weaving. Many more possibilities for using imagination are available with exposed supports than with concealed supports.

Rods and Sticks

Dowels, one of the most frequently used forms of support, are commonly made from birch, a good light-colored hardwood. They are, however, also available in different hardwoods from some woodworking supply houses and lumber-

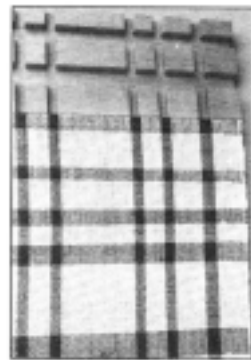


Figure 1. Note how the device for hanging has become part of the design.

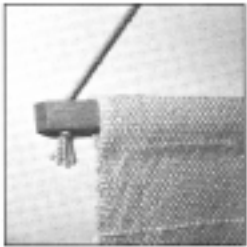


Figure 2. Rectangular oak stick slipped through top hem. Braided cords made from the warp yarns complete the hanging apparatus.

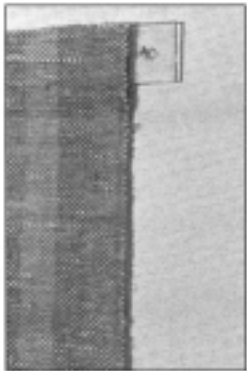


Figure 3. The weaving is hung on a Plexiglas™ strip.



Figure 4. An adjustable brass curtain rod inserted in the hem.

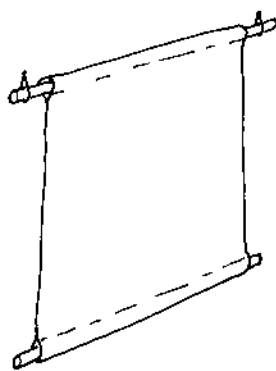


Figure 5.

yards. Oak, walnut and cherry are the standard woods in addition to birch, with oak and birch being the sturdiest. Walnut and cherry have only medium strength and are somewhat brittle, so a thicker diameter may be needed.

Thirty-six inches is the standard length available for all dowels up to 1" in diameter. Dowel sizes range from 1/8" to 1"; rarely can they be found larger or longer. (If longer, thicker poles are needed, try handrailings or clothes closet poles.) When selecting a dowel, sight along its length to make sure it is not badly warped. Sand the cut ends smooth with garnet type sandpaper 100 or 120 grit and gently round over the end with 150 grit or finer. The entire stick should be sanded, then given a seal coat of urethane ("polyurethane") or lacquer, followed by several additional coats of the same treatment for a more finished look. The finish should be sanded occasionally between coats with 150 or 220 grit and after the final coat with 220 grit, or lightly rubbed down with #40 steel wool. Both urethane and lacquer now come in convenient spray cans: Urethane is available in gloss or semi-gloss, lacquer in gloss only; Deft™ Clear Finish, a good, non-glossy lacquer base product, is available in brush or spray form. It dries to the touch in minutes, minimizing dust problems and it is very easy to use in multiple thin coats. Wood finishing should be done in natural light.

It is possible to stain a dowel, usually before the seal coat. The stain used must be compatible with the type of finish to be used. This information is usually stated on the stain label. It is good to have some familiarity with staining methods or a willingness to experiment. The bare dowel could be painted with an enamel or acrylic, both available in spray cans. Wrapping the dowel with yarn or covering it with a suitable fabric, treating the ends of the dowel with upholstery tacks, beads, or rings are other possibilities to consider.

Although dowels are cheap and convenient, they are not the only form of wood that can be used for support. An attractive support can be made using a stick with four flat sides, usually 1/2" to 1" thick, and rectangular in cross section (figure 2). In addition, smooth surfaced hardwood boards in oak, walnut, maple and cherry are becoming readily available in home improvement and woodworker supply stores and at better lumberyards. Red oak looks much like white oak but is much easier to work with. It has a fairly straight grain and little tendency to bend. All of these boards are usually 3/4" thick and come in various lengths and widths. Most lumberyards will, for an extra charge, cut wood to your specifications. Remember to match the size and style of the stick to its purpose, round over the edges, sand smooth and finish with urethane or lacquer.

Plastic Rods. The word "plastic" means "bendable," so small diameter plastic rods are impractical to use to mount hangings. Rods of 3/4" or 1" diameter, made of Lucite™ and avail-

able in six foot lengths, would be more stable. A flat plastic strip can be used as another alternative to Lucite™ rods (figure 3). More information about working with plastics is provided below.

Metal and other materials can also be used as hanging rods. Hollow brass-plated cafe-type curtain rods are adjustable in length and can be supported by screwhooks (figure 4) or other devices. Solid aluminum rods are not too hard to find in home improvement departments. This idea was used effectively in one hanging we saw with one rod at the top and one at the bottom. A loop of monofilament held each end of the top bar while the bottom hung free (figure 5). Iron rods, round or square, are available from local steel fabricators who can cut them to size and do other metal work if desired. Machine shops also will do this kind of work. Copper rods are available from electrical suppliers. Metals are not as rigid as one might suppose, and are subject to electrochemical reactions. A coat of urethane or lacquer is recommended.

A strip of tempered glass might also be used effectively to support a weaving.

Attaching the Weaving to the Support

There are a number of ways to attach a weaving to a dowel that you plan to leave exposed. The prepared dowel can be inserted through a hem or facing sewn along the top edge of the weaving as described above, except that the ends of the wood extend beyond the weaving. Alternatively, supporting loops can be made along the top edge of the weaving by braiding 8" to 10" warp ends in groups of three (figures 6, 7).

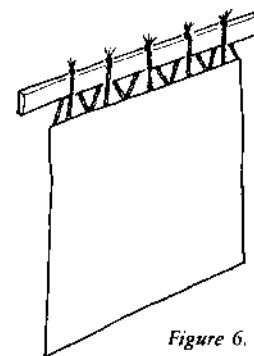


Figure 6.

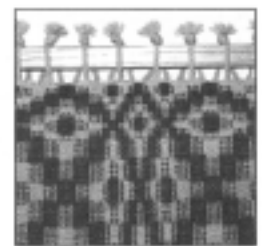


Figure 7. Braided and knotted warp threads with rectangular stick inserted.

Another time honored way to connect the weaving with the stick is to use a series of little straps, like suspenders, formed either from the weaving itself or from some suitable material (figure 8). These straps should be attached along the entire top edge of the weaving. Cord used trampoline style, spiraling along the top of the weaving, may be used to connect it with the dowel (figure 9). Whatever method is used, it is

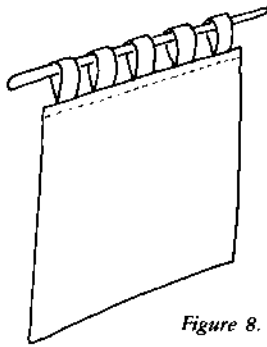


Figure 8.

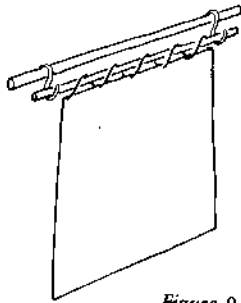


Figure 9.

important to distribute the weight of the weaving evenly among as many warp threads as possible to avoid distorting the fabric.

It should not be necessary to mention that, unless one's intentions are otherwise, a weaving should be aligned squarely with its support, with top and bottom, and sides parallel. This can be done by choosing one weft thread and maintaining a uniform distance between it and the stick through each stage of the attaching process. Weighting the bottom of a weaving usually does not help to overcome unevenness or ripples.

Placing the Weaving on the Wall

The next decision to make is how to fasten the dowel to the wall without piercing the fabric with a nail. If the weaving is fairly light weight and not too wide, or if the dowel support is fairly light weight and not too wide, or if the dowel support is fairly stout, the dowel can be supported at its ends, either from below the dowel or above it. Two nails can be positioned to the wall in such a way as to support the dowel from below (figure 10). One can use small, nearly headless nails known as brads. A #18 is suitably slender, #17 is a little sturdier. If a larger nail is needed, finishing nails are sold in bulk. A one penny nail is a little larger than a brad, then two penny, etc. I prefer to use 3/4" brass (plated) escutcheon pins which are similar to nails but have an attractive, small rounded head. Push pins offer some possibilities since they contain a notch where the dowel can rest, and brass screwhooks offer more security for a more permanent placement. Rings and hooks of various sizes and shapes can be utilized to cradle the ends of the dowel (figure 11). S-shaped hooks are especially useful if there is a rod or bar to hang the hook from.

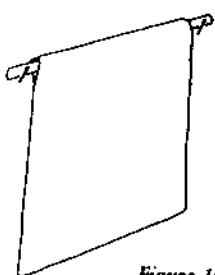


Figure 10.

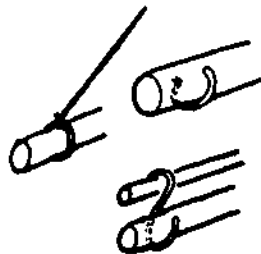


Figure 11.

Screweyes, available in brass at most hardware departments, can be inserted into dowel ends (figure 12). Since they are strong they can be fairly small, although they need a drilled guide-hole for accurate and gentle placement: brass does not withstand forcible twisting. The screweyes can be hung directly on nails or hooks, or by a cord.



Figure 12.

Cords for Hanging

A cord can be made of a compatible material and color, or can be fashioned by twisting or braiding some of the yarn used for the weaving itself, strengthened with low-visibility monofilament line (figure 13). Alternately, monofilament can be used by itself if an "invisible" cord is desired.

Colorless, low visibility monofilament is available as fishing line in various strengths. A 2# or 4# test line, which will support 2 or 4 pounds, is difficult to see and to work with, but is limp enough to substitute for heavy thread. The 8# test is almost invisible. If visibility is not a problem, 14# to 20# test is safer for loops because some strength is lost when monofilament is knotted. Use a double knot to avoid slippage, and allow for slight elasticity in the monofilament.

The end of the any cord you choose can be wound around the end of the rod and tied. A spot of glue will help prevent the cord from sliding on the rod. Or, the cord can be run through a hole drilled near the end of the rod and knotted, tasseled or treated in any suitable way (figure 14). The cord is then hung from a picture hook or other device. A variation of this is to make the cord long enough to allow it to be knotted on itself somewhere near its ultimate center. Pieces hung by a cord are probably the easiest to hang but are also the most unstable, since they are at the mercy of air currents.



Figure 13. A metal rod has been placed in hem. A twisted and knotted cord is inserted through holes in the end of the rod.

Supporting the Rod or Stick

Any wooden dowel supported at each end tends sag in the middle, and, of course, the more weight and the greater the span, the more sag. A thicker dowel offers one solution, but relocating the points of support is better, if it can be done. From a mechanical standpoint, a dowel supported in two places is least likely to sag if the points of support are located midway between the center and each end of the dowel (i.e. 1/4 and 3/4 the distance from end to end). This is true whether the dowel rests on support from beneath or is suspended from above.

A different way of securing the rod or stick to the wall makes use of small rings, such as brass cafe curtain rings, preferably in the 1/4" and 3/4" positions on the top or back of the dowel (figure 15). Hand stitch these in such a way that the

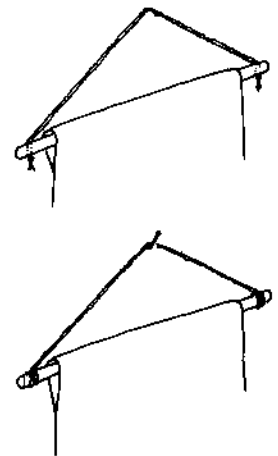


Figure 14.

HANGING to page 78

Warp-Faced Double Cloth

Adaptation of an Andean technique for the treadle loom

by Adele Cahlander

IN WRITING *Double Woven Treasures of Old Peru*¹, I had two goals in mind. One was the study and description of the many intriguing varieties of pre-Columbian double-cloth. This study became Part One of the book. My goal in Part Two was to help weavers reproduce the weave structures and designs on various types of looms, in order to gain a deeper insight into these varied, complex weaves. Naturally, these "reproductions" cannot be exact copies of pre-Columbian specimens, authentic in every way. However, I anticipate that many weavers will delight in the challenge of solving the puzzles presented by these intriguing weaves, and in adapting some of them for contemporary use.

Andean weavers of today do not use pattern diagrams for their weaving. The young weaver learns the traditions of her community by watching. She is told the number of yarns needed for a specific pattern, but very little other explanation is given. By contrast, we have grown dependent on pattern diagrams, and during the course of my research on the Andean weaves, I developed a number of different grid systems for diagramming patterns in various weaves. The system shown here is for warp-faced double cloth. Instructions are given for weaving a narrow band in warp-faced one-weft double cloth on the 4-shaft treadle loom.

Warp-Faced Double Cloth

This narrow band is woven in tubular fashion with one weft. No reed is needed for weaving this narrow band. A diamond grid is used to diagram the pattern.

The color order in the warp is *abab* (Light, Dark, Light, Dark), arranged on shafts -4 con-



Figure 1. A Quechua woman in Charazani, Bolivia weaving a wide bag in warp-faced double cloth on a 4-stake simple 2-bar loom. Under her hat she wears a *wimcha* (headband) of the same pattern weave. Only in this area of the Andes has the tradition of the Incan *wimcha* survived. *Photo by Ann Houston.*

¹ *Editors Note:* Adele Cahlander's latest book, *Double-Woven Treasures from Old Peru*, was released this winter. This article is excerpted in part from this new work.

Figure 2. Contemporary bag from Charazani, Bolivia. Warp-striped plain weave with pattern bands of warp-faced double cloth. Other features include woven tubular edge-binding with crossed and diverted warps, strap of complementary-warp weave, embellishments of fringes, coins and beads. Courtesy of Judy Conger.



Figure 3. Detail of long, narrow warp-faced double-cloth pre-Columbian band from the Middle Horizon period. Center stripe is two-faced 5-color warp-faced double cloth with warp substitution and a second, discontinuous weft; alternation of the 3- to 4-color patterned rectangles with those of one color. On each side, there is a narrow complementary-warp design in black and white, and a small red selvedge. 18'8" (5.7 m) x 3/4" (1.5 cm). Courtesy of Charles Llewellyn III.

secutively. Pattern pickup is made by forming a temporary lease of warps on shafts 1&2, (L&D), from which the L and D warps needed for a row of the pattern are selected. Since only one warp from each L-D partnership is picked up, warps of half of the #1&2 combination are left unpicked. When the opposite combination, shafts 3&4 (L&D), is lifted, the unpicked warps from #1&2 drop to the bottom of an x-shed (figure 4) used for the lower weft shot. In this way, the same pattern is formed on the back side in reverse colors.

The next pattern row is produced in the same manner, but the picking is done from a temporary lease of shafts 3&4 (L&D), and the unpicked warps drop to the bottom of the x-shed when the opposite combination, #1&2 (L&D), is lifted.

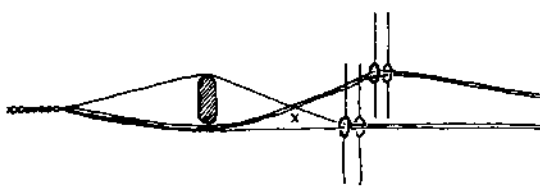


Figure 4. Warp-faced double weave, x-shed for lower layer.

A contrast of light and dark colors should be planned for the pattern area. Borders are in a tubular plain weave in a third color, referred to as medium (M), and are wound as d-bouts (double-yarn bouts) or figure-eights on a warping device (figure 5).

For this band, select a smooth, strong warp yarn, such as crochet cotton. Plan for a short sample warp, only 1 or 2 yards long. Have available some short, thin sticks such as tongue depressors, some thicker, short sticks and a small, pointed pickup-stick.

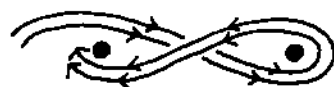


Figure 5. The warp is wound around two posts of a warping device in bouts. Double-yarn bouts are designated as d-bouts.

Warping

The yarn is wound in d-bouts with two yarns for each figure-8. Keep a finger between the two yarns when winding the warp. Use the following color sequence:

- 2 d-bouts MM for the border (8 ends M)
- 10 d-bouts L&D for the pattern (20 ends each L & D)
- 2 d-bouts MM for the other border. (8 ends M)

Weaving

Remove the reed and thread the loom according to the draft (figure 6). Use a direct tie-up. When the warps are tied on and their tension adjusted, weave in some filler yarns, alternating sheds 1&2 with 3&4, ending with 3&4. The warps need to be very close together.

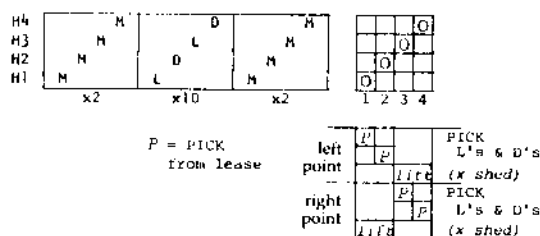


Figure 6.

Start the first weft in the shed of 1&2, with the short tail at the right, then lift 3&4 and pass weft from left to right, tucking the tail into the right edge of that shed. Read on before proceeding.

Understanding the Pattern Diagram

A diamond grid is suitable for diagramming the pattern of this weave. The border is usually omitted from this type of pattern diagram. The first pattern shown is a very simple pre-Columbian one (figures 7a and d). The replica shown in figure 7c was woven in natural (L) and brown (D), with a rust (M) border.

Note that alternate horizontal rows of diamonds "jog" out to the left or right. These will be referred to as *left-point row* and *right-point row*. They can help you keep your place. The first two rows are all-L. For the first row, a left-point row, lift #1, and for the second row, a right-point row, lift #3, BUT after each one, there is a shed manipulation for the *lower shot*. The next six rows on the face are D rows, taken alternately from #2 and #4, each followed by a shed manipulation. The D and L warps are picked in alternation for the next six rows.

The Picking Cross. For each row's upper shot, a picking cross is formed, with L warps on the near side and D warps on the far side (except it is not necessary to lift D warps when all warps to be picked are L). The picking cross is a temporary lease; a thick cord or stick can be placed

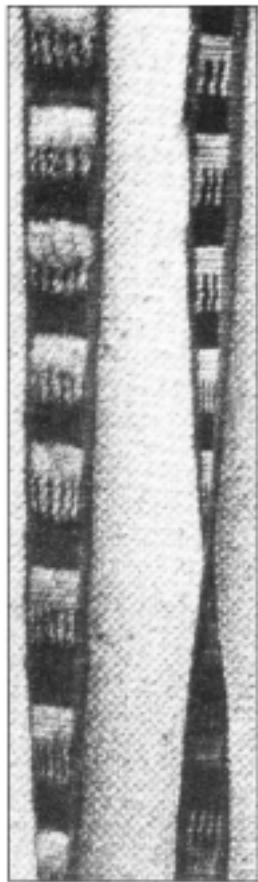


Figure 7a. Two narrow belts, pre-Inca, excavated near Pachacamac by W. Bennett and J.G. Phillips. 1 1/4" x 29" and 7/8" x 28". Photo by Lennie Sobanja. Courtesy of Woolaroc Museum, Bartlesville, Oklahoma.

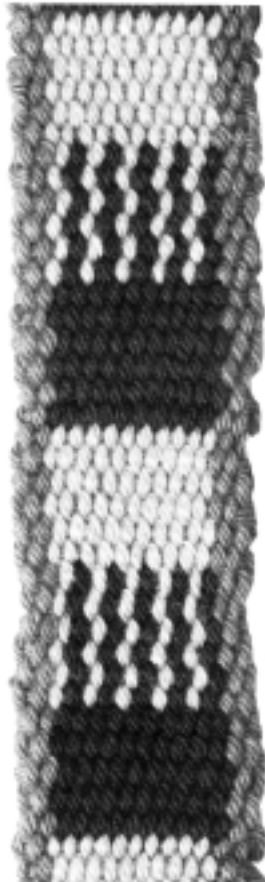


Figure 7b. Reproduction sample of band in figure 7a woven with Kentucky rayon yarn.

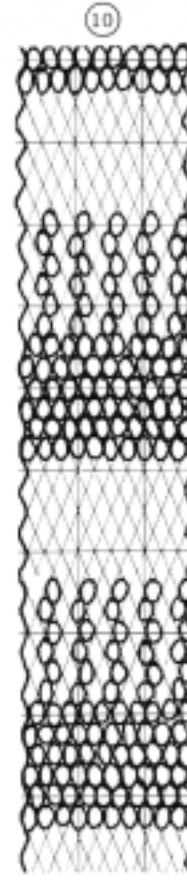


Figure 7c.

in the near shed, and the far shed can be held up with the left hand while proper warps are picked. Think of each two warps as L-D partners, the L warp to the left. Only one of the two is picked, so remember to drop the L partner when a D warp is picked.

Make it a rule always to take the border warps from the near side of the picking cross, so when there is an all-D row, all the D warps are taken from the far side of the cross, but the borders must come from the near side.

Weaving Sequence. The weft spirals. No picking is needed for the lower shots.

Left-point row

- a. upper shot: #1 near, #2 far, pick pattern & near borders. Pass weft from right to left, leave flat stick in shed.
- b. lower shot: lift #3&4, turn stick upright to form x-shed below for lower shot. Pass weft from left to right, remove stick, BEAT.

Right-point row

- a. upper shot: #3 near, #4 far, pick pattern & near borders. Pass weft from right to left, leave flat stick in shed.
- b. lower shot: lift #1&2, turn stick upright to form x-shed below for lower shot. Pass weft from left to right, remove stick, BEAT.

Adjusting the Selvedge The weft should be drawn straight across in the shed, rather than left in an arc. The tubular selvedges can be made

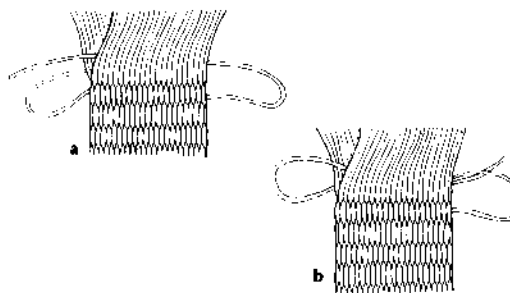


Figure 8. Leave two weft loops for adjusting selvages when weaving warp-faced double cloth: a. when passing weft in upper shed, and b. when passing weft in lower shed.

neater by leaving a weft loop at each side of the band (figure 8). When each upper and lower layer shed is made, beat the weft from the previous row, then adjust the selvedge by tugging on the weft until the loop disappears before passing the new weft and forming the new weft loop.

A Wider Band

Another pattern is shown in figures 9a and b. Figure 9c shows a single 8-bout pattern. Figure 9d shows three widths of the same pattern unit. A gap has been left between the pattern strips as an aid in counting for the pickup. This gap could be disregarded, or, a d-bout of the border-color warp might be used there to separate the motifs. The colors suggested are similar to those reported in Harcourt (1962): brown (D) for the dark warps, stripes of blue (B) and yellow (Y) for the

light, and borders in red (R). Five d-bouts are suggested for the borders. They may be made wider or narrower.

Warp order is: 5 d-bouts RR, 8 d-bouts

D&B, 8 d-bouts D&Y, 8 d-bouts D&B, and 5 d-bouts RR.

Follow the weaving sequence described above.

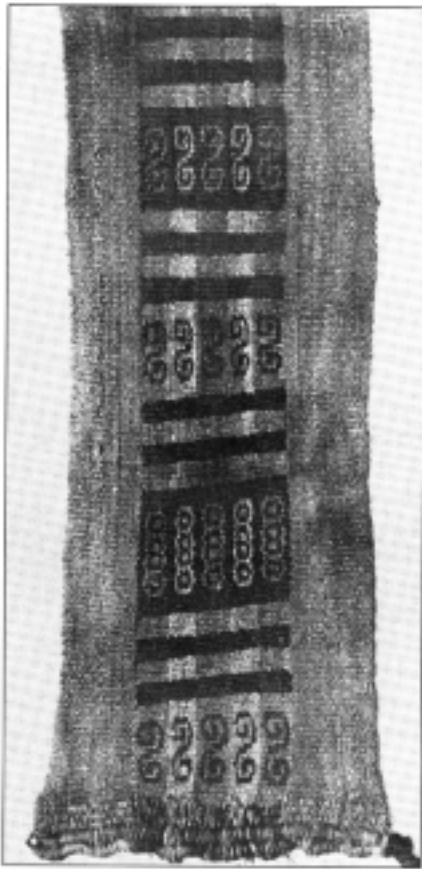


Figure 9a. Detail, pre-Columbian belt from Nasca Valley in warp-faced double cloth with warp stripes in light set of warps, borders in tubular plain weave. Collection of R. d'Harcourt (1962) by permission from University of Washington Press, Seattle.



Figure 9b. Reproduction sample of pattern shown in figure 8.



Figure 9c.



Figure 9d.

II - RIGHT-Point Row
III - LEFT-Point Row

PRELIMINARY → (11354 - Tuck in tail.)

(if underpicks or 11152) - Shoot tail of weft at RIGHT.

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Examining the Shed

by William Koepp

A CLEAR SHED with the yarns on each harness evenly tensioned is something that can be achieved by all weavers with the proper use of lease rods in the warp. When used in one of the two ways described below, lease rods can serve as an important "fine-tuning" control of the shed.

The length of the shed is determined by the position of the lease rods in relation to the fell. A good shed can be described as one that has the heddles of the center-most shafts half-way between the fell (the last shot of weft that was beaten into place) and the first lease rod (*figure 1*). For example, on a four-shaft floor loom, the theoretical half-way point would be just between shaft 2 and shaft 3. The reasoning behind this is that a heddle, when lifted, will attempt to shift toward the central point of the warp lifted, causing some abrasion to the warp and perhaps even to certain heddles (*figure 2*).

To minimize any heddle creep, the fell should be kept within reasonable limits and the lease rods tied to the back beam, the same distance from the center of the shafts as the fell.

Lease Rods

Early weavers advised using lease rods of different sizes. The rear rod is round in cross-section and is the largest of the two; the front rod is thinner and usually oval in cross-section. The smaller

front rod reduces the strain on the warp for certain sheds. The lease rods can be placed into the warp in two ways, depending on which of the plain weave sheds is opened first. This placement will determine whether the tension of the "rear shed," (the one lifted by the shaft farthest from the weaver) is greater than that of the "front shed." To see the difference in the two positions, look at the treadles tied for plain weave. Press the left plain weave treadle and look at the lease rods. Note whether the shed ends between the rods or in front of the first rod (the one nearest you). Release the left treadle and press the right plain weave treadle. Note that the end of the shed has moved: it is now on the other side of the lease rod. Write down the shed positions (for instance, left treadle—shed ends between rods, right treadle—shed ends in front of the rods). Now pull the rods out of the warp, and take up your new set of lease rods, one smaller than the other.

Press the treadle that made the shed end *between* the rods and put in the larger lease rod. Now press the other plain weave treadle (release the first treadle, of course) and put in the smaller rod. Release the treadle. Move the pair of rods back to their correct position near the back beam and tie them to the loom.

On some floor looms this can all be done from the side of the loom by yourself, by reaching around to step on the back ends of the treadles. On larger floor looms you may need a helper to press the treadles for you.

Figure 2. Courtesy of Master Weaver, Nilus Leclerc Co., Inc.

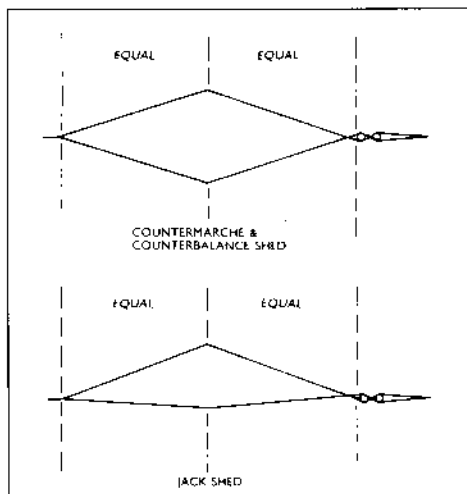
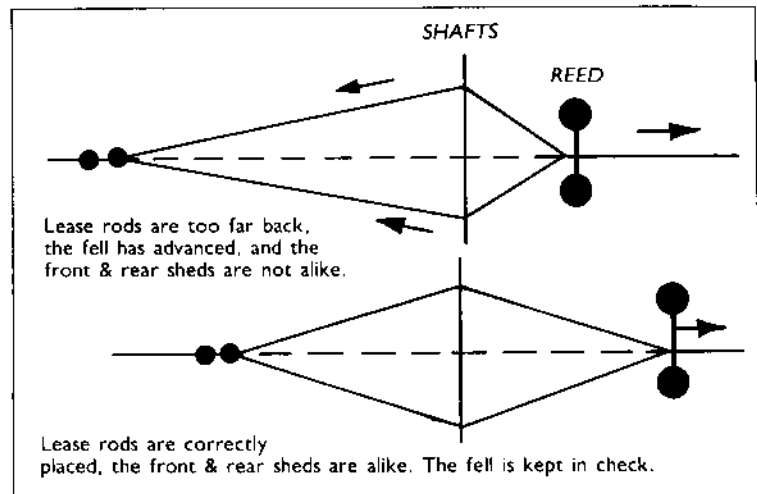


Figure 1.



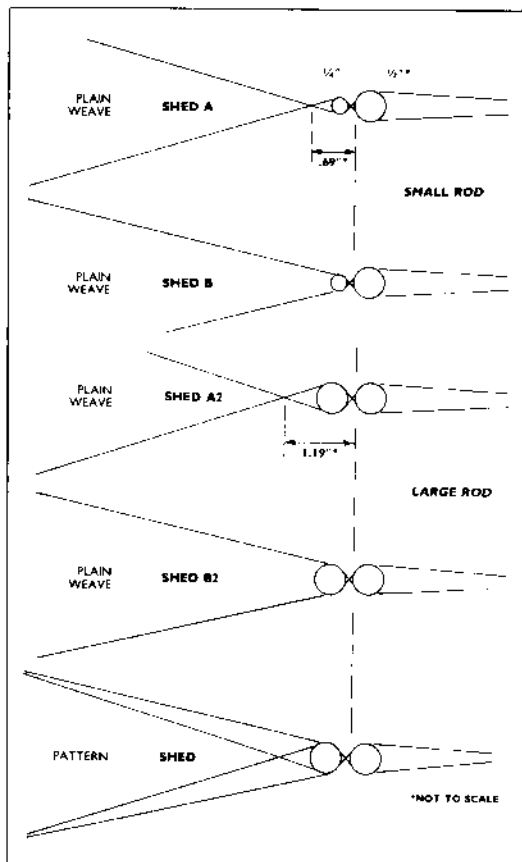


Figure 3.

and then tie two 1/2 inch dowels together, one on top of the warp, the other beneath the warp (figure 4). Tie these shed rods together at each end and every ten inches across the width of the warp with a slick string or monofilament. Leave enough room between the rods for the warp to move easily, about 1/8", or the thickness of a lollypop stick. Keep this distance constant across the warp.

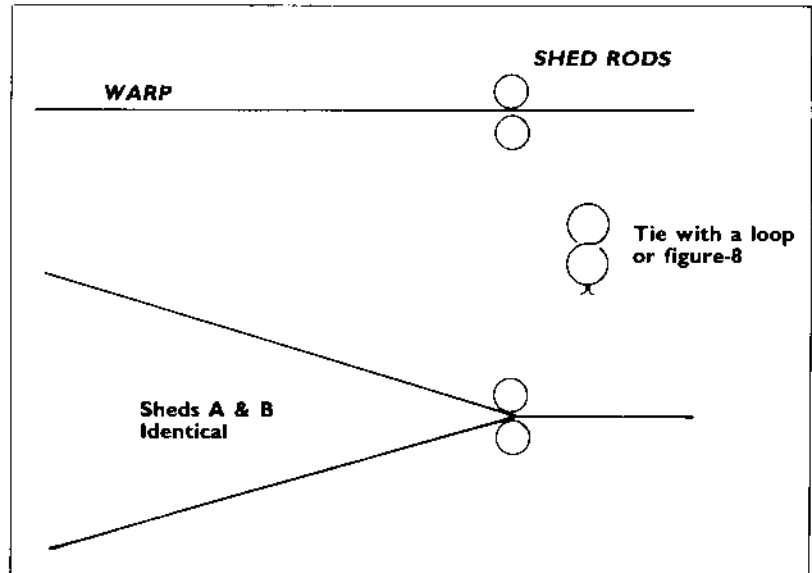


Figure 4.

Now try each plain weave treadle and note where the sheds end. You can see that if the "rear-most" shaft is lifted and the shed ends in front of the rods, the length of your shed is shorter and under greater tension, than when it is set up the other way. This would be a bit more noticeable with eight or twelve shafts.

A comparison of the lease rods will show what happens (figure 3). The *A shed* opens just in front of the two rods. The *B shed* opens between the two rods. Note the difference in the length of the shed when a small front rod is used. By reducing the rod diameter from 1/2 inch to 1/4 inch, the shed gains 1/2 inch in length. To put it another way, there will be 1/2 inch less dissimilarity between the plain sheds A and B, or between individual warp ends in a pattern lift.

Keeping the shed lengths closer in size helps keep the warp tension within a narrower range and it makes your treadling easier since some sheds are not so tight. This all varies to different degrees with the type of floor loom you have. Both of the lease-rod positions were used by the early power loom weavers, probably depending on the type of warp or the weaver's preference.

Shed Rods

Another old method used to control the shed length is to push the lease rods back to the back beam or remove them from the warp altogether,

Now measure from the fell to the center shafts. The shed rods should be placed this same distance behind the center shafts. Tie them to the loom framework so they cannot move forward or backward.

The shed rods will limit the length of the shed and regardless of the pattern or shaft lifted, the shed will be consistent as long as the fell is kept within reasonable limits. Advance your warp frequently: Do not try to weave six inches before turning the cloth beam.

If an attempt is made to keep the shed as consistent as possible throughout the weaving, it cannot fail to improve the fabric. This will alleviate undesirable strains on separate warp ends and subsequent tensions left in the fabric itself, which might cause distortions or disappointments.

Lease rods, incidentally, used to be manufactured with a hard, glass-like finish of several coats of enamel, each coat baked on for an hour or more. This very hard finish reduced the friction and kept the abrasion to an absolute minimum.

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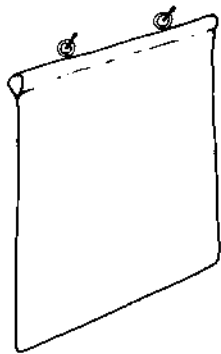


Figure 15.

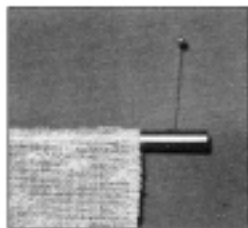


Figure 16. The weaving is hung from an aluminum rod with monofilament support.

stitch is carried under the dowel to support the dowel with no tension on or damage to the weaving. A practically invisible monofilament can be substituted for the rings. Slip a loop of 20# monofilament over either end of the dowel for hanging, or located in the $\frac{1}{4}$ " and $\frac{3}{4}$ " positions, if the weaving permits (figure 16). A number of variations in the use of monofilament for supporting weavings are possible.

Pieces hung by two fixed points of support can be a problem to install so that they are level (figure 17). Loops have a slight advantage over rings in that they allow for minor adjustment by wrapping an extra few turns around the nail, or a different size loop can be easily made. I always use a carpenter's level when mounting a piece on the wall (figure 18). Picture hooks are especially hard to mount in level pairs because of the acute angle of the nail.

Flat sticks have several hanging options not available to round sticks. If woodworking facilities are limited, a pair of mirror hangers are one of the simplest arrangements. These are flat metal pieces with two holes that can be screwed onto the back surface of the stick. Place a saw-

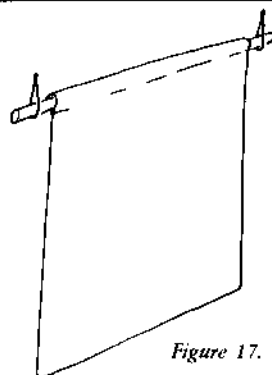


Figure 17.

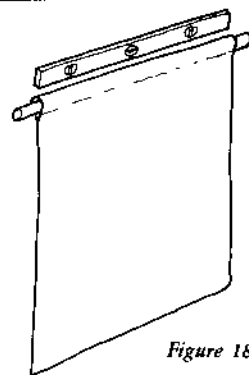


Figure 18.

tooth hanger in the back center of the stick if the wood is exposed at that point, or place one at each end and angled very slightly in opposite directions to assist in leveling. A slot for hanging can be made with a special "hang slot" router bit (figure 19). This is a favored method because the stick hangs snug to the wall. It can only be used if there is bare wood in the center of the balance area.

One may choose to weight the lower edge of the weaving but the stick or rod used should be light enough so that there is not undue tension placed on the weaving. Be aware that the added

Working with Plastic

Types of Plastics

Of the myriad types of plastic, only two types are clear or transparent, *acrylic* (such as Plexiglas™, Lucite™ made by DuPont, and other brands and generics), and *polycarbonate* (such as Lexan™ and Lucite S-A-R™ [surface abrasion resistant]).¹ Both are generally clear and are used largely as a substitute for window glass. Acrylic (Plexiglas™) is softer, easier to work with, cheaper, and is excellent to use where it be subject to little wear or to damage from scratching. Polycarbonate (Lexan™) is stronger and harder, costs more, does not scratch easily and, among other uses, is used for bulletproofing. Neither acrylic or polycarbonate is affected by sun, but both are flammable. Both are available in sheet, and pellet form, and rods are made from Lucite™.

Although the remaining remarks are in reference to acrylics, most of this information is applicable to the polycarbonates if allowances are made for increased hardness.

Supply Sources

Consult the Yellow Pages under "plastics" to find suppliers in your area. Sheets come in a variety of thicknesses, but $\frac{1}{8}$ " to $\frac{1}{4}$ " are common. They are available 4' x 8' and run \$5 to \$8 a square foot depending on thickness (\$150 to more than \$200 a sheet). Cheaper sheets of marginal quality in smaller sizes are available at many lumberyards and home improvement centers, usually only in the thickness of window glass. Some local glass stores handle plastic and will cut sheets to size. One can pick up scrap pieces for free or at a nominal charge. Sign companies usually also have colored scraps.

Working with Acrylic Sheet

Cutting

Think of cutting more as a scraping action, even when using a saw. Leave the

kraft paper backing on as long as possible to minimize cracking, chipping and scratching. You may draw your guidelines right on this paper.

Some hardware stores carry an inexpensive plastic-cutting tool. It consists of a handle and a steel piece with a sharpened hook-like tip. The tip is drawn toward you along a straight-edge making several passes and using reasonable pressure, until you have a groove about $\frac{1}{4}$ the thickness of the sheet. Then you simply bend the sheet between your thumbs or press it over a dowel to break it.

Most cutting now is done with a table saw using a carbide blade with teeth suitable for plywood. A bandsaw is used for curves (recommended three teeth per inch of blade) at a fairly slow speed and with fairly rapid advancement of the acrylic so it doesn't heat up and gum up the blade.

Bonding

In preparation for bonding, edges should not be sanded. To bond the

Figure 19. This back view shows the routed slot where the weaving is inserted.

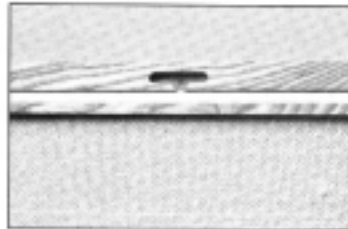


Figure 20. Sculptural wooden frame ready for the right weaving.

weight may cause pendulum-like swaying.

There are more complicated exposed methods of hanging which can be attempted if woodworking facilities are available. For example, one weaving might be superimposed on another, the two creating a single hanging. Hardwood frames can be constructed. Solid wood could show behind the weaving or wood of unusual or irregular shape may serve as the support (figure 20). A solid piece of wood might be designed with a slot on the underside for concealing a stick from which the weaving was suspended (figures 21, 22).



Figure 21. Front view showing routing at bottom of stick.

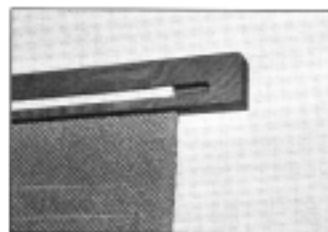


Figure 22. Back view of figure 21, showing how weaving is inserted.

edges, methylene chloride (a volatile, flammable substance) is the best agent for home use. Before application of this chemical, pieces to be joined are held in position by masking tape. Then the methylene chloride is applied using a hypodermic needle or eye dropper along the edge of the join. By virtue of capillary action, the methylene chloride is drawn into the join. The bond usually sets in two to five minutes. The agent acts as a solvent and the plastic parts are actually joined to each other.

Smoothing Edges

Edges that will not be joined to other surfaces can be smoothed and polished. A mill file, held *along* the edge of the piece, not across it, can be used for rough edges and burrs. Next, use 100 or 120 grit sandpaper, preferably glued or fit tightly to a small block of wood. Brush hard on the surface of the sandpaper to clean out the plastic that rapidly fills up the grit. Progress to finer grits of sandpaper up to 320 or even 600 grit if you can obtain it. Be very careful not to drag a corner of sandpaper across an exposed surface of the plastic, or it will scratch. Place some layers of soft cloth over the jaws of your vise to hold the plastic for sanding. After sanding, buff with a flannel wheel using an abrasive powder and some sort of wax or oil to contain the powder. Pumice is

roughest, followed by rottenstone, then jeweler's rouge. Lacking these supplies, one could probably get by with a coarse cloth wrapped tightly around a block of wood, and a little toothpaste for grit.

For a rounded edge, remove the kraft paper in the early stages of sandpapering. To do this, roll the paper from one corner around a dowel, clean the surface with soap and water, and use alcohol to remove any residual adhesive left from the kraft paper. Sand the edge to a rounded shape.

Bending

Plexiglas™ is easy to bend—the trick is to get the temperature right and the heat in the right place. Minimum temperature is 290° and the maximum is 360°. Commercially, hot air or infra red heat sources are used to bend the plastic. For home use, a strip heater can be made which heats only the part you want to bend. This excludes oven heating, which softens the whole piece and leaves it too hot to handle. (If you use tools such as tongs, they can leave dents). The goal is to get the full thickness up to proper temperature without overheating the surface and forming permanent bubbles. A thinner sheet is easier to heat evenly.

An electric hotplate can be adapted for the purpose of heating the sheet evenly. The top can be masked

into a strip by laying on strips of asbestos. The plastic is then worked back and forth, on both surfaces, a few inches above the exposed portion of the heating element. As soon as the plastic begins to soften, you can feel it start to bend. You may reheat and rebend if necessary but you will only be able to work the convex surface of the plastic. The edges of the plastic stay cool enough to hold in the bare hands but the heated area remains hot. It may be cooled by plunging it into cold water.

Drilling

Drilling should be done after sawing has been completed. Although there are special drills for Plexiglas,™ a hand drill, an electric drill or drill press can be used. Use light pressure to prevent cracking. In addition, use extreme care in withdrawing the drill after it has gone through the piece.

Note

1. The above information was distilled from telephone conversations with the technical advisor at Plexiglas (Rohm & Hass, Philadelphia), Amex in Phoenix (a division of Almac), a brief conversation with GE in Minneapolis, a plastics fabricator in Denver, three places that handle plastics in the Denver area, a do-it-yourself manual, and the authors' own personal experience. The authors want to disclaim any responsibility for the absolute accuracy and completeness of this report.

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Reviews

AN ILLUSTRATED GUIDE TO MAKING ORIENTAL RUGS

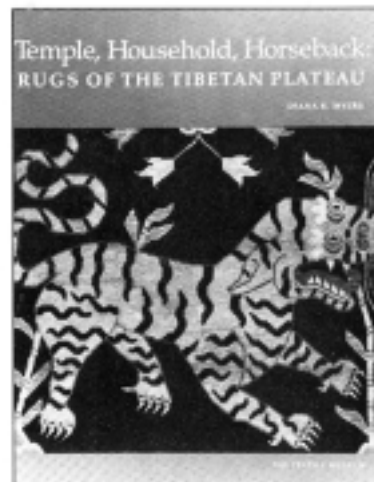
Gordon W. Scott

Seattle: Pacific Search Press, 1984. 103 pp. ISBN 0-914718-94-0. Soft cover \$14.95.

In spite of all of the fine books that have been published on the subject of oriental carpets, little more than paragraphs and pamphlets have ever been written about these wonderful textiles from the "how-to" perspective. Yet the techniques involved are not difficult, and should be of interest to handweavers with a taste for ethnic weaves.

At last a book has been published that describes the traditional methods used in the weaving of oriental rugs. *An Illustrated Guide to Making Oriental Rugs* is a practical manual for the warping and weaving of Oriental pile carpets, filled with clear step-by-step instructions, profuse illustrations and detailed practical advice regarding potential pitfalls. A major feature of the book is a set of plans and instructions for the assembly of an oriental rug loom. Plans for two types of small looms and a larger loom for rugs are provided. Patterns for nine different rugs are also included.

The instructions do include some modifications of traditional procedures which make the process more efficient. Scott also lists tools and yarns available in the United States which are either the same as or equivalent to traditional materials. Oriental rugs can be divided roughly into three classes: the bold, generally geometric rugs woven by nomads and villagers primarily for their own use; the palace carpets, designed by skilled artists utilizing intricate floral motifs, and between these, the conventionalized, more repetitious designs of the commercially produced rugs produced from paper patterns by paid weavers. This last category is the most substantial, and it is this tradition upon which the techniques described in this book are based. Although there is a brief overview of the types of rugs and looms used in other contexts, the reader will for the most part have to go elsewhere for this type of background. The author lived in Iran from 1959 to 1964, where he developed a love for the carpets he collected. He became interested in weaving them only some years later, after his return to the United States, where he was ultimately able to find a Persian weaver to teach him these techniques. It is regrettable that his interest in technique did not emerge while he was still



in Iran. However this background is not essential to the book, which does fill a significant vacuum for rug scholars and collectors as well as handweavers.

Charlotte Jirousek

Charlotte Jirousek is a doctoral candidate in Design at the University of Minnesota. As part of her five year Peace Corps experience in Turkey, she organized a weavers' co-op.

TEMPLE, HOUSEHOLD, HORSEBACK: RUGS OF THE TIBETAN PLATEAU

Diana K. Myers

Washington, D.C.: The Textile Museum, 1984. 111 pp. LC # 84-52139.

The legendary isolation of Tibet has given mystery to all things pertaining to this land in the Himalayas. This has resulted in a quite real gap in information about Tibetan Arts, in particular about its rug tradition. Diana K. Myers has devoted six years of her life to filling that gap. Her efforts have resulted in this book and an exhibition by the same name held November 1, 1984 through March 31, 1985 at the Textile Museum in Washington, D.C.

In addition to a catalogue of the exhibition, the book contains essays on the history and origins of rug making in Tibet, sources and uses of symbol and design, materials and techniques of rug weaving in Tibet, and functions of Tibetan pile rugs.

The historical origins of Tibetan pile rug weaving are obscure, since they have been collected only since the late nineteenth century. No examples are known which can be dated with certainty to any earlier than the late eighteenth century. Some scholars, howev-

er, believe that the tradition may be as much as a thousand years old in Tibet. The origin of the technique and much of the symbolism is believed to be influenced by neighboring China to the northeast, as well as Turkestan to the northwest, and to a lesser extent, India to the south. At the same time there are characteristics of technique, design and function which are uniquely Tibetan.

Myers traces the tenuous historical evidence with care, presenting various interpretations of the data for consideration. She also offers specific and detailed information about the weaving, dyeing and design of these textiles, providing the reader with a scholarly and well rounded context within which to appreciate these previously obscure weavings.

Charlotte Jirousek

A SILK WORKER'S NOTEBOOK

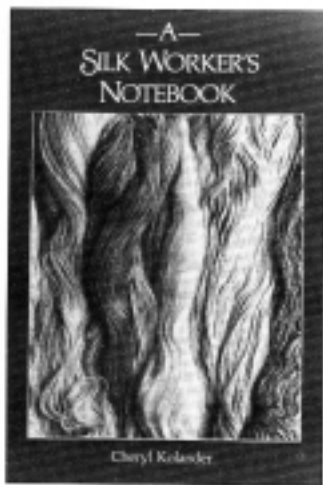
Cheryl Kolander

Boulder: Interweave Press, 1986. 168 pages. ISBN 0-934026-18-1 paper. \$12.00.

I was very happy to see a paperback version of *A Silk Worker's Notebook* cross my desk recently. The original privately printed edition of this work, like silk, was truly a luxury—printed on richly textured paper, lavishly illustrated, with several silk fabric samples, and priced at \$50. The new paperback edition from Interweave Press contains the original text plus a few additions, and is moderately priced. It is a valuable reference for all who work with, wear or merely covet silk.

This small book (5½" x 8½") is a compendium of silk history, folklore and practical advice on working with silk fibers and fabrics. Kolander describes the various

processes used in manufacturing silk yarns, from the hand reeling of cocoons to handspinning the various types of silk fiber available, to industrial yarn manufacturing processes. One chapter is devoted to a discussion of silk yarns and their characteristics. A valuable portion of the book is a "dictionary" of silk fabrics. A chapter is devoted to the care and handling of silk fabrics with an appendix on the



bleaching of silk. Two other appendices provide notes on weaving with silk and notes on knitting with silk yarns (a new section).

The text is illustrated with line drawings and black-and-white photos. A color photo gallery has been added to this edition, showing traditional and contemporary silk fabrics.

A Silk Worker's Notebook is everything you need to know about silk and some things you don't need to know, but will enjoy learning about.

Karen Searle

VIDEO!

TAPESTRY WEAVING—Level I Nancy Harvey

P.O. Box 1328, Port Townsend, Washington 98368; Victorian Video Productions, 1985.

Theoretically it is possible to write a book review without reading every word in the book. I thought the same concept would be true in reviewing the video tape on *Tapestry Weaving—Level I* since I already knew the beginning tapestry techniques so well. My plan was to watch, fast-forward, watch, fast-forward, etc. Well, that was not to be the case. After about five minutes of viewing I was completely mesmerized by Nancy Harvey's seemingly effortless and uncomplicated way of presenting her subject. Even with the stopping and starting and freezing of the tape that she asks her students to do, I could feel a rhythm develop and I soon regretted not having a tapestry warp in front of me to work with.

The audience that the "video author" has in mind is the non-weaving craftsperson eager to try a new craft (instructions are given for building a nail frame loom), and the beginning weaver who has not yet tried tapestry weaving.

The video, designed for active participation, first introduces us to the basic process, vocabulary, looms, equipment, and material and then moves on to the creation of three small tapestries. Each tapestry flows logically, moving from the simple to the challenging. The first project explores the basic techniques of slit tapestry and the weaving of curves. Project two presents weaving horizontal and vertical stripes, square shapes and interlocking. Project three includes weaving a circle. After the three tapestries are woven, Nancy shows two finishing processes—one for a pillow and one for a wall-hanging.

Video is an exciting format for self-study. However, I would suggest supplementary information on color and design and yarn selection and a book on tapestry techniques for quick referral. Nancy Harvey does mention the two tapestry books which she has authored as references.

The price of the video is about that of a two day workshop. We are all aware of the extra value one gets from a group experience and from having a good teacher (Nancy Harvey) in a class situation to personally guide us through the material, motivate us and critique our samples. The next best situation, however, would be using this video tape in a study group with one or more dedicated friends.

Carolyn Golberg

News

OLD DAYS, OLD WAYS. An Illustrated Folk History of Ireland, by Olive Sharkey is a collection of drawings of the tools for life in "the olden days" from 1800–1930. The accompanying text describes the lifestyle and activities of the people around the home and on the land. Subjects of the illustrations and text include thatching and decorating the house, spinning, weaving, lacework, canework and clothing. Cloth-bound, 176 pp., \$20.95. Available from: Irish Books and Media, 683 Osceola Ave., St. Paul, MN, 55105 (612) 647-5678.

Beverly Gordon is the editor of the **NEWSLETTER OF THE HELEN L. ALLEN TEXTILE COLLECTION (HATC)** at the University of Wisconsin-Madison. Volume 1, Number 1 has just appeared. The newsletter will be a regular HATC publication, initially appearing once per year. *For information:* Beverly Gordon, Editor, Newsletter, Helen L. Allen Textile Collection, 1300 Linden Drive, University of Wisconsin-Madison, Madison, WI 53706.

Fabric artist Eileen MacIntosh now publishes a monthly newsletter, **CREATING**. Included are craft ideas, book reviews, addresses for catalogues from craft suppliers and a monthly crafts pattern. \$10/year for 12 issues. Order from: Eileen MacIntosh, *Creating*, 23 Underwood St., Belmont, MA 02178.

"PEST BUSTERS" is the title of a brochure available from The Textile Museum, Washington, D.C. This publication, designed and compiled by Abby Sue Fisher for the Conservation Department of the Museum, looks at four household pests—moths, carpet beetles, silverfish, mold and mildew—and offers advice on detection, control and prevention. *For information:* The Textile Museum, Conservation Department, 2320 'S' Street, Washington, D.C. 20008.

BIAS LINE. A Newsletter for Costumers and Technicians, produced by Bobby Ann Loper, is published 11 times per year and contains patterning and construction ideas and techniques for creating theatrical costumes. Subscriptions are \$10.00 per year. *For information:* Bias Line, Costume Tech, 140 Glendale, Suite 243, Lakeland, Florida 33803.

DOUBLE-WOVEN TREASURES FROM OLD PERU, by Adele Cahlander with Suzanne Baizerman, has now been published by Dos Tejedoras Fiber Arts Publications. *Double-Woven Treasures* is a comprehensive analysis of the varieties of pre-Columbian double cloth in private and museum collections. Part I provides historical information and describes in detail examples studied by the authors. Part II provides instructions for reproducing the various weaves described in Part I on simple two-bar looms, inkle looms, rigid heddle looms and treadle looms. An extensive bibliography and detailed glossary are also included. Available in both hardcover (\$30.00) and paper (\$22.00). 208 pages, 20 color plates, 210 line drawings and diagrams, 150 black-and-white photos. *For information:* Dos Tejedoras, 3036 N. Snelling, St. Paul, Minnesota 55113 (612) 646-7445.

WEAVE CALIFORNIA! is a new quarterly newsletter directed to the weaving community in Northern California. *Weave California!* is a locally oriented publication for guild and non-guild members highlighting "Who's doing what? Where? and When?" Regular sections include an events calendar, workshops listing, local award winners, guild news, feature stories on local fiber artists. An extensive listing of used equipment for sale in Northern California is also included. \$18.00/year. *For information:* Weave California!, 16 Santa Ana Place, Walnut Creek, CA 94598 (415) 935-2026.

CALENDAR

EXHIBITS, FAIRS, FESTIVALS

ARIZONA

Prescott: The Mountain Spinners and Weavers Guild will sponsor a fiber show of handspun and handwoven wearables and interior decor, including basketry, June 3-21 at Yavapai College Art Gallery, Rush & Sheldon Sts., Prescott.

CALIFORNIA

Berkeley: Pacific Basin Gallery of Textile Arts will sponsor the following exhibits in 1986: Kay Pentzien, "Works on Fiber & Paper," April 3-May 2, 1986; 14th Annual Student Show, May 9-June 6, 1986; Group Show, June 13-July 3, 1986.

Monterey: Monterey County Fair Wool Show, August 12-17, 1986. Events include wool judging open to the public on August 12 and a fiber to fabric demonstration Sunday morning, August 18, followed by a fleece auction. For information: Monterey County Fair, P.O. Box 1151, Monterey, Ca 93942, (408) 372-5863.

San Francisco: The ACC Craftfair will be held in San Francisco, August 6-10, 1986, at Fort Mason Center.

Stockton: The Haggin Museum, Victory Park, 1201 N. Pershing Ave, Stockton, will sponsor the following exhibits in 1986: "Aspects of American Weaving," April 26-June 1; "19th Century Coverlets from the Permanent Collection," April 26-May 18; "E. E. Gilmore Retrospective," April 26-May 18; "Contemporary Handweaving," April 26-June 1.

COLORADO

Boulder: The Handweavers Guild of Boulder announces a national exhibition of wearable art. "Body Adornment—A Step Beyond," Boulder Center for the Visual Arts, 1750 Thirteenth St., June 5-July 3, 1986.

DELAWARE

Newark: "High Tech Meets High Touch," an invitational exhibit featuring the work of fiber artists who have been using the computer as an artistic tool, will be shown at the University Gallery, University of Delaware, Newark, Delaware, April 27-May 23, 1986.

DISTRICT OF COLUMBIA

Washington: "From East to West: New Treasures for the Textile Museum" will run from February 6 to June 7, 1986 at The Textile Museum.

GEORGIA

Marietta: The Jubilee Cultural Arts Festival will be held May 24, 25 and 26, 1986 at the Marietta/Cobb Fine Arts Center, 156 Church St., Marietta, Georgia.

IDAHO

Boise: "For the Floor: Contemporary Artists' Rugs," an exhibition organized by the American Craft Museum, will be held at the Boise Gallery of Art, August 2-September 14, 1986.

INDIANA

Indianapolis: The following exhibits will be held at The Indianapolis Museum of Art, 1200 W. 38th St., Indianapolis, Indiana: "Four Decades of Fashion: Selections from the Collection," April 19-June 1, 1986; "Fiber R/Evolution," April 19-June 1, 1986; "Traditional Arts of Africa, Oceania and the Americas: Selections from Private Collections," July 8-September 7, 1986.

IOWA

Ames: "Legends in Fiber," an exhibition of the work of "living legends" in the fiber arts will be shown at the Octagon Center for the Arts, March 16-April 30, 1986. Artists represented include: Anni Albers, Neda Alhilali, Ruth Asawa, Lenore Davis, Sheila Hicks, Glen Kaufman, Jack Lenor Larsen, Alice Parrot, Debra Rapaport, Ed Rossbach, Cynthia Schira, Kay Sekimachi, Lenore Tawney, Katherine Westphal and Claire Zeisler. For information: "Legends in Fiber," The Octagon Center for the Arts, 427 Douglas, Ames, Iowa 50010 (515) 232-5331.

Decorah: The Fifth Annual Exhibition of Weaving in the Norwegian Tradition will be held July 25, 26 and 27, 1986 at Vesterheim, The Norwegian-American Museum in Decorah. The exhibition is a judged showing of handwoven objects in the tradition of Norwegian folk weaving sponsored by the Norwegian-American Museum in connection with the Decorah Nordic Fest.

MASSACHUSETTS

North Andover: "Rugs: Contemporary Handwoven Floorcoverings," a juried exhibition of the works of northeastern textile artists, will be held at the Museum of American Textile History, 800 Massachusetts Ave., North Andover, February 9-June 15, 1986.

West Springfield: ACC Craftfair West Springfield will be held at the Eastern States Exposition Center, June 16-22 (open to the trade), June 20-22 (open to the public) 1986.

MICHIGAN

Bad Axe: Thumb Area Lamb and Fiber Affair, July 4 & 5, 1986, Huron Community Fairgrounds, Bad Axe. For information: Huron County Cooperative Extension Service, 104 County Building, Bad Axe, MI 48413.

Niles: Fourth annual Fiber Fest sponsored by the Michiana Fiber Artists Co-op, will be held May 31 at Fernwood Center, 1720 Range Line Rd., Niles. For information: Virginia Handy, 3503 Edwards Rd., Sodus, MI 49126.

MINNESOTA

St. Paul: The Goldstein Gallery at the University of Minnesota announces the following exhibits: "Danish Immigrant Homes: Glimpses from Southwest Minnesota," March 9-April 25, 1986; "Handcrafts from Finland," May 4-July 18, 1986; "Kashmiri to Paisley: Cultural Interactions," July 27-October 3, 1986; "Paris in the Cities," October 19, 1986-January 9, 1987.

MISSISSIPPI

Jackson: "Mississippi Weaves," sponsored by the Chimneyville Weavers Guild and the Dyed-in-the-Wool Weavers will be held in July, 1986 at the Deposit Guaranty Plaza. For information: Marcy Petrini, 950 Fairfax Cr., Jackson, MS 39211 (601) 957-1423.

NEW MEXICO

Los Alamos: The Fuller Lodge Art Center will sponsor "Que Pasa: What's Happening in New Mexican Art," from April 11-May 11, 1986 and the Fourth Biennial Juried Craft Exhibit, an exhibit of work by craftspeople residing in Arizona, Colorado, New Mexico, Texas and Utah, June 20-July 27, 1986.

NEW YORK

Ithaca: Eighth annual Upstate Crafts Fair, August 7-10, 1986 at Ithaca High School. Juried, quality crafts. Demonstrations. Trade Fair. For information: SASE to Upstate Crafts, P.O. Box 173, Ithaca, NY 14851 (607) 257-4618 or 273-4783.

New York City: George Little Management, Inc. will sponsor "Surtex '86," a surface design exhibition, at the Jacob K. Javits Convention Center, May 10-13, 1986. For information: Alan Steel, Show Director, George Little Management, Inc., 2 Park Avenue, Suite 1100, New York, NY 10016 (212) 686-6070.

OREGON

Salem: A Sheep-to-Shawl/Sweater Demonstration will be held on the grounds of Mission Mill Village, 1313 Mill St. S.E., Salem, Ore-

gon on May 24, 1986. For information: Debra Vassallo, Mission Mill Village, 1313 Mill St. S.E., Salem, OR 97301 (503) 585-7012.

PENNSYLVANIA

Philadelphia: "Fiber Arts '86," the 33rd annual exhibit of juried works by the Philadelphia Guild of Handweavers, will take place May 11-June 8, 1986 at the University of Pennsylvania Museum, Sharpe Gallery, 33rd and Spruce Sts., Philadelphia.

Womelsdorf: Second Annual Fleece Day at Amazing Acres Custom Wool Processing, Route 419 North, Womelsdorf, Saturday June 7, 1986. For information: (215) 589-4023.

RHODE ISLAND

Bristol: The Haffenreffer Museum of Anthropology, Mount Hope Grant, Bristol, Rhode Island 02809, announces the following exhibits during summer, 1986: "Northern Plains and Plateau Hide Clothing and Beadwork," the William Drayton Collection, 1880-1940; "Curator's Choice," costumes, artifacts, related textiles from Micronesia, Polynesia, Oceania, Africa and China; "South-east Asian Folkart," Laotian Hmong embroidery and applique, basketry and Buddhist altars from Thailand.

TENNESSEE

Gatlinburg: The Arrowmont School of Arts and Crafts announces the following exhibitions in 1986: "Tennessee—State of the Arts," April 5-May 21, 1986; "Arrowmont Summer Faculty and Staff Exhibition," May 30-August 15, 1986.

VERMONT

East Burke: The eighth annual Vermont Sheep and Wool Festival will be held at the Burklyn Barns in East Burke, May 24, 1986. For information: David & Cherrie Kennedy, Newark St., West Burke, VT 05871.

VIRGINIA

Alexandria: The National Standards Council of American Embroiderers presents "Needle Expressions 1986," August 31 to October 12, 1986 at The Atheneum.

WASHINGTON

Monroe: The sixth annual "Ewe to You" festival will be held June 28, 1986 at the Evergreen State Fair Grounds. The event is sponsored by the Valley Spinners Guild and the 4-H Sheep and Spinning Programs. For information: Joanne Hirsch, 8620 139th Ave. SE, Snohomish, WA 98290.

WISCONSIN

Sheboygan: The sixteenth annual Outdoor Arts Festival, sponsored by the John Michael Kohler Arts Center, will take place July 19 and 20, 1986 at the Arts Center.

Waukesha: The Wisconsin '86 Spin-In, sponsored by the Spindle & Dye Pot Guild of Milwaukee, will be held Saturday, September 20, 1986 at the Waukesha County Fairgrounds.

Wausau: "Art to Weave: New Handmade Clothing," an exhibit organized by the American Craft Museum; sponsored by International Paper Company Foundation with special funding by Bozell and Jacobs, Inc, will be at the Leigh Yawkey Woodson Museum, November 2-December 15, 1986.

WYOMING

Douglas: "Fiber Affair," will be held at the Wyoming State Fairgrounds in Douglas, June 20-22, 1986. The event will include workshops, exhibits, and sale. For information: Wyoming Fiber Affair, Community Education, Box 1028, Douglas, Wyoming 82633.

CANADA

ALBERTA

Edmonton: Sheep to Garment Competition, July 22, 1986, as part of Edmonton's Klondike Days Exposition. The competition will be managed by Sheep Creek Weavers in co-operation with Edmonton Northlands.

ONTARIO

Brockville: "Summer Treasures III," a mixed media exhibition of arts and crafts by area artists and craftspersons, will take place June 21-August 30, 1986 at Heritage Crafts, Sheridan Mews, 182-186 King St. West, Brockville, Ontario. Featured will be weaving by Joanne Coljee Ostler and Laurie Penny.

Mississauga: Sheridan College, School of Crafts and Design will hold its annual May show, May 10-11, 1986 at the Lorne Park Campus, 1460 South Sheridan Way, Mississauga, Ontario.

Toronto: The American Tapestry Alliance international juried exhibit, "Panorama of Tapestry," will take place July 1-August 15, 1986 at the University of Toronto, Faculty of Music, Edward Johnson Building, Toronto, Canada. The American Tapestry Alliance is an organization dedicated to the promotion, awareness of, and appreciation for tapestries designed and woven in America. This exhibit is one of the specialized exhibits held in conjunction with Convergence '86.

CONFERENCES

ARIZONA

Flagstaff: The Third Biennial Intermountain Weavers Conference will be held on the campus of Northern Arizona University in July 1987.

CALIFORNIA

Berkeley: "Surface Design: In Use," the southwest regional conference of the Surface Design Association, will be held at the University of California, Berkeley, May 31 and June 1, 1986. For information: Pacific Basin School of Textile Arts, 1659 San Pablo Ave., Berkeley, CA 94702 (415) 524-0777.

Oakland: ART/CULTURE/FUTURE, a national, interdisciplinary conference sponsored by the American Craft Council will take place



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June 4-7, 1986 at the Oakland Museum. The conference will examine issues of importance to all who are involved with craft: craftspeople, designers, artists and architects; industry, gallery and museum representatives; consultants, critics, reporters, educators, publishers and arts administrators; private, public and corporate collectors. *For information:* Susan Harkavy or Patricia Greenhill, American Craft Council, 45 West 45 Street, New York, NY 10036.

Stockton: The 33rd annual Conference of Northern California Handweavers will be held April 25, 26, 27, 1986. Speakers include: Nancy Harvey, Irene Waller, Mary Elizabeth Laughlin, Sandi Wright, Shereen LaPlantz and Albertje Koopman. *For information:* Registration, P.O. Box 172, Merced, CA 95340 or Penny Sanchez, 4519 N. Ebbet, Stockton, CA 95207 (209) 951-2848.

COLORADO

Denver: The 1986 Midwest Weavers Conference will be held June 6-9, 1986 at Loretto Heights College in Denver, Colorado. *For information:* Rocky Mountain Weavers Guild, Attn: Connie Dolezal, P.O. Box 22687, Denver, CO 80222.

Telluride: The Telluride Academy and Judy Mulford will host a week-long national basketry symposium, June 29-July 4, 1986. *For information:* SASE to Judy Mulford, 2098 Mandeville Canyon Rd., Los Angeles, CA 90049.

DELAWARE

Newark: The Spring Conference of the MidAtlantic Fiber Association will be held May 17, 1986 at the University of Delaware Conference Center, Newark. Featured speakers are Mary Walker Phillips and Randall Darwall. *For information:* Pat Bendler, Rt. 2, Box 72, Thorofare, NJ 08086.

FLORIDA

Gainesville: "American Crafts Council Southeast Region Annual Conference," at the University of Florida, May 21-24, 1986. *For information:* Ray Ferguson, Conference Coordinator, College of Education, University of Florida, Gainesville, FL 32611, (904) 392-0761.

Winter Park: The Florida Tropical Weavers Guild will hold its annual state convention at the Langford Hotel, Winter Park, Florida, April 18-20, 1986. The theme is "Something Spacey." Workshops in weaving, basketry and other fiber arts are planned. Workshop leaders include Doramay Keasbey (weaving) and Shereen LaPlantz (basketry). *For information:* Donna Sullivan, 1134 Montego Road W., Jacksonville, FL 32216.

ILLINOIS

Springfield: "Weaving and Education: A Contemporary Dialogue," a conference exploring developments in American weaving and weaving education from the turn of the century to the present, will take place May 17, 1986 at the Illinois State Museum, Spring-

field. This conference is held in conjunction with the Chicago Historical Society's exhibit on Edward Worst, which will be at the Illinois State Museum from April 19-June 1, 1986. *For information:* Maureen McKenna, The Illinois State Museum, Spring and Edward Sts., Springfield, Illinois 62706.

MASSACHUSETTS

Nantucket Island: The Northeast Regional Surface Design Conference will be held September 26-28, 1986 at the Nantucket Island School of Design. *For information:* Cathie Joselyn, Art Department, Clarion University, Clarion, PA 16214 (814) 226-2523.

MICHIGAN

Ypsilanti: "Lace Place Ten," the tenth anniversary conference of the Great Lakes Lace Group will be held April 30 to May 4, 1986 at the Hoyt Conference Center, Eastern Michigan University, Ypsilanti. *For information:* Linda Knapp, 17757 Redfern, Detroit, Michigan 48219.

MONTANA

Billings: "Spinning and Weaving Make Fiber Friends," MAWS 1986 will be held at Eastern Montana College, June 20, 21, 22, 1986. The conference is sponsored by the Montana Association of Weavers and Spinners. *For information:* Marge Ferrin, 2509 Cook, Billings, Montana 59102.

NEW YORK

Rome: The Rome Arts and Community Center, along with Flo Hoppe, will host a week-long national basketry symposium August 17-23, 1986. *For information:* SASE to Flo Hoppe, Rome Arts and Community Center, 308 W. Bloomfield, Rome, NY 13440.

TEXAS

Ingram: The second annual Spinfest will be held on the campus of the Hill Country Arts Foundation on October 23, 24 and 25, 1986. The instructors will be Arlene Mintzer, Iris Dozer and Celia Quinn. *For information:* Jeanne Bowman, Art Director, Hill Country Arts Foundation, P.O. Box 176, Ingram, TX 78025 (512) 367-5121.

VIRGINIA

Orkney Springs: The SPIN-OFF autumn retreat, SOAR 1986, will be held October 2-5, 1986 at Shrine Mont Conference Center, Orkney Springs. *For information:* Dale Pettigrew, Interweave Press, Inc., 306 N. Washington Ave., Loveland, Colorado 80537 (303) 669-7672.

WASHINGTON

Seattle: "SD Biz," the northwest regional Surface Design Association conference, will be held June 27-29, 1986 at the University of Washington, Seattle. *For information:* Richard Proctor, School of Art DM-10, University of Washington, Seattle, WA 98195.

Tacoma: The National Standards Council of American Embroiderers (NSCAE) will hold its

third annual study retreat at the University of Puget Sound, June 1-14, 1986. Constance Howard will be the instructor for this two week concentrated learning experience. *For information:* Judy Mirrer, Stonybrook Road, Middlebury, CT. 06762.

WISCONSIN

Mineral Point: "Colloquy 86" will be held at The Looms, Mineral Point, WI, June 30-July 2, 1986. The topic will be "Designing Functional Textiles." *For information:* The Looms, R3, Shake Rag St., Mineral Point, WI 53565 (608) 987-2277.

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 Ann Sutton. *For information:* Allen Sanderson, 535 61st St., Delta, B. C., Canada V4K 3X6.

MANITOBA

Winnipeg: The Fourth Annual Conference on Textiles and Complex Weaves will be held July 11-13, 1986. Sponsored by The Charles Babbage Research Centre, the Conference will take place at the University of Manitoba, Winnipeg. The proceedings of the Conference will be published and will appear as a volume of *Ars Textrina*. *For information:* Dr. Janet A. Hoskins, Department of Computer Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

ONTARIO

Toronto: "Convergence '86," sponsored by the Handweavers Guild of America will be held in Toronto, Canada, July 17-20, 1986. The biennial conference's first appearance in Canada, is co-hosted by the Ontario Handweavers and Spinners and the Ontario Crafts Council. The theme is "A Panorama of Canada—A Fibre Spectrum." *For information:* Ontario Crafts Council, 346 Dundas St. W., Toronto, Ontario M5T 1G5, Canada.

WEST GERMANY

Delmenhorst: "Marketing Chances—Handweaving/Weaving Design," the international crafts meeting of *Textilforum* at Eichenhof Farm, will be held May 30, 31, and June 1, 1986 at Delmenhorst (near Bremen, West Germany). *For information:* Textilforum e. V., P.O. Box 59 44, D-3000 Hannover 1, West Germany.

TO ENTER

Deadline May 1 for slides and **May 24, 1986** for hand carried entries for "Fiber Celebration '86," a juried exhibit sponsored by the Northern Colorado Weavers Guild. The exhibit will be held June 2 through June 27, 1986 at the Loveland Museum, Loveland, Colorado. *For information:* SASE to Fiber Celebra-

tion '86, 5515 West Hwy 34, Loveland, CO 80537.

Deadline May 9, 1986 for return of applications for the 4th Biennial Juried Craft Exhibition at Fuller Lodge Art Center, Los Alamos, New Mexico. Craftspeople residing in Arizona, Colorado, New Mexico, Texas and Utah are eligible to submit their work. For information: SASE to Biennial Craft Exhibition, Fuller Lodge Art Center, P.O. Box 790, Los Alamos, NM 87544.

Deadline May 15, 1986 for entries to Lafayesta 1986, a juried arts and crafts festival, August 30 and 31, 1986 in West Lafayette, Indiana. For information: Sue Paschke, Greater Lafayette Museum of Art, 101 South 9th St., Lafayette, IN 47901.

Deadline June 1, 1986 for a design competition in celebration of the Great Lakes Lace Group's 10th anniversary. For information: SASE to Linda Knapp, 17757 Redfern, Detroit, MI, 49219.

Deadline June 20, 1986 for entries for "A Celebration of Creativity," the 11th annual fiber and textile exhibit sponsored by the Whitewater Spinners and Weavers Guild, July 20-August 8, 1986 in the Crossman Gallery on the University of Wisconsin-Whitewater, Whitewater, Wisconsin. For information: Gloria Madsen, Rt. 1, Box 128-C, Whitewater, Wisconsin 53190.

Deadline June 30, 1986 for Access to the Arts sixth annual juried fiber show, Fiber National '86, September 13-October 25, 1986 at the Adams Memorial Gallery, Dunkirk, New York. Open to U.S. resident fiber artists. For information: SASE to Adams Memorial Gallery, 600 Central Ave., Dunkirk, NY 14048 (716) 366-7450.

Deadline July 1, 1986 for registrations and fees for the Fifth Annual Exhibition of Weaving in the Norwegian Tradition, a juried exhibition sponsored by Vesterheim, The Norwegian-American Museum. Open to weavers in the United States and Canada. Entry dates: July 1 through July 13, 1986. No object arriving after July 13 can be considered for judging or exhibition. For information: Lila Nelson, Vesterheim, Decorah, Iowa 52101.

Deadline July 21, 1986: Slides due for "Spare Parts," a national juried exhibition of artwork made from found objects, October 10-November 8, 1986. For information: Galeria Mesa, P.O. Box 1466, Mesa, Arizona 85201-0904.

Deadline August 2, 1986 for "Just for Fun," a multi-media exhibition open to all craft media and fine arts. Sponsored by Guilford Handcrafts, Inc. the exhibit will run from October 5 to October 25, 1986 at The Mill Gallery, Guilford, Connecticut. For information: SASE to Just for Fun, Guilford Handcrafts Center, P.O. Box 221, Guilford, CT 06437.

Deadline August 15, 1986: "Fiber Forum '86," September 28-November 7, 1986. A juried regional exhibition of fiber works executed in any medium during the past two years. Open to artists living within 150 miles

of Miami University. For information: SASE to Susan Kristoferson-Fiber Forum '86, Art Dept., Hiestand Gallery, Miami University, Oxford, Ohio 45056.

Deadline August 16, 1986 for slides for "Space: New Form/New Function," a competitive national exhibition sponsored by the Arrowmont School of Arts and Crafts. The exhibit will focus on the exploration of a variety of concepts as related to space and to project new forms and functions in two or three dimensional media. For information: Arrowmont School, P.O. Box 567, Gatlinburg, TN 37738 (615) 436-5860.

no deadline stated for "Mississippi Weaves," a juried show open to all weavers in Mississippi, sponsored by the Chimneyville Weavers Guild and the Dyed-in-the-Wool Weavers, July 1986 at the Deposit Guaranty Plaza in Jackson, Mississippi. For information: Marcy Petrini, 950 Fairfax Cr., Jackson, MS 39211 (601) 957-1423.

no deadline stated: "Wearable Art for the Collector," juried exhibition, fashion show and sale at the Evansville, Indiana Museum of Arts and Science, April 7-May 5, 1986. For information: SASE to First Additions, 2920 North Commonwealth 4B, Chicago, IL 60657.

no deadline stated: The Association of Michigan Basketmakers are currently accepting teacher proposals for the 1986 Michigan Basketmakers Convention, Detroit, Michigan, October 1986. For information: Kathleen P. Crombie, Convention Chairperson, c/o Tint & Splint Basketry, 29529 Ford Rd., Garden City, MI 48135.

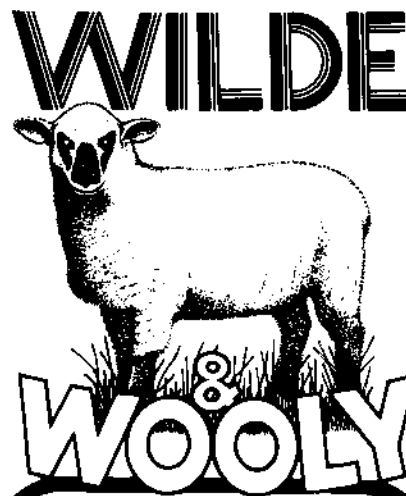
ANNOUNCEMENTS

Speakers and workshop teachers interested in the 1987 Mid-Atlantic Fiber Conference at Montclair College, New Jersey, July 10-12, 1987, please send resume, references and workshop outline to Program Chairperson, Lee Diamond, 2570 Wunnewetta Road, Cutchogue, New York 11935 (516) 734-5490.

The Great Lakes Lace Group announces the introduction on May 2, 1986, of the first American postage stamps devoted to lace. The Lace Group is preparing its own first-day cover to be officially cancelled on May 2. For information: Great Lakes Lace Group, c/o Mrs. Shirley Coe, 26024 Cathedral, Redford, Michigan 48239.

The Detroit Institute of Arts announces the appointment of Angela Lakwete as Textile Conservator in the Conservation Services Laboratory. Ms. Lakwete spent nine years in the Textile Conservation Department at the Metropolitan Museum of Art where she worked on fabrics of all cultures with emphasis on Dynastic Egyptian and Islamic. She is a spinner, dyer and weaver.

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ARIZONA

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

CALIFORNIA

Berkeley: The Pacific Basin Gallery of Textile Arts will sponsor the following lectures in 1986: "Spatial Texts," by Francis C. Butler, April 18; "Illuminated Sculpture," by Victoria A. Rivers, May 19.

Mendocino: The Mendocino Art Center, Summer Session will begin June 16, 1986. Textile classes include off loom, surface design, knitting, tapestry weaving, batik, basketry, fabric printing, paper, boundweave. *For information:* Lolli Jacobsen, Mendocino Art Center, 452 Little Lake St., P.O. Box 765, Mendocino, CA 95460.

IOWA

Decorah: Workshops sponsored by Vesterheim, The Norwegian-American Museum, July 11–August 17, 1986. Classes include traditional overshot, pile and bound weaves, felting, ethnic knitting, spinning, nålbinding, dyeing, embroidery, straw work. *For information:* Lila Nelson, Vesterheim, Decorah, Iowa 52101.

MAINE

Kents Hill: Horizons, The New England Craft Program will offer spring and summer workshops in clay, photography, papermaking, feltmaking, batik and kiln building at their new facility in western Massachusetts, beginning April 19 and continuing to August 25, 1986. *For information:* Horizons, 374 Old Montague Rd., Amherst, MA 01002.

MICHIGAN

Ann Arbor: The Michigan League of Handweavers announces its 1986 workshops to be held at Concordia College, Ann Arbor, Michigan, June 6, 7, 8, 1986. *For information:* Charlene Hancock, 300 Brookside Dr., Ann Arbor, MI 48105.

MINNESOTA

St. Paul: Complex weaves: from the traditional floor loom to the Jacquard, June 16–28, 1986. *For information:* University of Minnesota, Dept. of Design, Housing and Apparel, 240 McNeal Hall, St. Paul, MN 55108 (612) 624-9700.

NEW HAMPSHIRE

Harrisville: Harrisville Designs Summer

Workshops will begin June 23 and continue until September 6, 1986. *For information:* Sharon Driscoll, The Weaving Center at Harrisville Designs, Harrisville, NH 03450.

NEW MEXICO

Santa Fe: Shared Horizons will offer seminars in Southwestern Weaving (May 8–10) and Fiber and Dye Identification (May 11). *For information:* Recursos de Santa Fe, 227 East Palace, Dept. T, Santa Fe, NM 87501.

NEW YORK

Croton-On-Hudson: The Niddy Noddy will offer Navajo rug weaving, April 1, 15, 22 and 29, May 6 and 13, 1986. *For information:* The Niddy Noddy, 416 Albany Post Rd, Croton-On-Hudson, New York, 10520.

PENNSYLVANIA

Lancaster County: Klara Cherepov will conduct fiber arts workshops at Historic Smithton, in Lancaster County. Classes will be offered in the fundamentals of weaving, garment and product design. *For information:* Klara Cherepov Workshop, Historic Smithton, 900 West Main St., Ephrata, PA 17522, (717) 738-3333.

TENNESSEE

Gatlinburg: The Arrowmont School of Art and Crafts offer one and two week classes in fibers during its 1986 Summer Workshop Program, June 9–August 15, 1986. *For information:* Arrowmont School of Arts and Crafts, P.O. Box 567, Gatlinburg, TN 37738 (615) 436-5860.

VERMONT

Ludlow: Fletcher Farm School for the Arts and Crafts will offer week-long and weekend fiber courses for beginning and advanced students during its summer session. *For information:* SASE Fletcher Farm School, Ludlow, Vermont 05149.

WASHINGTON

Tacoma: The third study retreat sponsored by the Council of American Embroiderers will be held June 1 to 14, 1986 at the University of Puget Sound. The Summer Seminar, "From Sound to Summit," will be held from June 9 to 14, 1986, in conjunction with the study retreat. *For information:* SASE to NSCAE, P.O. Box 8578, Northfield, IL 60093.

AUSTRALIA

QUEENSLAND

Brisbane: The Australian Flying Arts School announces a new Weaving Correspondence Course, written by Janet De Boer, and spon-

sored 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.

CANADA

ONTARIO

Mississauga: Sheridan College School of Crafts and Design will offer fiber classes during its Summer Session, June 30–August 8, 1986. *For information:* Betty Kantor, Sheridan College School of Crafts and Design, Lorne Park Campus, 1460 South Sheridan Way, Mississauga, Ontario, L5H 1Z7.

SCANDINAVIA

DENMARK

Copenhagen: Det Danske Selskab will offer a summer course on Design in Scandinavia, August 24–September 6, 1986. *For information:* Det Danske Selskab, The Danish Cultural Institute, Kultorvet 2, DK-1175 Copenhagen K, Denmark.

TRAVEL

Peru: Weavers Hike in Peru, 3 weeks in May and June 1986. Customized tour featuring 8-day trek through remote villages. Visit Lima, Cuzco, Machu Picchu, Titicaca. *For information:* Betty Davenport, 1922 Mahan, Richland, Washington 99352 (509) 946-4409.

Scandinavia and the U.S.S.R.: The fifth biennial crafts tour conducted by Michael Scott, editor of *The Crafts Report*, June 30 to July 21, 1986. *For information:* SASE (business size) to Michael Scott, 3632 Ashworth North, Seattle, Washington 98103.

Indonesian Archipelago: Art expedition led by Mary Hunt Kahlenburg, specialist in Indonesian textiles and art, June 6–June 29, 1986. *For information:* Ramayana Tours, Int., 817 Anita Street, Redondo Beach, CA 90278.

Nepal and Northeast India: Global Views Tours presents "Behold the Jewel in the Lotus," a tour of artisans and Buddhist culture, November 1–23 (Part I) and November 22–December 11, 1986 (Part II). *For information:* Global Views, R.R. 3, Spring Green, WI 53588.

Yugoslavia and Hungary: Tom Wilson and Sherry Clark will offer a crafts tour to Yugoslavia, June 28–July 15 and a crafts tour to Yugoslavia and Hungary, July 12–31, 1986. *For information:* Craft World Tours, 6776 Warboys Road, Byron, NY 14422.

USSR: Craft World Tours will offer a craft tour of the USSR, August 15–September 1, 1986. *For information:* Craft World Tours, 6776 Warboys Road, Byron, NY 14422.

THE WEAVER'S MARKET CLASSIFIEDS

The Weaver's Market classified advertising rate is .75 per word, \$15.00 minimum. **Deadline** for the summer issue is May 31. Pre-payment must accompany ads. Send your ad copy to: The Weaver's Market Classifieds, c/o *The Weaver's Journal*, P.O. Box 14238, St. Paul, MN 55114.

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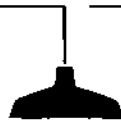
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AUTHORS from page 16

cessories. She has a special interest in reviving and preserving traditional weaves and patterns.

Jacquie Kelly has been weaving since 1968 when she acquired a small loom and checked out everything the local library could offer on weaving. For the last five years her main interest has been using the 10-shaft drawloom to explore the two-or-more-tie unit weaves, especially the "star and diamond" draws, and the tissue or lampas weaves. Her other interests are the baroque recorder and amateur radio—her call is KD7DZ. She hopes to find other weavers who would like to set up a net.

William Koepf's interest in weaving developed after building a counter-balance loom for his wife in 1975. A few years later, he drew plans for and constructed a larger counter-marche loom that he uses today. He lives in Bakersfield, California and works as a deputy sheriff, with weaving sharing time with other interests including wood-working, back-packing, chess and collecting old weaving books.

Elisha Renne is currently a graduate student in anthropology with emphasis on ethnic textiles at New York University. She also runs a weaving business, Arcadia Handweaving, which sells handwoven table linens to craft shops in eight states.

Phyllis Waggoner has an M.A. in Design from the University of Minnesota where she taught Color and Design. An interest in rug weaving, color and her Swedish heritage led her to study boundweave. Phyllis has recently joined the staff of *The Weaver's Journal*.

Errata

The phone number published in the ad for **A Westside Weaver** on page 20 of the Winter 1986 issue was incorrect. We regret the inconvenience this has caused.

COLLECTOR'S EDITION

IMAGES OF THE SOUTHWEST

The Weaver's Journal
Summer 1986

featuring

- Noël Bennett
- Mary Rawcliffe Colton
- Ann Lane Hedlund
- Kate Peck Kent
- Jack Lenor Larsen



Three weaving traditions: Native American, Hispanic, Anglo plus a weaver's guide to the Southwest including museums, galleries, shops and guilds.

CONTEST

Deadline for
entries has been
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Sept. 1, 1986

We invite you to send us your interpretation of *The Weaver's Journal* name draft used in an item woven for the home. Cash and merchandise prizes will be awarded to the winners, and instructions for making the winning projects will be published in *The Weaver's Journal*.

Instructions: Select one of the *Weaver's Journal* name drafts from Susan Mansfield's article in the Winter 1986 issue (p. 15) and use it to create something for the home such as upholstery fabric, table linens, towels, rugs, hangings,



etc. Send us a completed piece along with information on yarns used, weaving and finishing instructions, and a brief statement outlining your approach to this problem. (What were the factors that influenced your choice of project and materials?) If you make a group of items such as a set of placemats, send in only two of the set.



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